

Appendix 1 Traffic Assessment



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Whitehill & Bordon Relief Road

Technical Note: SATURN 2026 forecast results

10/02/2014

Quality Management

Issue/revision	Issue 1	Revision 1	Revision 2	Revision 3
Remarks	Initial assessment	Revisions to highway design	FINAL – incorporating client comments	
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Whitehill & Bordon Relief Road

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1 Project background

- 1.1.1 WSP - PB were commissioned by Hampshire County Council (HCC) in July 2013 to undertake a review of the route options which had been initially considered by HCC for a proposed relief road to serve the regeneration of the existing town of Whitehill & Bordon. The Ministry of Defence (MoD) facilities at Bordon, Hampshire, are to be decommissioned during late 2015 with the majority of military activity ceasing by that time. It is the intention to redevelop the MoD site from 2015 – 2035 which will comprise up to:
- 4,000 homes
 - 30,000 sq. m of retail
 - 122,000 sq. m of commercial floor space
- 1.1.2 The Project Delivery Board, which comprised East Hampshire District Council (EHDC), HCC, Defence Infrastructure Organisation (DIO), Homes and Communities Agency (HCA), Whitehill Town Partnership and Whitehill Town Council, developed a Masterplan to ensure the future growth of the town. The Masterplan was approved in June 2010 and updated in May 2012 (The Whitehill & Bordon Eco-Town Delivery Board, Whitehill & Bordon Eco-town Masterplan, Revised May 2012).
- 1.1.3 HCC adopted the Emerging Transport Strategy in September 2011 which stated the need for delivery of the relief road as part of the Masterplan. It is the intention to construct a relief road to serve the development of the Masterplan and ease existing pressure on the A325 as well as to serve the Masterplan development. The existing section of the A325 which runs through the centre of Whitehill and Bordon would be downgraded to facilitate creation of a new town centre by reducing severance and encouraging pedestrian movement with active shop frontages along the road.
- 1.1.4 The Homes and Communities Agency (HCA) are seeking to redevelop Louisburg Barracks as part of the Masterplan as an early phase (starting on-site in March 2015) which is contingent on work on the relief road being started by this date.
- 1.1.5 The Whitehill & Bordon base year model was developed to reflect 2010 traffic conditions with the aim of investigating the traffic impacts of the proposed Whitehill & Bordon development. The data used to develop the base year model is less than five years old and thus should provide an up-to-date basis for the assessment of the Relief Road. The model consists of a highway assignment model, public transport and variable demand model. The demand model has both mode choice and destination choice components in order that the impacts of developments can be properly assessed. In addition the demand model generates movements by the active modes (walking and cycling).
- 1.1.6 The models were developed for the following time periods:
- AM peak period (07:00-10:00) – assigned peak hour is 08:00-09:00
 - Inter-peak period (10:00-16:00) – assigned average hour is the period total divided by six
 - PM peak period (16:00-19:00) – assigned peak hour is 17:00-18:00
- 1.1.7 The 2010 base year models all validate against standard criteria (GEH values, convergence and journey times). As such it was considered appropriate by MVA to use the base year models as a suitable base for forecasting and testing of development scenarios.
- 1.1.8 Overall 21 forecast scenarios were run for years 2026 and 2036 using different assumptions about the mode share and containment targets, treatment of the A325 in Whitehill & Bordon and development growth in the area of interest. In all scenarios Option 4 (Inner relief road) is modelled as part of the new development (except the Fallback Option), which is aligned to the west of the existing A325.

1.1.9 The purpose of the relief road has been defined by HCC in the paper delivered to the Executive Member for Environment and Transport (22 January 2013) as follows:

- **Relieve Congestion on the A325:** The A325 currently carries heavy traffic flows, causing local issues within the town (congestion, severance, driver delay and frustration, pollution) and creates a barrier to strategic travel, with the A325 being seen as a constraint to local movement and growth. The relief road would address this issue within the town, providing a free-flow alternative to the existing A325, removing non-local traffic from the core of the town
- **Enable the new town centre:** The delivery of the relief road would reduce significantly the levels of traffic on the existing A325 (by some 40%), which would help deliver the conditions necessary to provide a successful town centre for Whitehill & Bordon
- **Provide access to the development:** The relief road would deliver critical road based access to the new development areas (4,000 dwellings, 122,000sqm commercial space and 30,000sqm retail)
- **Reduce severance:** Due to the heavy flow and dominance of traffic on the A325, there is an issue with community severance. The relief road would reduce traffic on the A325, providing conditions to encourage a permeable town that links the new development, the town centre and the existing town areas

1.2 Report purpose and structure

1.2.1 This technical note is intended to present the modelling results for different designs for the proposed Whitehill & Bordon relief road. The structure of this report is as follows:

- Chapter 2 provides details on the impact of the forecast traffic on the network when comparing the outer relief road (Option 2), inner relief road (Option 4) and the Do Minimum
- Chapter 3 shows the AADT flows for outer relief road (Option 2) and inner relief road (Option 4)
- Chapter 4 provides conclusions

2 Network impacts

2.1 Introduction

- 2.1.1 Previously MVA ran 21 forecast scenarios for years 2026 and 2036. Of these scenarios, the 'Option 1 (Masterplan)' was deemed to be appropriate for testing of different relief road options for Whitehill & Bordon as a scenario likely to produce a Central case forecast.
- 2.1.2 A total of seven relief road options have been proposed prior to the commencement of modelling. The modelling discussed within this technical note was carried out for Option 2 and Option 4. The Option 4 alignment is regarded as the most typical of the various inner relief road designs. Appendix A contains indicative drawings detailing the outer relief road (Option 2) and inner relief road (Option 4) alignments as figure A.1 and figure A.2 respectively.
- 2.1.3 The analysis has been undertaken using the transport models with no changes to the base model network or matrices. WSP-PB has run forecast models for the Whitehill & Bordon development for years of 2026 and 2036. Within this technical note results for 2026 will be discussed as having looked at both the 2026 and 2036 assignments the general distribution and behaviour of traffic is broadly similar. Three different scenarios will be discussed within this technical note, these include:
- Do Minimum (Whitehill & Bordon development without relief road)
 - Outer Relief Road (Option 2 - Whitehill & Bordon development with outer relief road at 40mph)
 - Inner Relief Road (Option 4 - Whitehill & Bordon development with inner Relief Road at 30mph)
- 2.1.4 The development and network assumptions that have been included within the 2026 transport models include:
- Masterplan – full development including 4,000 houses and 5,500 new jobs
 - a 50% mode share and 50% containment with traffic management on the A325

2.2 Outer relief road (Option 2) comparison against Do Minimum

- 2.2.1 Appendix B contains difference figures which show flow difference between the outer relief road peak hour model runs and respective Do Minimum (DM) for the AM peak (figure B.1), Inter peak (figure B.2) and PM peak (figure B.3) hours. The red lines on each figure represent an increase in traffic flow while the blue lines represent a decrease in traffic flow.
- 2.2.2 In all peaks, the outer relief road shows an increase in flow in both directions on the A325 Petersfield Road south of Whitehill & Bordon and A325 Farnham Road to the north when compared to the DM. The increase in flow for these strategic roads is shown in table 2.1.

Table 2.1: 2026 Outer relief road compared to 2026 DM flow difference for strategic roads (pcu)

Direction / Scenario	AM Peak	Inter Peak	PM Peak
A325 Farnham Road (NB)	436	81	189
A325 Farnham Road (SB)	369	163	163
A325 Petersfield Road (NB)	355	59	155
A325 Petersfield Road (SB)	149	133	110

2.2.4 The increased strategic traffic on the respective sections of the A325 is attracted to the outer relief road, leading to decreases in flow on the A325 Petersfield Road / High Street / Camp Road through Whitehill & Bordon itself.

2.2.5 The only section which shows an increase in flow in the AM peak on the A325 Petersfield Road in the southbound direction which shows an increase due to traffic being attracted to the outer relief road to avoid the A325 to the north.

2.2.6 Table 2.2 shows the difference in flows between the outer relief road and DM for the following sections of the A325:

- A325 Petersfield Road (north of Firgrove Road / Liphook Road roundabout and south of Lemon Grove)
- A325 Camp Road (north of Ennerdale Road and south of B3002 Station Road / B3002 Lindford Road)

Table 2.2: 2026 Option 2 compared to 2026 DM flow difference for A325 within Whitehill & Bordon (pcu)

Direction / Scenario	AM Peak	Inter Peak	PM Peak
A325 Petersfield Road (NB)	-194	-230	-237
A325 Petersfield Road (SB)	138	-67	-154
A325 Camp Road (NB)	-631	-356	-315
A325 Camp Road (SB)	-402	-123	-186

2.2.7 Decreases in flow can also be seen consistently through the peaks on road such as Hogmoor Road, Drift Road, Oakhanger Road, Whitehill Road and Hollywater Road showing the outer relief road to be a significant attractor for traffic.

2.2.8 Flows along the outer relief road are detailed in table 2.3 as the highest flow for the respective direction north and south of Oakhanger Road. The respective sections of the relief road which consistently give the highest levels of flow are as follows:

- Between Oakhanger Road and junction six access (see Appendix A.1)
- Between Louisburg development eastern access junction and A325 Farnham Road

Table 2.3: 2026 Outer relief road (Option 2) flows (pcu)

Direction / Scenario	AM Peak	Inter Peak	PM Peak
Relief Road (South of Oakhanger Rd – NB)	950	351	544
Relief Road (South of Oakhanger Rd – SB)	592	385	523
Relief Road (North of Oakhanger Rd – NB)	1044	347	405
Relief Road (North of Oakhanger Rd – SB)	486	262	475

2.2.9 The outer relief road (Option 2) acts as a significant attractor for strategic traffic and reduces the projected flow of traffic through Whitehill & Bordon on the existing A325.

2.3 Inner relief road (Option 4) comparison against Do Minimum

2.3.1 Appendix C contains difference figures which show flow difference between the Option 2 peak hour model runs and respective DM for the AM peak (figure C.1), Inter peak (figure C.2) and PM peak (figure C.3) hours. The red lines on each figure represent an increase in traffic flow while the blue lines represent a decrease in traffic flow.

2.3.2 Across all of the modelled peaks, the inner relief road shows increased flow in the both directions on both the A325 Petersfield Road and A325 Farnham Road when compared to the DM. The increase in flow for these strategic roads is shown in table 2.4.

Table 2.4: 2026 Option 4 compared to 2026 DM flow difference for strategic roads (pcu)

Direction / Scenario	AM Peak	Inter Peak	PM Peak
A325 Farnham Road (NB)	320	25	101
A325 Farnham Road (SB)	305	119	118
A325 Petersfield Road (NB)	199	39	104
A325 Petersfield Road (SB)	142	87	46

2.3.3 The increased strategic traffic on the respective sections of the A325 re-routes onto the inner relief road (Option 4), which again leads to decreases in flow on the A325 Petersfield Road / High Street / Camp Road through Whitehill & Bordon.

2.3.4 Table 2.5 shows the difference in flows between the inner relief road and DM for the following sections of the A325:

- A325 Petersfield Road (north of Firgrove Road / Liphook Road roundabout and south of Lemon Grove)
- A325 Camp Road (north of Ennerdale Road and south of B3002 Station Road / B3002 Lindford Road)

Table 2.5: 2026 Option 4 compared to 2026 Do Minimum flow difference for A325 within Whitehill & Bordon (pcu)

Direction / Scenario	AM Peak	Inter Peak	PM Peak
A325 Petersfield Road (NB)	-175	-199	-240
A325 Petersfield Road (SB)	-223	-91	-153
A325 Camp Road (NB)	-611	-387	-315
A325 Camp Road (SB)	-271	-83	-126

2.3.5 As with the outer relief road, alternative north to south routes such as Hogmoor Road, Drift Road, Whitehill Road and Hollywater Road show a decrease in flow showing the inner relief road is a significant attractor for traffic.

2.3.6 Flows along the inner relief road (Option 4) are detailed in table 2.6 and show the highest flow for the respective direction north and south of Oakhanger Road.

Table 2.6: 2026 Inner Relief Road (Option 4) flows (pcu)

Direction / Scenario	AM Peak	Inter Peak	PM Peak
Relief Road (South of Oakhanger Rd – NB)	796	476	560
Relief Road (South of Oakhanger Rd – SB)	535	300	497
Relief Road (North of Oakhanger Rd – NB)	1195	581	653
Relief Road (North of Oakhanger Rd – SB)	679	403	612

- 2.3.7 The section of the relief road to the north (between the Louisburg Barracks development and A325) has the highest flow as the scheme assumes no junction with the existing Station Road therefore traffic wanting to access Station Road will have to use the relief road and then through the Louisburg Barracks.
- 2.3.8 South of the Budds Lane / Station Road junction there is some variation as to the precise section of the relief road which has the highest levels of flow, however this is consistently north of the junction 8 (see Appendix A.2).
- 2.3.9 The inner relief road (Option 4) acts as a significant attractor for strategic traffic and reduces the projected flow of traffic through Whitehill & Bordon on the A325.

2.4 Outer relief road (Option 2) comparison against Inner relief road (Option 4)

- 2.4.1 Appendix D contains difference figures which show flow difference between the outer relief road peak hour model runs and respective inner relief road model runs for the AM peak (figure D.1), Inter peak (figure D.2) and PM peak (figure D.3) hours. The red lines on each figure represent an increase in traffic flow while the blue lines represent a decrease in traffic flow.
- 2.4.2 Comparing the outer relief road (Option 2) and the inner relief road (Option 4) alignments shows the outer relief road generating an increase in traffic at either end of the A325 in both directions for all peak hour periods. These differences are shown in table 2.7.

Table 2.7: 2026 Outer relief road (Option 2) compared to 2026 inner relief road (Option 4) difference for strategic roads (pcu)

Direction / Scenario	AM Peak	Inter Peak	PM Peak
A325 Farnham Road (NB)	116	56	88
A325 Farnham Road (SB)	65	44	45
A325 Petersfield Road (NB)	156	20	50
A325 Petersfield Road (SB)	7	47	64

- 2.4.3 The outer relief road is attracting greater levels of strategic traffic from routes further away from Whitehill & Bordon. Table 2.8 show that there is an increase in traffic on the on A325 Petersfield Road in the southbound direction due to traffic being attracted to the outer relief road to avoid the A325 to the north.
- 2.4.4 The A325 Camp Road shows a decrease in traffic with the outer relief road in the southbound direction in all peak hour periods and in the northbound direction in the AM peak period. This shows that the outer relief road is attracting greater levels of traffic away from the northern section of the existing A325 than the inner relief road.

Table 2.8: 2026 Option 2 compared to 2026 Option 4 - difference on the A325 within Whitehill & Bordon (pcu)

Direction / Scenario	AM Peak	Inter Peak	PM Peak
A325 Petersfield Road (NB)	-19	-32	4
A325 Petersfield Road (SB)	362	24	0
A325 Camp Road (NB)	-19	30	0
A325 Camp Road (SB)	-131	-40	-60

2.4.5 The following road sections (see table 2.9) show variances between the outer relief road (Option 2) and the inner relief road (Option 4) over the three peaks:

- between A325 / Firgrove Road / Liphook Road roundabout and Viking Way access junction
- between the Louisburg development access junctions

Table 2.9: 2026 Option 2 (Outer relief road) flows compared to Option 4 (Inner relief road) flows for common sections (pcu)

Direction / Scenario	AM Peak	Inter Peak	PM Peak
Relief Road South – NB (north of southern junction)	405	102	81
Relief Road South – SB (north of southern junction)	-74	92	150
Relief Road North – NB (between Louisburg accesses)	74	-189	-141
Relief Road North – SB (between Louisburg accesses)	41	4	38

2.4.6 Across common sections of the two relief road options, the outer relief road is attracting greater levels of traffic in the majority of peak hour periods. The results shown in table 2.9 suggest that the outer relief road is more successful in attracting traffic away from existing roads in Whitehill & Bordon than the inner relief road.

3 Annual Average Daily Traffic flows

3.1 Methodology

- 3.1.1 Annual Average Daily Traffic (AADT) 24 hour flows were calculated for Option 2 (Outer relief road) and Option 4 (Inner relief road) for use within the Environmental Impact Assessment. These values were calculated by factoring up the AM peak and PM peak hour flows to represent three hour AM peak period (07:00-10:00) and PM peak period (16:00-19:00) flows. These were then combined with inter peak flow factored up to 6 hours (10:00-16:00).
- 3.1.2 Appropriate survey data and TRADS data was used in this factoring process. The combined AM peak, Inter peak and PM peak traffic flows created a 12 hour flow. The 12 hour flow was then factored up using the COBA methodology detailed in the Design Manual for Roads and Bridges (DMRB) Volume 13 Part 4 which takes into account seasonality of the survey data used to factor up traffic flows.

3.2 Outer relief road (Option 2) comparison against DM

- 3.2.1 Figure 3.1 shows AADT absolute flow difference and percentage difference between the outer relief road and DM. The red lines on each figure represent an increase in traffic flow while the blue lines represent a decrease in traffic flow with all flows shown as two-way. Table 3.1 shows that increase and decrease in traffic flows on the network in absolute changes and the percentage difference.

Table 3.1: 2026 Outer relief road (Option 2) compared to 2026 DM flow difference (pcu)

Direction / Scenario	AADT (absolute)	% difference
A325 Farnham Road (north of Farnham Road/relief road junction)	6,390	31.1%
A325 Farnham Road (south of Farnham Road/relief road junction)	-13,058	-63.6%
A325 Petersfield Road (south of Firgrove Road/Liphook Road roundabout)	4,605	26.6%
A325 Petersfield Road (north of Firgrove Road/Liphook Road roundabout)	-4,186	-29.4%
Option 2 (Outer relief road) – southern end	15,229	-
Option 2 (Outer relief road) – northern end	19,743	-

- 3.2.2 The outer relief road (Option 2) is attracting traffic from other alternative north-south routes on the wider road network onto the existing A325 Farnham Road and A325 Petersfield Road (31.1% and 26.6%). This is traffic that is currently avoiding the existing A325 through Whitehill & Bordon due to existing delays through the town.
- 3.2.3 Figure 3.1 shows that there are considerable traffic reductions on the existing A325 through Whitehill & Bordon of between 29% and 49% with the outer relief road being seen to be an effective option in reducing traffic levels on the existing A325.
- 3.2.4 The outer relief road (Option 2) shows an AADT flow of 15,229 on the southern end of the route with 19,743 on the northern end.

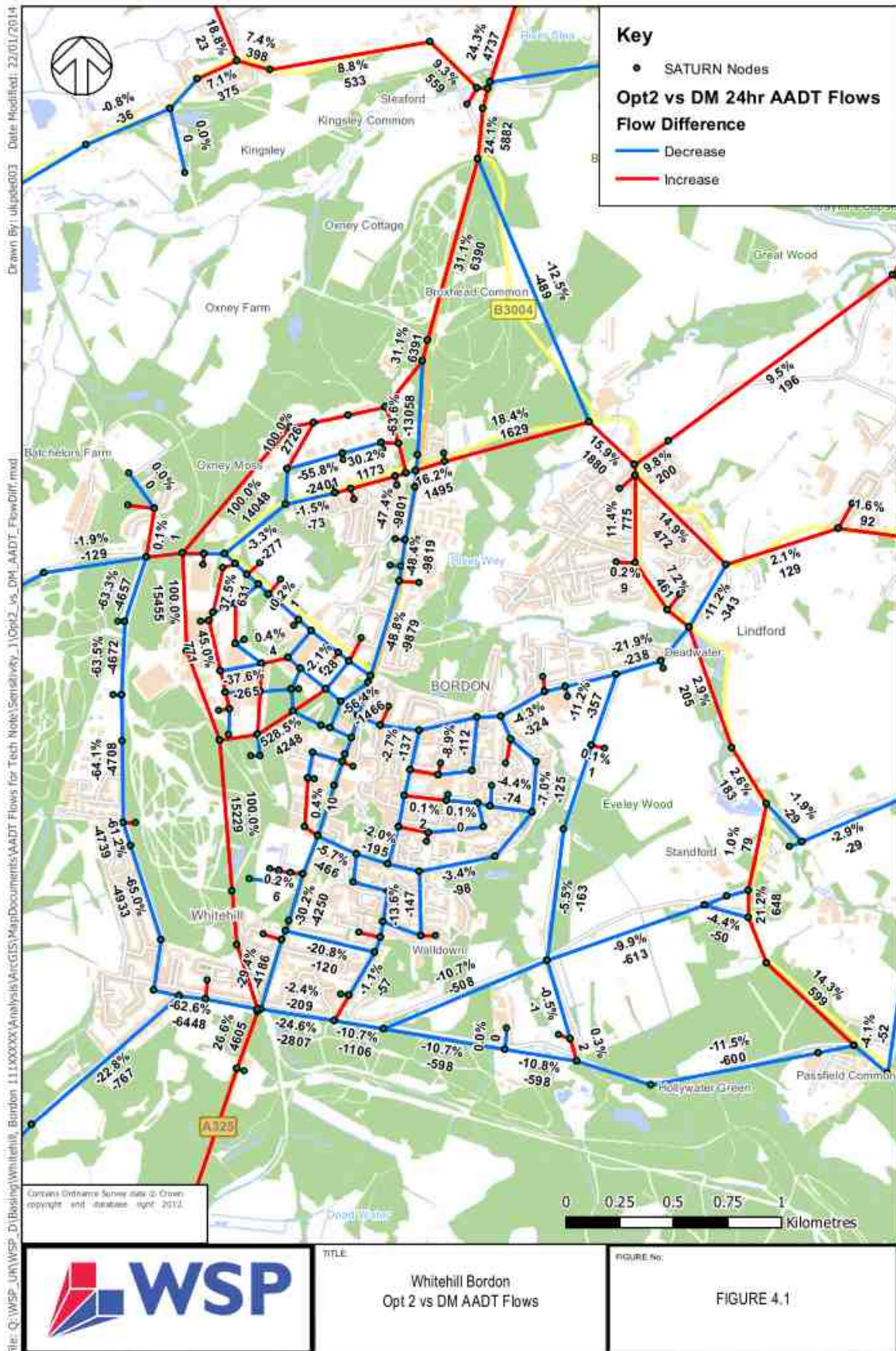


Figure 3.1: 2026 Outer relief road (Option 2) compared to DM (AADT 24 hour flows)

3.3 Inner relief road (Option 4) comparison against DM

3.3.1 Figure 3.2 shows AADT absolute flow difference and percentage difference between Option 2 and Do Minimum. The red lines on each figure represent an increase in traffic flow while the blue lines represent a decrease in traffic flow with all flows shown as two-way. Table 3.2 shows that increase and decrease in traffic flows on the network in absolute changes and the percentage difference.

Table 3.2: 2026 Option 4 (Inner relief road) compared to 2026 Do Minimum flow difference (pcu)

Direction / Scenario	AADT (absolute)	% difference
A325 Farnham Road (north of Farnham Road/relief road roundabout)	4,589	22.4%
A325 Farnham Road (south of Farnham Road/relief road roundabout)	-12,751	-62.1%
A325 Petersfield Road (south of Firgrove Road/Liphook Road roundabout)	3,215	18.6%
A325 Petersfield Road (north of Firgrove Road/Liphook Road roundabout)	-5,338	-37.5%
Option 2 (Outer relief road) – southern end	11,955	-
Option 2 (Outer relief road) – northern end	19,412	-

3.3.2 As with the outer relief road (Option 2) the inner relief road attract traffic attracted from other alternative north-south routes to the existing A325 albeit in lower numbers (22.4% and 18.6%). This will be due to the lower speed limit on Option 4 (Inner relief road) and the greater number of junctions along the route.

3.3.3 Even though the inner relief road (Option 4) is attracting less traffic from alternative routes than the outer relief road (Option 2) on the existing A325 through Whitehill & Bordon there are still reductions in the order of 35% and 44% as seen in figure 3.2.

3.3.4 The inner relief road (Option 4) shows an AADT flow of 11,955 on the southern end of the route with 19,412 on the northern end meaning that it is attracting less traffic than the outer relief road.

3.4 Summary

3.4.1 Figure 3.3 shows the AADT flows comparison of the outer relief road (Option 2) against the inner relief road (Option 4).

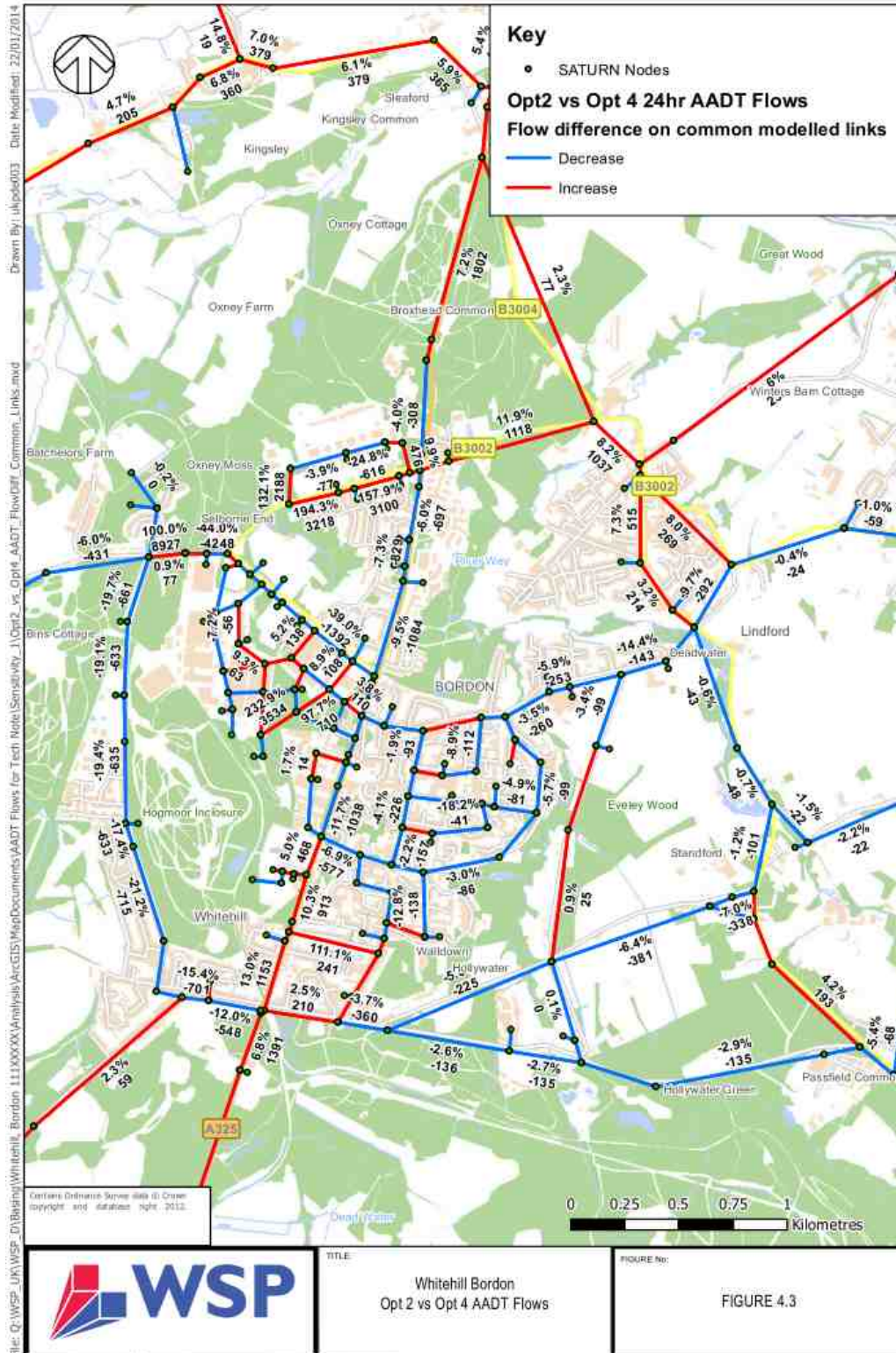


Figure 3.3: 2026 Outer relief road (Option 2) compared to 2026 Inner relief road (Option 4)

-
- 3.4.2 A comparison of the AADT flows for the common sections of two relief road options i.e. southern end and northern end shows that the:
- Outer relief road attract greater levels of traffic across the majority of the route with 27.4% greater flows on the southern section (15,229 AADT against 11,955 AADT)
 - Outer relief road shows a greater reduction of traffic on the majority of the existing A325 when compared to the inner relief road of between 1.9% and 11.7%
 - Outer relief road attracts greater levels of more strategic traffic as shown by the 6.8% increase in traffic on the A325 Petersfield Road south of Firgrove Road/Liphook Road and the 7.2% increase in traffic on the A325 Farnham Road north of Camp Road
 - Outer relief road reduces traffic on the majority of the existing A325 through Whitehill & Bordon to a greater extent than the inner relief road with a 48.8% reduction compared to 43.4% reduction north of Budds Lane when compared to the DM
 - Outer relief road shows an increase in traffic on the southern section of the existing A325 between Conde Way and the A325 Petersfield Road/Firgrove Road/Liphook Road junction. This is due to more local traffic being attracting to the outer relief road and avoiding the A325 through Whitehill & Bordon
- 3.4.3 In summary the outer relief road attracts greater levels of traffic on the route and great levels of strategic traffic with a correspondng greater reduction in traffic levels on the majority of the existing A325 than the inner relief road.

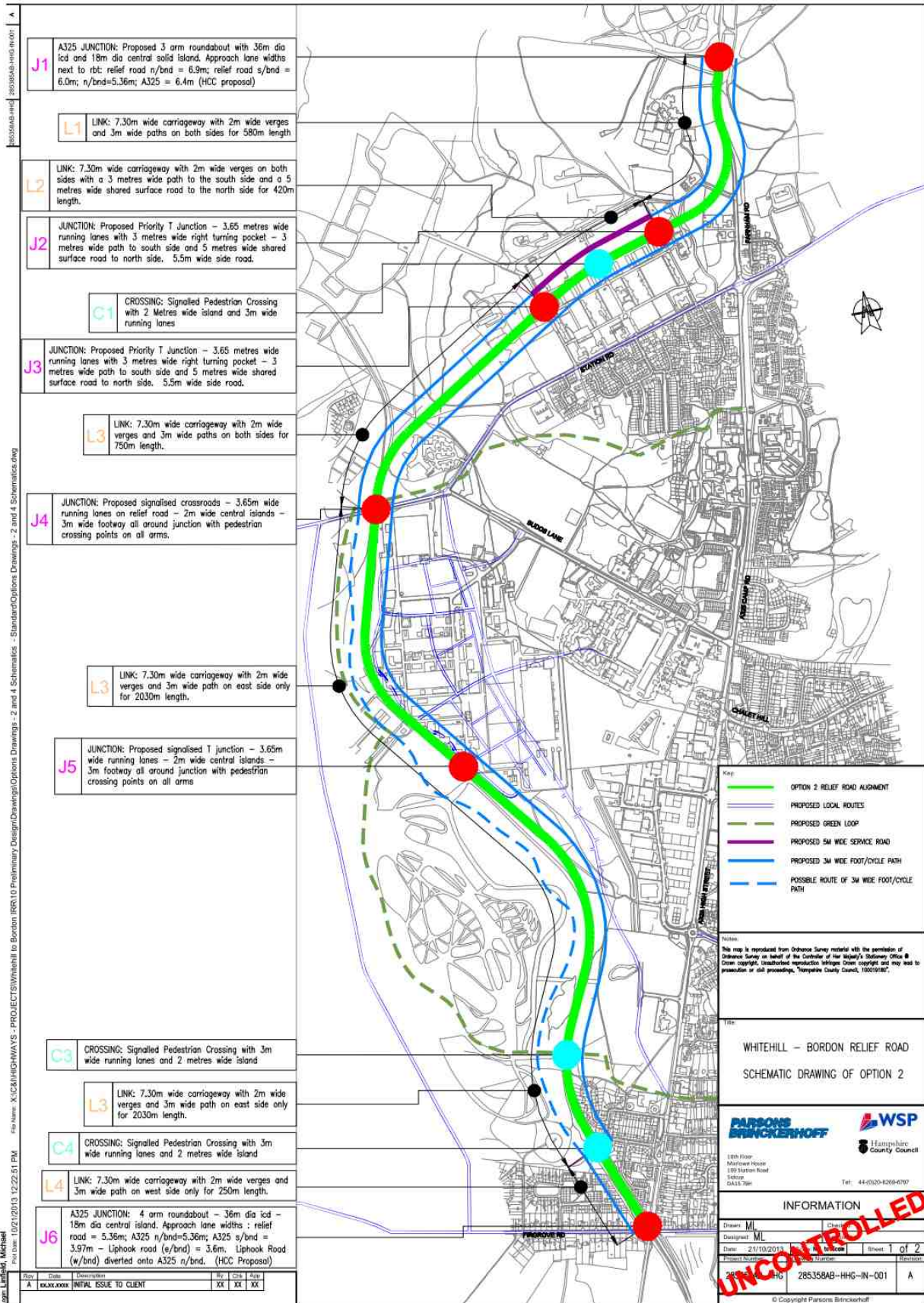
4 Conclusions

- 4.1.1 This technical note details the results of modelling carried out to assess the impact of the outer relief road (Option 2) and the inner relief road (Option 4) road designs for a forecast year of 2026.
- 4.1.2 The analysis has been undertaken using the transport models with no changes to the base model network or matrices. Both relief road options are shown to be significant attractors of traffic leading to increases in flow on the A325 north and south of Whitehill & Bordon. This leads to an associated decrease in flow to other neighbouring roads of limited capacity ensuring strategic traffic has an efficient route through the simulation area.
- 4.1.3 The comparison of the two relief road options for Whitehill & Bordon shows that the outer relief road (Option 2) shows a greater potential for attracting traffic and leads to more substantial decreases in flow on the existing A325 within Whitehill & Bordon which would be of significant benefit to local residents.
- 4.1.4 The outer relief road (Option 2) shows 3,274 (27.4%) greater AADT flows on the southern section of the route and 331 (0.2%) greater traffic flows on the northern section of the route.
- 4.1.5 The outer relief road (Option 2) shows a greater reduction of traffic on the majority of the existing A325 when compared to the inner relief road (Inner relief road) of between 1.9% and 11.7%.
- 4.1.6 On balance the traffic modelling work contained within this technical note shows that the outer relief road is more successful in traffic terms of relieving congestion on the A325, enabling the new town centre, providing access to the development and reducing severance on the existing A325 than the inner relief road.

Appendices

Appendix A

Relief road option plans



Logon: L:\info\Michael
 File Date: 10/21/2013 12:22:51 PM
 File Name: X:\CA\HIGHWAYS - PROJECTS\Whitehill to Bordon IRR10 Preliminary Design\Drawings\Options Drawings - 2 and 4 Schematics.dwg

J1	A325 JUNCTION: Proposed 3 arm roundabout with 36m dia icd and 18m dia central solid island. Approach lane widths next to rbt: relief road n/bnd = 6.9m; relief road s/bnd = 6.0m; n/bnd=5.36m; A325 = 6.4m (HCC proposal)
L1	LINK: 7.30m wide carriageway with 2m wide verges and 3m wide paths on both sides for 580m length
L2	LINK: 7.30m wide carriageway with 2m wide verges on both sides with a 3 metres wide path to the south side and a 5 metres wide shored surface road to the north side for 420m length.
J2	JUNCTION: Proposed Priority T Junction - 3.65 metres wide running lanes with 3 metres wide right turning pocket - 3 metres wide path to south side and 5 metres wide shored surface road to north side. 5.5m wide side road.
C1	CROSSING: Signalled Pedestrian Crossing with 2 Metres wide island and 3m wide running lanes
J3	JUNCTION: Proposed Priority T Junction - 3.65 metres wide running lanes with 3 metres wide right turning pocket - 3 metres wide path to south side and 5 metres wide shored surface road to north side. 5.5m wide side road.
L3	LINK: 7.30m wide carriageway with 2m wide verges and 3m wide paths on both sides for 750m length.
J4	JUNCTION: Proposed signalled crossroads - 3.65m wide running lanes on relief road - 2m wide central islands - 3m wide footway all around junction with pedestrian crossing points on all arms.
L3	LINK: 7.30m wide carriageway with 2m wide verges and 3m wide path on east side only for 2030m length.
J5	JUNCTION: Proposed signalled T junction - 3.65m wide running lanes - 2m wide central islands - 3m footway all around junction with pedestrian crossing points on all arms
C3	CROSSING: Signalled Pedestrian Crossing with 3m wide running lanes and 2 metres wide island
L3	LINK: 7.30m wide carriageway with 2m wide verges and 3m wide path on east side only for 2030m length.
C4	CROSSING: Signalled Pedestrian Crossing with 3m wide running lanes and 2 metres wide island
L4	LINK: 7.30m wide carriageway with 2m wide verges and 3m wide path on west side only for 250m length.
J6	A325 JUNCTION: 4 arm roundabout - 36m dia icd - 18m dia central island. Approach lane widths : relief road = 5.36m; A325 n/bnd=5.36m; A325 s/bnd = 3.97m - Liphook road (e/bnd) = 3.6m. Liphook Road (w/bnd) diverted onto A325 n/bnd. (HCC Proposal)

Key

- OPTION 2 RELIEF ROAD ALIGNMENT
- PROPOSED LOCAL ROUTES
- PROPOSED GREEN LOOP
- PROPOSED 5M WIDE SERVICE ROAD
- PROPOSED 3M WIDE FOOT/CYCLE PATH
- POSSIBLE ROUTE OF 3M WIDE FOOT/CYCLE PATH

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Title:
 WHITEHILL - BORDON RELIEF ROAD
 SCHEMATIC DRAWING OF OPTION 2

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INFORMATION

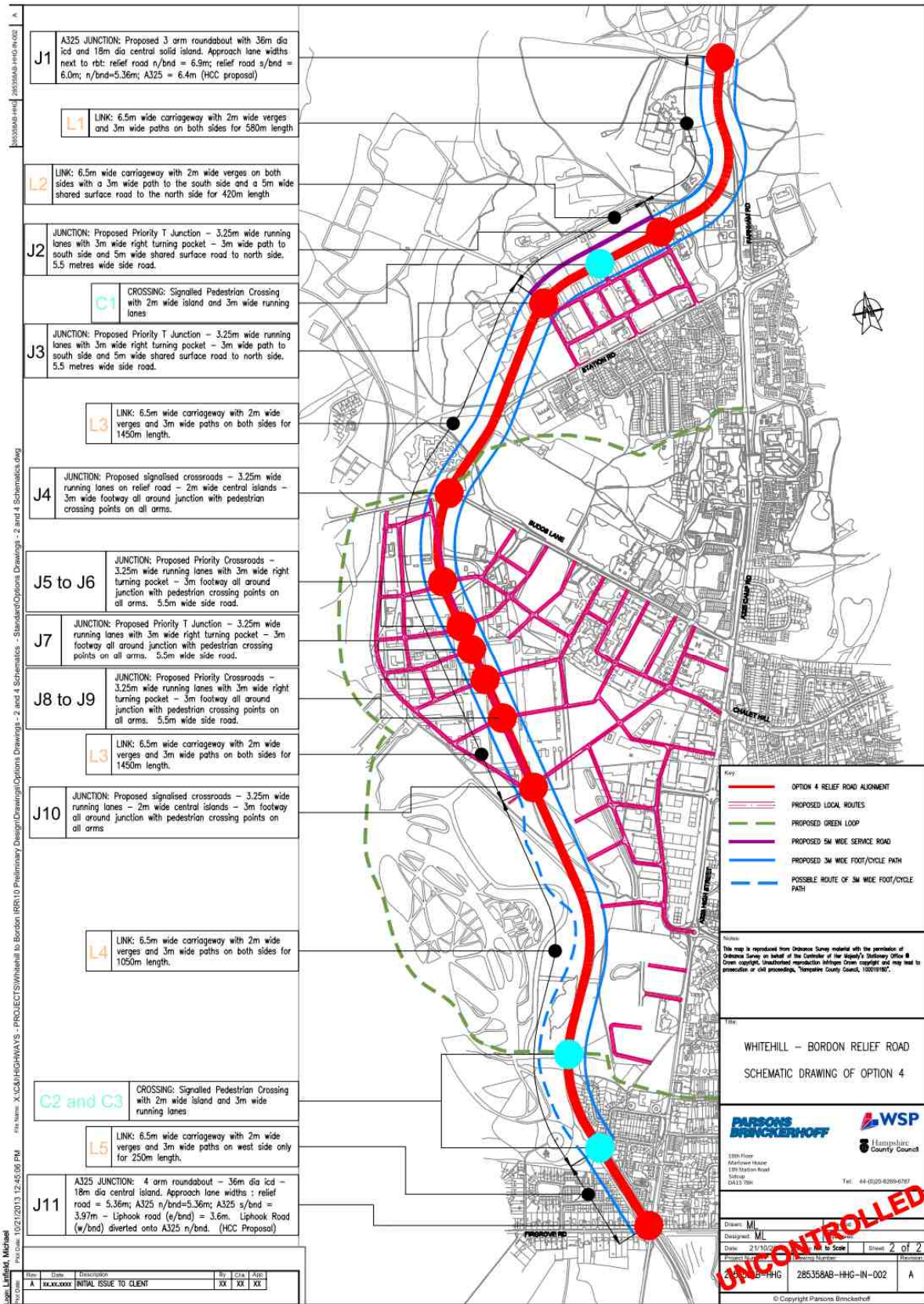
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Designer: ML	Scale:
Date: 24/10/2013	Sheet: 1 of 2
Project Name: 285358AB-HHG-IN-001	Revision:

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Appendix A.1: Outer relief road (Option 2)





Appendix A.2: Outer relief road (Option 4)

Appendix B

Outer relief road (Option 2) and Do Minimum comparison

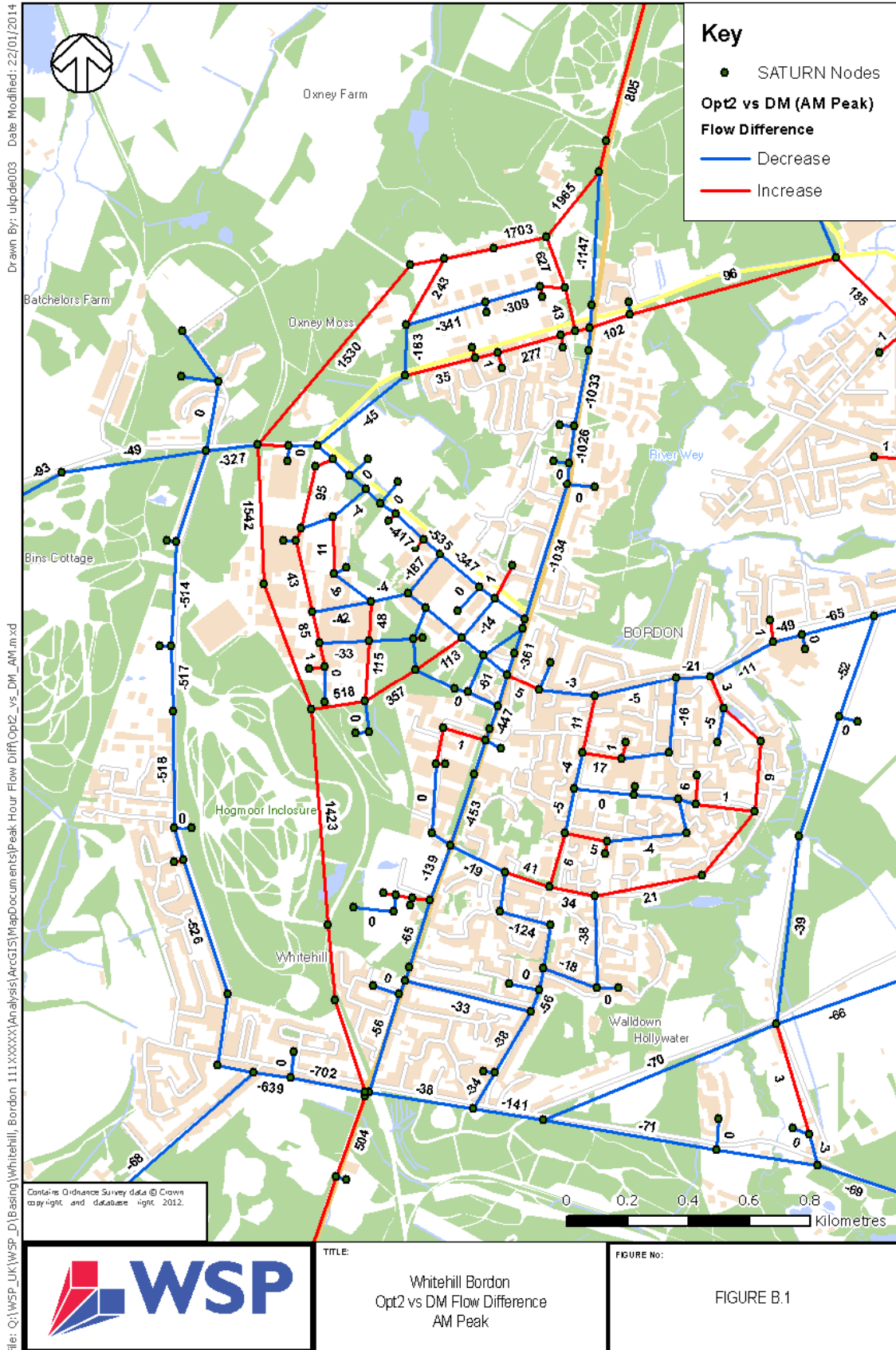
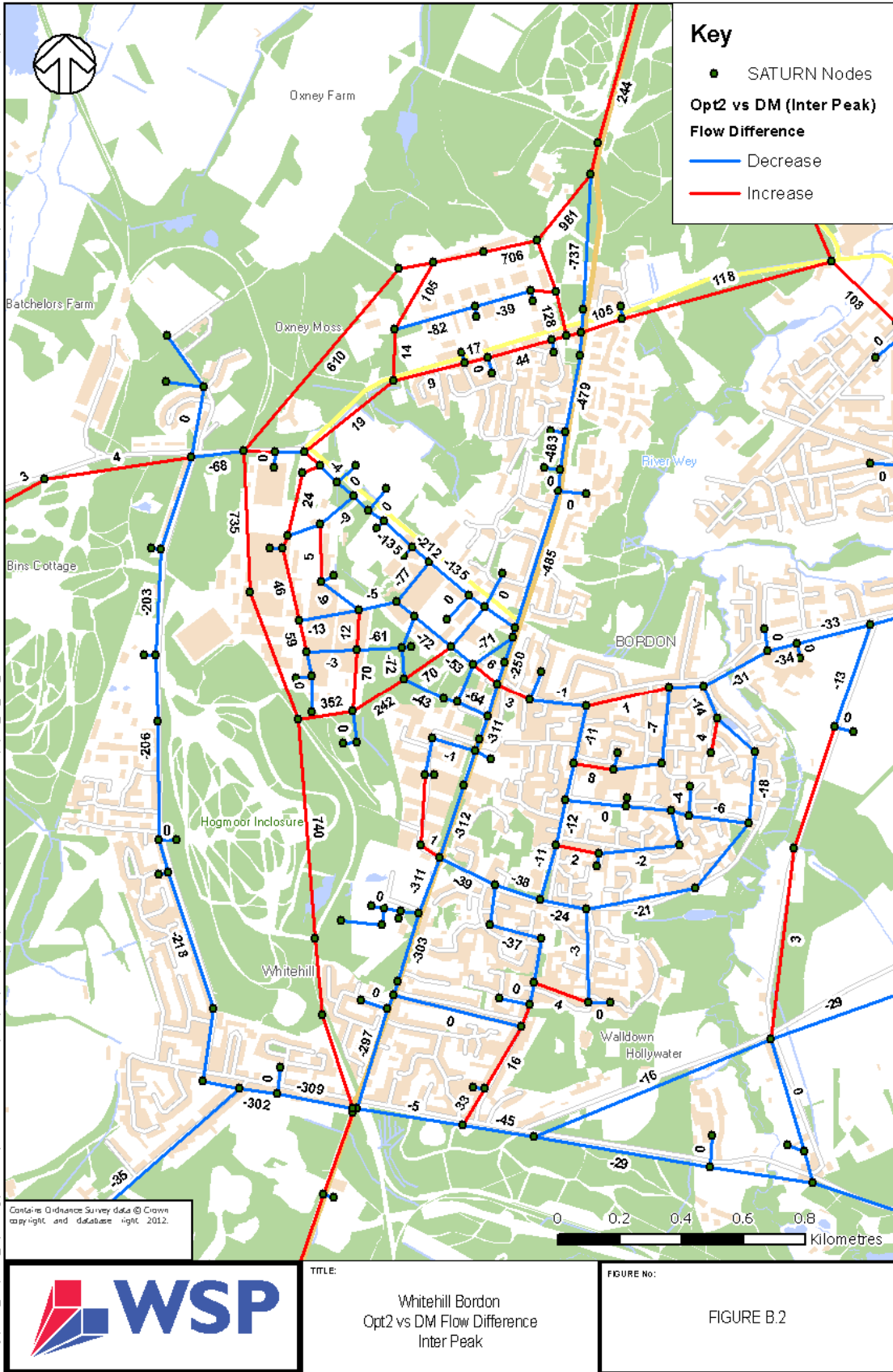


Figure B.1: 2026 Outer relief road (Option 2) vs. 2026 DM (AM peak)

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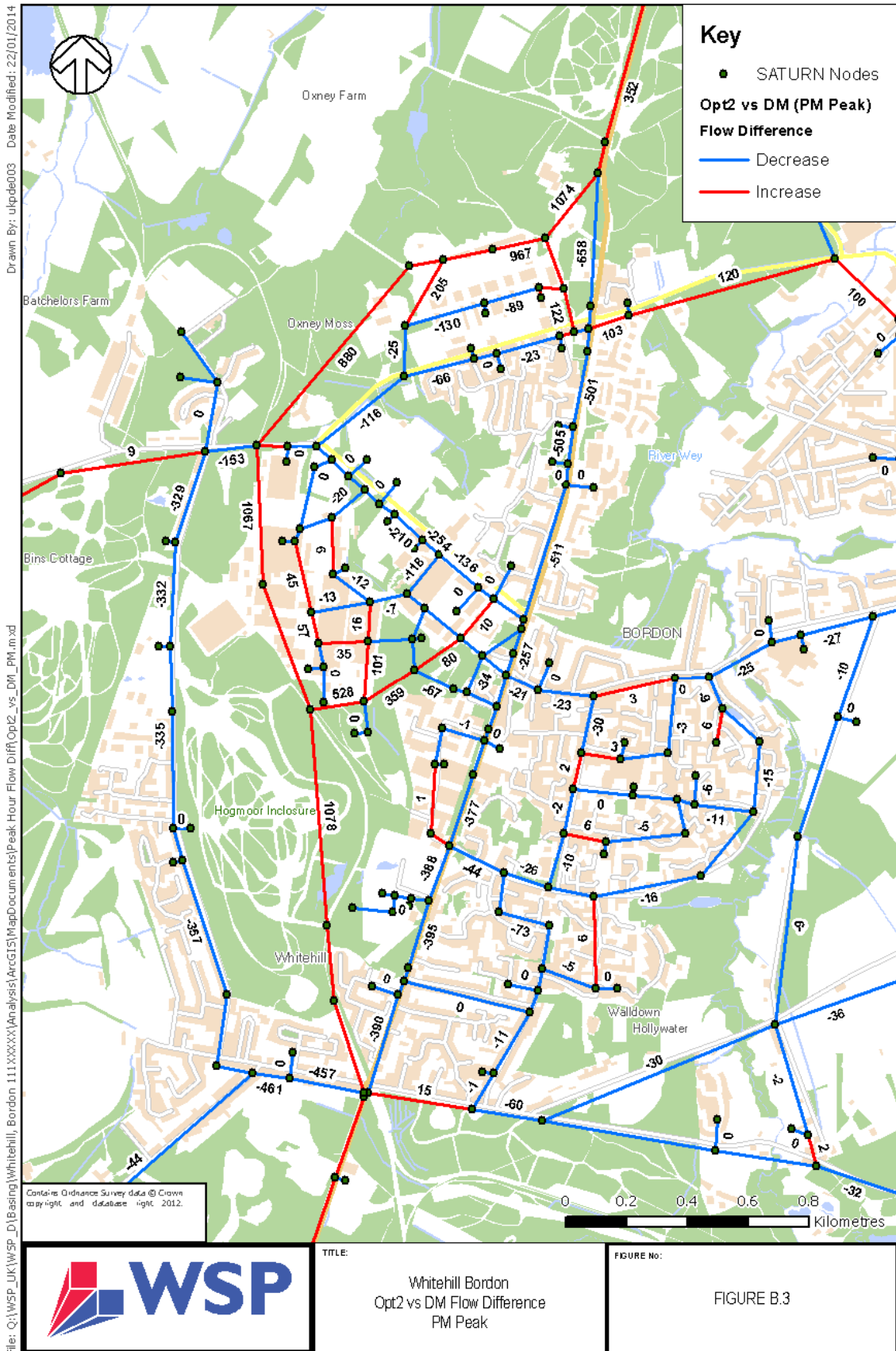


Figure B.3: 2026 Outer relief road (Option 2) vs. 2026 DM (PM peak)

Appendix C

Inner relief road (Option 4) and Do Minimum comparison

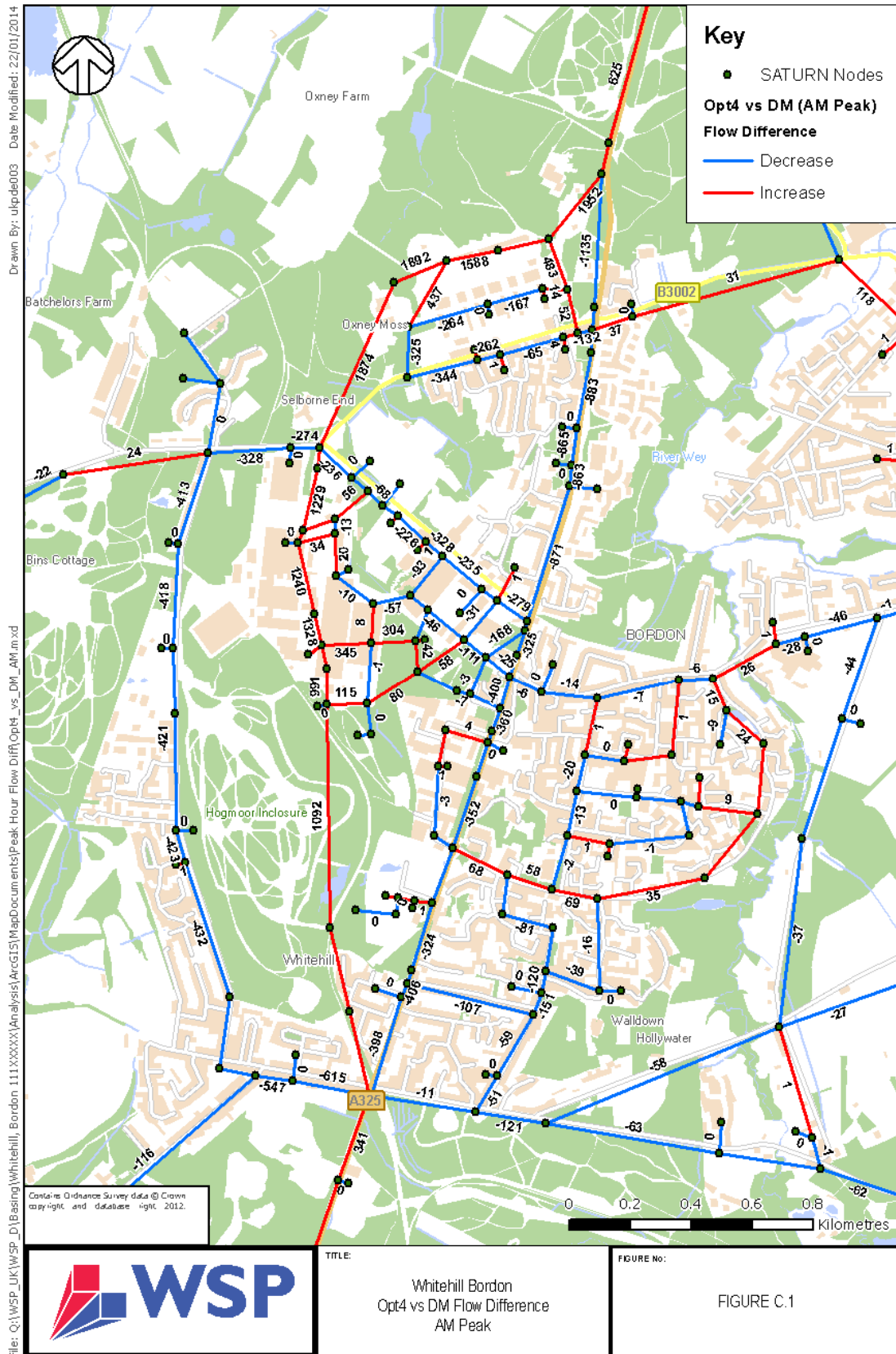


Figure C.1: 2026 Inner relief road (Option 4) vs. 2026 DM (AM peak)

File: Q:\WSP_UK\WSP_D1\Basing\Whitehill, Bordon 111\XXXXXX\Analysis\ArcGIS\MapDocuments\IPeak_Hour_Flow_Diff_Opt4_vs_DM_IP.mxd Date Modified: 22/01/2014

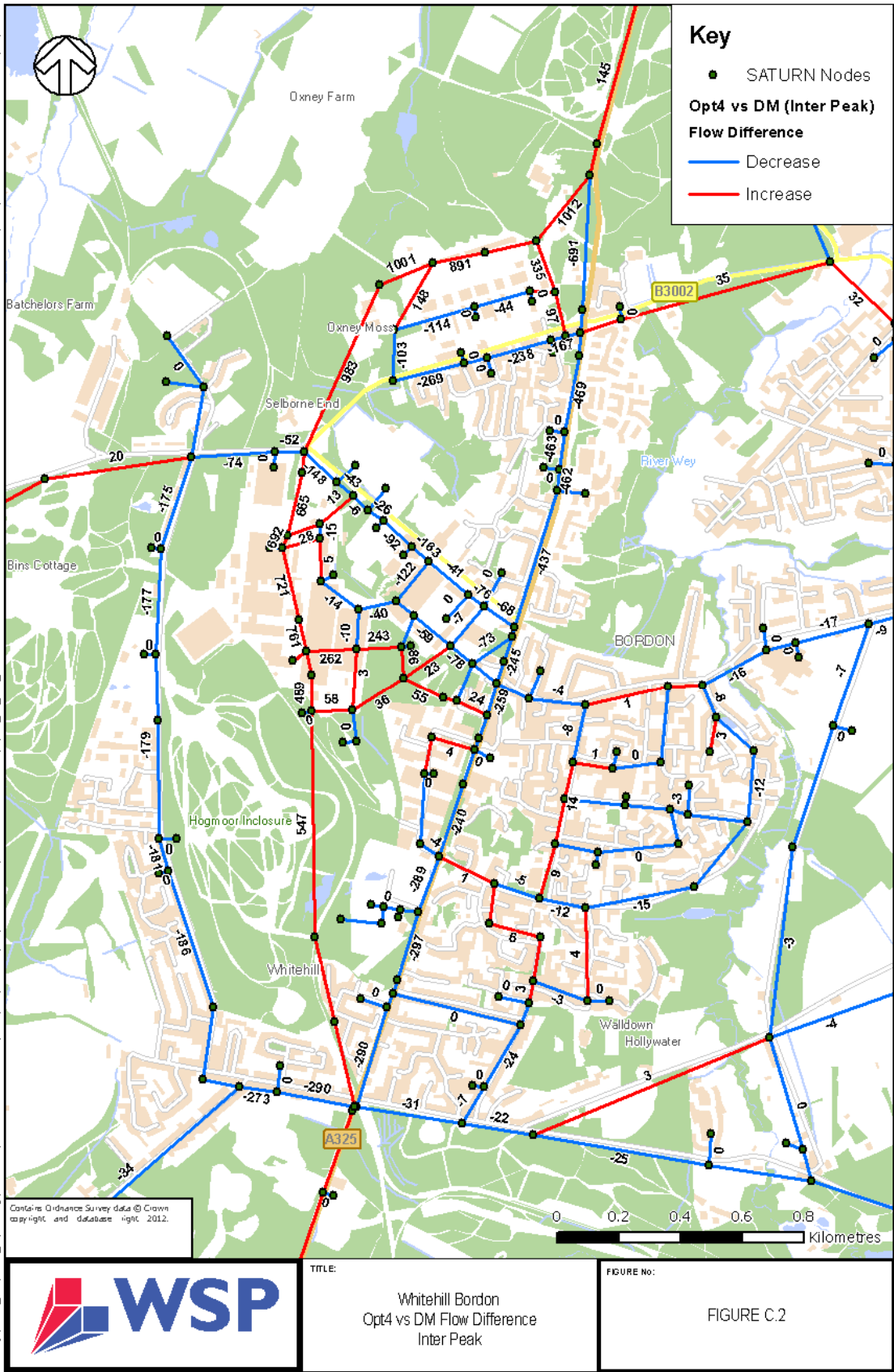


Figure C.2: 2026 Inner relief road (Option 4) vs. 2026 DM (Inter Peak)

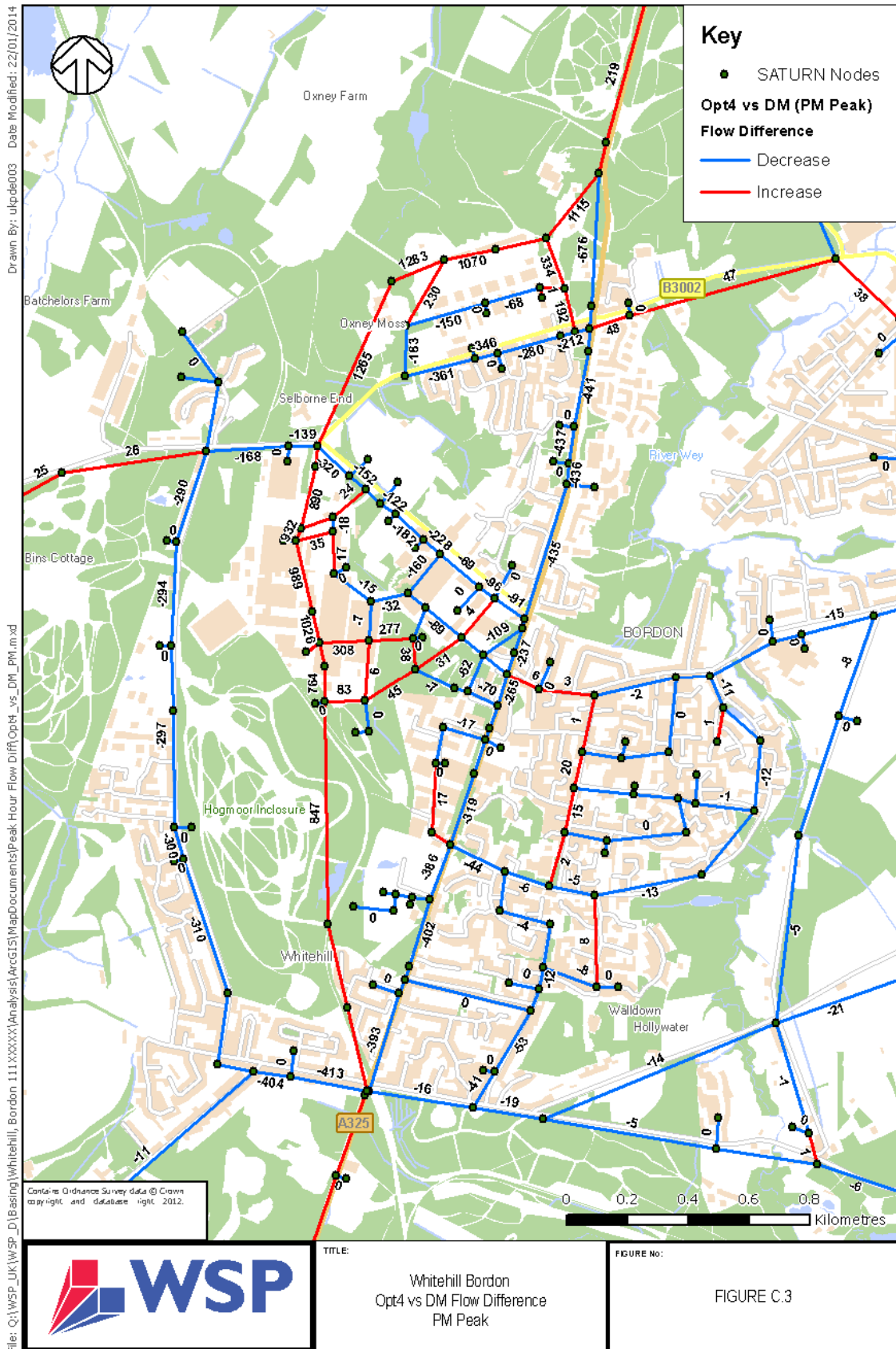


Figure C.3: 2026 Inner relief road (Option 4) vs. 2026 DM (PM peak)

Appendix D

Outer relief road (Option 2) and Inner relief road (Option 4) comparison

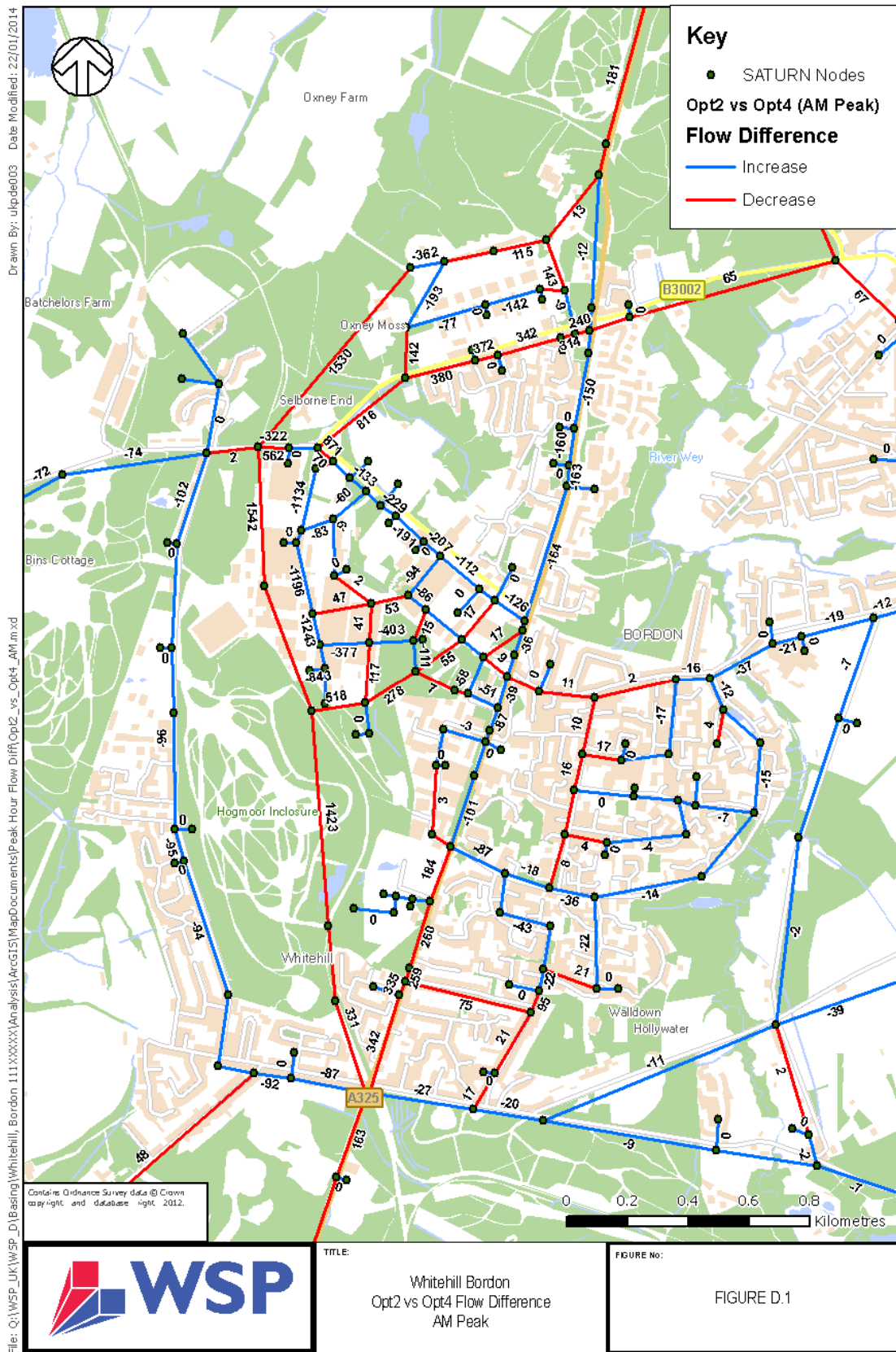


Figure D.1: 2026 Outer relief road (Option 2) vs. 2026 Inner relief road (Option 4) (AM peak)

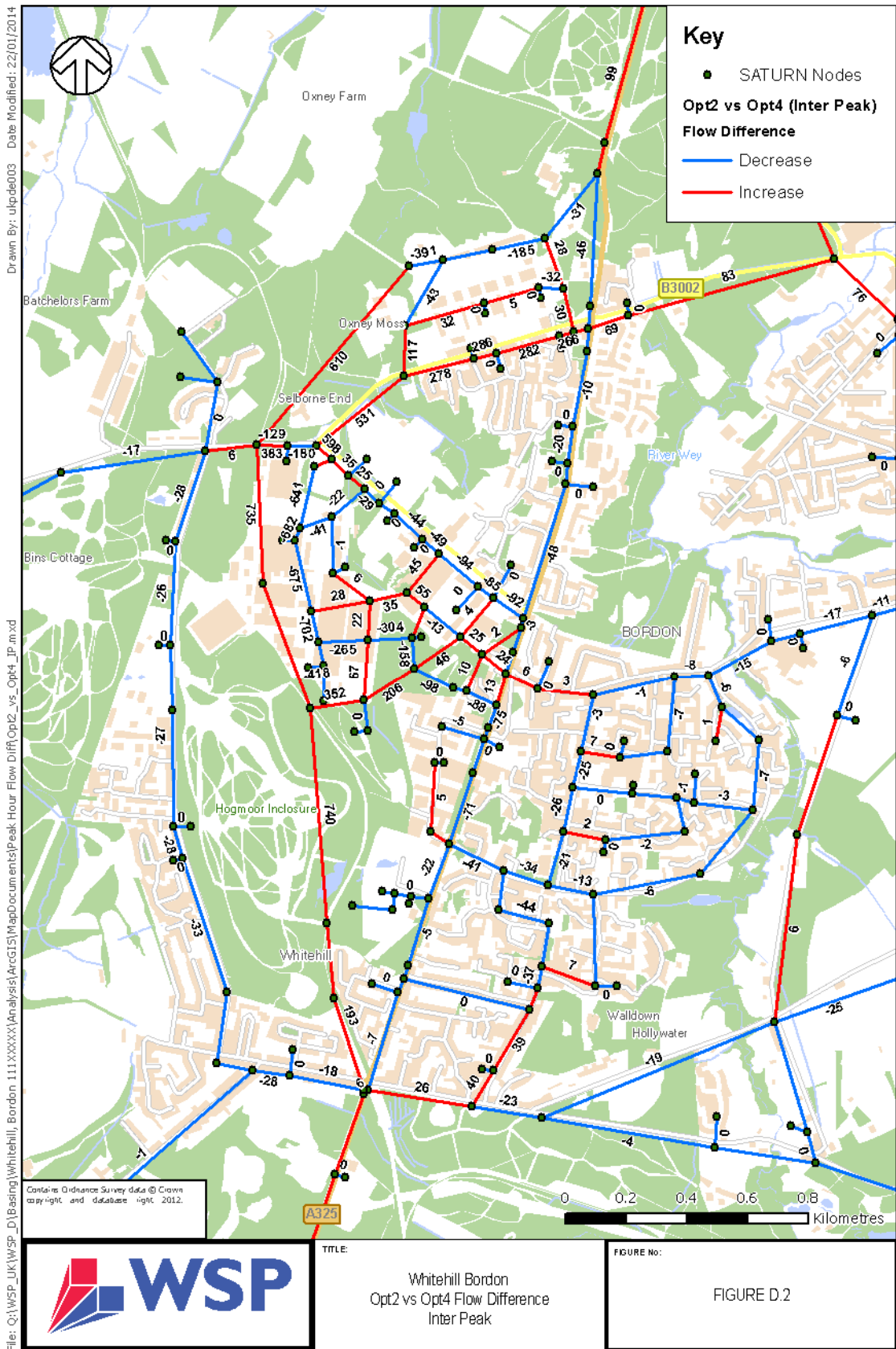


Figure D.2: 2026 Outer relief road (Option 2) vs. 2026 Inner relief road (Option 4) (Inter peak)

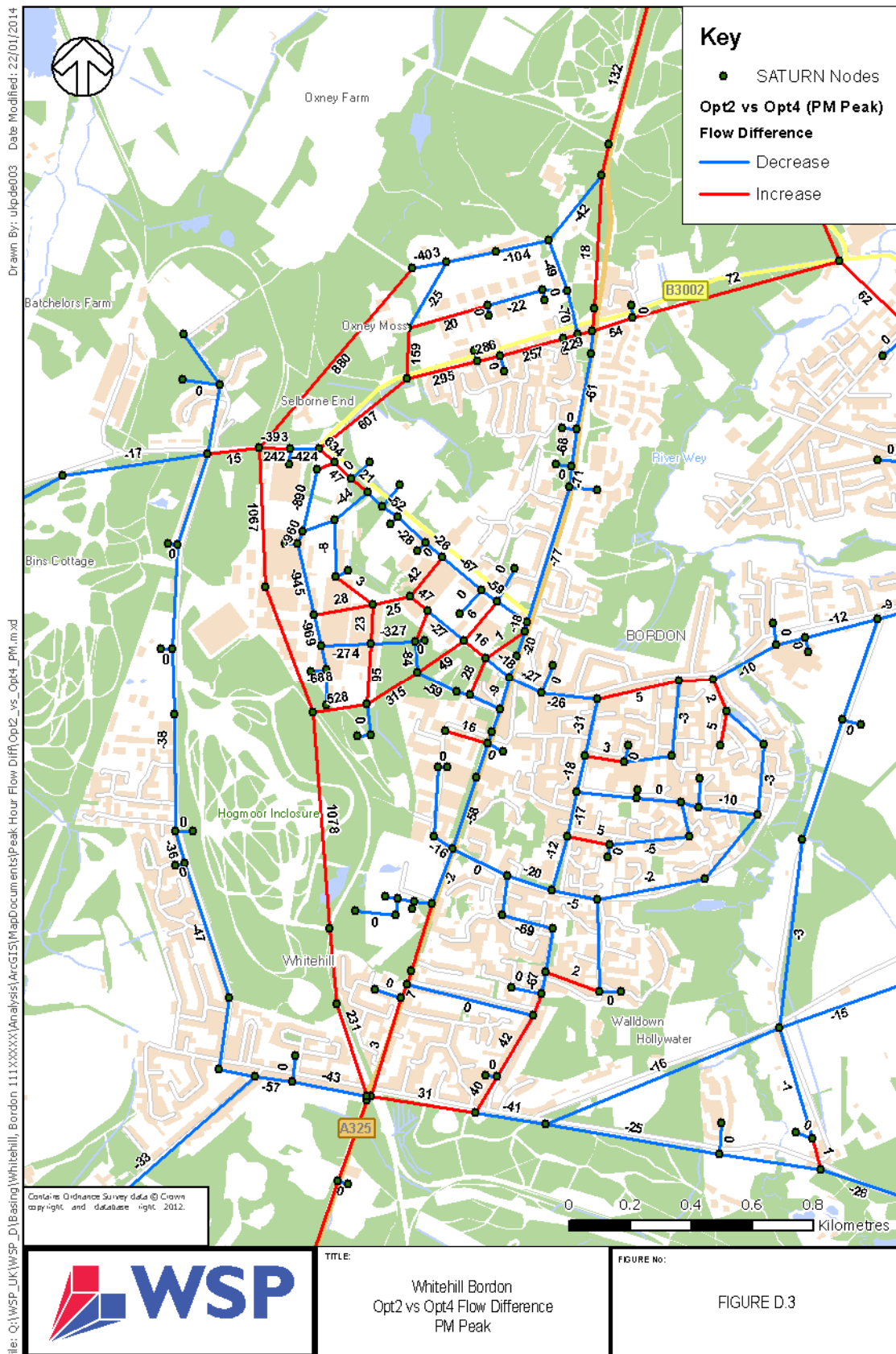


Figure D.3: 2026 Outer relief road (Option 2) vs. 2026 Inner relief road (Option 4) (PM peak)

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