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NEW ALRESFORD LAND ALLOCATIONS – FINAL

Winchester City Council

SYSTRA

LOCAL PLAN PART 2 – TRANSPORT EVIDENCE BASE

NEW ALRESFORD LAND ALLOCATIONS – FINAL

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1. INTRODUCTION

1.1 Context

1.1.1 During the Local Plan Part 2 (LPP2) consultation process, alternative land allocations have been proposed by various site promoters and objectors to the LPP2 draft site allocations at The Dean (Sites 2534 & 2535) and Sun Lane (Site 277).

1.1.2 An alternative strategy, based on a dispersed pattern of development has been promoted by the Alresford Professional Group (APG). That strategy proposes the same quantum of housing (as included in the draft Local Plan) at four key locations distributed around the town; at New Farm Road, Arlebury Park, The Dean and Sun Lane North. A copy of the APG Masterplan drawing is included in Appendix A. For reference, this masterplan is a variant of the one originally submitted in 2014 which also included two additional sites at Bridge Road and Sun Hill School owned by Hampshire County Council. These site have now been removed from the APG scheme and the associated housing reallocated to other sites such that the total housing allocation is unchanged.

1.2 Purpose of this Study

1.2.1 This study provides a comparison between the draft Local Plan proposals and the APG alternative land allocation strategy to identify the relative transport impacts of each. This includes traffic impact comparisons, i.e. forecast traffic increases on routes and junctions in and around the town and also takes account of transport sustainability in terms of distances to schools, local facilities and bus routes.

1.2.2 An important additional strand of work in this study included an appraisal of the need for and feasibility of building a new junction on to the A31 for Site 277. This is in response to objectors who have queried the feasibility and viability of providing a junction at this location.

1.3 Land Allocation Scenarios

1.3.1 Within this report the Draft Local Plan strategy is referred to as Scenario 1 and the alternative APG strategy is Scenario 2. Scenario 1 comprises 385 dwellings shared over two sites at The Dean (65 dwellings) and Sun Lane (320 dwellings). Scenario 1 also allows for 5 hectares of employment land and for the purposes of this study it has been assumed that up to 15,000sqm of B1 and 15,000sqm of B8 development could be accommodated on the site. This is the level of development tested by the site promoter in terms of transport impact, but is significantly higher than assumed by the Council. It would represent a high level of development density and is therefore used for testing purposes only, to provide a 'worst case' scenario in terms of traffic impact assessment.

1.3.2 Scenario 2 proposed by APG comprises 387 dwellings spread over five sites at The Dean (30 dwellings), New Farm Road North (50 dwellings), New Farm Road South (98 dwellings), Arlebury Park (64 dwellings) and Sun Lane North (145 dwellings). Scenario 2 also assumes that all existing employment sites in Alresford are retained and that no new employment allocation is needed.

1.3.3 Scenario 2 also includes a proposed 20 bed care home at Sun Lane. This will be a very low generator of trips and has been ignored for the purpose of this study.

1.3.4 Because the very different employment assumptions between Scenarios 1 and 2 would make like-for-like comparisons of traffic impacts difficult, Scenario 1 has been sub-divided into Scenario 1A, excluding the employment allocation for testing purposes, and Scenario 1B which includes employment.

1.3.5 Table 1 summarises the land use scenarios considered in this study and shows the distribution of housing together with assumptions for employment floor areas.

Table 1. Land Allocation Scenarios

	SCENARIO 1A (LPP2)	SCENARIO 1B (LPP2)	SCENARIO 2 (APG)
HOUSING (Dwellings)	Sun Lane – 320 The Dean – 65 Total – 385 Dwellings	As Scenario 1A Total - 385 Dwellings	Sun Lane – 145 The Dean – 30 Arlebury Park – 64 New Farm Road – 148 Total – 387 Dwellings
EMPLOYMENT (m^2 GFA)	Excluded from this scenario for testing purposes	B1 – 15,000m^2 B8 – 15,000m^2 Total – 30,000m^2	No New Sites (Retain Existing)

2. SITE ACCESSIBILITY ASSESSMENT

2.1 Comparison of site accessibility indicators

2.1.1 As part of the LPP2 evidence base all proposed housing sites have been assessed in terms of their general levels of accessibility to local facilities and public transport. This results in a range of accessibility indicators based on average walking distances and an overall accessibility rating classified as Excellent, Good, Adequate or Poor. Full details are contained in the evidence base available on the Winchester City Council website as follows: http://www.winchester.gov.uk/planning-policy/local-plan-part-2/development-needs-and-site-allocations/new-alresford/ The Council has produced an addendum to update the accessibility assessment, covering the site areas and capacity now proposed either by the Local Plan or alternative site promoters. In relation to the Sun Lane site, this now reflects that the proposed housing development is located in the northern segment of the site.

2.1.2 Table 2 summarises the key accessibility indicators for the sites, taken from the Council's updated accessibility assessment. The locations of all of the sites are indicated on the APG Masterplan drawing in Appendix A.

Table 2. Accessibility Rating and Local Amenity Walk Distances

	SUN LANE	THE DEAN NORTH	THE DEAN SOUTH	ARLEBURY PARK	NEW FARM ROAD NORTH	NEW FARM ROAD SOUTH
SITE Ref No	277	2535	2534	2552	2553	1927
Average Distance to Facilities	733 metres	500 metres	400 metres	700 metres	1067 metres	1223 metres
Accessibility Rating	Good	Good	Excellent	Good	Adequate	Adequate
Nearest Bus Stop	800 metres	300 metres	200 metres	500 metres	300 metres	400 metres
Local centre, shops & facilities	900 metres	300 metres	200 metres	500 metres	1300 metres	1600 metres
Local Primary Schools	500 metres	900 metres	800 metres	1100 metres	1600 metres	1700 metres

2.1.3 Ignoring The Dean sites, which are common to both scenarios, the Scenario 1 & 2 sites all score between Good and Adequate in terms of overall accessibility. The New Farm Road sites are furthest away from the town centre and local facilities whilst Arlebury Park is the nearest. Currently the Sun Lane site is more remote from existing bus services compared to New Farm Road and Arlebury Park. However, development of the Sun Lane site could provide opportunities for new or diverted services to be provided.

2.1.4 Overall the LPP2 sites (Scenario 1) are preferable in terms of site accessibility with all sites scoring either Good or Excellent. In comparison, the inclusion of the New Farm Road sites within the APG proposals (Scenario 2) results in two Adequate scores.

3. SUN LANE A31 JUNCTION

3.1 Access Proposals

3.1.1 The Sun Lane site is proposed to be accessed in part from Sun Lane and also via a new junction on to the A31. Access from Sun Lane is straightforward due to the long site frontage. There are also opportunities to revise the access and drop-off arrangements at the Sun Hill Primary School, as identified in both Scenarios. Access from the A31 will require the creation of a new junction to the east of Sun Lane. During LPP2 consultations some objectors raised concerns that a new junction at this location is not achievable. For this study, the proposals put forward by the Sun Lane site promoters and the observations received from objectors have been reviewed. This review has considered the relevant highway design guidance (see below), the potential junction options available, the cost implications and the views of the local highway authority Hampshire County Council.

3.2 Design Standards

3.2.1 Guidance and standards for the design of access junctions and highway layouts is available from various sources. The DfT's 'Manual for Streets' document and local highway authority design guides, such as HCC's 'Companion Guide to Manual for Streets', provide guidance for local roads generally with design speeds up to 40mph. For UK motorways and trunk roads, guidance exists in the Highways England (formerly the Highways Agency) suite of documents entitled the 'Design Manual for Roads and Bridges' (DMRB). For highways falling between 'local roads' and 'trunk roads' there is no definitive design standard. However, HCC, together with other UK local highway authorities, generally use DMRB as a source of guidance for informing design decisions.

3.2.2 A primary aim of design manuals is to ensure the consistency of designs throughout the road network whilst at the same time providing designers with some flexibility to adapt and modify schemes to suit specific requirements or constraints. The extent to which a design complies with or deviates from DMRB guidance is one of the considerations in the selection and approval of design options. DMRB allows for relaxations and departures from standards subject to agreement by the highway authority.

3.2.3 Responsibility for design decisions and subsequent approvals ultimately rests with the designer and the relevant highway authority.

3.3 Design Options

3.3.1 In the vicinity of the site the A31 is a derestricted (60mph) rural single carriageway with an additional overtaking lane (climbing lane) in the eastbound direction where the gradient is approximately 3.5% (or 1/30). Preliminary design drawings for a new access to the Sun Lane site have been submitted by both the site promoters and by objectors during the LPP2 consultation process. These drawings along with ground levels and highway boundary records, have been reviewed in detail and a site inspection undertaken to ascertain the constraints and opportunities for achieving a satisfactory access to the development.

Priority Junction

3.3.2 It would be possible, within the land available, to introduce an at-grade priority junction at this location, incorporating a dedicated right-turn lane for traffic entering the site from the east. However, the introduction of right-turning movements across the A31, to and from the site, would create undesirable vehicle conflicts and associated safety risks that can be avoided with other design options. Therefore a priority junction is not considered appropriate.

Roundabout

3.3.3 A roundabout could be accommodated subject to building up ground levels on either side of the A31 to accommodate the level differences between the site and the highway. A junction of this type would necessitate that traffic slows down on the approach to the junction and would therefore introduce some delays to through traffic using the A31. Whilst technically feasible in engineering terms, the delays inherent in this approach could be avoided by providing a grade-separated junction.

Grade Separation

3.3.4 Grade separation would involve the creation of left-in / left-out junctions on either side of the A31, linked by a connector road passing under the main carriageway, using the existing underbridge at Appledown Lane. This form of junction avoids the vehicle conflicts associated with an all-movements priority junction and also avoids the delays to through traffic caused by a roundabout.

3.3.5 Although the A31 is not a trunk road, the DMRB has been used to inform possible layout options for a grade separated junction at this location. Three possible forms of grade separation are possible under DMRB including full grade separation (Ref TD 22/06), compact grade separation (Ref TD 40/94) and local grade separation (Ref TD 42/95). The choice between options is determined by a range of factors including traffic flows, existing highway standards, site constraints, environmental impacts and cost/benefit considerations.

3.3.6 *Full Grade Separation* - The promoters of the site have put forward a full grade separation option which caters for all turning movements except the right turn into the site from the east. The absence of this turning movement is because the land needed to create the westbound-off slip road is not currently available. A drawing of the junction is included in Appendix D. Copies of highway boundary records are included in Appendix E. Full grade separation, which includes dedicated slip roads and generous merging and diverging tapers to and from the main carriageway, provides the highest capacity of all the grade separated junction types as the slip roads allow merging and diverging vehicles to more closely match the speeds of mainline traffic. Such layouts are usually used for high capacity dual carriageway routes. Whilst not precluded under DMRB guidance, full grade separation is not normally recommended for single carriageway roads. This is partly because flow levels on single carriageways generally do not justify this level of provision and partly due to the risk

that drivers may misinterpret the highway layout due to its resemblance to a dual carriageway.

3.3.7 The proposed layout contains a small number of design elements which fall below full DMRB standards and would need to be agreed with HCC if this form of junction is taken forward. One element is the gradient of the eastbound-on slip road which at 7% exceeds the recommended maximum of 6%. However as the merge taper (approx. 3.5% gradient) is well within standards this would be unlikely to materially compromise the operation of the junction. The proposed central island which divides the eastbound and westbound carriageways on the western side of the junction and which is designed to prevent illegal right-turn movements across the A31, is slightly shorter than recommended. There is scope to extend this eastwards to minimise the risk of illegal turns. A further consideration is that the existing carriageway of Appledown Lane, where it passes under the A31, is 5m wide and narrower than desirable for two way traffic including goods vehicles. However, given the very low forecast traffic flows in this area, the underbridge could be designed to operate as a single lane section with one-way alternate operation under the bridge.

3.3.8 *Compact Grade Separation* – DMRB recommends this form of layout for use on rural and inter-urban roads where traffic flows are substantially below those normally encountered on major highways (i.e. where full grade separation would normally be justified). TD 40/94 (DMRB Vol 6.2.5) indicates that full grade separation can be economically justified for design flows above 30,000 AADT (Annual Average Daily Traffic) on the main line whereas compact grade separation can be justified at flows as low as 12,500 AADT. These thresholds relate to the standard cost/benefit analyses required for publicly financed highway schemes and whilst not directly relevant to privately funded schemes they do provide a guide to suitable flow levels. DfT traffic count data for the A31 at Alresford indicates that the AADT flow in 2014 was approximately 10,200. It is therefore clear that flows at this location are well within capacity range for compact grade separation. TD 40/94 also states that compact grade separation is suitable for single carriageway roads, but requires the introduction of a central traffic island on the main line to prevent any right-turn movements.

3.3.9 The key difference between this form of junction and full grade separation is the absence of slip roads and long merge and diverge tapers. These are replaced with more conventional left-in /left-out junctions linked by two-way connector roads. Typical examples of compact grade separation designs, (from TD 40/94) are contained in Appendix F. The compact nature of the design means that junctions require less space than full grade separation. Having established that there is sufficient land to available to accommodate a full grade separated junction option at this location it is apparent that a compact layout could easily be accommodated. Subject to further design studies it is also possible that a compact layout would enable all turning movements to be achieved.

3.3.10 *Local Grade Separation* – This form of junction is very similar in appearance to compact grade separation and utilises left-in / left-out junctions linked together with connector roads passing over or under the main carriageway. This form of grade separation is generally used to link a number of junctions along a route. The key difference compared with compact grade separation is that it uses higher design standards for the connector roads and consequently has a target flow range of 40,000 vehicles per day AADT and above. This form of junction could be considered for the A31 junction, although it is not justified in terms of traffic capacity. It would require less land take than full grade separation but more than a compact grade separation design.

3.4 Cost Considerations

3.4.1 A range of cost estimates have been submitted by the site promoter and other respondents during the consultation process. Estimates for full grade separation range from £3.1M (RGP consultants acting on behalf of site promoters Seaward Properties Limited - March 2014) to £3.8M (consultants i-Transport acting on behalf of objectors Alfred Homes – December 14). The higher estimate includes £0.6M bridge widening costs which can probably be avoided through redesign of the layout; making the two cost estimates comparable. The cost of the alternative roundabout option has been estimated at approximately £1.3M (i-Transport – February 2014). Finally, the option of compact grade separation has been estimated at £1.9M (i-Transport – December 2014). These estimates have been reviewed and are considered robust.

3.4.2 The impact of highway costs on overall viability is affected by many factors including land values, other development costs, the presence of any abnormal costs and the commercial terms between land owners and developers. Whilst the access costs for the Sun Lane site are substantial they are not without precedence. The site promoters have confirmed that the new junction is affordable and have committed to its provision.

3.4.3 An assessment of development viability would require access to confidential commercial information and is beyond the scope of this study. However, the Council has commissioned a separate viability assessment which concludes that the Sun Lane site remains viable based on the worst case junction cost assumptions.

3.5 Conclusions on A31 Access Design Options

3.5.1 Due to the topography of the area there are engineering challenges, cost considerations and potential environmental factors to be taken into account in progressing the design of a new junction onto the A31. However, following a site inspection and a review of the available mapping, highway boundary records, level information and DMRB guidance alongside the proposed schemes put forward by the site promoter and objectors, it is concluded that a number of junction options are possible and that a new access onto the A31 is both feasible and viable.

3.6 Consultations With Hampshire County Council

3.6.1 Consultations to date with Hampshire County Council reflect the current status of the Local Plan and the preliminary design stage that has been reached in relation to access proposals for this and other draft land allocations. The County Council has confirmed at various stages of the Local Plan process that it has no objection in principle to the formation of a new junction on the A31 to serve development at this location but has not at this stage either accepted or rejected any particular design option. It will consider design proposals in more detail, alongside details of transport impacts, including the traffic redistribution effects of the junction, when the development proposals are submitted through subsequent pre-application and planning application processes.

4. ACCESS ARRANGEMENTS FOR COMPETING SITES

4.1 Arlebury Park

4.1.1 Access is proposed from The Avenue via the existing private driveway which forms the western boundary of the site. The site promoter has indicated that a legal right of access exists across the verge between the site and The Avenue over a width of 4.8m. The verge is understood to be owned by the Town Trustees. Visibility splays of 2.4m x 90m are proposed in each direction along The Avenue.

4.1.2 Hampshire County Council has been consulted by the site promoters and has confirmed agreement in principle to the proposed access arrangements. Based on this and the stated rights of access across the verge, access to the proposed development appears feasible.

4.2 New Farm Road

4.2.1 The site allocations proposed at New Farm Road comprise two adjoining parcels of land; New Farm Road North (Site Ref 2553) and New Farm Road South (Site Ref 1927).

New Farm Road North

4.2.2 The AGP Masterplan (see Appendix A) indicates access to the north site across land adjoining the disused railway cutting and the plot currently occupied by the property "Netherbourne".

4.2.3 Visibility northwards at this location is limited by the parapet walls of the bridge over the former railway cutting, although it would be possible to achieve adequate sight-lines in that direction subject to locating the access approximately 15m south of the bridge parapet. However, at that location, visibility in the southern direction is severely constrained due to the curvature of the road and the absence of a highway verge or footway along the carriageway adjoining Netherbourne (and adjacent properties).

4.2.4 Supplementary information submitted in July 2015 by Neame Sutton on behalf of Southcott Homes includes an indicative access sketch showing a proposed access road following the approximate route of the existing gated access track between the railway cutting and Netherbourne. Observations on site confirm that visibility at this location is severely restricted and this is borne out by the submitted access sketch which shows visibility splays (2.4m X 43m in each direction) encroaching into the main carriageway such that visibility in the northern direction is significantly compromised. The sight-line towards the south encroaches into the carriageway to a lesser extent but appears to pass across land outside the 'red line' site boundary. Currently there is insufficient detail shown on the submitted access sketch to demonstrate that satisfactory sight-lines can be delivered. Therefore, pending submission of more detailed supporting information and confirmation that sufficient land is available, significant doubts remain regarding the feasibility of providing access at this location.

New Farm Road South

4.2.5 The southern site is shown as two linked land parcels on the APG Masterplan with access indicated from Watercress Meadow to the south. The northern section of Watercress Meadow reduces to a private drive and would not be suitable as an access for additional

development. This is acknowledged by the site owner who has advised that access is instead to be taken through the property "Thody's" which abuts New Farm Road just south of the junction with South Road. The site owner has commissioned an access appraisal which demonstrates that a conventional priority T junction with a 5m wide access road can be accommodated within the site frontage.

4.2.6 Visibility requirements have been determined from traffic speed surveys and indicate that splays of 2.4m X 45.1m (to the north) and 2.4m X 55.2m (to the south) are needed as calculated using Manual for Streets. In order to achieve these dimensions it will be necessary to off-set the sight-lines by approximately 1m into the carriageway. This represents a relaxation of standards which will require agreement but is unlikely to be resisted by the highway authority. A further consideration is that visibility to the south of the access is currently constrained by the presence of vegetation and protected trees along the boundary of Thody's. The assessment shows that four trees with Tree Preservation Orders would need to be removed to accommodate the sight-line to the south. Permission to remove protected trees would require a formal application under the Town and Country Planning Act 1990. This process has not yet begun and the outcome remains unknown at present. The achievement of satisfactory access to the New Farm Road South site would be dependent upon the granting of permission for tree removal.

5. TRAFFIC IMPACT COMPARISON

5.1 Introduction

5.1.1 In order to compare the relative traffic impacts of the two land allocation scenarios, an assessment of the likely trip generation, distribution and assignment of vehicle trips has been undertaken for each site. This builds on the transport evidence base material for Part 1 of the Local Plan and has also included a review of the evidence submitted by site promoters and objectors.

5.2 Trip generation, Distribution and Assignment

5.2.1 The vehicle trip generation rates used for this study are contained in Appendix B. These have been determined by comparing trip rates used in the previous LPP1 transport studies with more recent TRICS rates put forward by the Sun Lane site promoters. The rates have been averaged and rounded up to provide indicative rates for this study, then applied to all sites in Scenarios 1 and 2 to enable a direct comparison between the options. Trip distribution has been based on Census Journey to Work statistics. This has enabled the directional distribution of trips, by mode, to and from Alresford zones to the north, south, east and west, to be assessed. Based on this, the assignment of vehicle trips, to and from each site, has been manually assessed having regard to the routes most likely to be taken by drivers. As the census data indicates approximately 5.4% of journeys to work involve rail commuting, these have been assumed to also involve a vehicle journey to either Winchester or Alton main line railway stations. Full details of the trip distribution and assignment assumptions are contained in Appendix B.

5.3 Future Baseline

5.3.1 Baseline traffic flows, i.e. flows before the addition of future development traffic, have been derived from traffic survey data. A number of manual, classified junction turning counts were undertaken at locations around the town during the period April to December 2013 and form part of the evidence base. For this study, this 2013 survey data has been factored-up to 2031 using growth factors from Tempro to give a future year baseline consistent with the Local Plan period. Details of the growth factors used are contained in Appendix B. It is noted that the addition of development traffic to these baseline flows will involve an element of double counting of development related traffic flows as the Tempro factors include provision for growth associated with future development sites.

5.3.2 It has been noted that some inconsistencies exist in the traffic survey data, for example differences in flows between two sets of junction counts. This reflects the variability that is present in such survey data due to natural variations in conditions between different survey days and the tolerances inherent in manual counting methods. Some elements of the data may need verification before any detailed junction capacity assessment is carried out however, for the purposes of this study, the data is considered to be sufficiently robust to provide an indication of baseline traffic flows.

5.3.3 An indication of future daily traffic (24 hour) flows has been included in the traffic forecasts. These have been calculated by averaging the AM and PM peak hour flows and multiplying by a factor of 10. In the absence of 24 hour traffic survey data, this provides an order of magnitude of likely daily traffic flows. However, the comparison of the various scenarios below focusses mainly on peak flows rather than daily totals as peak flows are more critical in terms of network capacity assessment.

5.4 Comparison of Forecast Traffic Flows

Traffic Generation

5.4.1 The predicted traffic generation for each Scenario is summarised below in Table 3.

Table 3. Trip Generation Totals (vehicles per hour)

	SCENARIO 1A (LPP2) 385 DWELLINGS			SCENARIO 1B (LPP2) 385 DWELLINGS 15,000 M^2 B1 15,000M^2 B8			SCENARIO 2 (APG) 387 DWELLINGS		
HOUSING		AM	PM		AM	PM		AM	PM
	Arr	58	139	Arr	58	139	Arr	58	139
	Dep	154	92	Dep	154	92	Dep	154	93
	Total	212	231	Total	212	231	Total	212	232
EMPLOYMENT		AM	PM		AM	PM		AM	PM
	Arr	0	0	Arr	255	30	Arr	0	0
	Dep	0	0	Dep	36	210	Dep	0	0
	Total	0	0	Total	291	240	Total	0	0
TOTAL		**212**	**231**		**503**	**471**		**212**	**232**

5.4.2 Diagrams showing the predicted future traffic flows on the highway network for each development scenario are included in Appendix C. These are shown on separate sheets for the AM peak hour, PM peak hour and Daily traffic flows. The diagrams also indicate the proposed points of connection between each site and the highway network. In the case of the Sun Lane site in Scenarios 1A and 1B, proposed network changes include the creation of a new junction onto the A31 (with development assumed to link direct to the new junction) and alterations to the northern section of Sun Lane to make it one-way southbound (between East Street and the railway bridge). For scenario 2, no network changes are proposed and all development on the Sun Lane site is assumed to be served from Sun Lane, with Sun Lane remaining two-way.

5.4.3 The flow diagrams show the future baseline, i.e. 2015 flows growthed to 2031 (excluding site generated traffic); plus forecast flows for each development scenario (including site generated traffic). Also included in Appendix C, are diagrams showing the net increases in traffic flows compared to the 'without development' future baseline. The results show the variations in traffic increases around the town associated with the different development scenarios and their respective access arrangements.

Comparison of Scenarios

5.4.4 Scenario 1A (LPP2 excluding employment) and Scenario 2 (APG excluding employment) both contain a similar level of housing development across the town but show marked differences in traffic flows due to their different site locations and access strategies. For example, the combined two-way AM peak flows on Sun Lane, south of Nursery Road, are predicted to increase by 26 vehicles per hour (vph) in Scenario 1A and by 68 vph in Scenario 2. The flow increase is 42 vph higher under Scenario 2 even though the proposed quantum of development at Sun Lane in Scenario 2 is less than half that in Scenario 1A. This reflects the inclusion of the new A31 access in Scenario 1A and its exclusion from Scenario 2. The same pattern of differences between these two scenarios is repeated across the town (and in the PM peak and daily forecasts).

5.4.5 As expected, the differences between Scenarios 1A and 2 are more marked in the areas closest to the New Farm Road sites. For example, the increase in two-way traffic flows on Winchester Road (west of New Farm Road) in the AM peak is 40 vph in Scenario 1A and 164 vph in Scenario 2. On The Avenue (east of New Farm Road) the increase is 34 vph in Scenario 1A and 105 vph in Scenario 2. This reflects the fact that traffic from the New Farm Road sites is focussed on to the B3047 corridor for most journeys (including those using the A31).

5.4.6 In general the predicted increases in flows around the town for Scenario 1A are lower than for Scenario 2. The only exception to this is the southbound flow along the northern section of Sun Lane, where the predicted increase in the AM peak is slightly (5 vph) higher than Scenario 2. This is due to the missing westbound-off slip road at the proposed A31 junction and the associated routing of inbound traffic to the Sun Lane site for journeys originating to the east of Alresford.

5.4.7 Two-way peak hour flow increases along the B3047 corridor through Bishops Sutton are forecast to be 12 vph in the AM and 20 vph in the PM for Scenario 1A and 28 vph AM and 32 vph PM in Scenario 2.

5.4.8 Comparisons between Scenario 1B (LPP2 including employment) and Scenario 2 (APG excluding employment) show significantly greater differences. This reflects the addition of 240 to 290 extra peak hour vehicle trips associated with proposed B1 and B8 employment on the Sun Lane site. This more than doubles the quantum of development trips in Scenario 1B compared with Scenarios 1A or 2. Notwithstanding the very different development assumptions in the scenarios with and without employment, the impacts in terms of traffic increases are largely mitigated by the presence of the proposed A31 junction. In many instances the two-way traffic flow increases in Scenario 1B are lower than those in Scenario 2. This is the case for all roads with the exception of Tichborne Down, Jacklyns Lane, East Street and Sun Lane.

5.4.9 On Tichborne Down, Scenario 1B results in a traffic flow increase 10 vph higher than Scenario 2 in the AM peak and 2 vph in the PM peak. The corresponding differences on Jacklyns Lane are 5 vph AM and 3 vph PM. On Nursery Road the AM peak flows are 10 vph lower under Scenario 1B than Scenario 2, and 18 vph lower in the PM peak. On East Street; and along the B3047 corridor through Bishops Sutton; Scenario 1B flow increases are 17 vph more than Scenario 2 in the AM peak but with a reduction of 8 vph in the PM peak. This is due to the missing slip road at the A31 junction which affects arrivals to the employment area from the east in the AM but not in the PM when eastbound departures can gain direct access to the A31.

5.4.10 The largest difference in traffic increases occurs on the northern section of Sun Lane in the AM peak, again this is due to the missing slip road. In Scenario 1B the increase is 55 vph (all southbound) compared with 14 vph (4 southbound plus 10 northbound) in Scenario 2, a difference of 41 vph. Elsewhere on Sun Lane the differences in two-way traffic flows range between 10 to 20 vph.

5.4.11 Although Scenario 1B results in greater traffic increases than Scenario 2 in some locations the magnitude of the differences is small in absolute values and significantly lower than those predicted on the western side of the town where the forecast traffic increases for Scenario 2 exceed those for Scenario 1B. For example, the increase in two-way traffic flows on Winchester Road (west of New Farm Road) in the AM peak is 164 vph in Scenario 2 compared with 61 vph in Scenario 1B. On The Avenue the increase is 105 vph in Scenario 2 and 47 vph in Scenario 1B.

5.4.12 Given the 'worst case' floor area assumptions used for the employment trip generation analysis it is likely that the traffic flow increases for Scenario 1B are over estimated. It must also be borne in mind that Scenario 2 assumes no additional employment development, although the APG plan proposes retention and intensification of existing and committed commercial areas, and therefore comparison with Scenario 1B is somewhat distorted.

5.4.13 A further consideration is that the provision of a new A31 junction would enable some existing baseline traffic to divert via the Sun Lane site to gain access to the A31, thereby relieving traffic on other routes across the town. The amount of traffic that might re-route cannot be accurately estimated without knowledge of the internal road layout of the Sun Lane site and how this might affect journey times for those existing households with the option of choosing alternative routes. The extent to which existing traffic is either encouraged to, or discouraged from, re-routing to the A31 is also a consideration in terms of how this might impact on existing and future residents living in the Sun Lane area and is something that could be controlled by the design of the internal road layout and proposed access locations serving the

new development. These are matters that will need to be assessed in detail as proposals for the Sun Lane site are progressed through subsequent pre-application and planning application stages, to ensure that a satisfactory balance is reached.

5.4.14 An approximate indication of the potential traffic re-routing effect can be calculated from the knowledge that there are around 800 existing dwellings in the area between Jacklyns Lane and Sun Lane and that these households could generate approximately 450 vph during peak periods (based on the residential trip generation rates in Appendix B). It is also known that around 80% of external journeys to/from Alresford utilise the A31 corridor. Given earlier comments about the internal road layout of the Sun Lane development and the relative attractiveness of switching routes, the proportion of re-routed traffic cannot be determined at this stage and could vary significantly depending on the design. If, for assessment purposes, it is assumed that 50% of the dwellings within the Sun Lane area were to switch to the new junction this would equate to 180 peak hour vehicle movements being redistributed. This would reduce traffic flows by varying amounts across a number of routes within the town (including New Farm Road, Jacklyns Lane and the B3047 corridor) but would locally increase traffic flows in areas adjoining the site (including Sun Lane, Tichborne Down and potentially Nursery Road).

Impact of Local Plan growth

5.4.15 Considering the overall impacts of Local Plan growth (all options), the traffic flow diagrams in Appendix C show that traffic flow increases are generally in the range of 20 to 40 two-way vehicle movements per hour, with some exceptions up to a maximum of around 88 vph for Scenario 1B (Sun Lane AM peak) and 193 vph for Scenario 2 (Winchester Road PM peak).

5.4.16 With the exception of the B3047 corridor, particularly at its western end, forecast baseline flows on most roads in the town are relatively low and well within the expected traffic carrying capacity of single carriageway roads. Within the town, the existing junctions along the B3047 are likely to experience greatest pressure as traffic growth occurs in the period to 2031, as this is the most heavily trafficked corridor. Key junctions include Jacklyns Lane and Broad Street. However, as these junctions are constrained by existing buildings and are important to the Alresford streetscape, the scope for capacity improvement is limited. Consideration could be given to the introduction of traffic signals. An alternative form of mitigation would be to focus on wider travel demand management measures including modal shift and/or utilising the potential benefits of traffic redistribution away from the B3047 associated with the construction of a new junction onto the A31.

5.4.17 The scope for localised junction improvements will require further analysis as planning applications for site allocations come forward. However, the evidence from this study indicates that none of the development Scenarios tested are likely to have highway capacity impacts which could not be mitigated; noting of course that such capacity mitigation would not affect the relative 'accessibility' ratings of individual sites. The Scenario 1 options (including the new A31 junction) offer the greatest benefits in terms of minimising traffic impacts within the town, due to the ability to access the A31 directly. In the case of Scenario 1B, this enables significant new employment development to take place in the period to 2031 whilst reducing traffic impacts across the town compared to the APG (Scenario 2) proposals.

Other Considerations

5.4.18 Some representations have queried the need for and/or the deliverability of the new A31 junction and what the impacts of development of the Sun Lane site might be if the full LPP2 housing and employment growth occurs but the new junction is not provided. It should be noted that no such scenario is being promoted by either the Council or APG. However, an indication of the potential impacts can be gleaned by comparing the relative trip generation estimates for this site in Scenarios 1B and 2; and by examining these alongside the Scenario 2 impact results reported in this study.

5.4.19 Scenario 2 proposes 145 dwellings at Sun Lane. Using the trip generation rates in Appendix B, the 145 dwellings are expected to generate 80 vph in the AM peak. In Scenario 1B, 320 dwellings plus 30,000m^2 of employment are proposed, with a combined trip generation of 467 vph in the AM peak. Therefore, in the absence of a new A31 junction, the impacts locally in the Sun Lane area would be more than 5 times greater than those reported for Scenario 2. In the case of Sun Lane (south of Nursery Road) the forecast increase in two-way traffic in the AM peak is 68vph in Scenario 2 and this would be expected to increase to more than 340vph in Scenario 1B, assuming no A31 junction. On Nursery Road the corresponding increases are 44 vph in Scenario 2 and 220vph in Scenario 1B, assuming no A31 junction were to be provided. This exercise indicates that the potential traffic impacts would be significant and reinforces the need for the new junction to serve the proposed quantum of development in Scenario 1B.

5.4.20 A further matter arising from consultation responses was the suggestion of a new access road from the Sun Lane site, connecting directly to the B3047 at Bishops Sutton (south of the Watercress Line railway bridge). Again, no such proposal is being promoted by either the Council or APG. A link road in this location would provide an alternative route into the site from the east and enable site generated traffic to avoid using the northern section of Sun Lane. Such a link tends to be promoted as an alternative to a new access direct to the A31. Reference to the trip generation totals in Table 3 and the trip distribution data in Appendix B, shows that the amount of site generated traffic entering and exiting the site from the east is small; some 11% of all trips, amounting to around 55 two-way vehicle movements in the AM peak and 52 in the PM peak, based on the highest estimate of trip generation (Scenario 1B). Even assuming that all eastbound traffic would use the link road and that no new junction onto the A31 is built, these small levels of traffic can be accommodated within the existing highway network and are too low to justify the construction of a new access road. Under other scenarios the levels of traffic would be lower still.

6. SUMMARY AND CONCLUSIONS

6.1.1 This study provides a comparison between the draft Local Plan Part 2 (LPP2) proposals and the alternative 'dispersed' land allocation strategy proposed by the Alresford Professional Group (APG). It identifies the relative transport impacts of each by comparing forecast traffic increases on routes and junctions in and around the town and also takes account of transport sustainability in terms of distances to schools, local facilities and public transport. The study also includes an appraisal of the feasibility of achieving access to the various sites, including the construction of a new junction onto the A31 for the Sun Lane site.

Development Scenarios

6.1.2 The LPP2 proposals are referred to as Scenario 1 and the alternative APG strategy is Scenario 2. Scenario 1 comprises 385 dwellings shared over two sites at The Dean (65 dwellings) and Sun Lane (320 dwellings) plus 5 hectares of employment; assumed to comprise 15,000sqm of B1 and 15,000sqm of B8 development. Scenario 2 comprises 387 dwellings spread over five sites at The Dean (30 dwellings), New Farm Road North (50 dwellings), New Farm Road South (98 dwellings), Arlebury Park (64 dwellings) and Sun Lane North (145 dwellings). Scenario 2 also assumes that all existing employment sites in Alresford are retained and that no new employment sites are provided. Because the very different employment assumptions between Scenarios 1 and 2 would make like-for-like comparisons of traffic impacts difficult, Scenario 1 has been sub-divided into Scenario 1A, excluding the employment allocation, and Scenario 1B which includes employment.

Accessibility Assessment

6.1.3 The various housing sites have been assessed in terms of their general levels of accessibility to local facilities and public transport. This results in a range of accessibility indicators based on average walking distances and an overall accessibility rating classified as Excellent, Good, Adequate or Poor. Ignoring The Dean sites, which are common to both scenarios, the Scenario 1 & 2 sites all score between Good and Adequate in terms of overall accessibility. The New Farm Road sites are furthest away from the town centre and local facilities whilst Arlebury Park is the nearest. Currently the Sun Lane site is more remote from existing bus services compared to New Farm Road and Arlebury Park. However, development of the Sun Lane site could provide opportunities for new or diverted services to be provided. Overall the LPP2 sites (Scenario 1) are preferable in terms of site accessibility with all sites scoring either Good or Excellent. In comparison, the inclusion of the New Farm Road sites within the APG proposals (Scenario 2) results in two Adequate scores.

A31 Junction

6.1.4 Due to the topography of the area there are engineering challenges, cost considerations and potential environmental factors to be taken into account in progressing the design of a new junction onto the A31. However, following a site inspection and a review of the available mapping, highway boundary records, level information and DMRB guidance, alongside the proposed schemes put forward by the site promoter and objectors, it is concluded that a

number of junction options are possible and that a new access onto the A31 is both feasible and viable.

Access to Competing Sites

6.1.5 Access to the Arlebury Park site is proposed via the existing junction on The Avenue. The site promoters have indicated that a legal right of access exists across the verge between the site and The Avenue, which is owned by the Town Trustees. Hampshire County Council has confirmed agreement in principle to the proposed access arrangements. Based on this and the stated rights of access across the verge, access to the proposed development appears feasible.

6.1.6 Access to the New Farm Road North site is proposed across land abutting the disused railway cutting and the plot currently occupied by the property Netherbourne. There are significant visibility constraints at this location due to the bridge structure over the disused railway and the absence of sufficient highway land along the western side of New Farm Road. Indicative access proposals submitted by the site promoter highlight the visibility constraints but currently there is insufficient detail shown to demonstrate that satisfactory sight-lines can be delivered. Therefore, pending submission of more detailed supporting information for this site and confirmation that sufficient land is available, significant doubts remain regarding the feasibility of providing access at this location.

6.1.7 Access to the New Farm Road South site is proposed via the property known as Thody's. The site access appraisal commissioned by the site owner demonstrates that a conventional priority T junction with a 5m wide access road can be accommodated subject to a slight relaxation of visibility standards and subject to the removal of up to four trees currently protected by a Tree Preservation Order. Therefore, access appears to be feasible subject to the site promoter securing permission for tree removal.

Traffic Impact Comparison

6.1.8 Scenario 1A (LPP2 excluding employment) and Scenario 2 (APG) both contain a similar level of housing development across the town but there are significant differences in forecast traffic flows due to their different site locations and access strategies. In general the predicted flow increases around the town for Scenario 1A are lower than for Scenario 2, due to the inclusion of the A31 junction in Scenario 1A. The only exception to this is the southbound flow along the northern section of Sun Lane, where the predicted increase in the AM peak is slightly higher (5 vph) than Scenario 2. This is due to the missing westbound-off slip road at the proposed A31 junction and the associated routing of inbound traffic to the Sun Lane site for journeys originating to the east of Alresford.

6.1.9 Comparisons between Scenario 1B (LPP2 including employment) and Scenario 2 (APG excluding employment) show significantly greater differences. This reflects the inclusion of 30,000m^2 of B1/B8 floorspace at Sun Lane in Scenario 1B. This more than doubles the quantum of development trips in Scenario 1B compared with Scenario 2 (the employment element generating 240 and 290 extra peak hour vehicle trips in the AM and PM peaks respectively). Notwithstanding the very different development assumptions in these two scenarios, the impacts in terms of traffic increases are largely mitigated by the presence of the proposed A31 junction. In most instances the two-way traffic flow increases in Scenario

1B are lower than those in Scenario 2. This is the case for all roads with the exception of Tichborne Down, Jacklyns Lane, East Street/Bishops Sutton Road and Sun Lane.

6.1.10 Predicted traffic increases on these roads are generally in the range of 10 to 20 vph higher in Scenario 1B than in Scenario 2, except on the northern section of Sun Lane where the predicted difference in the AM peak is 41 vph. In contrast to this, the predicted impacts in the areas closest to the New Farm Road sites are noticeably greater for Scenario 2 compared with either Scenario 1 tests. For example, the increase in two-way traffic flows on Winchester Road (west of New Farm Road) in the AM peak is 164 vph in Scenario 2 compared with 61 vph in Scenario 1B. On The Avenue the increase is 105 vph in Scenario 2 and 47 vph in Scenario 1B. This reflects the fact that traffic from the New Farm Road sites and Arlebury Park is focussed on to the B3047 corridor for most journeys (including those using the A31) whereas direct access to the A31 is available in Scenario 1B.

6.1.11 The results demonstrate that Scenario 1B will lead to greater traffic increases than Scenario 2 in a small number of locations. However, the magnitude of the differences is small in absolute values and significantly lower than those predicted in most locations, particularly on the western side of the town, where Scenario 2 impacts exceed those for Scenario 1B.

6.1.12 A further consideration is that the provision of a new A31 junction would enable some existing baseline traffic to divert via the Sun Lane site to gain access to the A31, thereby relieving traffic on other routes across the town. The amount of traffic that might re-route cannot be accurately predicted at this stage, without knowledge of the internal road layout of the Sun Lane site and how this might affect journey times for those existing households with the option of choosing alternative routes. However, the potential exists for some traffic relief to be achieved through the re-distribution of existing vehicle trips.

6.1.13 With the exception of the B3047 corridor, particularly at its western end, forecast baseline flows on most roads in the town are relatively low and well within the expected traffic carrying capacity of single carriageway roads. It is therefore concluded that none of the scenarios tested would be likely to exceed the available link capacity of the network.

6.1.14 Existing junctions along the B3047 are likely to experience the greatest pressure as traffic growth occurs in the period to 2031, as this is the most heavily trafficked corridor within the town. Key junctions include Jacklyns Lane and Broad Street. However, as these junctions are constrained by existing buildings and are important to the Alresford streetscape, the scope for capacity improvement is limited. Consideration could be given to conventional traffic management measures such as the introduction of traffic signals. An alternative form of mitigation would be to focus on wider travel demand management including modal shift and/or utilising the potential benefits of traffic redistribution away from the B3047 associated with the construction of a new junction onto the A31.

6.1.15 The scope for localised junction improvements will require further analysis as planning applications for individual site allocations come forward. However, the evidence from this study indicates that none of the development Scenarios tested are likely to have highway capacity impacts which could not be mitigated; noting of course that such capacity mitigation would not affect the relative 'accessibility' ratings of individual sites.

Conclusions

6.1.16 The evidence from this study demonstrates that the LPP2 planned levels of growth for New Alresford can be accommodated in terms of their impacts on the highway network. The Scenario 1 options (including the new A31 junction) offer the greatest benefits in terms of minimising traffic impacts within the town, due to the ability to access the A31 directly. In the case of Scenario 1B, this enables significant new employment development to take place in the period to 2031 whilst reducing traffic impacts in most locations across the town compared to the APG (Scenario 2) proposals. The Scenario 1 options also achieve better ratings in terms of their overall accessibility to local facilities, compared with Scenario 2.

SYSTRA provides advice on transport, to central, regional and local government, agencies, developers, operators and financiers.

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SYSTRA

Appendix A

ALRESFORD PROFESSIONAL GROUP – MASTERPLAN

ALRESFORD PROFESSIONAL GROUP ALTERNATIVE PLAN FOR ALRESFORD

AMENDED APRIL 2015

ALRESFORD PROFESSIONAL GROUP

SITE 1927
WATERCRESS MEADOWS
45 DWELLINGS

SITE 1927 NEW FARM ROAD
53 DWELLINGS

SITE 2553 NEW FARM ROAD
50 DWELLINGS

SITE 2552
ARLEBURY PARK
64 DWELLINGS

THE DEAN 30 DWELLINGS
INCLUDING APARTMENTS
SUITABLE FOR FIRST TIME BUYERS

SITE 277 SUN LANE
145 UNITS COMPRISING:
104 DWELLINGS
PLUS TOTAL CARE
40 APARTMENTS
& 20 BED CARE HOME

TOTAL POTENTIAL DWELLINGS:
386 DWELLINGS
PLUS 20 BED CARE HOME

386 required

4.3 hectares
open space
Rugby pitches etc.

The Dean
Ongoing redevelopment to provide offices and residential above at high density.
30 residential units/flats.
Opportunity for first time buyers

Business/Employment use retained

SITE 2552
2.2 hectares
30/hectare
64 dwellings

Landscape buffer

0.4 hectares
parking minimum
50 spaces

Access via existing to provide additional town parking

Open space retained to Arlebury Park

Avenue tree line enhanced

Improved structural planting to Avenue

Avenue tree line protected

Existing employment site

Long Barn, Employment
Permission for 800 sq.m offices
Employment for 60

Green cycle link through new development

SITE 2553
1.8 hectares
50 dwellings
@ 27/hectare

Open Space
2 hectares

AVERAGE DENSITY
21 PER HECTARE (LOW)
INCLUDING OPEN SPACE

SITE 1927
1.9 hectares
53 dwellings
average density
27/hectare

Landscape/Ecology buffer

SITE 1927 1.5 hectares
45 dwellings
30/hectare

Watercress beds retained

1 hectare for
Total Care
40 Apartments
& 20 Bed
Care Home

SITE 277
3.9 hectares
26/hectare
Later Living/Dwellings
105 units

DEVELOPMENT KEPT BELOW RIDGE LINE

parking for burial ground

parking/ drop off

parking/ drop off

Parkland/Open Space

Viewing Area on ridgeline

Traffic Calming measures to Sun Lane

60 Bed Apartments & Care Home could also provide 30-50 jobs
Limit of development to ridge to protect distant views

2.2 hectares
Open Space &
Burial Ground

Divert road to create improved school drop off and additional area of playing fields

Parking for burial ground.

Area for enhanced ecology

1 hectare Allotments/ open space

Allotment parking

Tichborne Down
Re alignment of corner and provision of new area of Amenity Space

100
105
110

21 HECTARES OF NEW OPEN SPACE ON SITE 277

AREAS FOR DEVELOPMENT

EXISTING SETTLEMENT BOUNDARY

PEDESTRIAN/CYCLE LINKS

IMPORTANT EMPLOYMENT SITES

RETAINED OPEN SPACE AROUND ARLEBURY PARK

TRAFFIC CALMING MEASURES

EXISTING OPEN SPACE

Appendix B

TRIP RATES DISTRIBUTION AND GROWTH

APPENDIX B Trip Generation Trip Distribution and Growth Rates

WINCHESTER DISTRICT LPP2

TRIP GENERATION RATES

RESIDENTIAL VEH TRIPS	AM Peak 0800-0900			PM Peak 1700-1800			Daily		
	depart	arrive	total	depart	arrive	total	depart	arrive	total
Local Plan Part 1 (LPP1) Study	0.41	0.13	0.54	0.20	0.35	0.55	3.10	3.08	6.18
Sun Lane site promoters	0.30	0.16	0.46	0.28	0.37	0.64	2.60	2.60	5.20
Mean	0.36	0.15	0.50	0.24	0.36	0.60	2.85	2.84	5.69
Proposed Rates for LPP2 Study	**0.4**	**0.15**	**0.55**	**0.24**	**0.36**	**0.6**	**2.9**	**2.9**	**5.8**

B1 EMPLOYMENT VEH TRIPS	AM Peak 0800-0900			PM Peak 1700-1800			Daily		
	depart	arrive	total	depart	arrive	total	depart	arrive	total
Local Plan Part 1 (LPP1) Study	0.12	1.74	1.86	1.46	0.10	1.56	6.46	6.77	13.23
Sun Lane site promoters	0.14	1.23	1.37	0.87	0.10	0.97	4.13	4.45	8.58
Mean	0.13	1.49	1.62	1.17	0.10	1.27	5.30	5.61	10.91
Proposed Rates for LPP2 Study	**0.14**	**1.5**	**1.64**	**1.2**	**0.1**	**1.3**	**5.5**	**5.5**	**11**

B8 EMPLOYMENT VEH TRIPS	AM Peak 0800-0900			PM Peak 1700-1800			Daily		
	depart	arrive	total	depart	arrive	total	depart	arrive	total
Local Plan Part 1 (LPP1) Study	0.13	0.30	0.43	0.29	0.16	0.45	3.49	3.51	7.00
Sun Lane site promoters	0.06	0.07	0.13	0.07	0.02	0.09	0.67	0.68	1.35
Mean	0.10	0.19	0.28	0.18	0.09	0.27	2.08	2.10	4.18
Proposed Rates for LPP2 Study	**0.1**	**0.2**	**0.3**	**0.2**	**0.1**	**0.3**	**2.5**	**2.5**	**5**

TRIP DISTRIBUTION

Table 8.11 From LPP1 Stage 1 Framework Transport Assessment

Base Assignment		AM			PM			DAY			
EXTERNAL+INTERNAL		depart	arrive	total	depart	arrive	total	depart	arrive	total	
Work at home		26	6	32	9	16	26	122	108	230	5%
Train											
	north	0	0	1	0	0	1	2	2	5	
	east: Alton	1	1	2	1	1	2	8	8	17	
	south	0	0	1	0	0	1	2	2	5	
	west: Winchester	14	15	29	15	9	24	105	101	206	
		16	17	32	17	10	27	119	114	232	5%
Bus/minibus											
	north	2	2	5	2	2	4	18	17	34	
	east: Alton	2	2	3	2	1	3	11	11	22	
	south	4	4	9	4	3	7	32	30	62	
	west: Winchester	5	5	10	5	3	8	37	35	73	
	0	0	0	0	0	0	0	0	0	0	
		13	13	27	13	8	22	98	93	191	4%
Taxi/minicab											
	local	1	1	2	1	1	1	6	6	12	
Car driver											
	north	29	40	69	38	19	57	253	245	498	
	east: Alton	18	24	43	23	12	35	155	150	305	
	south	56	75	131	73	36	108	478	463	941	
	west: Winchester	66	87	153	84	42	126	557	539	1097	
	0	0	0	0	0	0	0	0	0	0	
		169	227	396	219	108	327	1444	1398	2842	67%
Car passgr											
	north	3	3	6	3	2	5	23	22	45	
	east: Alton	2	2	4	2	1	3	14	13	27	
	south	5	6	12	6	3	10	43	41	84	
	west: Winchester	6	7	14	7	4	11	49	48	97	
	0	0	0	0	0	0	0	0	0	0	
		16	19	35	19	10	29	129	124	253	6%
Cycle		4	4	8	4	2	7	30	28	58	1%
Walk		33	30	63	31	21	52	233	221	454	11%
Total		279	316	595	313	177	489	2180	2092	4273	100%

LPP2 Assumptions

		Total vehicle-based trips incl rail		
2%				
7%				
2%				
89%				
18%				
11%				
33%				
38%				
18%	582	17%	North	
11%	371	11%	East	
33%	1093	31%	South	
39%	1473	42%	West	
	3519			
18%				
11%				
33%				
38%				

TEMPRO GROWTH FACTORS

Base Year: 2013
Future Year: 2031
Trip Purpose Group: All purposes
Area description: Winchester
Level: 24UP3

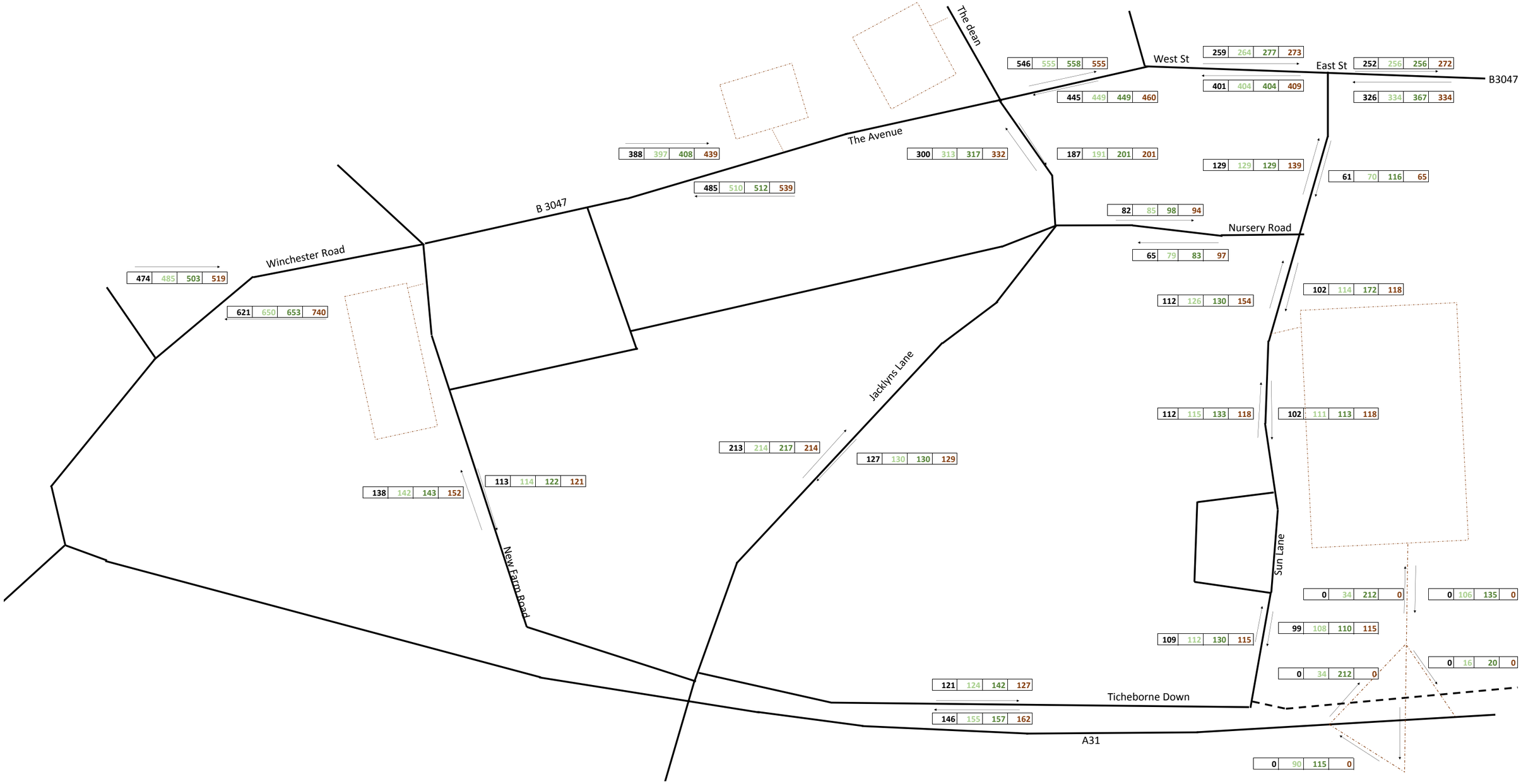
	Weekday AM peak period (0700 - 0959)	Weekday PM peak period (1600 - 1859)	Average Weekday
Production	1.151	1.1482	1.1595
Attraction	1.113	1.1067	1.117
Factor	**1.132**	**1.12745**	**1.13825**

Appendix C

TRAFFIC FLOW DIAGRAMS

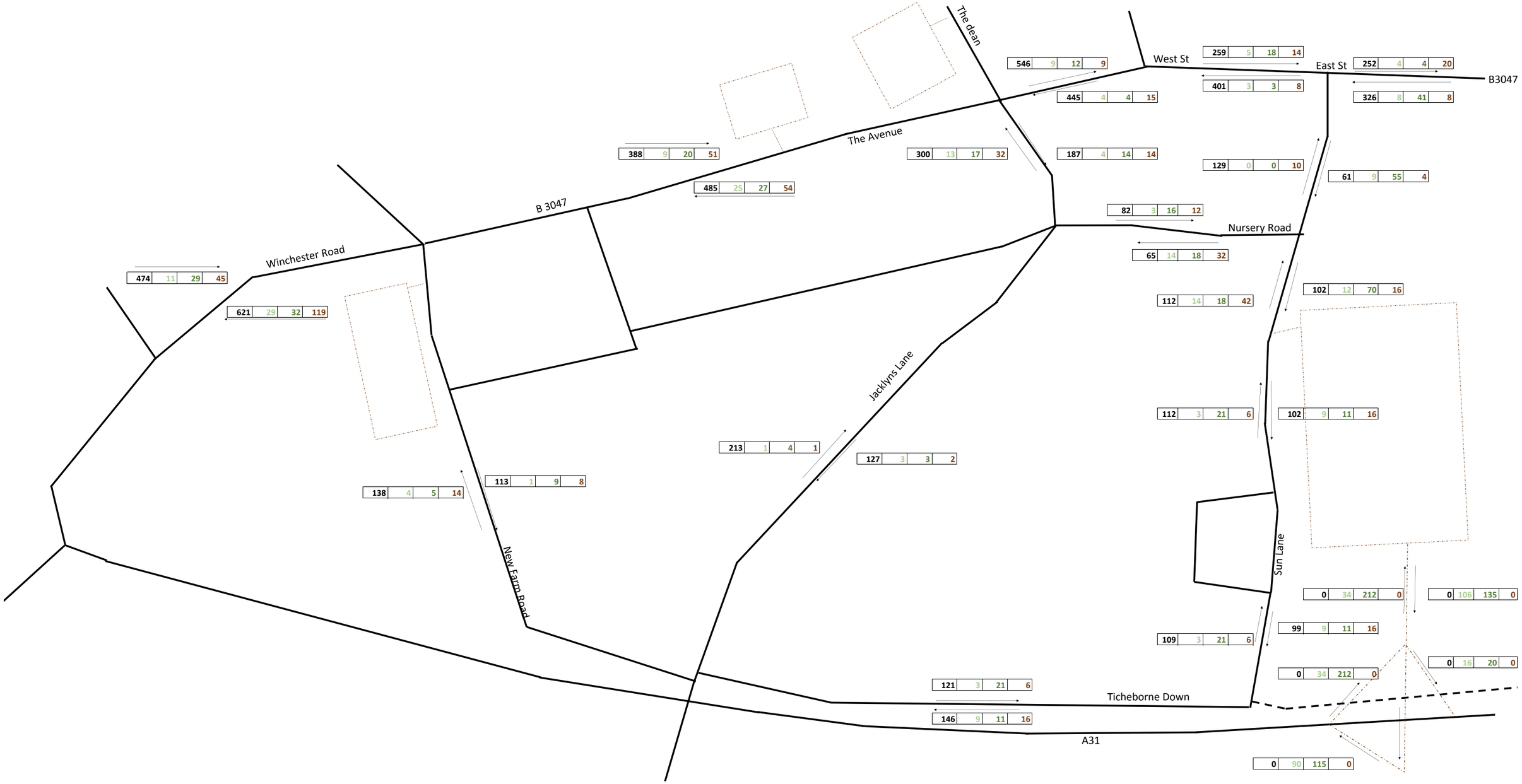
AM FLOW 2031

Baseline	Scenario 1	Scenario 1b	Scenario 2



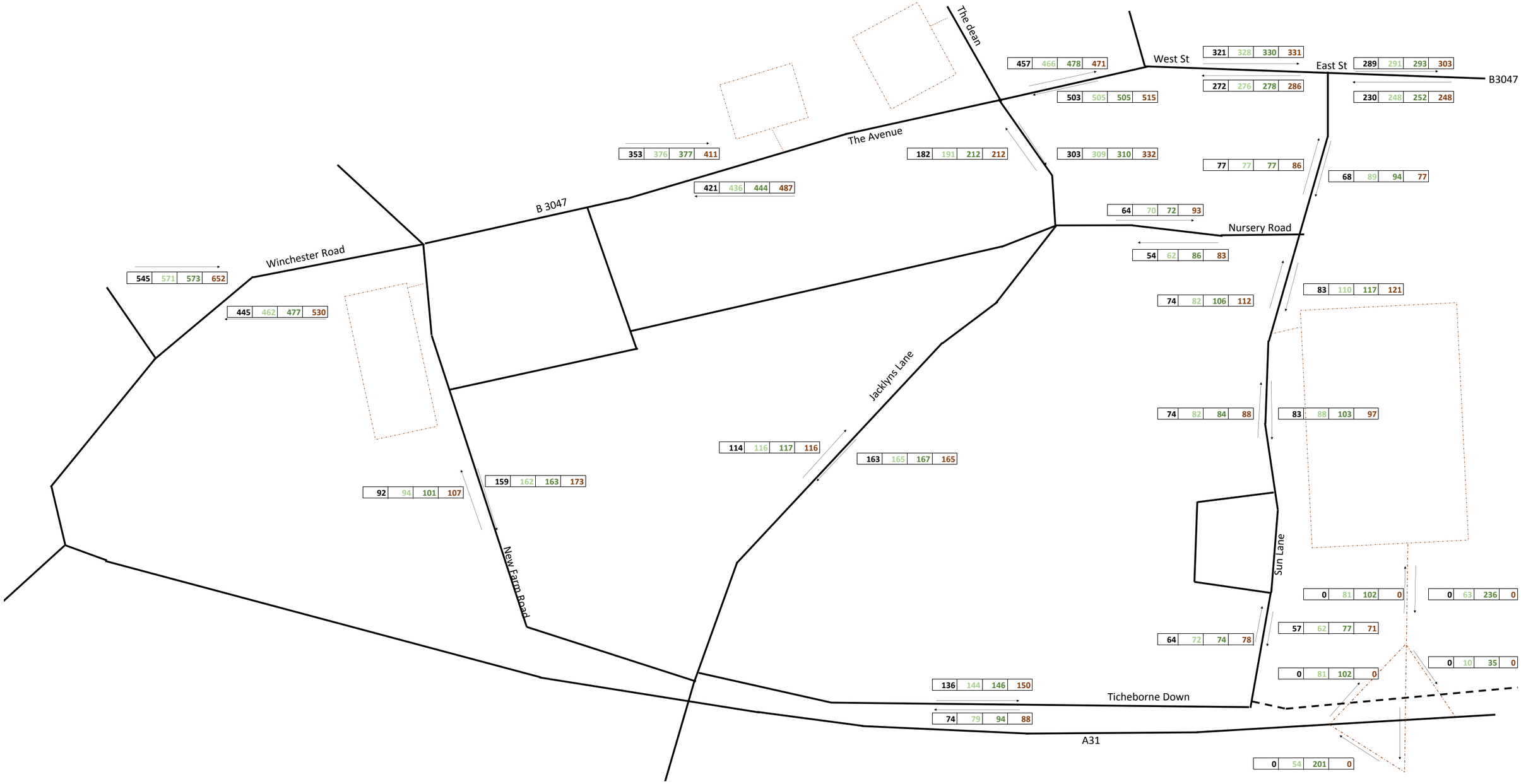
AM FLOW 2031 - DIFFERENCES WITH BASELINE

Baseline	Scenario 1	Scenario 1b	Scenario 2



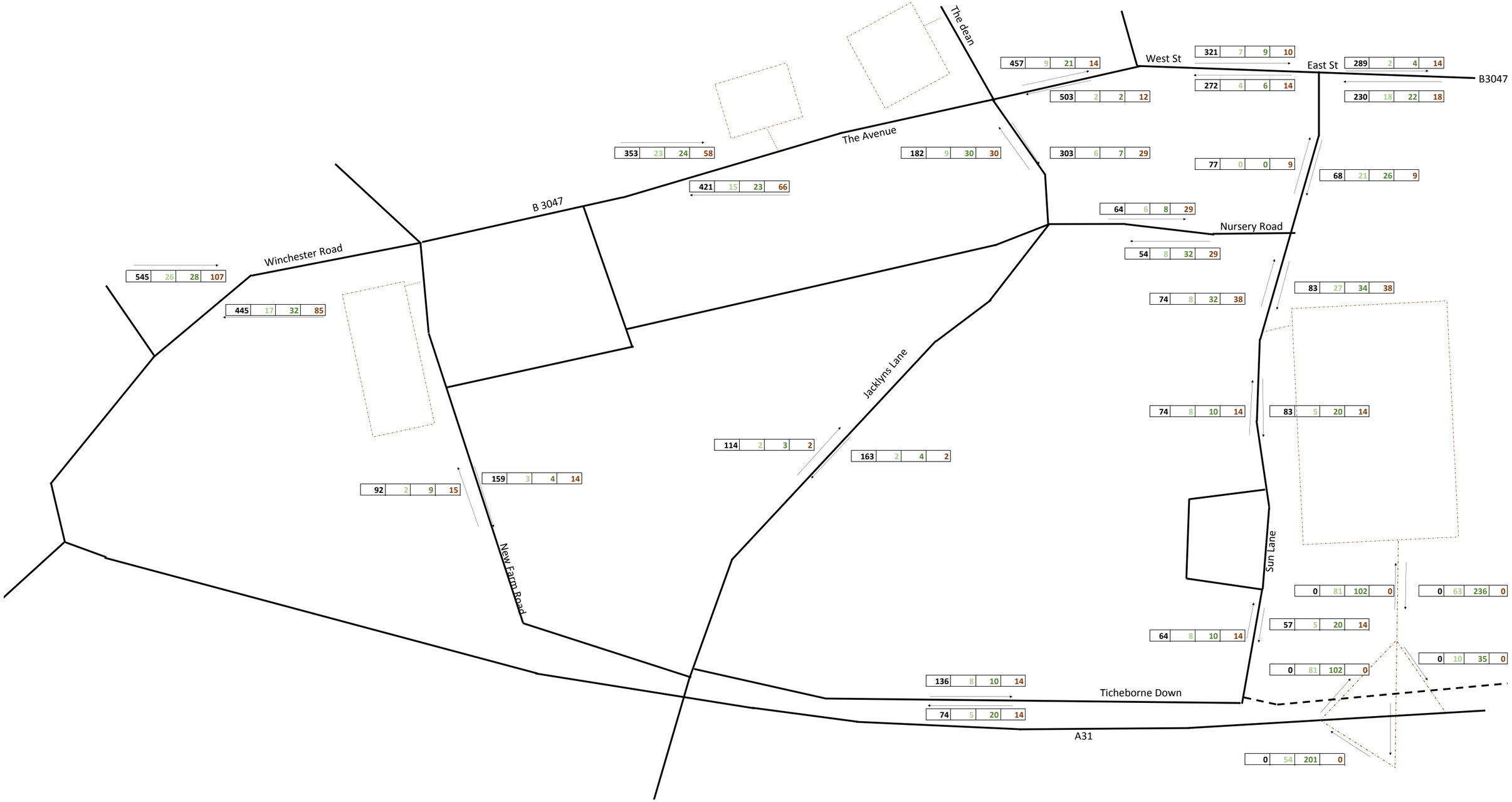
PM FLOW 2031

Baseline	Scenario 1	Scenario 1b	Scenario 2



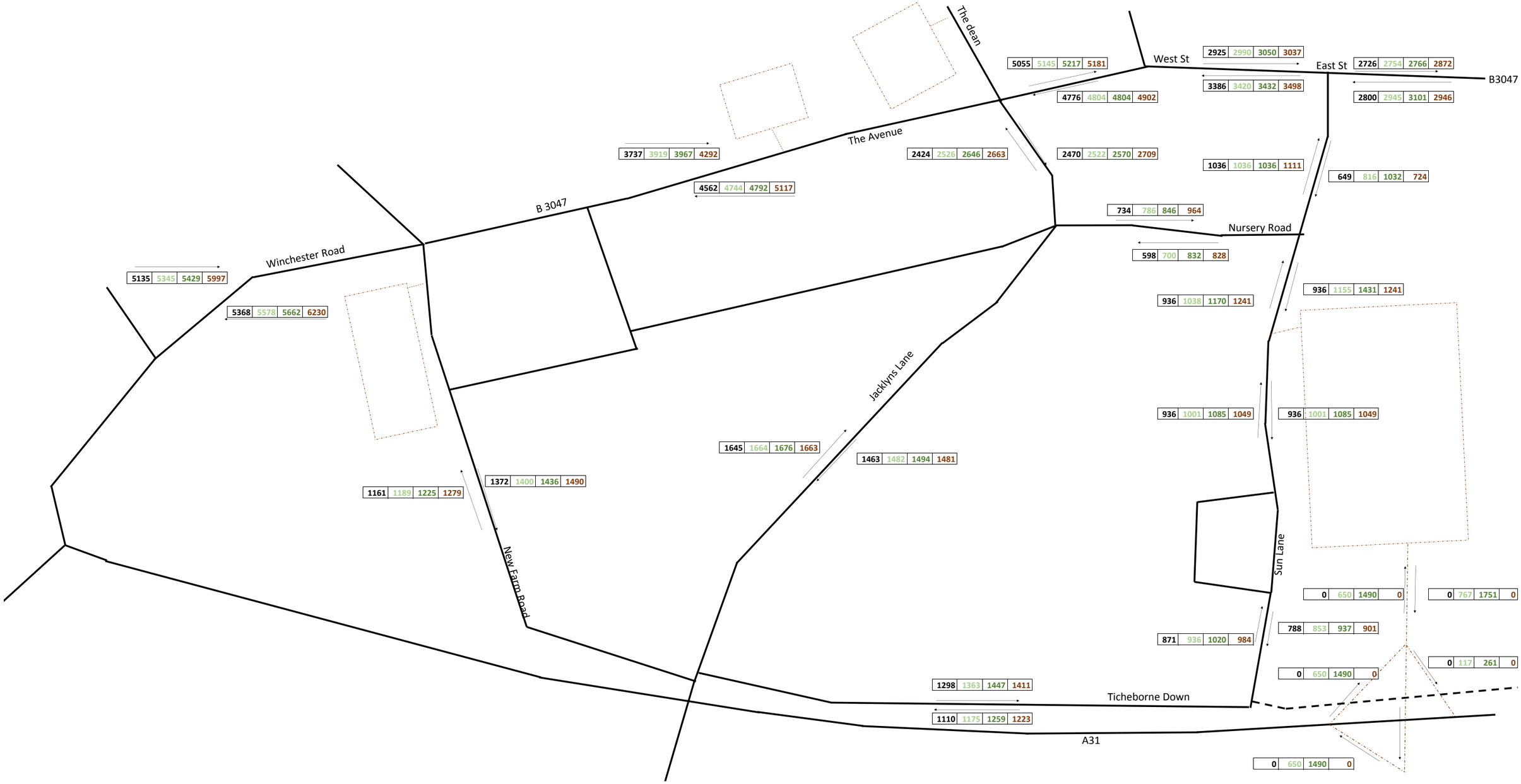
PM FLOW 2031 - DIFFERENCES WITH BASELINE

Baseline	Scenario 1	Scenario 1b	Scenario 2



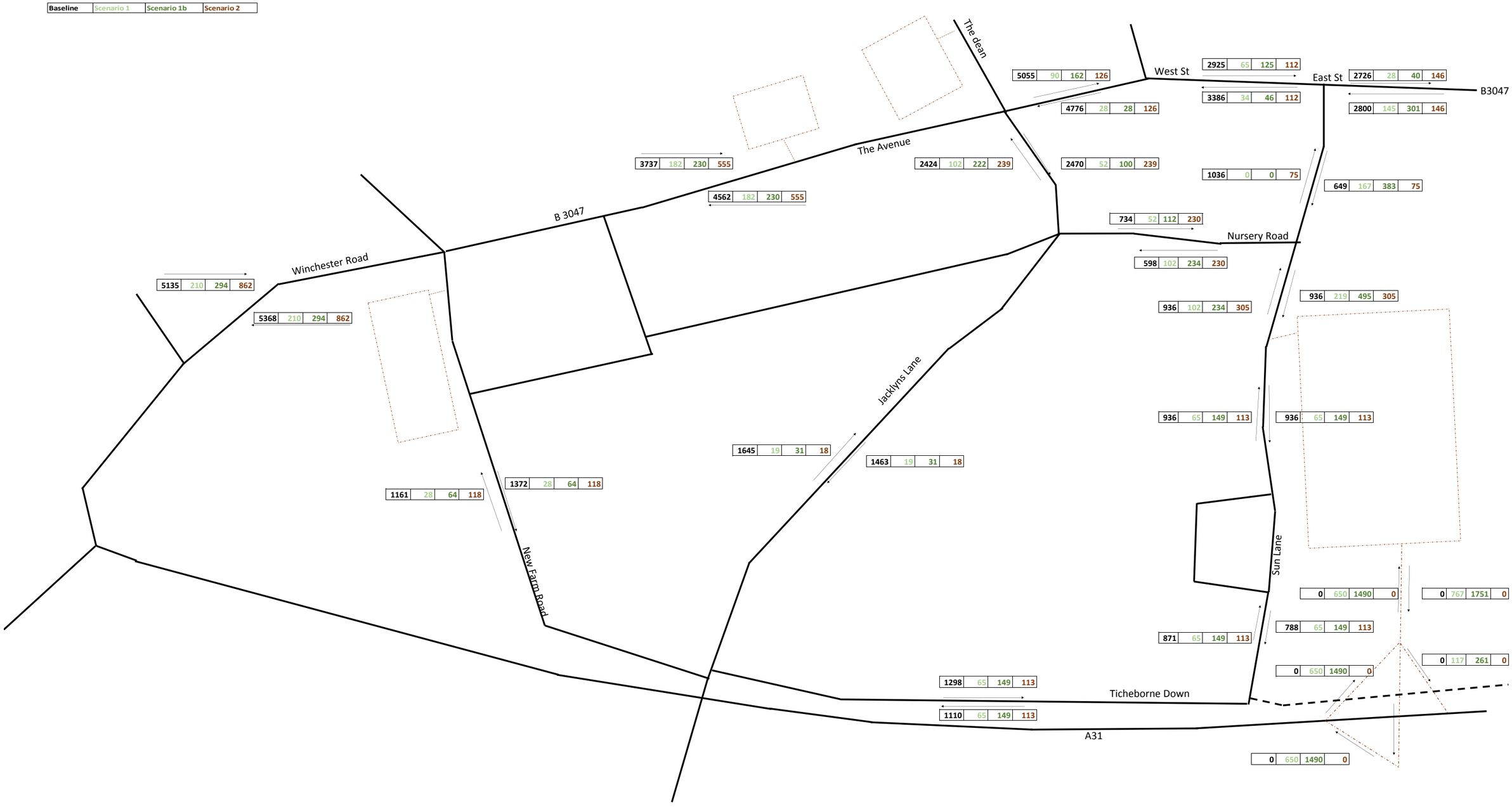
DAILY FLOW 2031

Baseline	Scenario 1	Scenario 1b	Scenario 2



DAILY FLOW 2031 - DIFFERENCES WITH BASELINE

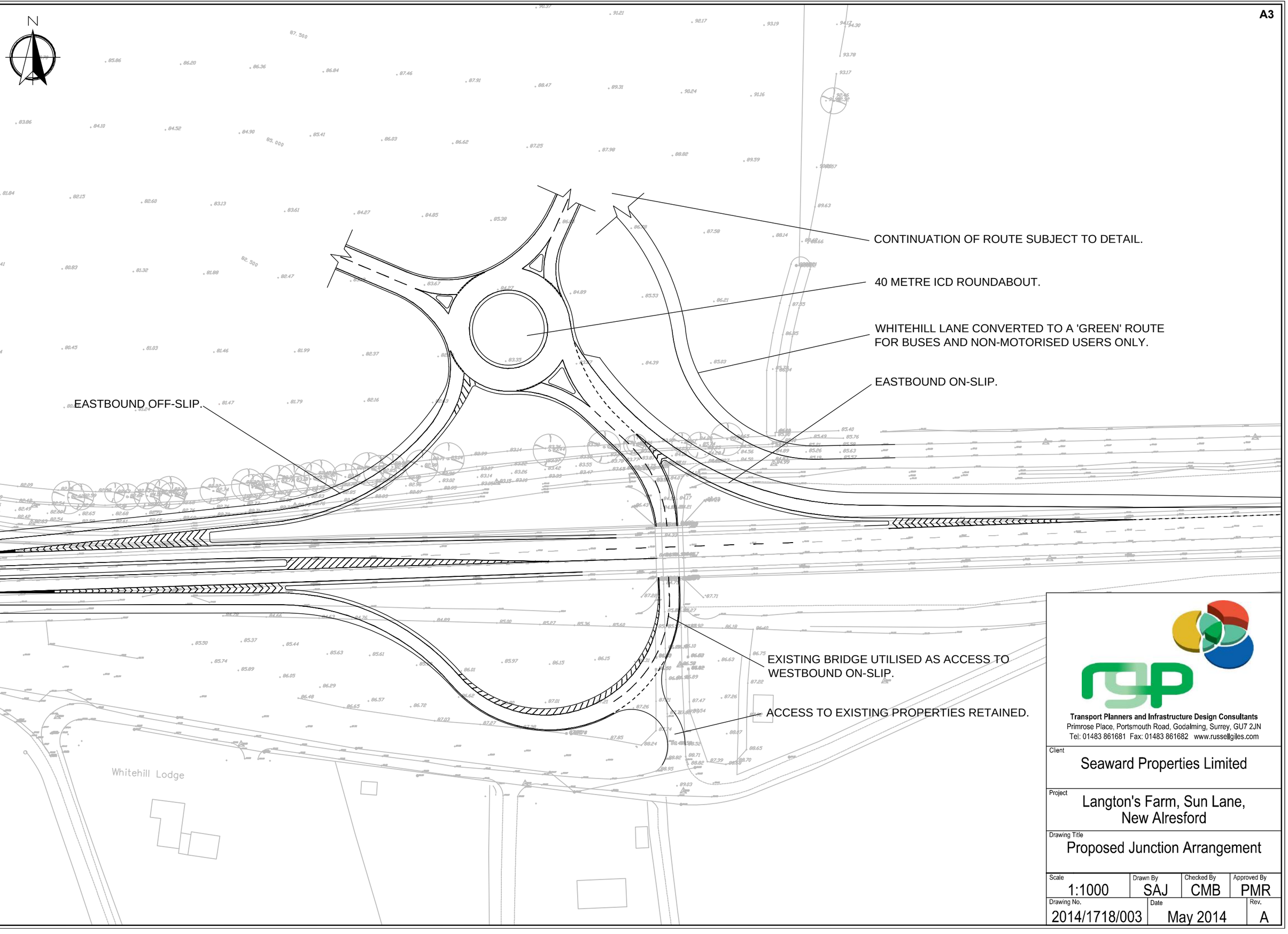
Baseline	Scenario 1	Scenario 1b	Scenario 2



Appendix D

A31 JUNCTION PLAN

A3



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Seaward Properties Limited

Project
Langton's Farm, Sun Lane, New Alresford

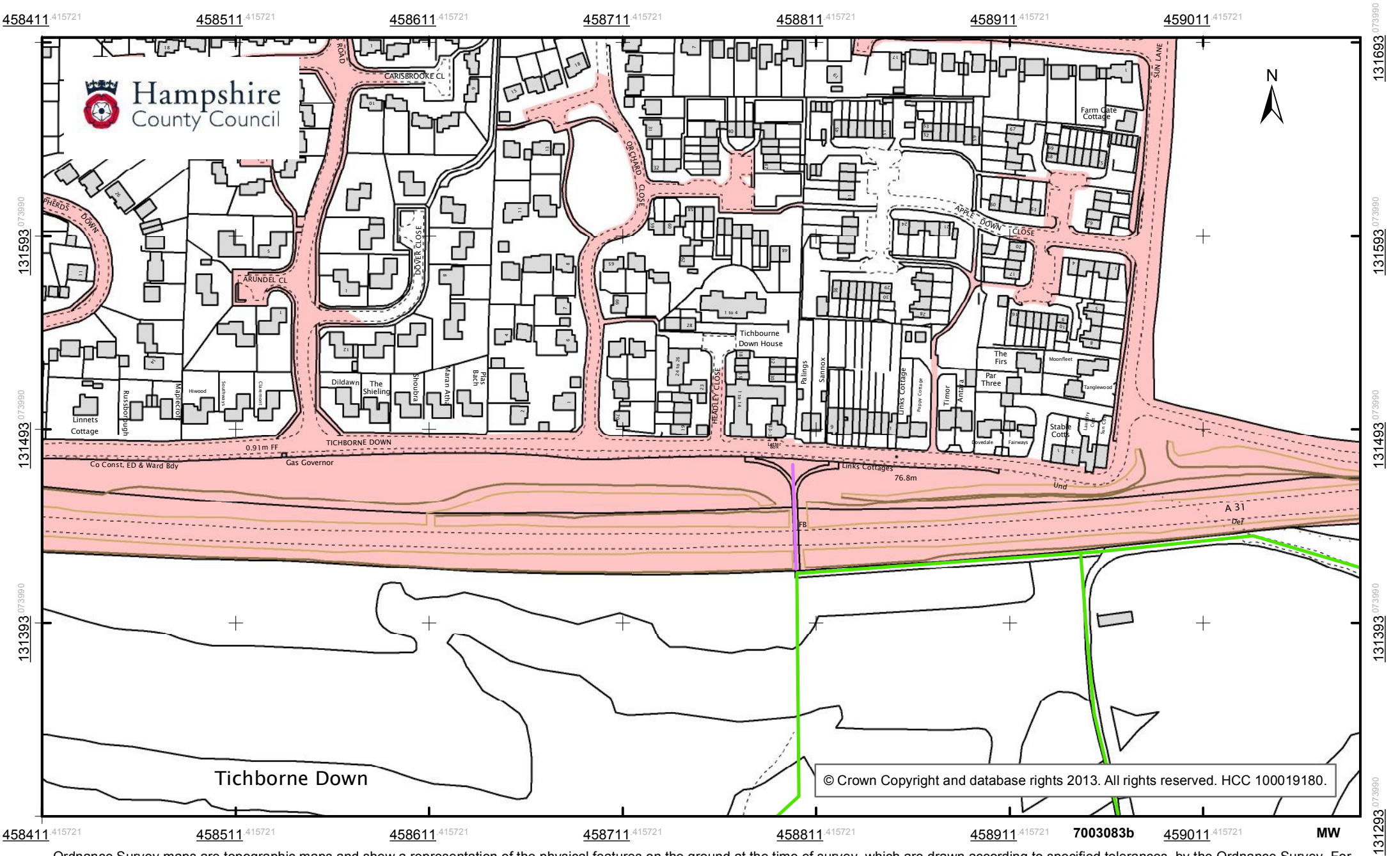
Drawing Title
Proposed Junction Arrangement

Scale	Drawn By	Checked By	Approved By
1:1000	SAJ	CMB	PMR

Drawing No.	Date	Rev.
2014/1718/003	May 2014	A

Appendix E

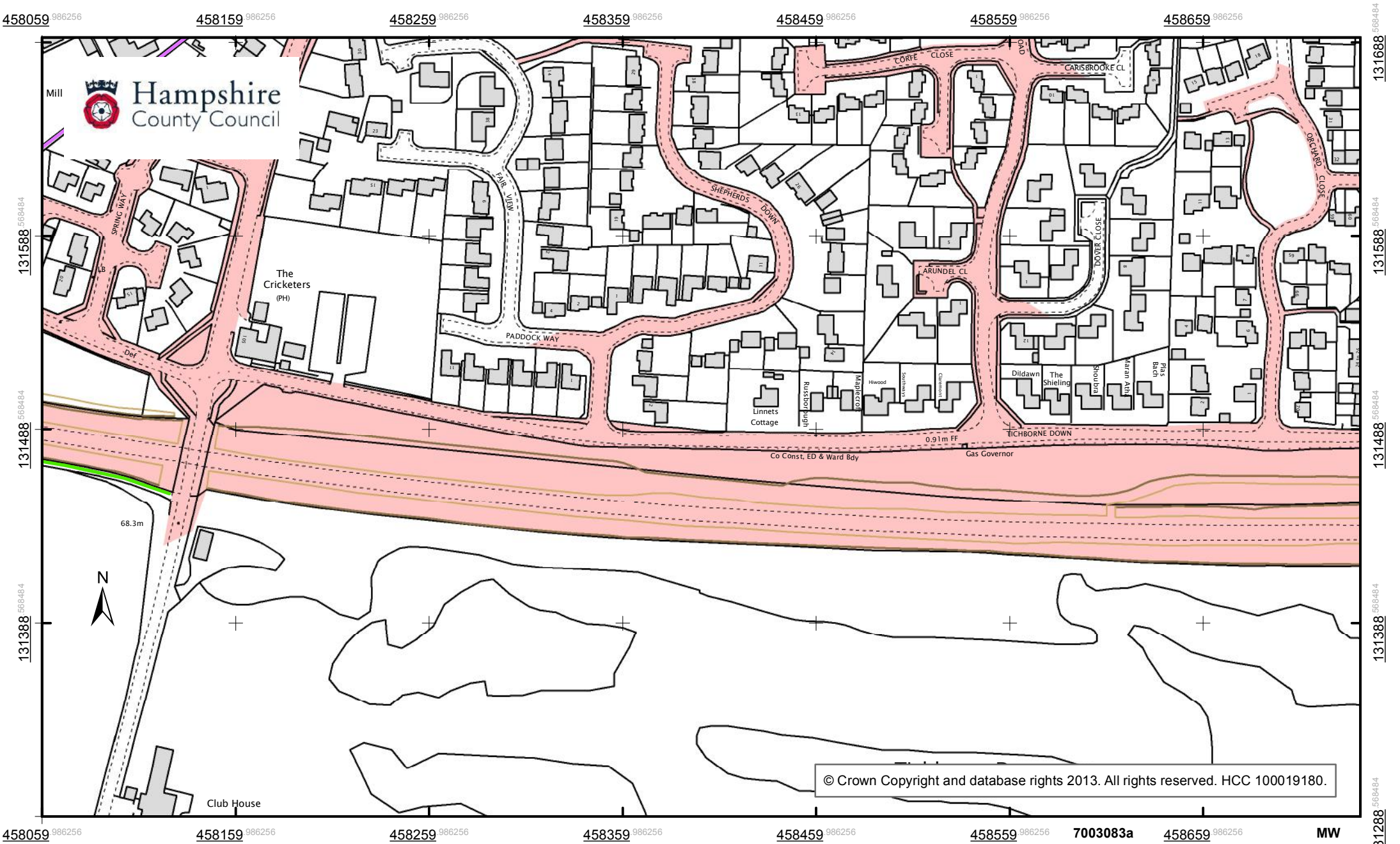
HIGHWAY BOUNDARY RECORDS



Ordnance Survey maps are topographic maps and show a representation of the physical features on the ground at the time of survey, which are drawn according to specified tolerances, by the Ordnance Survey. For further information on Ordnance Survey mapping please see: http://www.ordnancesurvey.co.uk/oswebsite/support/knowledgebase/property-boundaries.html

For questions about the responsibility for ditches please refer to Hampshire County Council's website at: http://www3.hants.gov.uk/roads/highway-flooding/highways-drainage/your-responsibilities.htm

This plan is made on the basis of information at present available to the County Council and is made on the distinct understanding that, in the absence of negligence, neither the County Council nor I as an officer of the Council is to be held responsible should you rely on this statement and consequently suffer damage



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Appendix F

DMRB EXAMPLES OF COMPACT GRADE SEPARATION

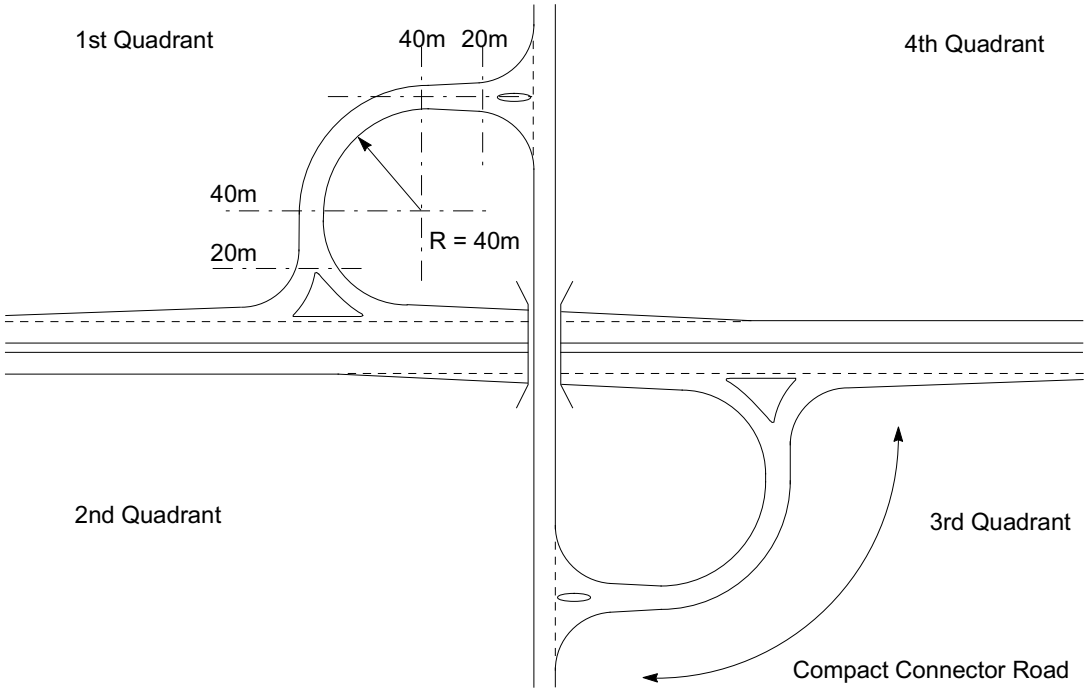

Figure 7/1 **Example of Compact Grade Separation for 4 Arm Junction, Showing Merge and Diverge Tapers**

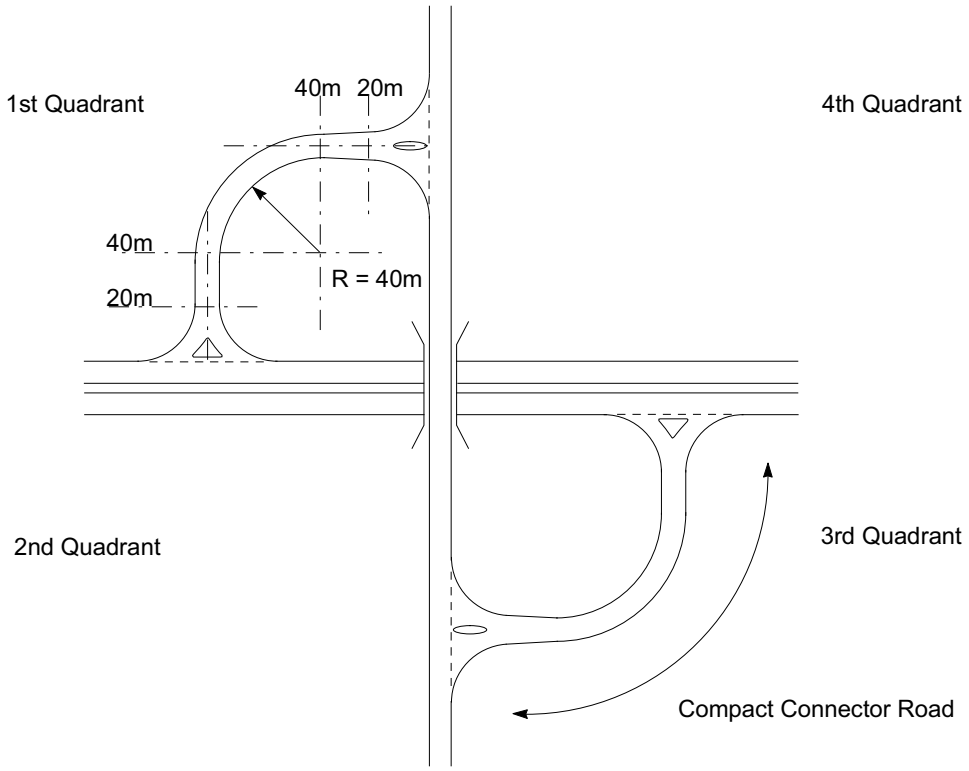

Figure 7/2 **Example of Compact Grade Separation for 4 Arm Junction, Without Merge and Diverge Tapers**

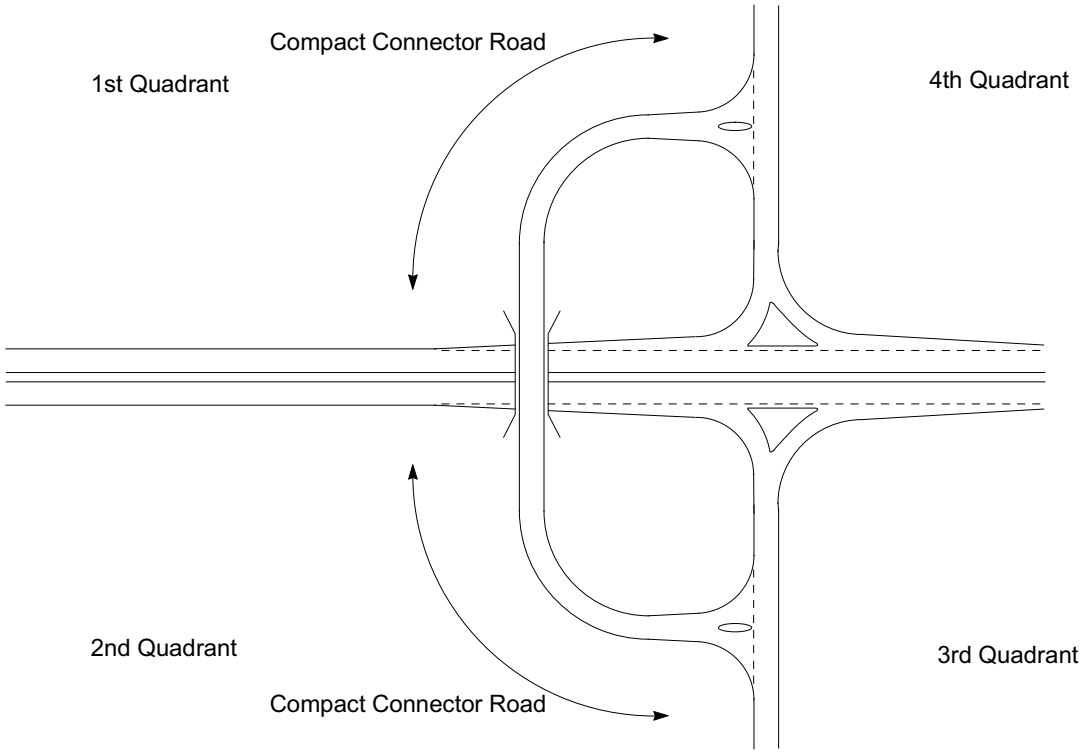

Figure 7/3 Compact Grade Separation for 4 Arm Junction, Showing Merge and Diverge Tapers

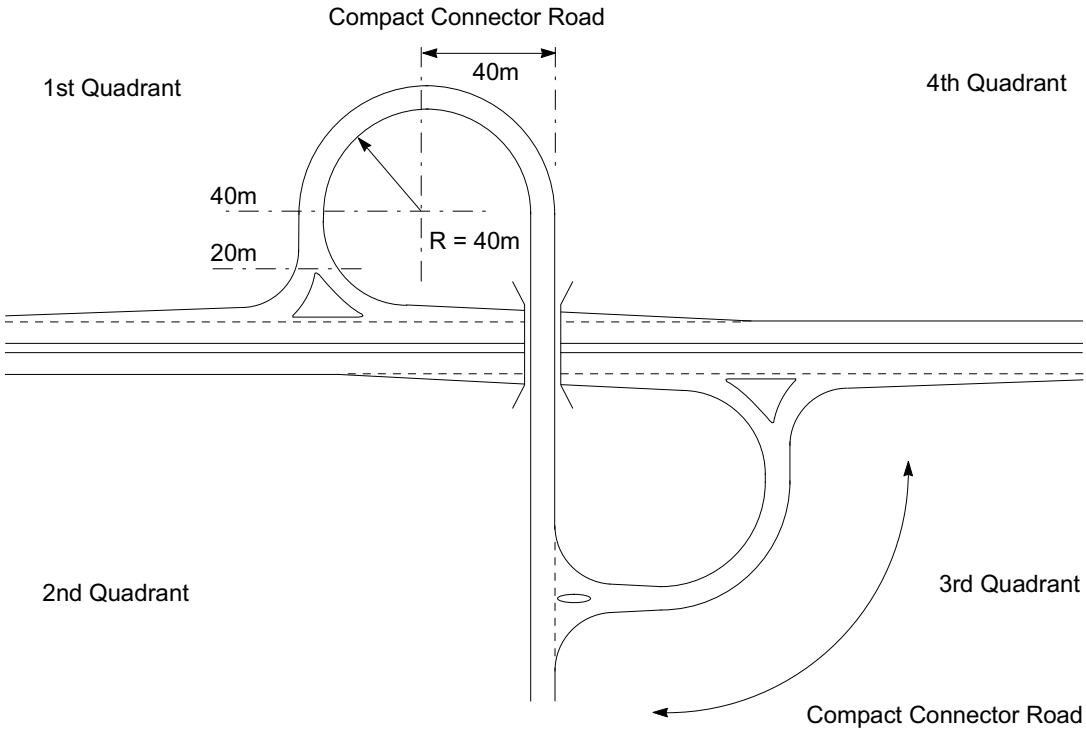

Figure 7/4 Compact Grade Separation for 3 Arm Junction, Showing Merge and Diverge Tapers

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