

Purbeck Modelling

Spatial Model Report

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**DORSET COUNTY COUNCIL,
ENVIRONMENT AND THE ECONOMY**

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1.0 INTRODUCTION

Background

- 1.1 Dorset County Council's Modelling Team were commissioned on 9 February 2016 to undertake an assessment of the impact of two proposed development options in the Purbeck District. The study area is shown in Figure 1.1.
- 1.2 The study area includes all the parishes in Purbeck District and some external zones that represent immediate surrounding areas such as Poole and Weymouth plus the A35 and A352 that allow people to get in and out of the Purbeck District via major link roads.

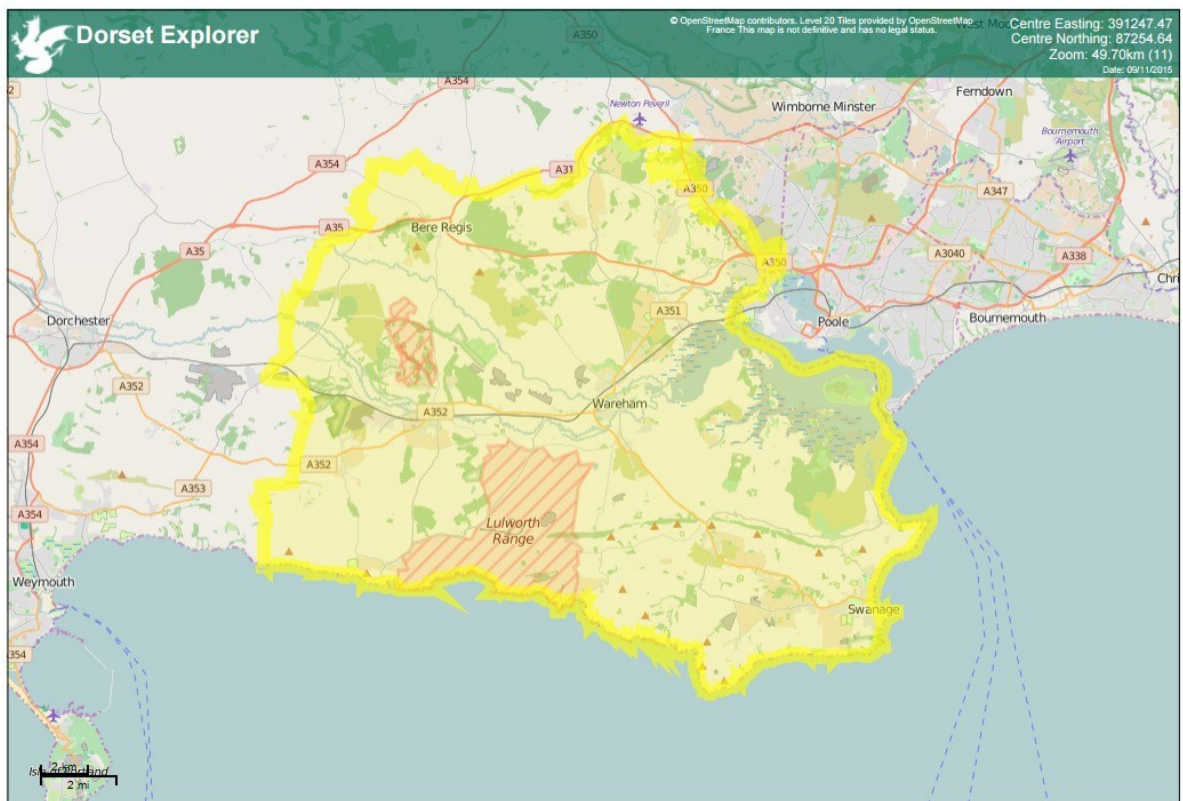


Figure 1.1 – Study Area

- 1.3 A number of options were considered for undertaking this study including using the Dorset Diamond Spreadsheet model, a simple model that represents traffic flows on the major roads in Dorset, or updating an existing SATURN assignment model, a more detailed model that includes delays at junctions. However, in view of the tight timescale and budget constraints a 'buffer' model was created using SATURN software, a simple model that includes traffic flow but has no detail on junctions or traffic signals. This is considered an appropriate level of information for this stage of the plan making process.

2.0 MODEL CREATION

Network

- 2.1 A basic traffic model was created with SATURN modelling software using data from Google maps and Dorset Explorer (buffer network). All major routes have been included. This network does not take account of individual junctions but gives an indication of where vehicles travel to and from. The buffer network reflects; link length, capacity and speed flow relationship. The extents of the model are shown in Figure 2.1.

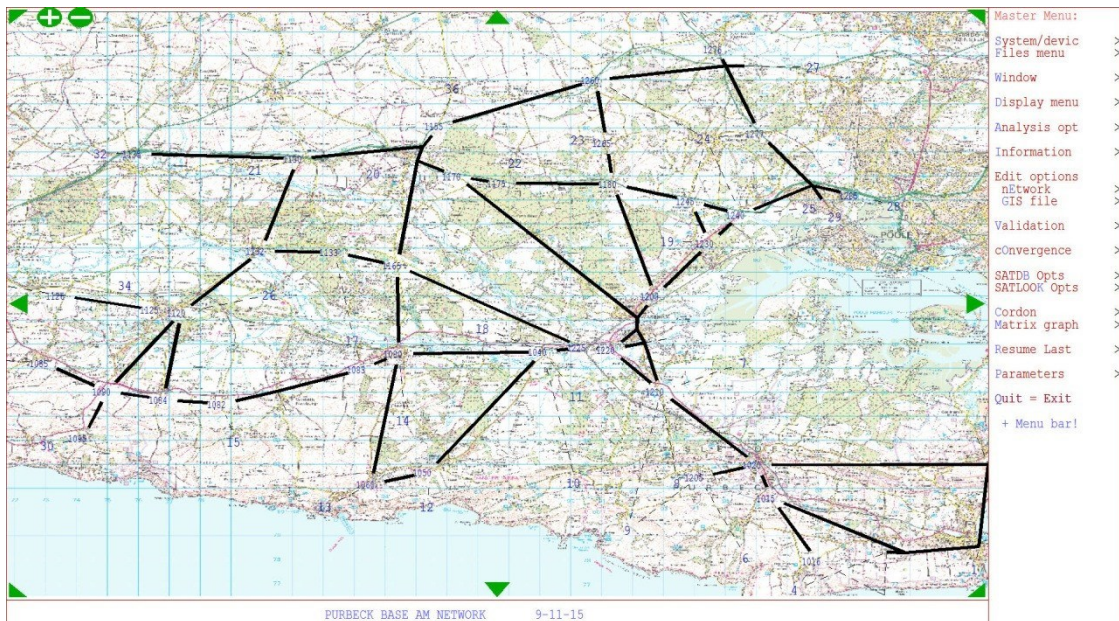


Figure 2.1 – SATURN Buffer Network

Demands

- 2.2 Trip distribution (where people travel to and from) was based on ‘distance travelled to work’ data from the 2011 Census. The road network in this model covers the 26 parishes within Purbeck. The 26 parishes are represented by Zones, which are listed in Table 3.2. An additional 10 zones around the perimeter of the model represent external links to and from the Purbeck District. These allow trips to travel to and from Purbeck. Traffic demands (how many vehicles are travelling) are based on historic traffic counts and some estimates of the number of vehicles entering and exiting each parish and external zone.
- 2.3 The traffic on the model represents an average AM peak hour (0800-0900).
- 2.4 The model represents all categories of vehicles. It does not take special account of heavy good vehicles or buses.

Validation

- 2.6 The traffic flows within the model have been validated (checked) against a number of independent traffic counts. The results are contained in Appendix A.
- 2.7 Overall, 80% of links (road sections) meet the Design Manual for Roads and Bridges (DMRB) criteria for model validation. This is below the DMRB guidance of 85%, however, it is still a reasonable representation of likely traffic flows. Figure 2.2 shows the differences between observed and modelled traffic flows. Green bandwidths show modelled traffic flow greater than observed. Blue shows modelled traffic flow lower than observed.

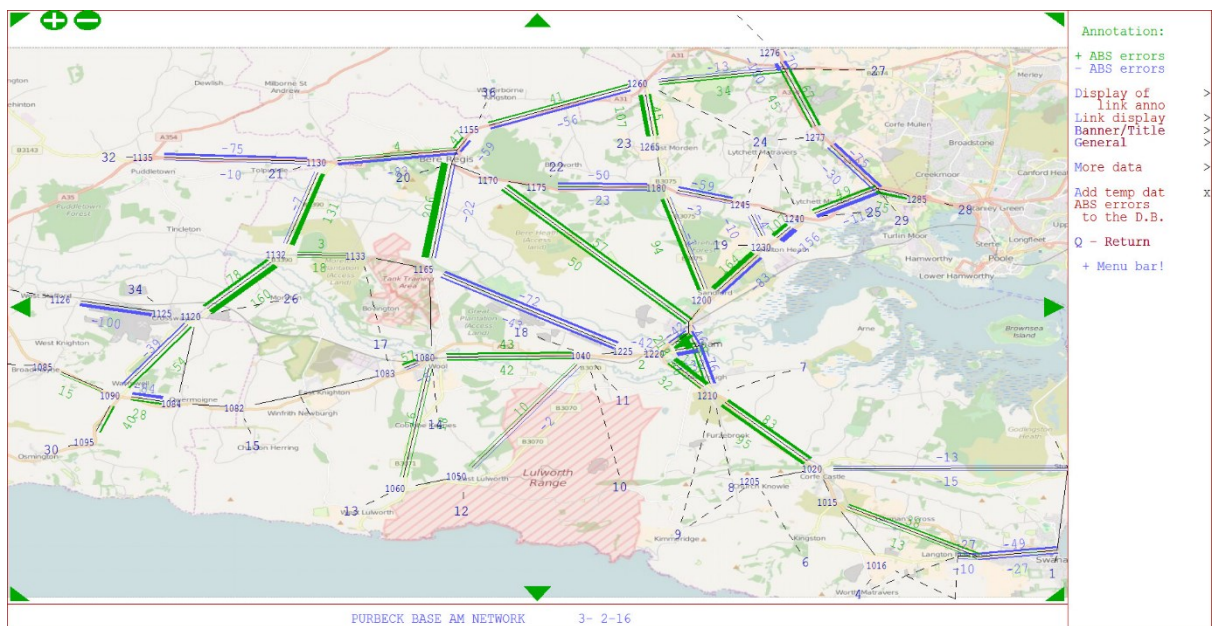


Figure 2.2 – Differences between Observed and Modelled Traffic Flow

- 2.8 Speeds along a number of routes have been compared with information from Google Maps. This data does not meet DMRB criteria but does allow individual routes to be compared on a like for like basis. Generally, modelled and Google time appear similar.

3.0 FORECAST MODEL

Background Growth to 2027 (Do Minimum)

3.1 The Purbeck Local Plan Part 1 (PLP1) plans for 2,520 dwellings up to 2027. Those yet to be built have been included in the spatial areas shown in Table 3.1. The Table shows the current rate of housing development within Purbeck from 2006-2015 and the number of dwellings still to be built up to 2027. These have been included in the forecast scenario.

Table 3.1 – Purbeck Growth 2015-2027

| Spatial area | No. homes to deliver in PLP1 | No. delivered 2006-2015 | No. left to build |
|--------------|------------------------------|-------------------------|-------------------|
| North west | 120 | 39 | 81 |
| North east | 605 | 286 | 319 |
| Central | 475 | 135 | 340 |
| South west | 360 | 297 | 63 |
| South east | 960 | 398 | 562 |
| Totals | 2,520 | 1,155 | 1,365 |

3.2 Traffic growth for zones outside Purbeck District has been included in the model. Growth for these external zones has been based on figures generated for the South East Dorset Model. Although the growth factors from South East Dorset are for 2012-2026 they are likely to be similar to the 2015-27 growth estimates. A complete list of growth factors for origins (vehicles leaving a zone) and destinations (vehicles entering a zone) are shown in Table 3.2.

| Zone | Description | Origins | Destinations |
|------|-----------------------------|---------|--------------|
| 1 | Swanage | 1.069 | 1.023 |
| 2 | Studland | 1.556 | 1.116 |
| 3 | Wareham Town | 1.025 | 1.008 |
| 4 | Worth Matravers | 1.463 | 1.162 |
| 5 | Langton Matravers | 1.278 | 1.074 |
| 6 | Corfe Castle | 1.278 | 1.162 |
| 7 | Arne | 1.217 | 1.190 |
| 8 | Church Knowle | 1.938 | 1.269 |
| 9 | Kimmeridge (no data) | 2.403 | 1.854 |
| 10 | Steeple (including Tynham) | 1.651 | 1.289 |
| 11 | East Holme (no data) | 1.980 | 1.572 |
| 12 | East Lulworth | 1.062 | 1.030 |
| 13 | West Lulworth | 1.031 | 1.010 |
| 14 | Coombe Keynes (no data) | 1.153 | 1.093 |
| 15 | Chaldon Herring | 1.155 | 1.046 |
| 16 | Winfrith Newburgh | 1.052 | 1.018 |
| 17 | Wool | 1.008 | 1.002 |
| 18 | East Stoke | 1.651 | 1.073 |
| 19 | Wareham St. Martin | 1.056 | 1.007 |
| 20 | Bere Regis | 1.058 | 1.035 |
| 21 | Affpuddle and Turnerspuddle | 1.188 | 1.595 |
| 22 | Bloxworth | 1.312 | 1.601 |
| 23 | Morden | 1.335 | 1.176 |
| 24 | Lytchett Matravers | 1.078 | 1.027 |
| 25 | Lytchett Minster and Upton | 1.108 | 1.058 |
| 26 | Moreton | 1.062 | 4.209 |
| 27 | A31 Henbury | 1.192 | 1.226 |
| 28 | A35 Upton Bypass | 1.126 | 1.118 |
| 29 | A350 Upton | 1.103 | 1.068 |
| 30 | A353 Poxwell | 1.164 | 1.194 |
| 31 | A352 Broadmayne | 1.146 | 1.190 |
| 32 | A35 Puddletown | 1.146 | 1.190 |
| 33 | A350 Spetisbury | 1.142 | 1.207 |
| 34 | Crossways | 1.185 | 1.068 |
| 35 | West Stafford | 1.146 | 1.190 |
| 36 | Winterbourne Kingston | 1.142 | 1.207 |

Table 3.2 – Growth Factors to 2027 (“Do minimum”). These growth factors are calculated using the number of houses left to build per area of Purbeck (up to 2017) and the number of trip rates generated in each area according to the number of jobs and the number of houses (using information from 2011 Census). This will determine whether a zone is mainly an origin or a destination for journeys made during the AM peak.

- 3.3 These factors do not explicitly take account of the 500 homes planned at Crossways but does include overall growth 2012-2026 for West Dorset District. The factors do not take account of any potential minerals development as future growth is currently uncertain.

Growth 2027 to 2033 (Do Minimum)

3.4 Further growth factors have been applied to the 2027 matrices to represent a ‘Do Minimum’ year of 2033. This has been carried out using TEMPRO data from the National Trip End Model.

Trip Rates

3.5 Trip rates have been calculated using the TRICS database. TRICS is the national standard system of trip generation (the number of trips generated by a proposed development).

3.6 Trip rates have been calculated for two scenarios. The first has been based on a previous report for development in the Wool area because this development is included in most of the scenarios tested. The second scenario is based on more remote sites (these have higher trip rates as people need to drive to obtain services).

3.7 Table 3.3 below shows the estimated trips from 1000 dwellings – **for the Wool scenario** – taken from TRICS output.

**Estimated TRIP rate value per 1000 DWELLS shown in shaded columns
BOLD print indicates peak (busiest) period**

| Time Range | ARRIVALS | | | | DEPARTURES | | | | TOTALS | | | |
|---------------------|----------|-------------|--------------|---------------------|------------|-------------|--------------|---------------------|----------|-------------|--------------|---------------------|
| | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate |
| 00:00 - 01:00 | | | | | | | | | | | | |
| 01:00 - 02:00 | | | | | | | | | | | | |
| 02:00 - 03:00 | | | | | | | | | | | | |
| 03:00 - 04:00 | | | | | | | | | | | | |
| 04:00 - 05:00 | | | | | | | | | | | | |
| 05:00 - 06:00 | | | | | | | | | | | | |
| 06:00 - 07:00 | | | | | | | | | | | | |
| 07:00 - 08:00 | 3 | 95 | 0.050 | 50.441 | 3 | 95 | 0.330 | 330.161 | 3 | 95 | 0.398 | 398.602 |
| 08:00 - 09:00 | 3 | 95 | 0.101 | 101.399 | 3 | 95 | 0.346 | 346.154 | 3 | 95 | 0.447 | 447.553 |
| 09:00 - 10:00 | 3 | 95 | 0.101 | 101.399 | 3 | 95 | 0.199 | 199.301 | 3 | 95 | 0.300 | 300.700 |
| 10:00 - 11:00 | 3 | 95 | 0.147 | 146.853 | 3 | 95 | 0.136 | 136.364 | 3 | 95 | 0.283 | 283.217 |
| 11:00 - 12:00 | 3 | 95 | 0.213 | 213.287 | 3 | 95 | 0.161 | 160.839 | 3 | 95 | 0.374 | 374.126 |
| 12:00 - 13:00 | 3 | 95 | 0.126 | 125.874 | 3 | 95 | 0.178 | 178.322 | 3 | 95 | 0.304 | 304.196 |
| 13:00 - 14:00 | 3 | 95 | 0.133 | 132.867 | 3 | 95 | 0.136 | 136.364 | 3 | 95 | 0.269 | 269.231 |
| 14:00 - 15:00 | 3 | 95 | 0.168 | 167.832 | 3 | 95 | 0.199 | 199.301 | 3 | 95 | 0.367 | 367.133 |
| 15:00 - 16:00 | 3 | 95 | 0.294 | 293.706 | 3 | 95 | 0.161 | 160.839 | 3 | 95 | 0.455 | 454.545 |
| 16:00 - 17:00 | 3 | 95 | 0.259 | 258.741 | 3 | 95 | 0.140 | 139.860 | 3 | 95 | 0.399 | 398.601 |
| 17:00 - 18:00 | 3 | 95 | 0.353 | 353.147 | 3 | 95 | 0.196 | 195.804 | 3 | 95 | 0.549 | 548.951 |
| 18:00 - 19:00 | 3 | 95 | 0.346 | 346.154 | 3 | 95 | 0.143 | 143.357 | 3 | 95 | 0.489 | 489.511 |
| 19:00 - 20:00 | | | | | | | | | | | | |
| 20:00 - 21:00 | | | | | | | | | | | | |
| 21:00 - 22:00 | | | | | | | | | | | | |
| 22:00 - 23:00 | | | | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | | | | |
| Total Rates: | | | 2.300 | 2300.700 | | | 2.334 | 2335.666 | | | 4.634 | 4636.366 |

Table 3.3: TRICS data – 1000 dwellings (Wool area). N.B: No. of days (3) column refers to the number of surveys available with suitable data (excluding weekends, public holidays etc...), and Average Dwellings column (95) refers to the number of houses on the development of a similar type, size and location to the Wool site (according to TRICS best practice this was the nearest match).

3.8 This table shows that the busiest times on the network will be between 08:00 – 09:00 and 17:00 – 18:00 (morning and evening peaks). The TRICS data is taken from the national database for new housing development of a similar size and type and in a similar location to the proposed allocation in Wool. The calculations are based on TRICS good practice and uses the best data available at the time.

4.0 SCENARIO TESTING

Scenarios

4.1 Two housing scenarios have been tested as follows:

- **Option A** – Maximise housing in south west Purbeck

| Settlement | Number of homes |
|--------------------|-----------------|
| Upton | 100 |
| Wareham | 705 |
| Lytchett Matravers | 110 |
| Wool | 1,000 |
| Langton Matravers | 40 |
| Harmans Cross | 20 |
| Lytchett Minster | 650 |
| Moreton Station | 600 |
| | 3,225 |

- **Option B** – edge of conurbation focus

| Settlement | Number of homes |
|--------------------|-----------------|
| Upton | 100 |
| Lytchett Minster | 650 |
| Lytchett Matravers | 625 |
| Wareham | 705 |
| Wool | 1,000 |
| | 3,080 |

4.2 The number of trips generated by each development, and growth factors for departures and arrivals per zone are shown in Table 4.1 and Table 4.2 for Option A and option B respectively.

| Scenario | Location | Dwellings | Zone | Predicted Departures | Predicted Arrivals |
|----------|--------------------|-----------|------|----------------------|--------------------|
| OPTA | Upton | 100 | 29 | 35 | 10 |
| OPTA | Wareham | 705 | 3 | 244 | 71 |
| OPTA | Lytchett Matravers | 110 | 24 | 38 | 11 |
| OPTA | Wool | 1000 | 17 | 346 | 101 |
| OPTA | Langton Matravers | 40 | 5 | 14 | 4 |
| OPTA | Harmans Cross | 20 | 6 | 7 | 2 |
| OPTA | Lytchett Minster | 650 | 25 | 225 | 66 |
| OPTA | Moreton Station | 600 | 26 | 208 | 61 |
| | TOTAL | 3225 | | 1116 | 326 |

Table 4.1 – Option A

| Scenario | Location | Dwellings | Zone | Predicted Departures | Predicted Arrivals |
|----------|-----------------------|-----------|------|----------------------|--------------------|
| OPTB | Upton | 100 | 29 | 35 | 10 |
| OPTB | Lytchett Minster | 650 | 25 | 225 | 66 |
| OPTB | Lytchett Matravers | 625 | 24 | 216 | 63 |
| OPTB | Wareham | 705 | 3 | 244 | 71 |
| OPTB | Wool | 1000 | 17 | 346 | 101 |
| | TOTAL | 3080 | | 900 | 263 |

Table 4.2 – Option B

5.0 RESULTS

Overview

- 5.1 The forecast scenarios were run and results compared with the 2033 ‘Do Minimum’ scenario – this is the highway network as it is now with growth and developments added up to 2027 (as per the PLP1) plus five additional years of background growth to bring the model up to 2033. Difference plots have been produced for each test. Green bandwidths show predicted increases in traffic and blue bandwidths show predicted decreases in traffic. A tabulated set of these results are contained in Appendix B (forecast flows highlighted in pink are greater than the maximum recorded observed flow).

Option A

- 5.2 This scenario focuses on maximising housing in south west Purbeck and includes the following housing: 100 at Upton, 705 at Wareham, 110 at Lytchett Minster, 1000 at Wool, 40 at Langton Matravers, 20 at Harmans Cross, 650 at Lytchett Minster and 600 near Moreton Station.
- 5.3 The difference plot in Figure 5.1 shows predicted increases in traffic are generally to the northern area of the network. There are significant (more than 100 vehicles per hour) increases on the Upton Bypass, the A35 between B3075 Morden and Bakers Arms roundabout, the B3390 north of Crossways and the A35 Bere Regis Bypass. There is also a significant increase in traffic on the A351 just north of Wareham (This will alter depending on the location of the proposed Wareham development). The bypasses should easily accommodate the additional traffic. However, the A35 west of Bakers Arms and the B3390 may experience greater congestion compared with current conditions.

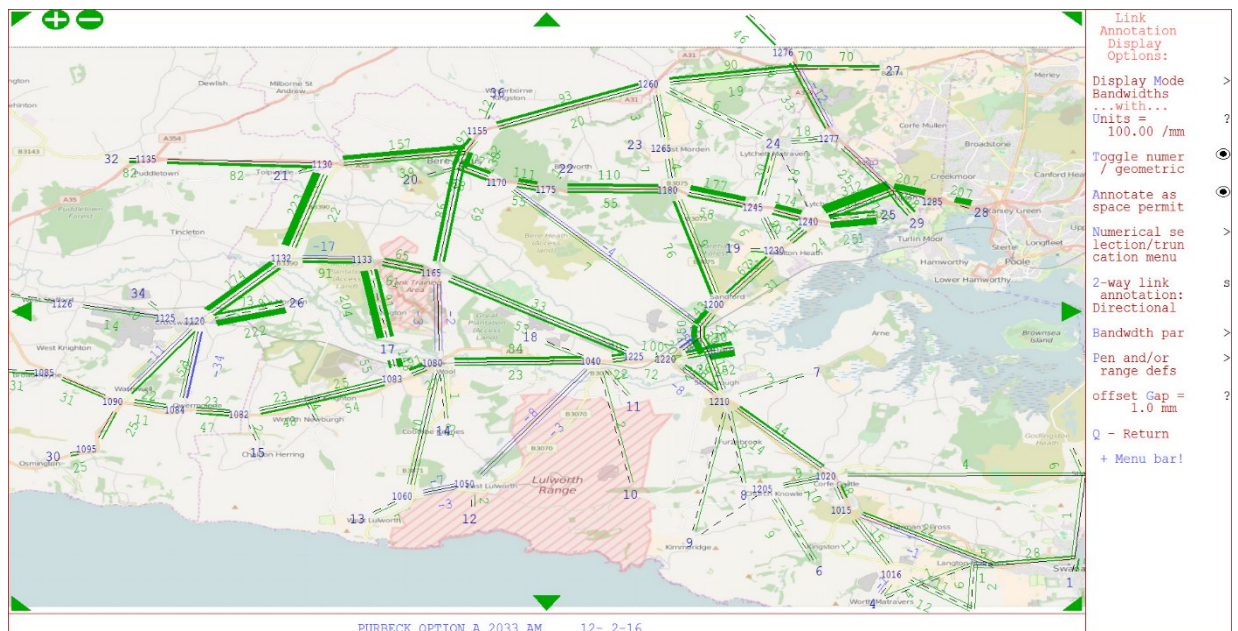


Figure 5.1 – Option A compared with Do Minimum 2033

Option B

- 5.4 This scenario is focused on the edge of the conurbation plus a large development at Wool and includes the following housing: 100 at Upton, 650 at Lytchett Minster, 625 at Lytchett Matravers, 705 at Wareham and 1000 at Wool.
- 5.5 The difference plot in Figure 5.2 shows predicted increases in traffic are spread fairly evenly across the network. There are significant (more than 100 vehicles per hour) increases on the Upton Bypass, the A35 between B3075 Morden and Bakers Arms roundabout, on the C6 south of Bere Regis and on the A351 just north of Wareham. (The A351 traffic will alter depending on the location of the proposed Wareham development). Because of congestion at Bakers Arms, some traffic is using the B3075 to travel from Wareham to Poole and Wareham to the A31.

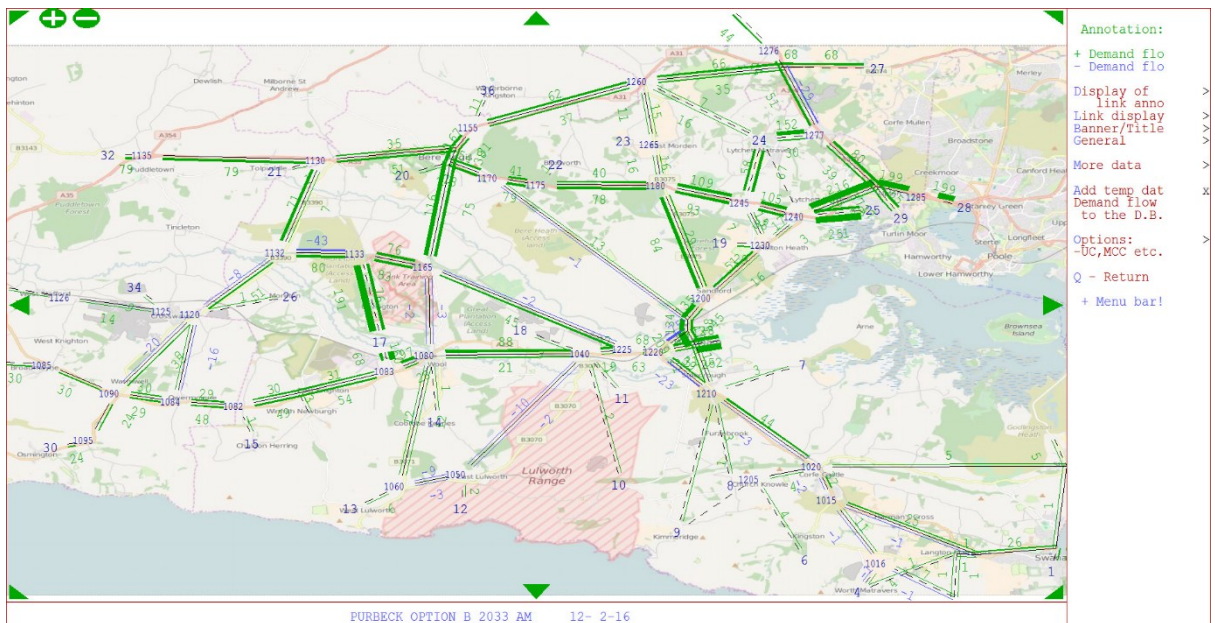


Figure 5.2 – Option B compared with Do Minimum 2033

Model Summary Statistics

- 5.6 The SATURN model produces a number of summary statistics relating to average speed, time travelled, distance travelled and distance queued. This data provides an indication of how the network is performing overall.
- 5.7 Statistics from the Base, Do Minimum and both scenario options are presented in Table 5.1.

| Matrix Name | Total number of trips in the matrix | Total Travel Time (PCU.HRS) | Total Travel Distance (PCU.KMS) | Average Speed (PCU.HRS) | Average Distance per trip | Average Time per trip |
|-------------|-------------------------------------|-----------------------------|---------------------------------|-------------------------|---------------------------|-----------------------|
| BaseAM | 9913.9 | 1002.9 | 70716 | 70.5 | 7.132943 | 0.10116 |
| DM2033A | 11344.22 | 1241.4 | 82343.7 | 66.3 | 7.258661 | 0.10943 |
| OPTA_2033A | 12527.1 | 1444.5 | 89527.4 | 62 | 7.146755 | 0.115311 |
| OPTB_2033A | 12471.6 | 1408.1 | 88046.3 | 62.5 | 7.059744 | 0.112905 |

Table 5.1 – Model Summary Statistics

- 5.8 The colour scales in Table 5.1 show the base model to be the least congested with the fastest travel times and shortest distance travelled (highlighted in green).
- 5.9 Option B appears to be the less congested of the two options with the shortest distance driven per trip (highlighted in green). The shorter distances could provide better opportunities for more journeys made by walking and cycling and fewer by car.
- 5.10 Option A is the most congested of the two options.

6.0 CONCLUSIONS

6.1 The buffer model provides a reasonable reflection of current 2015 morning peak.

6.2 The results of the scenario tests highlight some significant increases in traffic flows on a number of links. In many cases these are:

- B3390 northbound between Crossways and the A35
- A351 Northbound just north of Wareham (dependent on location of development)
- C6 northbound on its approach to Bere Regis
- A35 Between Morden Park Corner and the Upton Bypass

6.3 The summary statistics shows:

- Option A (maximise development in south west Purbeck) is the most congested. The increase in traffic is generally in the northern area of the network. The most significant increases in congestion are likely to occur on the A35 west of Bakers Arms roundabout and on the B3390.
- Option B (focus on the edge of the conurbation and at Wool) is the least congested. Increases in traffic appear to be spread more evenly across the network. Option B also has the shortest distance travelled per trip, as the housing is located closer to the employment and services.

6.4 Based upon this modelling exercise, Option B (with a focus on the edge of the conurbation and at Wool) appears to be the least congested and has the shortest distance travelled per trip, which could provide better opportunities for more journeys made by walking and cycling, bus and fewer by car.

ADDENDUM

DCC Transport Planning Briefing Note

Public consultation on the Purbeck Local Plan Partial Review Issues and Options in January 2015 emphasised the importance to continue close liaison with DCC Highways to ensure that development would not lead to unacceptable impacts on local highways. As the plan review progresses, DCC has undertaken 'traffic modelling' to test the potential impacts of developing specific sites based upon two scenarios.

It should be noted that these are high level comments based on the outcomes from the Purbeck Traffic Modelling Report (2016) and the principles of sustainable development and severe impact testing are not based on a detailed transport assessment of individual proposals at this stage.

Key findings:

Option A: This option maximises housing in south west Purbeck.

This scenario includes housing at the following locations: Upton, Wareham, Lytchett Matravers, Wool, Langton Matravers, Harman's Cross, Lytchett Minster and Moreton.

The traffic forecasting for this option shows that this is the most congested scenario with predicted increases in traffic generally to the northern part of the network, mostly on the main links into the conurbation to access services, facilities and employment. This option also has a larger proportion of shorter trip lengths compared to Option B suggesting that people will travel to their local town/village centre to access available services and facilities, rather than travelling the further distance into the Poole/Bournemouth conurbation.

Although this model forecasts a general increase in traffic levels, it is expected that future development focused in Wool, Wareham and Moreton, being in close proximity to their respective train stations, would encourage more journeys to be made by train (with link journeys made by walking, cycling and bus) to the main centres of Dorchester/Weymouth and Poole/Bournemouth. It is forecast that future development will not have a severe impact on the highway network.

Option B: This option focuses on edge of conurbation development.

This scenario includes housing at the following locations: Upton, Lytchett Minster, Lytchett Matravers, Wareham and Wool.

The traffic forecasting for this option shows that this is the least congested scenario, with a general increase in traffic spread fairly evenly across the network. Option B also has the shortest distance travelled per trip, due to housing being located closer to local services, facilities and employment within the conurbation. The shorter trip lengths provide opportunities for more journeys to be made by walking, cycling and public transport and fewer car-based journeys. However Option B has a lower number of shortest distance trips travelled compared to Option A. It is forecast that future development will not have a severe impact on the highway network.

Previous public consultation showed that there is a common belief that traffic congestion is a major problem in Purbeck (especially along the A351), and general public consensus that there should be no further development to the south of the district. Instead development should be focused to the north of the district, along and around the A35. The modelling results would suggest that Option B (focusing on edge of conurbation development) is the more sustainable scenario in terms of future development.

When the brief for this traffic model was issued (autumn 2015), it was decided by Purbeck District Council and Dorset County Council that the most sensible approach was to model the two scenarios as outlined at the time, these being two extreme options for future housing development. Since then, Purbeck District Council has continued to move towards a Preferred Option which is considered to be the “middle ground” between the two scenarios tested and has therefore not been modelled at this stage. The modelling undertaken to date demonstrates that the two scenarios tested will not have a severe impact on the highway network. As the Preferred Option is sitting in the middle of these two scenarios, we conclude that the preferred option is therefore acceptable on severe impact grounds.

The Council is aware that impacts on local infrastructure need to be mitigated. Where there is a negative impact on the network, the developer will be required to initiate mitigation measures such as improving walking, cycling and public transport links to and from the development site in order for it to be acceptable in sustainable development terms.

The Options:

Option A (tested): This scenario focuses on maximising housing in south west Purbeck and includes the following housing:

Upton 100
Wareham 705
Lytchett Matravers 110
Wool 1000
Langton Matravers 40
Harmans Cross 20
Lytchett Minster 650
Moreton 600

Total 3,225

Option B (tested): This scenario is focused on the edge of the conurbation plus a large development at Wool and includes the following housing:

Upton 100
Lytchett Minster 650
Lytchett Matravers 625
Wareham 705
Wool 1000

Total 3,080

Preferred Option (not tested): This scenario is a new infrastructure-led approach, with a focus on sustainable locations, wherever possible. Development in the following locations:

Upton 100
Wareham Town 500
North Wareham 205

Lytchett Minster 650
Wool 1,000
Langton Matravers 40
Harmans Cross 20
Lytchett Matravers 330
Moreton 350
Total 3,195

Severe Impact Test (for information)

Paragraph 32 of the NPPF: ***“Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.”***

The test should be approached as follows:

1. Identify the current position;
2. Add expected traffic/travel growth, including increases expected from development with planning permission but not yet build or occupied;
3. Add the anticipated growth from the application site;
4. Look at all highway improvement schemes proposed by the development, other development or HA schemes;
5. Expected travel conditions can then be assessed for the design year to see if the residual effect would be severely adverse.

To sum up, it's not just the development, both in terms of impact and mitigation that should be considered; but the entire picture.

APPENDIX A

Model Validation Results

APPENDIX B

Model Forecast Results

Traffic Counts vs Forecast Flows in Purbeck Area (AM Peak)

| Road | Location | Dir. | No. | Ave.Obs. | Max Obs | DM | OPTA | OPTB |
|-------|--------------------------|------|--------|----------|---------|------|------|------|
| A31 | East of Bere Regis | EB | 2362 | 610 | 1034 | 808 | 926 | 897 |
| A31 | East of Bere Regis | WB | 2362 | 730 | 1030 | 796 | 836 | 854 |
| A31 | Winterborne Zelston | EB | 2196 | 510 | 900 | 678 | 788 | 757 |
| A31 | Winterborne Zelston | WB | 2196 | 610 | 904 | 665 | 711 | 728 |
| A31 | West of A350 | EB | 2362 | 690 | 1034 | 843 | 957 | 933 |
| A31 | West of A350 | WB | 2362 | 610 | 1030 | 765 | 823 | 839 |
| A35 | E of A354 Northbrook | EB | 2464 | 1060 | 1214 | 1129 | 1147 | 1147 |
| A35 | E of A354 Northbrook | WB | 2464 | 930 | 1254 | 1116 | 1231 | 1227 |
| A35 | Rogers Hill Farm | EB | 2005 | 1020 | 1395 | 1189 | 1365 | 1242 |
| A35 | Rogers Hill Farm | WB | 2005 | 1090 | 1346 | 1229 | 1305 | 1317 |
| A35 | Woodlake | EB | 347 | 730 | 967 | 763 | 872 | 802 |
| A35 | Woodlake | WB | 347 | 590 | 894 | 655 | 713 | 736 |
| A35 | Upton Bypass West | EB | 23 | 1680 | 1984 | 1957 | 2272 | 2175 |
| A35 | Upton Bypass West | WB | 23 | 1480 | 1878 | 1494 | 1523 | 1505 |
| A35 | East of B3075 | EB | 1960 | 840 | 937 | 925 | 1106 | 1039 |
| A35 | East of B3075 | WB | 1960 | 610 | 1167 | 697 | 756 | 791 |
| A350 | Coombe Almer | NB | 361 | 430 | 668 | 581 | 622 | 640 |
| A350 | Coombe Almer | SB | 361 | 670 | 922 | 839 | 826 | 808 |
| A350 | N of A35 | NB | 6959 | 580 | 668 | 648 | 678 | 691 |
| A350 | N of A35 | SB | 6959 | 1050 | 922 | 1096 | 1091 | 1173 |
| A351 | South of Bakers Arms | NB | 22 | 830 | 1121 | 1015 | 1046 | 1031 |
| A351 | South of Bakers Arms | SB | 22 | 910 | 1024 | 796 | 805 | 784 |
| A351 | Sandford Rd Sandford | NB | 1849 | 700 | 1040 | 923 | 988 | 972 |
| A351 | Sandford Rd Sandford | SB | 1849 | 720 | 1016 | 670 | 688 | 673 |
| A351 | River Piddle Bridge | EB | 616 | 590 | 903 | 662 | 549 | 528 |
| A351 | River Piddle Bridge | WB | 616 | 620 | 955 | 759 | 753 | 765 |
| A351 | Wareham Bypass (South) | NB | J06077 | 470 | 766 | 656 | 656 | 641 |
| A351 | Wareham Bypass (South) | SB | J06077 | 370 | 607 | 524 | 561 | 562 |
| A351 | Stoborough | NB | 15 | 460 | 955 | 661 | 681 | 665 |
| A351 | Stoborough | SB | 15 | 400 | 1005 | 499 | 542 | 543 |
| A351 | Harmans Cross | EB | 359 | 280 | 531 | 321 | 343 | 346 |
| A351 | Harmans Cross | WB | 359 | 340 | 524 | 378 | 381 | 381 |
| A352 | Owermoigne | EB | 10 | 510 | 699 | 464 | 488 | 496 |
| A352 | Owermoigne | WB | 10 | 300 | 851 | 417 | 431 | 449 |
| A352 | Wareham Road East Stoke | EB | 1848 | 310 | 531 | 368 | 453 | 457 |
| A352 | Wareham Road East Stoke | WB | 1848 | 310 | 598 | 399 | 427 | 425 |
| A352 | Worgret West of Wareham | EB | 357 | 500 | 888 | 522 | 633 | 601 |
| A352 | Worget West of Wareham | WB | 357 | 420 | 803 | 526 | 673 | 663 |
| B3070 | Worgret Road, Wareham | EB | 2726 | 240 | 460 | 293 | 364 | 354 |
| B3070 | Worgret Road, Wareham | WB | 2726 | 200 | 252 | 68 | 105 | 100 |
| B3070 | Worgret Rd Wareham | EB | 2297 | 240 | 460 | 293 | 364 | 354 |
| B3070 | Worgret Rd Wareham | WB | 2297 | 160 | 252 | 68 | 105 | 100 |
| B3075 | Winterborne Zelston | NB | 2237 | 50 | 281 | 198 | 208 | 216 |
| B3075 | Winterborne Zelston | SB | 2237 | 70 | 192 | 128 | 146 | 156 |
| B3075 | North Street Wareham | NB | 1079 | 450 | 1085 | 687 | 896 | 901 |
| B3075 | North Street Wareham | SB | 1079 | 310 | 543 | 261 | 298 | 306 |
| B3075 | Corfe Road, Stoborough | NB | 2768 | 120 | 334 | 178 | 200 | 199 |
| B3075 | Corfe Road, Stoborough | SB | 2768 | 110 | 405 | 34 | 47 | 47 |
| B3075 | Sherford South of A35 | NB | 1184 | 90 | 546 | 259 | 347 | 354 |
| B3075 | Sherford South of A35 | SB | 1184 | 140 | 305 | 153 | 175 | 195 |
| B3351 | Rempstone | EB | 353 | 70 | 460 | 66 | 70 | 70 |
| B3351 | Rempstone | WB | 353 | 50 | 376 | 56 | 56 | 56 |
| B3390 | Crossways | NB | 355 | 230 | 388 | 363 | 539 | 357 |
| B3390 | Crossways | SB | 355 | 150 | 523 | 383 | 473 | 443 |
| B3390 | S of Crossways | NB | 2137 | 210 | 388 | 215 | 207 | 199 |
| B3390 | S of Crossways | SB | 2137 | 160 | 523 | 235 | 304 | 282 |
| C6 | Gallows Hill Picnic Area | NB | 360 | 200 | 731 | 516 | 671 | 701 |
| C6 | Gallows Hill Picnic Area | SB | 360 | 320 | 524 | 345 | 413 | 426 |
| C7 | South of C79 Crossroads | NB | 1393 | 120 | 421 | 166 | 111 | 102 |
| C7 | South of C79 Crossroads | SB | 1393 | 150 | 270 | 197 | 187 | 204 |
| C27 | Vineyard Bridge | EB | 2636 | 30 | 140 | 130 | 139 | 131 |
| C27 | Vineyard Bridge | WB | 2636 | 30 | 143 | 54 | 60 | 58 |
| C80 | Puddletown Road Worgret | EB | 2097 | 100 | 165 | 48 | 85 | 51 |
| C80 | Puddletown Road Worgret | WB | 2097 | 80 | 212 | 104 | 227 | 219 |

| | | | | | | | | |
|-----|-----------------------|----|------|-----|-----|-----|-----|-----|
| C80 | East of Waddock Cross | EB | 1394 | 230 | 294 | 262 | 244 | 218 |
| C80 | East of Waddock Cross | WB | 1394 | 130 | 367 | 182 | 275 | 264 |

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APPENDIX C
DCC comments on
large sites

DCC Transport Development Management
High Level Comments on Potential Development Sites
for Purbeck Local Plan Review Sep 2014

These initial, high level comments are based on the principle of the location of development with reference to initial transport assessments of individual proposals were submitted.

All large sites would require improvements.

Lytchett Minster

No objections in principle subject to mitigation measures as described below:

The Transport Appraisal has identified that capacity improvements will be required at the Baker's Arms roundabout East and West approach at least would need improvement possibly, including the east arm being signalised and these are deliverable within the existing highway extents.

The following areas of concern may also require mitigation measures:

- Traffic impact through Lytchett Minster and Upton
- A35 and A351 traffic impact
- Pedestrian / cycle access into Upton over the bypass (Watery Lane link)
- Cycle improvements along Dorchester Road
- Huntick Road / Randalls Hill junction very poor visibility
- Access arrangements for the individual sites proposed
- Changing the nature of the rural lanes in the area

Lytchett Minster is in reasonable proximity of Poole, with access to jobs and services. There is potential for public transport, cycle and walking.

Moreton Station / Redbridge Pit area

No objections subject to mitigation measures identified in the High Level Transport Statement as described below:

The site is very well located for encouraging the uptake of sustainable travel, being within a reasonable walking distance of Crossway's village, and the facilities therein, and significant public transport options, including Moreton Rail Station. A package of sustainable transport measures, including offsite pedestrian crossing/s of the B3390 Station Road, would facilitate movement to and from these key locations to the north west and south west via the existing footway along the northbound carriageway of Station Road.

The development could result in the need for design changes at the Fiveways junction, although it is anticipated that this issue might alternatively be mitigated through site layout design with restrictions built into the street network to limit the extent of through traffic movements."

The following sites could be more problematic in transport terms and their impacts on Purbeck's transport network (particularly the A351 and Wool level crossing) will need careful assessment with appropriate mitigation measures identified:

Worgret Manor Farm, Wareham

Initially the County Highway Authority had concerns over this location given that it lies on the "outside"

of the Wareham by-pass which makes it appear remote and raises concerns relating to severance. However, it should be noted that it is a similar distance from the town centre as the North Wareham site and appreciably closer to some schools, Particularly Purbeck School.

It is acknowledged that the overall pedestrian provision across the A351 at the roundabout is currently poor and would, without improvement to pedestrian facilities, present a significant barrier to trips being made to and from the proposed development.

The submitted Transport Strategy has identified that capacity improvements may be required at the Baker's Arms roundabout East and West approach at least would need improvement possibly, including the east arm being signalised and these are deliverable within the existing highway extents.

However the County Highway Authority considers that the proposals in the Transport Assessment could significantly reduce these issues to an acceptable level and it therefore has no objections in principle subject to mitigation measures as described below:

The areas of concern may require mitigation measures are:

- Impact on the A351, particularly at The Bakers Arms Roundabout.
- The formation of safe routes for cyclists and pedestrians across the bypass and along Worgret to the town centre facilities and schools.
- Assistance with proposed cycle and pedestrian route improvements along the A351 to the railway station.
- The developers need to contact Network Rail regarding the proposed creation of a branch line halt and bridges over their railway line and Swanage Railway regarding the possibility of serving the halt.

North Wareham

Subject to suitable mitigation this site offers reasonable opportunities with the exception of two significant concerns which need to be addressed and are due to the distance from schools and the potential need for safe easy crossing for all of the railway line and the by-pass link with the town centre and schools. These shouldn't be insurmountable but can be expected to have significant cost implications. The following points should also be noted:

- The T.A. considers impact on the A351 is acceptable.
- Footway and cycling links needed along Bere Road to existing network and rail station
- New 30mph gateway to Wareham to slow traffic from new urban edge created by new frontage development
- Carey's Road should have limited development fronting on to it due to the narrow width of the road and the lack of continuous footway provision.
- Footway and cycleway links to the town centre and schools need providing/improving especially if the pedestrian level crossing of railway is closed without ramps being installed to the footbridge. Discussions are on-going on options for this. Public consultation planned.

Sandford

Whilst the site has good development potential and is located close to Wareham with cycle and pedestrian connections along the route already; connections from the A351 to the site need provision or mitigation as below:

- Improved walking and cycling links needed from proposed site to A351 and Sandford facilities
- Improved walking and cycling links needed from proposed site to Holton Heath Industrial Estate using Rights of Way network

Wool

1000 dwellings

The matter of additional queuing at the level crossing arising from the promotion of 1,000 homes was the only outstanding area of concern in transport terms. Estimates of increases in queue length have been provided by i-Transport and checked by DCC Transport Modelling and considered to be acceptable and not to cause severe impact. Development would help support employment at Dorset Green and could support other services locally. A mix of uses could improve sustainability.

Previous comments which are still relevant included:

No objections in principle subject to strategic planning and mitigation measures.

- Significant development here will require strategic planning
- Wool level crossing is a traffic constraint due to its limited capacity
- Wool bypass issues with non-deliverability (Environment Agency objections) and significant cost, scheme not contained in LTP or LP1
- Online bridging over existing level crossing? Significant cost.
- Developers need to consult Network Rail - move Wool station westwards? Discussions ongoing between DCC NR to see if this would be an option
- Impact of traffic on A31 Bere Regis, developers need to consult Highways England