[Statement of Common Ground pertaining to Matter 5: Strategy for the Urban Area of the Examination into the Core Strategy Review (December 2020)

Folkestone & Hythe District Council and Highways England

1. Overview

1.1 This Statement of Common Ground (SCG) has been prepared by Folkestone & Hythe District Council (FHDC) together with Highways England (HE).

1.2 The purpose of this SCG is to set out the basis on which FHDC and HE have actively and positively agreed to work together to meet the requirements of the Duty to Cooperate. FHDC has prepared their Core Strategy Review for submission in early 2020.

1.3 Under section 33A of the Planning and Compulsory Purchase Act 2004 (amended by section 110 of the Localism Act 2011) and in accordance with the National Planning Policy Framework (NPPF) 2019 it is a requirement under the Duty to Cooperate for local planning authorities, county councils and other named bodies to engage constructively, actively and on an ongoing basis in the preparation of development plan documents and other local development documents. This is a test that local authorities need to satisfy at the Local Plan examination stage and is an additional requirement to the test of soundness.

1.4 The Duty to Cooperate applies to strategic planning issues of cross boundary significance. Local authorities all have common strategic issues and as set out in the National Planning Practice Guidance (NPPG):

> *"local planning authorities should make every effort to secure the necessary cooperation on strategic cross boundary matters before they submit their plans for examination."*

1.5 The statutory requirements of the Duty to Cooperate are not a choice but a legal obligation. Whilst the obligation is not a duty to agree, cooperation should produce effective and deliverable policies on strategic cross boundary matters in accordance with the government policy in the NPPF, and practice guidance in the NPPG.

2.0 Strategic matters

2.1 The NPPF defines the topics considered to be strategic matters (para 20). The strategic matters relevant to FHDC and HE are

- the cross-boundary matters associated with the movement of vehicular traffic on the Strategic Road Network (SRN),; and
- the impacts of development proposed and/or resulting from any adoption of the Core Strategy Review on the Strategic Road Network within the district; and

- the interplay between the Strategic Road Network and Local Road Network where any changes to, or need for mitigation of, the latter may have consequences for the former.

2.2 Government policy places much emphasis on housing delivery as a means for ensuring economic growth and addressing the current national shortage of housing. The NPPF is very clear that:

> *"strategic policy-making authorities should establish a housing requirement figure for their whole area, which shows the extent to which their identified housing need (and any needs that cannot be met within neighbouring areas) can be met over the plan period."*

2.3 Following changes to the NPPF and PPG, the planning policy team has been assessing how the district can meet the new housing need for the Core Strategy Review plan period. This has involved a number of areas of work, assessing past trends as well as reviewing current and future sources of housing supply.

2.4 The Government's new national formula calculated from household formation and housing affordability figures is published regularly by Office for National Statistics, and the most recently published figure for Folkestone & Hythe district currently stands at 738 new homes a year. FHDC's Regulation 19 Plan outlines a housing requirement for 13,284 new homes over plan period (to 2036/37). Meeting this target over the plan period will be provided for by development in Core Strategy Review, Places and Policies Local Plan, existing planning permissions and small sites.

Table 2.1: Core Strategy Review 2019/20-2036/37– elements of housing supply

Source of housing supply	Number of homes
Current planning permissions and sites under construction (with adjustment for lapsed permissions)	4,274
Places and Policies Local Plan and 2013 Core Strategy sites without planning permission	1,703
Windfall allowance (95 homes a year over 15 years)	1,425
New garden settlement (Core Strategy Review policies SS6-SS9)	5,925
Expansion of Sellindge (Core Strategy Review policy CSD9) (part of allocation without permission)	188
Total Core Strategy Review plan period	**13,515**

2.5 However, DfT Circular 2/13 and the NPPF are equally clear that any development, including housing delivery, must be tempered by the requirement to ensure that it can be accommodated without unacceptable impacts on the safety, reliability and operation of the Strategic Road Network. Therefore, as

necessary and appropriate, any development must be accompanied by suitable mitigation in the right places at the right time, that is to the required standards and is deliverable in terms of land availability, constructability and funding.

Transportation (strategic) – evidence base

2.6 FHDC and HE exchanged correspondence during 2017 and 2018 about HE's assessment requirements of the People and Places Local Plan to 2031 and Core Strategy Review to 2037. This was in accordance with the assessment requirements of DfT Circular 02/2013 and NPPF. The assessment covered the following junctions:

- A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads
- Alkham Valley Road / A20 Off Slip / A20 On Slip
- A260 / Alkham Valley Road
- A20 / M20 / B2064 Cheriton Interchange
- A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)
- M20 / A20 / B2068 Roundabout

2.7 The assessment looked at the junction capacity and merge and diverge assessments in accordance with Design Manual for Roads and Bridges standards. The findings indicated that mitigation would be required for the strategic road network under the following development scenarios:

Junctions:

A20/A260 eastbound off slip:

- 2037 CS6500 AM and PM
- 2037 CS8000 AM and PM

M20 Junction 11:

- 2037 CS6500 AM and PM
- 2037 CS8000 AM and PM

M20 Junction 13:

- 2037 CS6500 and 8000

Merges and Diverges:

M20 Junction 12:

- e/b merge 2037 – needs a parallel merge all scenarios (DM, CSR 6500 and CSR 8000)

M20 Junction 13:

- w/b merge 2037 needs a lane gain (2 lanes main carriageway +1 slip) with ghost island merge all scenarios

- e/b diverge 2037 needs ghost island all scenarios

M20 Junction 11:

- e/b diverge 2037 needs a lane drop and ghost island diverge for CSR scenarios
- e/b merge 2037 needs parallel merge for DM and lane gain for CSR scenarios
- w/b diverge 2037 – ghost island diverge needed for CSR 8000 scenario
- w/b merge 2037 – parallel merge required for DM and CSR 6500 scenarios and lane gain with ghost island for CSR 8000 scenario

2.8 As a result of this work, the Council and Highways England agreed an interim SoCG on 28 January 2020. It appears each party interpreted it slightly differently. The Council assumed all matters were concluded sufficiently to allow the CSR to progress to examination and adoption. However, Highways England assumed the SoCG was simply an interim document and awaited details of the identified, required mitigation.

2.9 Consequently, around the time the Examination process commenced in June 2020, having not heard anything from the Council since January, Highways England wrote to the Council and Programme Officer, setting out our expectations with regards what needed to be provided by the Council by way of evidence and mitigation proposals, in order to avoid any need for Highways England to object to the plan, or parts of it, at the Examination.

2.10 Since June 2020 Highways England have been working with the Council to enable them to provide the necessary evidence and mitigation proposals. It is now apparent that the evidence and mitigation can be separated into two main packages, namely:

- any related to Matter 5: Strategy for the Urban Area; and
- any related to Matters 7 & 11 relevant to the allocation and delivery of Otterpool

2.11 The purpose of this Statement of Common Ground is to effectively decouple, and reach agreement on, those issues arising under Matter 5 (for which verbal agreement has been reached) from those associated with Matters 7 and 11. A separate SoCG(s) will be issued to deal in turn with Matters 7 and 11 respectively.

Highways England response to Core Strategy Review Regulation 19 plan document

2.12 Within its response to the Core Strategy Review Regulation 19 plan document (Appendix 1 refers), HE has advised that generally, the direction of, and considerations within, the Core Strategy Review appear to be sound and to

concur generally with the approach and policies of HE with regard to development and its impacts on the SRN.

2.13 HE are satisfied that policy SS5 – District Infrastructure Planning – complies with DfT 02/13, in that it states that planning permissions will only be granted where the development aims to reduce demands on infrastructure; does not jeopardise current or planned physical infrastructure; and allows sustainable travel patterns. HE has commented that whilst the provision of sustainable modes is included, an additional objective should be added, as follows:

> *'to consider and manage the travel demand of new development proposals, and develop tailored solutions to limit car use generated by new developments.'*

2.14 HE concurs that the Core Strategy Review is necessarily 'high-level' and broad in scope. HE also acknowledges that the Core Strategy Review makes reference to identified infrastructure upgrades in Figure 4.4, to include three 'key highway improvements' on the M20, A20 and A259 respectively. However, as no more detail is provided within the body of the Core Strategy Review, HE would need to be consulted further on these schemes as they progress. By progress, Highways England means that it is demonstrated prior to adoption of the Plan in order to demonstrate, in turn, that the Plan is sound.

2.15 HE has flagged that 'critical' and 'necessary' infrastructure needed to support the spatial strategy is stated as being set out in the Infrastructure Delivery Plan (IDP). FHDC can confirm that the IDP was published as one of the evidence base documents to the Core Strategy Review. HE need sufficient certainty that the mitigation set out in the IDP is *the "right thing in the right place at the right time"* and is deliverable in terms of it meeting required standards, the land being available and it being funded.. Ensuring the Plan is supported by any/all mitigation is the responsibility of the promoting Council. Highways England are not able to accept any significant risks that development occurs without the necessary mitigation. FHDC and HE will have regular conversations regarding the delivery of IDP mitigation throughout the life of the CSR.

3. Submission to the Examination in Public into the Core Strategy Review Representation made by Highways England (July 2020)

3.1 Highways England representation to the Core Strategy Review Examination in Public on 3rd July 2020. A copy of the representation is appended to this statement (Appendix 5 refers). The representation made by Highways England cross-refers to three Matters to be examined, namely Matter 5: Strategy for the Urban Area, Matter 7: Strategy for the North Downs Area (Otterpool); and Matter 11 (Other Policies).

4. Work to update the SoCG following representation made by Highways England in relation to Matter 5: Strategy for the Urban Area (Folkestone and Hythe urban centres)

4.1 Highways England confirmed in October 2018 as part of negotiations on the district council's Places and Policies Local Plan that no mitigation was required for the 2031 DS scenario in accordance with the additional modelling scenarios. A copy of the email correspondence dated October 2018 is provided in Appendix 6.

4.2 The AECOM model update report prepared on behalf the District Council incorporated analysis of all strategic sites from the adopted Core Strategy (2013) as committed development, reflected as follows:

- Folkestone Seafront: outline planning consent granted on 31st July 2014. Construction is recently underway;
- Shorncliffe Garrison: hybrid planning consent granted on 17th December 2015. Construction is well underway and off-site highway improvements are being implemented. Most notably the junction of Cheriton Approach and Cheriton High Street is to be upgraded and the improved layout (which shall facilitate an all-movements right turn from Cheriton High Street onto Cheriton Approach) is to be operational by December 2020;
- Sellindge Phase 1 (Taylor Wimpey): hybrid planning consent granted on 19th January 2016. Construction is well underway;
- New Romney Broad Location: outline consent for 110 dwellings granted on 10th February 2017 (note that New Romney is rather distant from the local/strategic network around Otterpool Park). This parcel is expected to be fully built out within the next 18 months or so. The second parcel was granted outline consent on 28th August 2019. Construction activity has not commenced; and
- Martello Lakes/Nickolls Quarry: this scheme for 1050 dwellings was originally a smaller allocation in the 2006 Local Plan. Outline consent was granted in 2010. Construction is well underway.

4.3 As drawn from the AECOM Model Update Note dated November 2017, under the 2031 Places and Policies (PPLP) DM scenario, with the application of background growth and committed developments, a further five junctions are predicted to be over capacity and therefore potentially require mitigation measures. These include:

- The remaining junction forming the Alkham Valley interchange, which is the roundabout serving the A20 eastbound slip roads, the A260 and White Horse Hill;
- The Spitfire Way / Canterbury Road / A260 roundabout in Hawkinge, under Kent County Council (KCC) control;
- Castle Hill Interchange (M20 Junction 13), at Folkestone, under Highways England (HE) control;

- Two roundabout junctions in Folkestone, under KCC control; and
- The A20 / A261 Hythe Road / Stone Street junction complex, in the Sellindge area, also under KCC control.

4.4 In accordance with the 2031 'Do Something' PPLP scenario, a further junction is predicted to experience capacity issues, namely:

- The priority junction of Aldington Road and Lympne Hill, under KCC control.

4.5 With the introduction of the Otterpool Park traffic for the 2037 DS CSR scenarios, this causes further capacity issues at the following junctions and road sections:

- The M20 / A20 / B2068 roundabout (M20 Junction 11), under HE control;
- The signalised junction of the A20 Ashford Road with the B2067 Otterpool Lane, under KCC control;
- The roundabout to the south of M20 Junction 11, under KCC control; and,
- The priority junction of Aldington Road and Stone Street, under KCC control.
- M20 Junction 13 interchange
- M20 Junction 12 and 13 merges and diverges to require a third lane on the main carriageway
- The Spitfire Way / Canterbury Road / A260 roundabout
- The remaining junction forming the Alkham Valley interchange, which is the roundabout serving the A20 eastbound slip roads, the A260 and White Horse Hill

4.6 At the time of writing, further technical work to define the specific requirement for mitigation and the corresponding timing of when mitigation will need to be implemented based on the delivery of development proposed as further growth to be allocated in the Core Strategy Review (i.e. over-and-above site allocations from the adopted Core Strategy 2013 that are be rolled forward in the Core Strategy Review) remains ongoing, but is nearing its conclusion. The outcome of the ongoing technical work is to be appropriately reflected in a separate SoCG to deal with Matters 7 and 11 respectively.

4.7 The reported outcomes from the AECOM report (as accepted by Highways England) in respect of the possible requirement for mitigation is reflected in the Infrastructure Delivery Plan that forms part of the evidence base to the Places and Policies Local Plan. Following confirmation from Highways England that no mitigation was required for the 2031 scenario for the Places and Policies Local Plan, it is now accepted by Highways England that the 2031 DS scenario for the PPLP represents that 2031 'Do Minimum' scenario for the Core Strategy Review.

4.8 Other than the proposed allocation of the Garden Settlement (Otterpool Park) with modest growth at Sellindge (Phase 2 site A for 188 dwellings that does not carry the benefit of a planning consent), and Phase 2 site B (which does carry the benefit of planning consent granted on 7th January 2019 for 162 dwellings and small-scale employment use) the Core Strategy Review simply carries forward the allocations in the Core Strategy (2013), to include those allocations that fall within the spatial extent relating to Matter 5: Strategy for the Urban Area (i.e. the urban centres of Folkestone and Hythe) to ensure there are site-based policies to guide future Reserved Matters applications.

4.9 The only unknown now with regards the Strategy for the Urban Area is how the delivery of windfall sites will pan out in practice. Highways England would be content with a policy led approach that limits the delivery of windfalls to 500 dwellings (around a third of the total relied upon) in the Urban Area (to be applied from the date of the signing into the SOCG), unless the Council's monitoring and updated modelling demonstrates to the satisfaction of Highways England that further capacity exists and/or commensurate mitigation can be delivered.

4.10 In respect of the Core Strategy Review, and in particular Matter 5: The Urban Area (which is limited to the urban centres of Folkestone and Hythe), both parties, subject to the approach outlined within this SoCG, are satisfied that planned growth associated with the Urban Area has been appropriately captured and appraised as part of the modelling work undertaken by AECOM, and that it is duly resolved that there is no requirement for further discussion at Examination into the Core Strategy Review in relation to Matter 5.

4.11 In the context of the representation made by Highways England into the submission made to the examination by Highways England in a letter dated 3rd July 2020 there is no associated requirement for the Strategy for the Urban Area to secure junction mitigations. As such, the Core Strategy Review meets the NPPF Local Plan soundness tests, as well as the transport specific NPPF and C2/13 tests.

5. Summary of actions going forward

5.1 A summary of key actions going forward is provided below.

Key issue	Agreed action
Infrastructure	FHDC and HE to continue to liaise and work together on all relevant matters relating to the Strategic Road Network, including planning applications.

6. Governance arrangements

6.1 Officers of FHDC meet with representatives of HE to discuss cross-boundary strategic matters under the Duty to Cooperate. The narrative and outcome of these discussions is demonstrated in this Statement of Common Ground.

6.2 It is intended that the Statement of Common Ground will be updated going forward, particularly as FHDC progresses its Core Strategy Review. The SOCG will then be kept under ongoing review and will be updated at key stages in F&HDC plan making process and/or when new key strategic issues arise which require amendments to this SOCG. If there are any changes of the content of the SOCG these matters can be discussed at future Duty to Co-operate meetings.

7 Signatories/declaration

Signed on behalf of Folkestone & Hythe District Council (Officer) James Hammond [redacted]	**Signed on behalf Highways England** Paul Harwood [redacted]
Position: Strategy & Policy Senior Specialist	**Position:** Spatial Planning Team Leader
Date: 16/12/2020	**Date:** 16/12/2020

Appendices

Appendix 1. Highways England response to the Core Strategy Review Regulation 19 plan

Appendix 2. AECOM Shepway Transport Model Merge and Diverge Appraisal dated 3rd September 2018

Appendix 3. AECOM Briefing Note: Shepway Transport Model Update – Review & Findings dated March 2017

Appendix 4. AECOM Briefing Note: Shepway Transport Model Update – Review & Findings dated December 2017

Appendix 5. Highways England representation to the Core Strategy Review Examination in Public dated 3rd July 2020.

Appendix 6. Email correspondence from Highways England dated October 2018 to confirm that as part of negotiations on the district council's Places and Policies Local Plan no mitigation was required for the 2031 DS scenario in accordance with the additional modelling scenarios.

Appendix 7. Folkestone & Hythe District Council Local Plan Traffic Analysis Highways England Road Network dated 3rd October 2020 (first draft)

Appendix 8. Folkestone & Hythe District Council Local Plan Traffic Analysis Highways England Road Network dated 30th November 2020 (second draft)

APPENDIX 1: HIGHWAYS ENGLAND RESPONSE TO CORE STRATEGY REVIEW REGULATION 19 PLAN

[redacted]

From: [redacted]
Sent: 05 November 2019 13:26
To: [redacted]
Subject: FW: Folkestone & Hythe Core Strategy Review Submission Draft 2019 and Heritage Strategy public consultation [redacted] Folkestone & Hythe District Council

From: [redacted]highwaysengland.co.uk]
Sent: 11 March 2019 11:04
To: Planning Policy <Planning.Policy@folkestone-hythe.gov.uk>; [redacted]
Subject: Folkestone & Hythe Core Strategy Review Submission Draft 2019 and Heritage Strategy public consultation [redacted]

Dear [redacted]

Planning Policy Manager - Folkestone & Hythe District Council
Folkestone & Hythe Core Strategy Review Submission Draft 2019 and Heritage Strategy public consultation

Highways England Ref: #6734

Thank you for your email of 24 January 2019, regarding the Folkestone & Hythe Core Strategy Review Submission Draft 2019 and the Heritage Strategy public consultation.

Highways England ("we") have been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and are the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such works to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

We will be concerned with proposals that have the potential to impact on the safe and efficient operation of the SRN.

We understand from your consultation email that the Core Strategy Review Submission Draft has been published for consultation under Regulation 19 of the Planning and Compulsory Purchase Act 2004 and follows the previous public consultation on the 'Preferred Options' stage in March 2018. The purpose of the Core Strategy Review is to allocate sufficient land to meet the identified development needs of the Folkestone & Hythe district up to 2037. This is the final stage of consultation prior to public examination.

As requested, our response below addresses the extent to which we consider the Core Strategy Review to comply with the legal requirements and the duty to co-operate, as well as the plan's 'soundness' as outlined in your email.

We have also reviewed the relevant content of the accompanying Sustainability Appraisal (SA) to the Core Strategy.

We understand that the Folkestone & Hythe District Heritage Strategy is an evidence document for the Places and Policies Local Plan and Core Strategy Review and it will also provide information for planning applications and funding bids.

The Heritage Strategy sets out positive objectives and priorities for the district's heritage assets and was influenced by the views of various stakeholders. It has now been published for comments to help shape the final version.

Review of Core Strategy

We have reviewed the Core Strategy and have the following comments which are only related to issues that we consider will affect the SRN:

- The Core Strategy is necessarily high-level and broad in scope. As such, it is not possible to comment in significant detail and we would therefore request to be consulted throughout the further development of schemes within the strategy.

- Generally, the direction of, and considerations within, the Core Strategy appear to be sound and to concur generally with the approach and policies of Highways England with regard to development and its impacts on the SRN.

- Policy SS5 – District Infrastructure Planning – concurs with DfT 02/13 in that it states that planning permissions will only be granted where the development aims to reduce demands on infrastructure; does not jeopardise current or planned physical infrastructure; and allows sustainable travel patterns.

- Policy SS5 primarily addresses Core Strategy Review aims under the following Strategic Needs: A, B, C and D. (Of these Strategic Needs, one of them is relevant to transport: Strategic Need D, which is "*The challenge to plan for strategic development which fosters high quality place-making with an emphasis on sustainable movement, buildings and green spaces*", as detailed earlier in the document). Other details of Strategic Need D are also given, such as the various aims detailed in Section 3.6. We recommend that the aims of Strategic Need D should add greater emphasis on discouraging car use and encouraging modal shift. While the provision of sustainable modes is included, an additional aim should be added: to consider and manage the travel demand of new development proposals, and develop *tailored* solutions to limit car use generated by new developments.

- Figure 4.4 – Identified infrastructure upgrades – includes three 'key highway improvements'. These are on the M20, A20 and A259. However, no more detail is given; we would like to be consulted further on these schemes as they progress.

- Critical and necessary infrastructure needed to support the spatial strategy is stated as being set out in the Infrastructure Delivery Plan. However, no more detail is given of this Infrastructure Delivery Plan; we would like to be consulted further on these schemes as they progress.

Review of the accompanying Sustainability Appraisal (SA) to the Core Strategy

The accompanying Sustainability Appraisal (SA)[1] of the Review of the Core Strategy sets out the context and framework for the SA of the Core Strategy Review and reports the appraisal findings of growth options tested to inform the preferred Core Strategy Review policies, as well as the appraisal findings of the policies in the Proposed Submission Core Strategy Review.

We have reviewed the Sustainability Appraisal (SA) and have the following comments. Our comments are related only to issues that we consider will affect the SRN.

- The SA Review of the Core Strategy uses a framework of 15 SA objectives; of these, SA13 is most relevant to Highways England's interests. The SA13 objective is "*Reduce the need to travel, increase opportunities to choose sustainable transport modes and avoid development that will result in significant traffic congestion and poor air quality*".

- SA2 is also relevant to our interests due to the way locations have been considered against it. SA2 is "*Support the creation of high quality and diverse employment opportunities*". As detailed below, this has some implications for the SRN in the way it has been applied.

- The findings against these SA objectives are summarised for six "character areas":

    - Character area 1: Kent Downs.
    - Character area 2: Folkestone and Surrounding Area.
    - Character area 3: Hythe and Surrounding Area.
    - Character area 4: Sellindge and Surrounding Area (which is further divided into four sub-areas).
    - Character area 5: Romney Marsh and Walland Marsh.
    - Character area 6: Lydd, New Romney and Dungeness.

- The character area findings for the SA objectives are given in Section 6. These are limited in detail at this stage, but appear to have a reasonable overall approach. However, a few areas for improvement are noted:

    - Paragraph 6.48, regarding SA2, suggests that access to existing strategic road infrastructure is expected to have a positive effect on this objective (the creation of high quality and diverse employment opportunities). While it is accepted that SRN access can reduce congestion on lower-order roads which are less able to accommodate heavy traffic, Highways England aims to encourage development in locations that are or can be made sustainable, that allow for uptake of sustainable transport modes and support wider social and health objectives. As such, while limiting congestion is important, this should not be achieved in a way that could potentially encourage an increase in overall car use, even if the road network could accommodate such traffic in that location.

    - Similarly, Paragraphs 6.65 and 6.66, regarding SA13, attribute a similarly positive effect to proximity to the SRN (notwithstanding that these paragraphs also attribute a positive effect to access to sustainable modes also, which is welcomed).

    - These comments also apply to the SA scoring of locations in Appendices 3 and 4.

Review of the Folkestone & Hythe District Heritage Strategy

The Folkestone & Hythe District Heritage Strategy, Version 9 (27 November 2018) is an evidence document for the Places and Policies Local Plan and Core Strategy Review and it will also provide information for planning applications and funding bids.

This is very limited in scope with regard to the SRN and therefore we do not have any comments on this document. However, we request to be consulted in the usual way if any schemes result from the strategy which may impact the SRN.

Furthermore, as stated above, all three of these documents – the Core Strategy, the accompanying Sustainability Appraisal (SA) and the Folkestone & Hythe District Heritage Strategy – are necessarily high-level and broad in scope. As such, it is not possible to comment in significant detail and we would therefore request to be consulted throughout the further development of schemes within any of these strategies. Also, we would like to comment in detail on the forthcoming Local Plan.

If you have any further queries, please contact me.

Kind regards

[redacted]

[redacted]

Area 4 Spatial Planning Team
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[1] LUC, 17 December 2018, *Folkestone & Hythe Proposed Submission Core Strategy Review Sustainability Appraisal Report*

APPENDIX 2: MERGE AND DIVERGE APPRAISAL

AECOM Imagine it. Delivered.

Shepway Transport Model
Merge and Diverge Appraisal

3rd September 2018

Quality information

Prepared by	Checked by	Approved by
[redacted]	[redacted]	[redacted]
Assistant Transport Planner	Principal Transport Planner	Associate

Revision History

Revision	Revision date	Details	Authorized	Name	Position
0	Sep 2018	Draft	PK	Paul Kelly	Principal

Prepared for:

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Tables

1. Introduction

Background

AECOM (formerly known as Scott Wilson and URS) prepared the Transport Strategy that formed part of the evidence base for the Core Strategy. The Transport Strategy was supported by a transport spreadsheet model ('Shepway Transport Model') which was produced for Shepway District Council (SDC), now Folkestone and Hythe District Council (FHDC).

The Transport Strategy work, including the spreadsheet model, was carried out during 2010 and completed in 2011. The model has since been updated at various points to inform local modelling and impact assessments of development options. In 2016, AECOM was commissioned by SDC to undertake a comprehensive update of the Shepway Transport Model, incorporating the latest available data since the 2011 model was completed.

As part of the feedback on this work, Highways England has requested that merge and diverge appraisals are completed for any slip roads within the model which connect with the strategic highway network. A review of the Shepway Transport Model revealed that five of the seven junctions, previously modelled for Highways England, require merge and diverge appraisals, as follows:

Table 1-1 Summary of Merge / Diverge Assessment Requirements

Report ID	Model ID	Junction	Merge / Diverge Assessment
3	134	A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	Yes
4	136	Alkham Valley Road / A20 Off Slip / A20 On Slip	Yes
5	135	A260 / Alkham Valley Road	No
6	26	A20 / M20 / B2064 Cheriton Interchange	Yes
7	124	A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)	Yes
21	4	M20 / A20 / B2068 Roundabout	Yes
34	20	A259 / A259 Straight Lane / B2080 / A2070	No

To appraise the ability of vehicles to safely enter and exit the strategic network in both the 2031 and 2037 future year scenarios with and without development, merge and diverge assessments have been completed on the basis of DMRB guidance 'All-purpose merging and diverging diagrams' (Volume 6, Section 2, Part 1 TD 22/06). Relevant data has been extracted from the Shepway Transport Model for the five junctions listed above, supplemented with data from WebTRIS where required. This has been compared to the DMRB's all-purpose road merging and diverging diagrams to ascertain the most suitable layout for that location

The remainder of this note sets out the methodology employed and the results of the assessment.

2. Methodology

To appraise whether the existing merge or diverge arrangement is appropriate for the flows forecast in each future year scenario, the Shepway Transport Model was first reviewed to identify any gaps in data availability. The results are shown in **Table 2.1**.

Table 2-1 Summary of Data Availability

Report ID	Model ID	Junction	Data Availability	
			Slip Roads	Mainline Flows
3	134	A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	Shepway Model	WebTRIS
4	136	Alkham Valley Road / A20 Off Slip / A20 On Slip	Shepway Model	WebTRIS
6	26	A20 / M20 / B2064 Cheriton Interchange	Shepway Model	Shepway Model
7	124	A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)	Shepway Model	WebTRIS
21	4	M20 / A20 / B2068 Roundabout	Shepway Model	Shepway Model

For those locations where mainline data was not available, traffic counts were selected from WebTRIS in order to derive the required mainline traffic flows during a neutral month (September) in the vicinity of each junction. These traffic flows were then factored up to 2031, using growth factors from 2016 to 2031 covering a 15 year period. The appropriate growth factors were applied regardless of whether the WebTRIS flows were extracted for September 2016 or September 2017. This was to provide a robust approach.

Following the collation of the future year baseline mainline and slip road flows, the proposed committed and non-committed development flows from the spreadsheet model were added to arrive at the required scenario for the AM and PM peak hours. The scenarios covered as part of this assessment include the following:

- 2031 Do Minimum and 2031 Do Minimum Alternative (ALT)
- 2031 Do Something Places and Policies Local Plan (PPLP)
- 2037 Do Minimum and 2037 Do Minimum Alternative (ALT)
- 2037 Do Something Core Strategy Review (CSR) (+ 6500 Homes)
- 2037 Do Something CSR (+ 8000 Homes)

The calculated traffic flows for each slip road and mainline carriageway have then been compared to the DMRB's (TD 22/06) Motorway or All-Purpose Road Merging and Diverging Diagrams to ascertain the appropriate layout for that location in the future case. Where the intersection point (between the mainline and slip road) falls outside of a defined category, the closest arrangement to that intersection point has been selected. The existing and forecast layouts for each junction are detailed below in **Chapter 3**.

3. Merge and Diverge Appraisal

3.1.1 2031 Scenarios

The results for the merge / diverge assessments for the 2031 Do Minimum, 2031 Do Minimum Alternative (ALT) and 2031 Do Something Do Something Places and Policies Local Plan (PPLP) scenarios are set out below by junction, with the accompanying flows presented in **Appendix A** and outputs **in Appendix B**.

3.1.1.1 A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Road

Table 3.1 sets out the results of the merge and diverge appraisal for the A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads. The results for this junction indicate the following:

- EB Diverge – An upgrade to a Ghost Island Diverge for the existing Taper Diverge is likely to be required by the 2031 DM and 2031 DM ALT case. No further upgrades are required for the 2031 PPLP scenario.
- EB Merge – The assessment identifies the requirement for a Lane Gain (with one lane upstream and two lanes downstream) in all scenarios. However, no amendments to the existing Taper Merge arrangement are likely to be required for any of the scenarios given that the existing Taper Merge (two lanes upstream and two lanes downstream) provides greater capacity and the EB Diverge does not require a Lane Drop at this location.

Table 3-1 2031 Merge/Diverge Appraisal (A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Road

Slip Roads	Existing Layout	2031 DM		2031 DM ALT		2031 DS PPLP	
		AM	PM	AM	PM	AM	PM
A20 EB Diverge	Taper Diverge	Taper Diverge	Ghost Island Diverge	Taper Diverge	Ghost Island Diverge	Taper Diverge	Ghost Island Diverge
A20 EB Merge	Taper Merge	Lane Gain	Lane Gain	Lane Gain	Lane Gain	Lane Gain	Lane Gain

3.1.1.2 Alkham Valley Road / A20 Off Slip / A20 On Slip

Table 3.2 sets out the results of the merge and diverge appraisal for the Alkham Valley Road / A20 Slip Roads. The results for this junction indicate the following:

- WB Diverge – No amendments to the existing Taper Diverge arrangement are likely to be required for any of the scenarios.
- WB Merge – The assessment concludes that a Lane Gain with Ghost Island Merge is required to accommodate the most onerous 2031 DM and 2031 DM ALT scenario comprising the AM peak. No further upgrades are required for the 2031 PPLP scenario.

Table 3-2 2031 Merge/Diverge Appraisal (Alkham Valley Road / A20 Off Slip / A20 On Slip

Slip Roads	Existing Layout	2031 DM		2031 DM ALT		2031 DS PPLP	
		AM	PM	AM	PM	AM	PM
A20 WB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge
A20 WB Merge	Taper Merge	Lane Gain with Ghost Island Merge	Lane Gain	Lane Gain with Ghost Island Merge	Lane Gain	Lane Gain with Ghost Island Merge	Lane Gain

3.1.1.3 A20 / M20 / B2064 (Cheriton Interchange, M20 Junction 12)

Table 3.3 sets out the results of the merge and diverge appraisal for the M20 Junction 12 (Cheriton Interchange) Slip Roads. The results for this junction indicate the following:

- EB Diverge – No amendments to the existing Taper Diverge arrangement are likely to be required for any of the scenarios.
- EB Merge – No amendments to the existing Taper Merge arrangement (two lanes upstream, two lanes downstream) are likely to be required for any of the scenarios based on the most onerous time period (PM peak). The assessment identifies the requirement for a Lane Gain (with one lane upstream and two lanes downstream) in the AM peak.
- WB Diverge – No amendments to the existing Taper Diverge arrangement are likely to be required for any of the scenarios.
- WB Merge – No amendments to the existing Lane Gain arrangement are likely to be required for any of the scenarios.

Table 3-3 2031 Merge/Diverge Appraisal (Cheriton Interchange, M20 Junction 12)

Slip Roads	Existing Layout	2031 DM		2031 DM ALT		2031 DS PPLP	
		AM	PM	AM	PM	AM	PM
M20 Jct 12 EB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge
M20 Jct 12 EB Merge	Taper Merge	Lane Gain	Taper Merge	Lane Gain	Taper Merge	Lane Gain	Taper Merge
M20 Jct 12 WB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge
M20 Jct 12 WB Merge	Lane Gain	Taper Merge	Lane Gain	Taper Merge	Lane Gain	Taper Merge	Lane Gain

3.1.1.4 A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange, M20 Jct 13)

Table 3.4 sets out the results of the merge and diverge appraisal for the M20 Junction 13 (Castle Hill Interchange) Slip Roads. The results for this junction indicate the following:

- EB Diverge – No amendments to the existing Taper Diverge arrangement are likely to be required for any of the scenarios.
- EB Merge – No amendments to the existing Taper Merge arrangement (two lanes upstream, two lanes downstream) are likely to be required for any of the scenarios based on the most onerous time period (PM peak). The assessment identifies the requirement for a Lane Gain (with one lane upstream and two lanes downstream) in the AM peak.
- WB Diverge – No amendments to the existing Taper Diverge arrangement are likely to be required for any of the scenarios.
- WB Merge – An upgrade to the existing Taper Merge is required in the AM peak in the 2031 DM and 2031 DM ALT case. The most extensive upgrade is in the AM peak to a Lane Gain with Ghost Island Merge. No further upgrades are required for the 2031 PPLP scenario.

Table 3-4 2031 Merge/Diverge Appraisal (Castle Hill Interchange, M20 Junction 13)

Slip Roads	Existing Layout	2031 DM		2031 DM ALT		2031 DS PPLP	
		AM	PM	AM	PM	AM	PM
M20 Jct 13 EB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge
M20 Jct 13 EB Merge	Taper Merge	Lane Gain	Taper Merge	Lane Gain	Taper Merge	Lane Gain	Taper Merge
M20 Jct 13 WB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge
M20 Jct 13 WB Merge	Taper Merge	Lane Gain with Ghost Island Merge*	Lane Gain with Ghost Island Merge*	Lane Gain with Ghost Island Merge*	Lane Gain with Ghost Island Merge*	Lane Gain with Ghost Island Merge*	Lane Gain with Ghost Island Merge*

*Assumed Lane Gain with Ghost Island Merge based on intersection Point falling in line with Area of Uncertainty

3.1.1.5 M20 / A20 / B2068 Roundabout (M20 Junction 11)

Table 3.5 sets out the results of the merge and diverge appraisal for the M20 Junction 11 Slip Roads. The results for this junction indicate the following:

- EB Diverge – No amendments to the existing Taper Diverge arrangement are likely to be required for any of the scenarios.
- EB Merge – In the 2031 DM case and 2031 DS PPLP scenarios, an upgrade from the existing Taper Merge arrangement to a Parallel Merge is required based on the most onerous time period (PM peak). No upgrades are required for the 2031 DM ALT.
- WB Diverge – No amendments to the existing Taper Diverge arrangement are likely to be required for any of the scenarios.
- WB Merge – No amendments to the existing Taper Merge arrangement are likely to be required for any of the scenarios.

Table 3-5 2031 Merge/Diverge Appraisal (M20 Junction 11)

Slip Roads	Existing Layout	2031 DM		2031 DM ALT		2031 DS PPLP	
		AM	PM	AM	PM	AM	PM
M20 Jct 11 EB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge
M20 Jct 11 EB Merge	Taper Merge	Taper Merge	Parallel Merge	Taper Merge	Taper Merge	Taper Merge	Parallel Merge
M20 Jct 11 WB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge
M20 Jct 11 WB Merge	Taper Merge	Taper Merge	Taper Merge	Taper Merge	Taper Merge	Taper Merge	Taper Merge

3.1.2 2037 Scenarios

The results for the merge / diverge assessments for the 2037 Do Minimum, 2037 Do Minimum Alternative, 2037 Do Something Core Strategy Review (CSR) (+6500) and 2037 Do Something CSR (+8000) scenarios are set out below by junction, with the accompanying flows presented in **Appendix A** and outputs presented in **Appendix C**.

3.1.2.1 A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Road

Table 3.6 sets out the results of the merge and diverge appraisal for the A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads. The results for this junction indicate the following:

- EB Diverge – An upgrade from the existing Taper Diverge to a Ghost Island Diverge is likely to be required for all scenarios in 2037. No further upgrades are likely to be required due to the addition of traffic associated with the CSR.
- EB Merge – The assessment identifies the requirement for a Lane Gain (with one lane upstream and two lanes downstream) in all scenarios. However, no amendments to the existing Taper Merge arrangement are likely to be required for any of the scenarios given that the existing Taper Merge (two lanes upstream and two lanes downstream) provides greater capacity and the EB Diverge does not require a Lane Drop at this location.

Table 3-6 2037 Merge/Diverge Appraisal (A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Road

Slip Roads	Existing Layout	2037 DM		2037 DM ALT		2037 DS CSR (+6500)		2037 DS CSR (+8000)	
		AM	PM	AM	PM	AM	PM	AM	PM
A20 EB Diverge	Taper Diverge	Taper Diverge	Ghost Island Diverge	Taper Diverge	Ghost Island Diverge	Taper Diverge	Ghost Island Diverge	Taper Diverge	Ghost Island Diverge
A20 EB Merge	Taper Merge	Lane Gain	Lane Gain	Lane Gain	Lane Gain	Lane Gain	Lane Gain	Lane Gain	Lane Gain

3.1.2.2 Alkham Valley Road / A20 Off Slip / A20 On Slip

Table 3.7 sets out the results of the merge and diverge appraisal for the Alkham Valley Road / A20 Slip Roads. The results for this junction indicate the following:

- WB Diverge – No amendments to the existing Taper Diverge arrangement are likely to be required in 2037 based on the modelled scenario results.
- WB Merge – The assessment concludes that a Lane Gain with Ghost Island Merge is required to accommodate the most onerous 2037 DM and 2037 DM ALT time period comprising the AM peak. No further upgrades are required to accommodate the additional traffic associated with the CSR.

Table 3-7 2037 Merge/Diverge Appraisal (Alkham Valley Road / A20 Off Slip / A20 On Slip)

Slip Roads	Existing Layout	2037 DM		2037 DM ALT		2037 DS CSR (+6500)		2037 DS CSR (+8000)	
		AM	PM	AM	PM	AM	PM	AM	PM
A20 WB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge
A20 WB Merge	Taper Merge	Lane Gain with Ghost Island Merge	Lane Gain	Lane Gain with Ghost Island Merge	Lane Gain	Lane Gain with Ghost Island Merge	Lane Gain	Lane Gain with Ghost Island Merge	Lane Gain

3.1.2.3 A20 / M20 / B2064 (Cheriton Interchange, M20 Junction 12)

Table 3.8 sets out the results of the merge and diverge appraisal for the M20 Junction 12 (Cheriton Interchange) Slip Roads. The results for this junction indicate the following:

- EB Diverge – The existing Taper Diverge arrangement is appropriate for each of the scenarios modelled.

  EB Merge – No amendments to the existing Taper Merge arrangement (two lanes upstream, two lanes downstream) are likely to be required for the 2037 DM ALT scenario based on the most onerous time period (PM peak). An amendment to a Parallel Merge would be required in the 2037 DM, 2037 DS CSR (+6500) and 2037 DS CSR (+8000) scenarios based on the most onerous time period (PM peak).
- WB Diverge – No amendments to the existing Taper Diverge arrangement are likely to be required for any of the scenarios.
- WB Merge – No amendments to the existing Lane Gain arrangement are likely to be required for any of the scenarios with the existing Lane Gain arrangement providing greater capacity than the flows appraised.

Table 3-8 2037 Merge/Diverge Appraisal (Cheriton Interchange, M20 Junction 12)

Slip Roads	Existing Layout	2037 DM		2037 DM ALT		2037 DS CSR (+6500)		2037 DS CSR (+8000)	
		AM	PM	AM	PM	AM	PM	AM	PM
M20 Jct 12 EB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge
M20 Jct 12 EB Merge	Taper Merge	Lane Gain	Parallel Merge	Lane Gain	Taper Merge	Taper Merge	Parallel Merge	Taper Merge	Parallel Merge
M20 Jct 12 WB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge
M20 Jct 12 WB Merge	Lane Gain	Taper Merge	Lane Gain	Taper Merge	Lane Gain	Taper Merge	Taper Merge	Taper Merge	Taper Merge

3.1.2.4 A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange, M20 Jct 13)

Table 3.9 sets out the results of the merge and diverge appraisal for the M20 Junction 13 (Castle Hill Interchange) Slip Roads. The results for this junction indicate the following:

- EB Diverge – An upgrade to a Ghost Island Diverge from the existing Taper Diverge is likely to be required based on the most onerous time period (PM peak) for the 2037 DM case and 2037 DS CSR scenarios. No upgrade is required for the 2037 DM ALT scenario.
- EB Merge – No amendments to the existing Taper Merge arrangement (two lanes upstream, two lanes downstream) is likely to be required for any of the scenarios based on the most onerous time period (PM peak). The assessment identifies the requirement for a Lane Gain (with one lane upstream and two lanes downstream) in the AM peak.
- WB Diverge – No amendments to the existing Taper Diverge arrangement is likely to be required for any of the scenarios.
- WB Merge – An upgrade to the existing Taper Merge is required in the AM peak in the 2037 DM and 2037 DM ALT case to a Lane Gain with Ghost Island Merge. No further upgrades are required for the 2037 CSR scenarios.

Table 3-9 2031 Merge/Diverge Appraisal (Castle Hill Interchange, M20 Junction 13)

Slip Roads	Existing Layout	2037 DM		2037 DM ALT		2037 DS CSR (+6500)		2037 DS CSR (+8000)	
		AM	PM	AM	PM	AM	PM	AM	PM
M20 Jct 13 EB Diverge	Taper Diverge	Ghost Island Diverge	Ghost Island Diverge	Taper Diverge	Taper Diverge	Ghost Island Diverge	Ghost Island Diverge	Ghost Island Diverge	Ghost Island Diverge
M20 Jct 13 EB Merge	Taper Merge	Lane Gain	Taper Merge	Lane Gain	Taper Merge	Lane Gain	Taper Merge	Lane Gain	Taper Merge
M20 Jct 13 WB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge
M20 Jct 13 WB Merge	Lane Gain	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge*	Lane Gain with Ghost Island Merge*	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge

*Assumed Lane Gain with Ghost Island Merge based on intersection Point falling in line with Area of Uncertainty

3.1.2.5 M20 / A20 / B2068 Roundabout (M20 Junction 11)

Table 3.10 sets out the results of the merge and diverge appraisal for the M20 Junction 11 Slip Roads. The results for this junction indicate the following:

- EB Diverge – An upgrade to a Lane Drop at Taper Diverge from the existing Taper Diverge arrangement is likely to be required for the 2037 DM case. A further upgrade is likely to be required for the 2037 CSR scenarios to a Ghost Island Diverge for Lane Drop.
- EB Merge – An upgrade to a Parallel Merge from the existing Taper Merge arrangement is required in the 2037 DM case. A further upgrade to a Lane Gain is required to accommodate traffic associated with the 2037 CSR scenarios in the most onerous time period (PM peak).
- WB Diverge – No amendments to the existing Taper Diverge arrangement are likely to be required for the 2037 DM, 2037 DM ALT and 2037 DS CSR (+6500) scenarios. A Lane Gain with Ghost Island Diverge would be required to accommodate the traffic flows associated with both the 2037 DS CSR (+8000) scenario.
- WB Merge – An upgrade to a Parallel Merge from the existing Taper Merge arrangement is required for the 2037 DM and 2037 CSR DS (+6500) case. A further upgrade to a Lane Gain with Ghost Island Merge is required for the 2037 DS CSR (+8000) scenario.

Table 3-10 2037 Merge/Diverge Appraisal (M20 Junction 11)

Slip Roads	Existing Layout	2037 DM		2037 DM ALT		2037 DS CSR (+6500)		2037 DS CSR (+8000)	
		AM	PM	AM	PM	AM	PM	AM	PM
M20 Jct 11 EB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Ghost Island Diverge for Lane Drop	Taper Diverge	Ghost Island Diverge for Lane Drop
M20 Jct 11 EB Merge	Taper Merge	Taper Merge	Parallel Merge	Taper Merge	Taper Merge	Parallel Merge	Lane Gain	Parallel Merge	Lane Gain
M20 Jct 11 WB Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Taper Diverge	Ghost Island Diverge
M20 Jct 11 WB Merge	Taper Merge	Parallel Merge	Taper Merge	Taper Merge	Taper Merge	Parallel Merge	Taper Merge	Lane Gain with Ghost Island Merge	Taper Merge

4. Summary

In order to summarise the results, **Table 4.1** and **Table 4.2** (on the following page) presents where changes to the merge and diverge arrangements may be required for each scenario in 2031 and 2037. Green indicates no change, amber indicates an upgrade is required and red indicates an alternative/different upgrade is required relative to the other scenarios.

Overall, the results indicate the increase in traffic arising from the Places and Policies Local Plan in 2031 is unlikely to warrant any further upgrades to slip road infrastructure beyond what would have been required through background growth. In 2037, and with the introduction of traffic associated with the Core Strategy Review (including Otterpool Park), further upgrade to slip road infrastructure, beyond that required in the Do Minimum, may be required at all M20 Junction 11 slip roads in the CSR (+8000) scenario, but only the WB Merge and Diverge in the CSR (+6500) scenario.

Table 4-1 2031 Summary of Merge and Diverge Appraisal

Junction	Slip Road	Existing Layout	2031 DM	2031 DM ALT	2031 PPLP
A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	A20 EB Diverge	Taper Diverge	Ghost Island Diverge	Ghost Island Diverge	Ghost Island Diverge
	A20 EB Merge	Taper Merge	No Change	No Change	No Change
Alkham Valley Road / A20 Off Slip / A20 On Slip	A20 WB Diverge	Taper Diverge	No Change	No Change	No Change
	A20 WB Merge	Taper Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge
A20 / M20 / B2064 (Cheriton Interchange, M20 Junction 12)	M20 Jct 12 EB Diverge	Taper Diverge	No Change	No Change	No Change
	M20 Jct 12 EB Merge	Taper Merge	No Change	No Change	No Change
	M20 Jct 12 WB Diverge	Taper Diverge	No Change	No Change	No Change
	M20 Jct 12 WB Merge	Lane Gain	No Change	No Change	No Change
A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange, M20 Junction 13)	M20 Jct 13 EB Diverge	Taper Diverge	No Change	No Change	No Change
	M20 Jct 13 EB Merge	Taper Merge	No Change	No Change	No Change
	M20 Jct 13 WB Diverge	Taper Diverge	No Change	No Change	No Change
	M20 Jct 13 WB Merge	Taper Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge
M20 / A20 / B2068 Roundabout (M20 Junction 11)	M20 Jct 11 EB Diverge	Taper Diverge	No Change	No Change	No Change
	M20 Jct 11 EB Merge	Taper Merge	Parallel Merge	No Change	Parallel Merge
	M20 Jct 11 WB Diverge	Taper Diverge	No Change	No Change	No Change
	M20 Jct 11 WB Merge	Taper Merge	No Change	No Change	No Change

Table 4-2 2037 Summary of Merge and Diverge Appraisal

Junction	Slip Road	Existing Layout	2037 DM	2037 DM ALT	2037 CSR (+6500)	2037 CSR (+8000)
A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	A20 EB Diverge	Taper Diverge	Ghost Island Diverge	Ghost Island Diverge	Ghost Island Diverge	Ghost Island Diverge
	A20 EB Merge	Taper Merge	No Change	No Change	No Change	No Change
Alkham Valley Road / A20 Off Slip / A20 On Slip	A20 WB Diverge	Taper Diverge	No Change	No Change	No Change	No Change
	A20 WB Merge	Taper Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge
A20 / M20 / B2064 (Cheriton Interchange, M20 Junction 12)	M20 Jct 12 EB Diverge	Taper Diverge	No Change	No Change	No Change	No Change
	M20 Jct 12 EB Merge	Taper Merge	Parallel Merge	No Change	Parallel Merge	Parallel Merge
	M20 Jct 12 WB Diverge	Taper Diverge	No Change	No Change	No Change	No Change
	M20 Jct 12 WB Merge	Lane Gain	No Change	No Change	No Change	No Change
A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange, M20 Junction 13)	M20 Jct 13 EB Diverge	Taper Diverge	Ghost Island Diverge	No Change	Ghost Island Diverge	Ghost Island Diverge
	M20 Jct 13 EB Merge	Taper Merge	No Change	No Change	No Change	No Change
	M20 Jct 13 WB Diverge	Taper Diverge	No Change	No Change	No Change	No Change
	M20 Jct 13 WB Merge	Taper Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge	Lane Gain with Ghost Island Merge
M20 / A20 / B2068 Roundabout (M20 Junction 11)	M20 Jct 11 EB Diverge	Taper Diverge	No Change	No Change	Ghost Island Diverge for Lane Drop	Ghost Island Diverge for Lane Drop
	M20 Jct 11 EB Merge	Taper Merge	Parallel Merge	No Change	Lane Gain	Lane Gain
	M20 Jct 11 WB Diverge	Taper Diverge	No Change	No Change	No Change	Ghost Island Diverge
	M20 Jct 11 WB Merge	Taper Merge	Parallel Merge	No Change	Parallel Merge	Lane Gain with Ghost Island Merge

Appendix A Mainline and Slip Road Flows

2031 Mainline and Slip-Road Flows

Junction	Slip Roads	2031 DM (Forecast Flows)				2031 DM ALT				2031 PPLP			
		Mainline Total AM	Slip Road AM	Mainline Total PM	Slip Road PM	Mainline Total AM	Slip Road AM	Mainline Total PM	Slip Road PM	Mainline Total AM	Slip Road AM	Mainline Total PM	Slip Road PM
A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	A20 EB Diverge	902	731	1039	1421	898	728	1034	1415	904	736	1038	1420
	A20 EB Merge	902	151	1039	66	898	150	1034	66	904	150	1038	66
Alkham Valley Road / A20 Off Slip / A20 On Slip	A20 WB Diverge	979	80	900	114	975	80	896	114	978	80	902	114
	A20 WB Merge	979	1618	900	906	975	1611	896	902	978	1615	902	911
A20 / M20 / B2064 (Cheriton Interchange, M20 Junction 12)	M20 Jct 12 EB Diverge	1534	522	2121	827	1527	520	2111	824	1542	520	2120	824
	M20 Jct 12 EB Merge	1534	763	2121	992	1527	760	2111	988	1542	760	2120	988
	M20 Jct 12 WB Diverge	2099	1117	1676	803	2090	1112	1669	799	2097	1112	1684	799
	M20 Jct 12 WB Merge	2099	698	1676	540	2090	695	1669	538	2097	695	1684	538
A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange, M20 Junction 13)	M20 Jct 13 EB Diverge	1209	1319	1871	1332	1204	1314	1863	1327	1218	1314	1872	1327
	M20 Jct 13 EB Merge	1209	404	1871	622	1204	402	1863	619	1218	402	1872	619
	M20 Jct 13 WB Diverge	1755	721	1287	555	1748	718	1282	552	1754	718	1297	552
	M20 Jct 13 WB Merge	1755	1795	1287	1736	1748	1788	1282	1728	1754	1788	1297	1728
M20 / A20 / B2068 Roundabout (M20 Junction 11)	M20 Jct 11 EB Diverge	1926	555	2573	879	1918	553	2563	875	1918	565	2563	902
	M20 Jct 11 EB Merge	1926	663	2573	813	1918	660	2563	810	1918	675	2563	819
	M20 Jct 11 WB Diverge	2322	884	2147	660	2313	881	2138	657	2313	888	2138	672
	M20 Jct 11 WB Merge	2322	793	2147	595	2313	790	2138	593	2313	815	2138	609

2037 Mainline and Slip-road Flows

Junction	Slip Roads	2037 DM (Forecast Flows)				2037 DM ALT				2037 DS CSR (+6500)				2037 DS CSR (+8000)			
		Mainline Total AM	Slip Road AM	Mainline Total PM	Slip Road PM	Mainline Total AM	Slip Road AM	Mainline Total PM	Slip Road PM	Mainline Total AM	Slip Road AM	Mainline Total PM	Slip Road PM	Mainline Total AM	Slip Road AM	Mainline Total PM	Slip Road PM
A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	A20 EB Diverge	953	780	1087	1487	881	724	1004	1376	1022	948	1103	1532	1054	998	1125	1567
	A20 EB Merge	953	156	1087	68	881	146	1004	64	1022	146	1103	64	1054	146	1125	64
Alkham Valley Road / A20 Off Slip / A20 On Slip	A20 WB Diverge	1026	83	947	118	946	77	877	110	1024	77	1024	110	1042	77	1057	110
	A20 WB Merge	1026	1694	947	960	946	1563	877	890	1024	1687	1024	1123	1042	1715	1057	1175
A20 / M20 / B2064 (Cheriton Interchange, M20 Junction 12)	M20 Jct 12 EB Diverge	1605	542	2212	857	1474	505	2038	801	1960	559	2377	838	2069	572	2454	847
	M20 Jct 12 EB Merge	1605	827	2212	1048	1474	767	2038	968	1960	767	2377	968	2069	767	2454	968
	M20 Jct 12 WB Diverge	2193	1176	1747	864	2020	1083	1611	801	2402	1083	2195	801	2490	1083	2327	801
	M20 Jct 12 WB Merge	2193	723	1747	559	2020	676	1611	522	2402	706	2195	578	2490	713	2327	591
A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange, M20 Junction 13)	M20 Jct 13 EB Diverge	1292	1377	1962	1384	1197	1270	1814	1285	1562	1445	2069	1407	1643	1485	2126	1436
	M20 Jct 13 EB Merge	1292	420	1962	648	1197	390	1814	598	1562	390	2069	598	1643	390	2126	598
	M20 Jct 13 WB Diverge	1840	754	1368	577	1699	694	1268	535	1902	694	1647	535	1947	694	1732	535
	M20 Jct 13 WB Merge	1840	1871	1368	1807	1699	1730	1268	1671	1902	1940	1647	1931	1947	1989	1732	1992
M20 / A20 / B2068 Roundabout (M20 Junction 11)	M20 Jct 11 EB Diverge	2039	590	2691	961	1888	553	2493	898	1888	816	2493	1392	1888	875	2493	1500
	M20 Jct 11 EB Merge	2039	690	2691	840	1888	640	2493	788	1888	1234	2493	1203	1888	1368	2493	1298
	M20 Jct 11 WB Diverge	2429	917	2263	685	2248	857	2096	637	2248	1187	2096	1254	2248	1263	2096	1393
	M20 Jct 11 WB Merge	2429	877	2263	640	2248	821	2096	601	2248	1296	2096	932	2248	1400	2096	1005

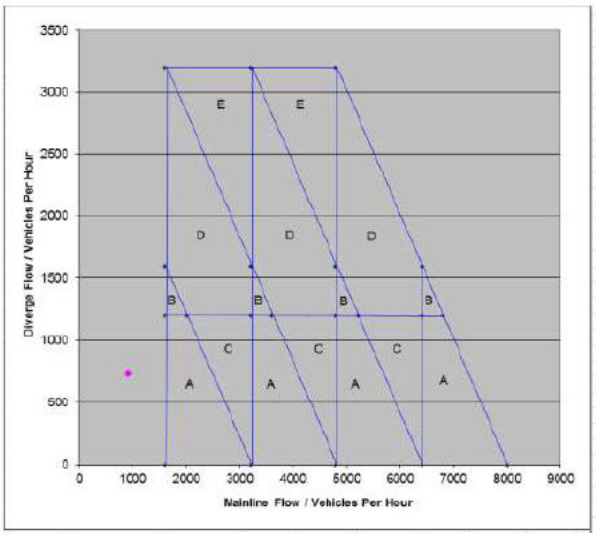
Appendix B 2031 Merge and Diverge Outputs

Merge and Diverge Appraisal

2031 Scenarios

A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Road

2031 Do Minimum AM (Diverge)



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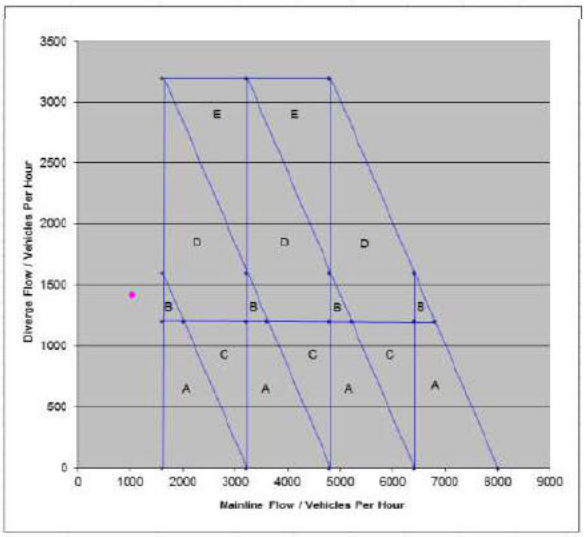

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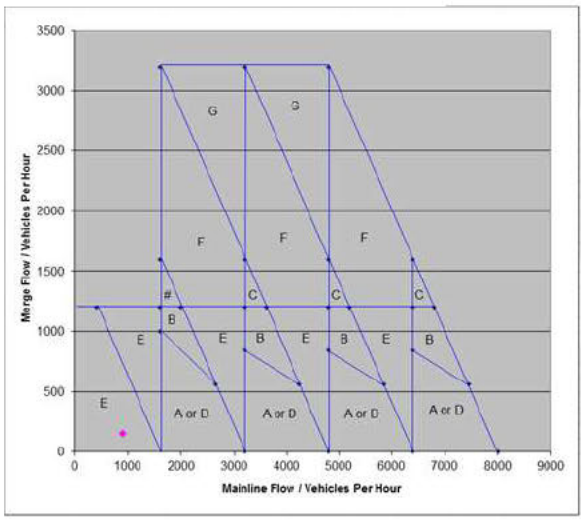

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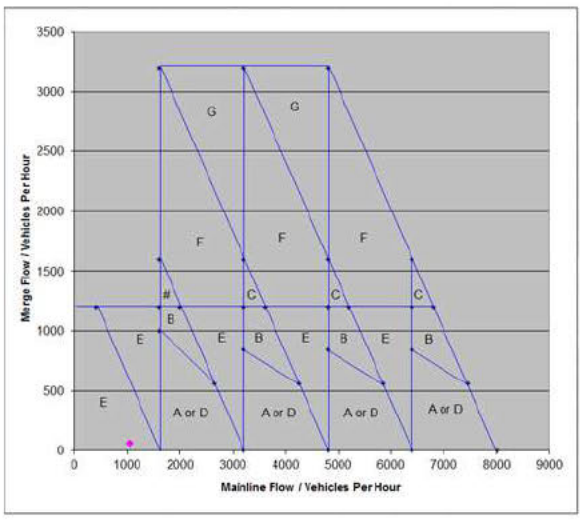
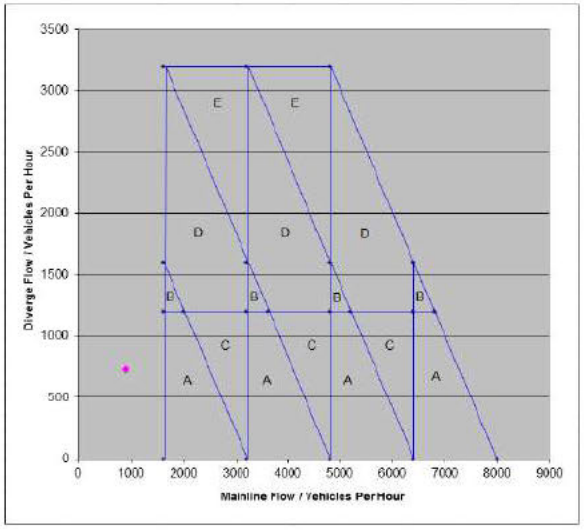


2031 Do Minimum Alternative AM (Diverge)



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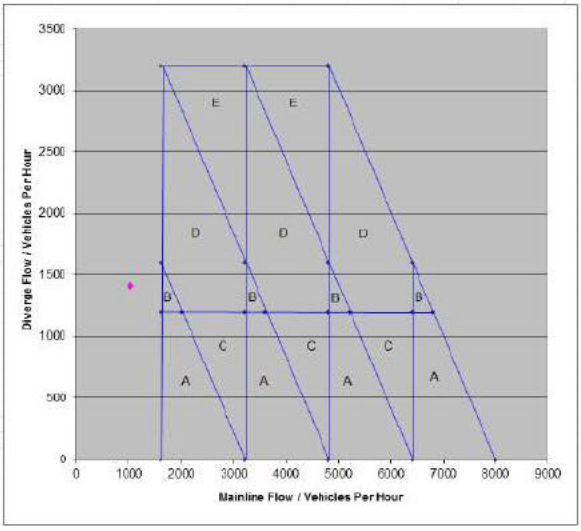

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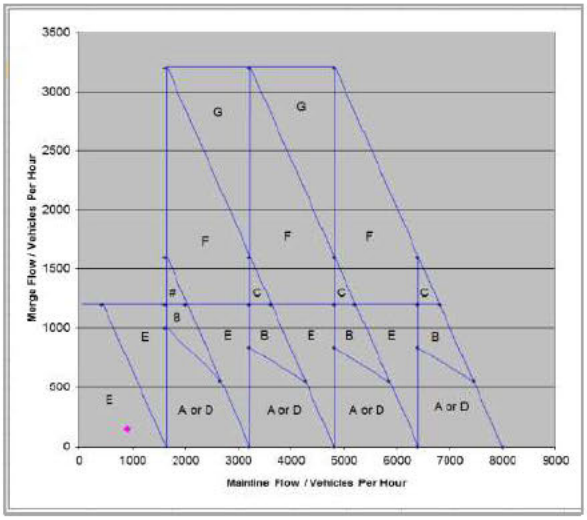

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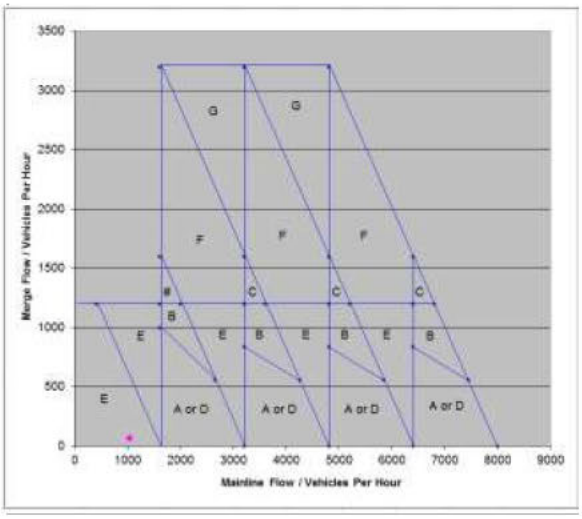
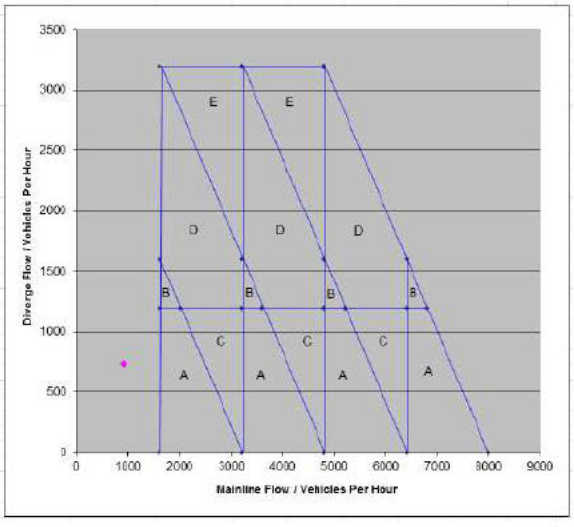


2031 Do Something PPLP AM (Diverge)



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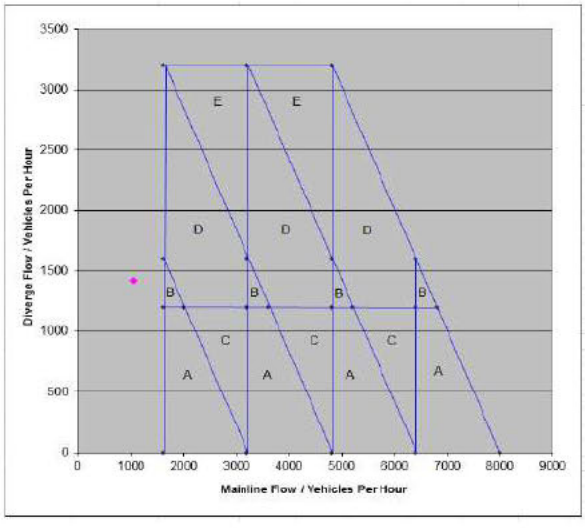

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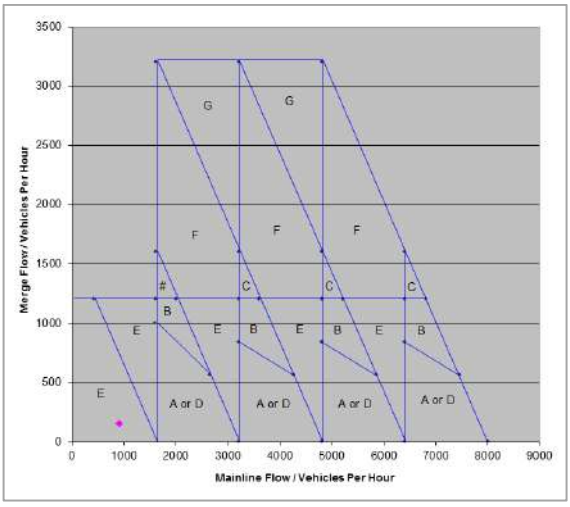
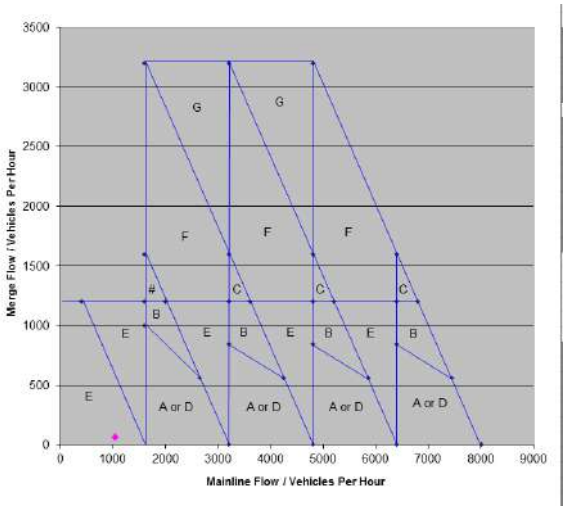
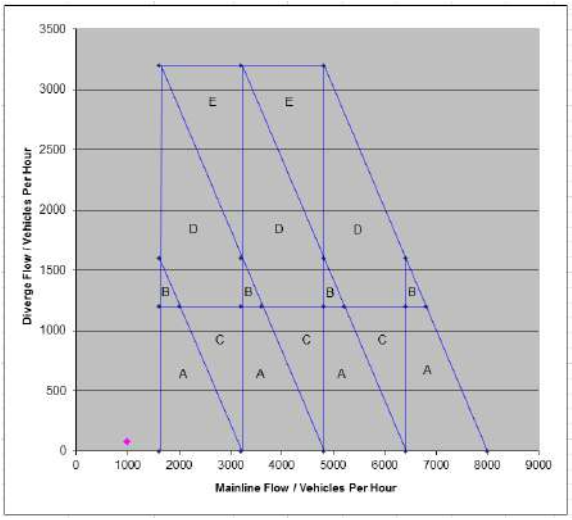


2031 Do Something PPLP PM (Merge)



Alkham Valley Road / A20 Off Slip / A20 On Slip

2031 Do Minimum AM (Diverge)



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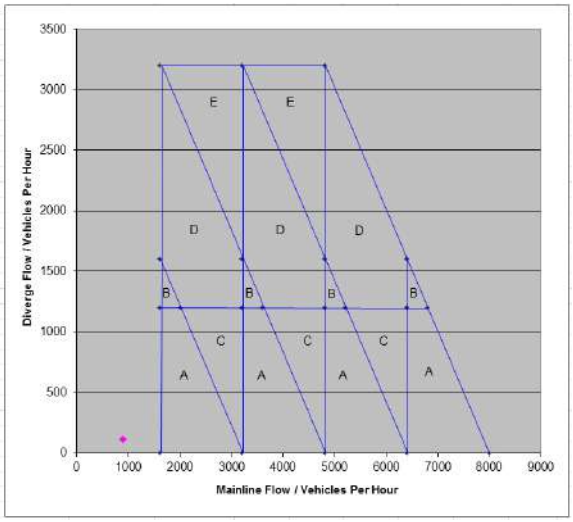

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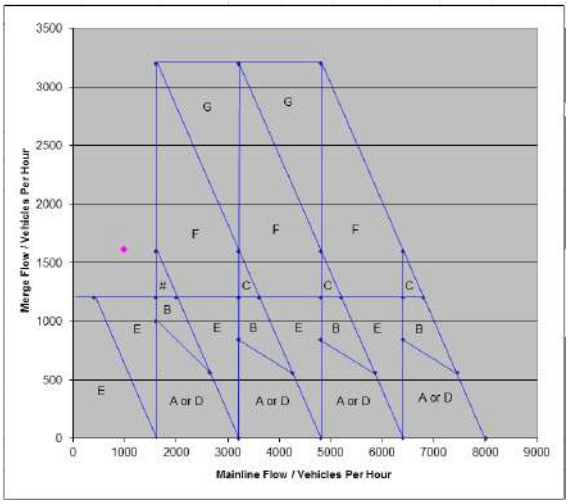

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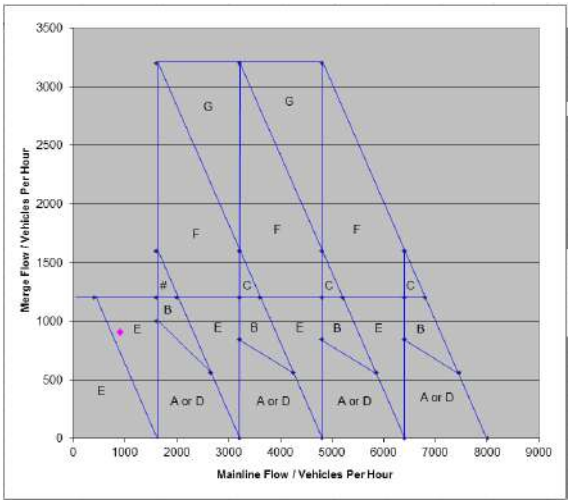

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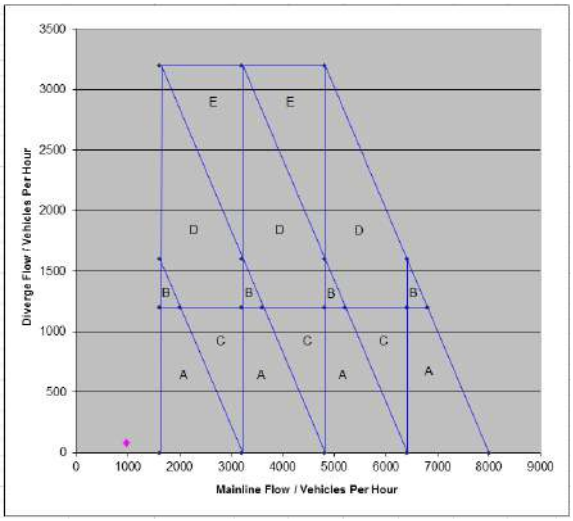

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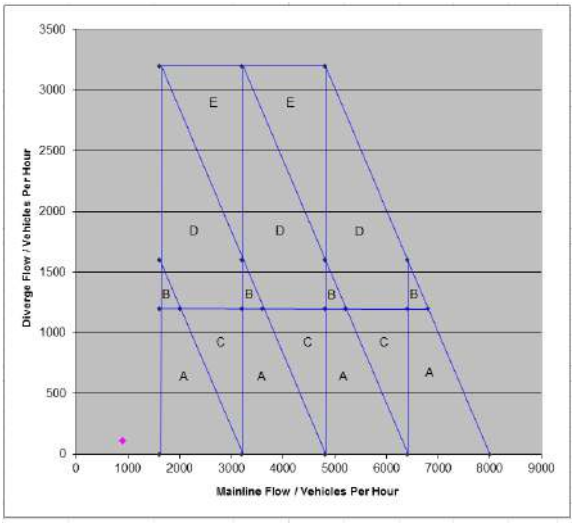

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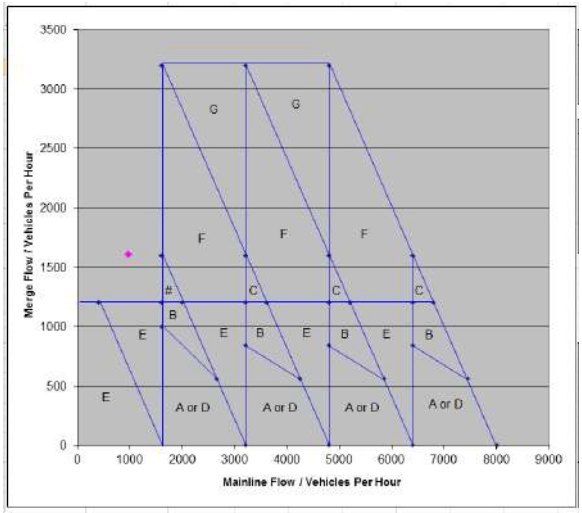

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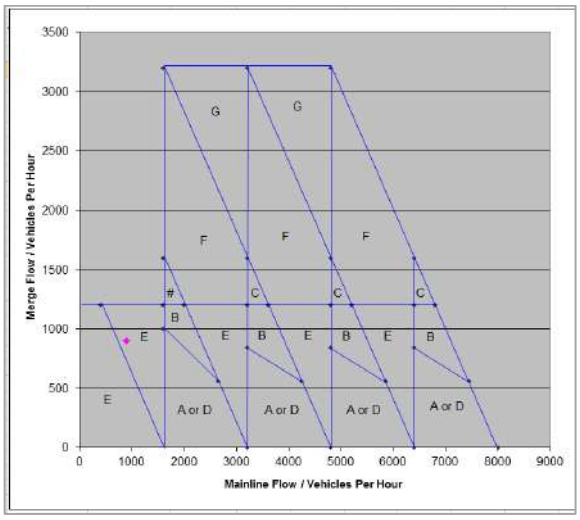
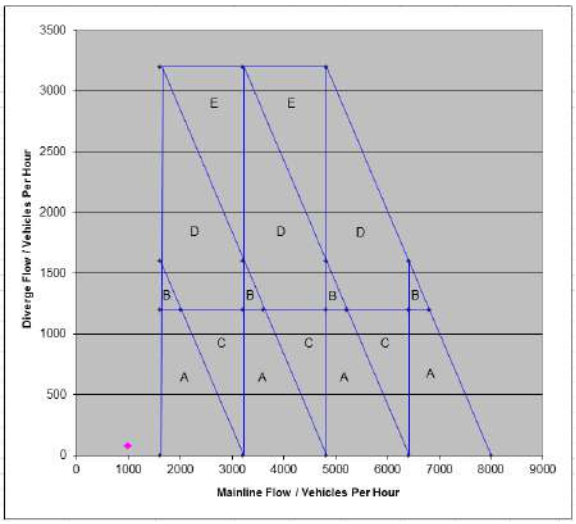


2031 Do Something PPLP AM (Diverge)



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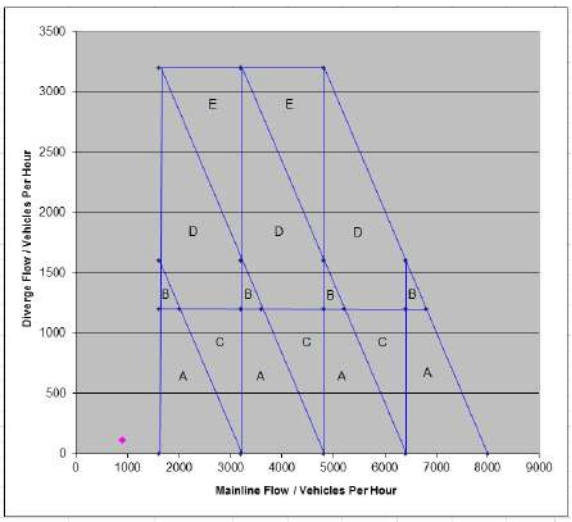

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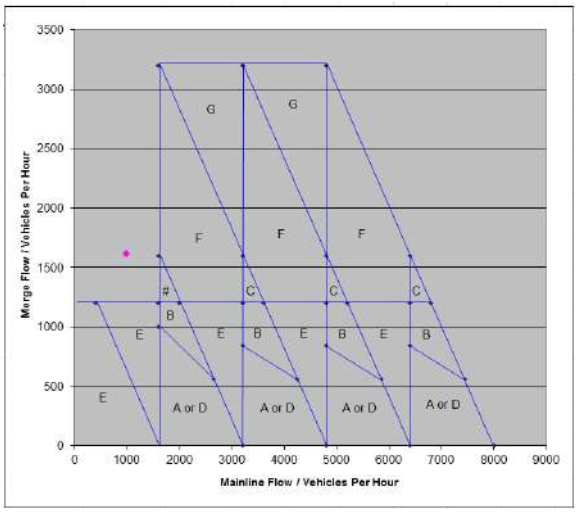

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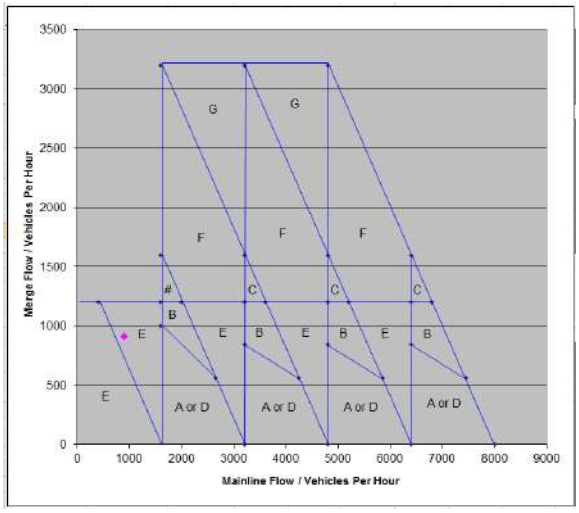
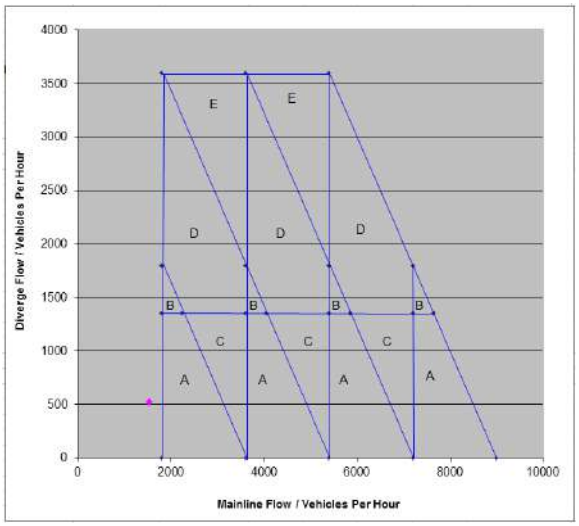


A20 / M20 / B2064 (Cheriton Interchange, M20 Junction 12)

Eastbound

2031 Do Minimum AM (EB Diverge)



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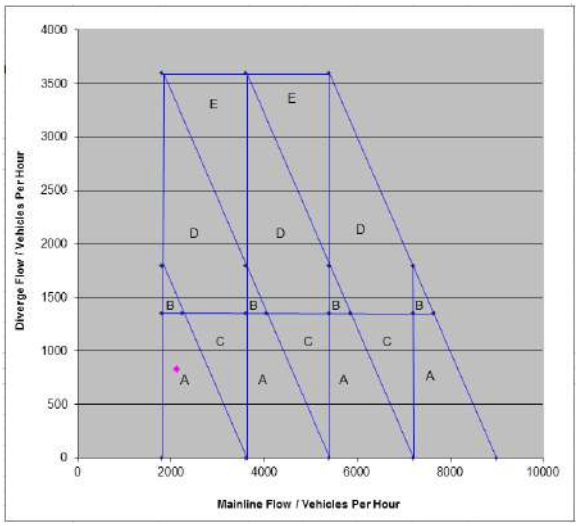

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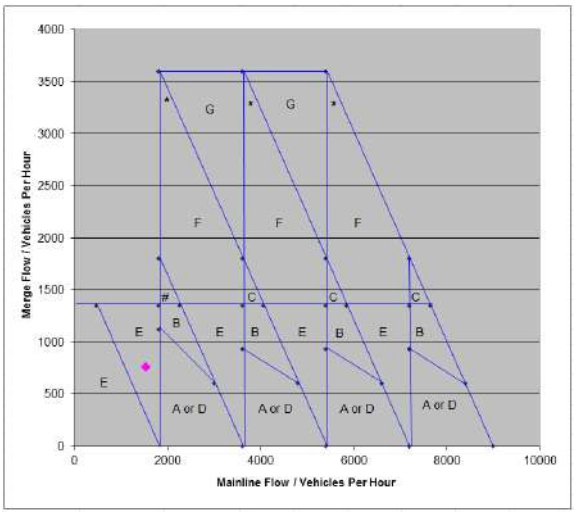

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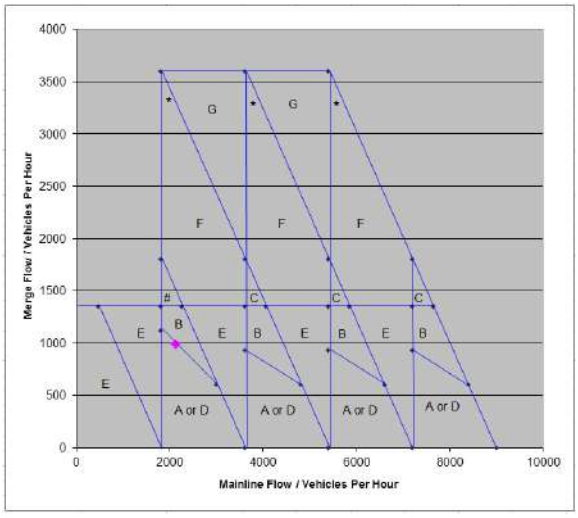

Westbound

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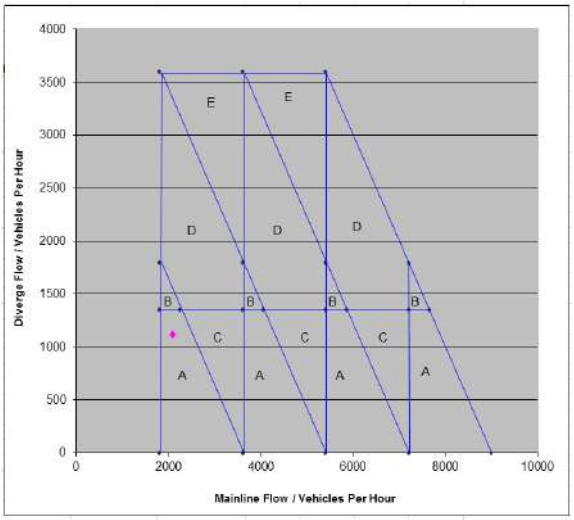

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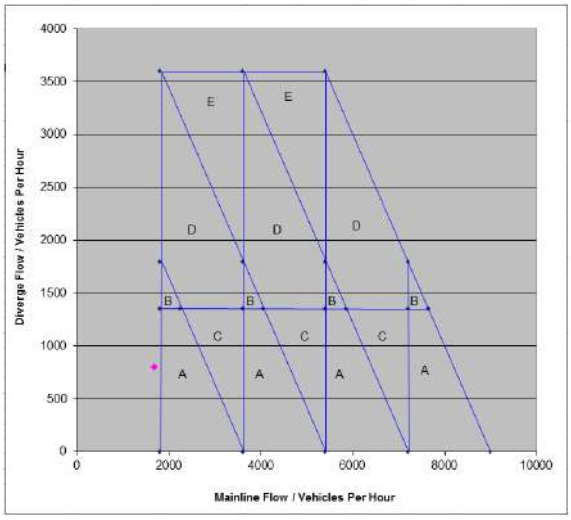

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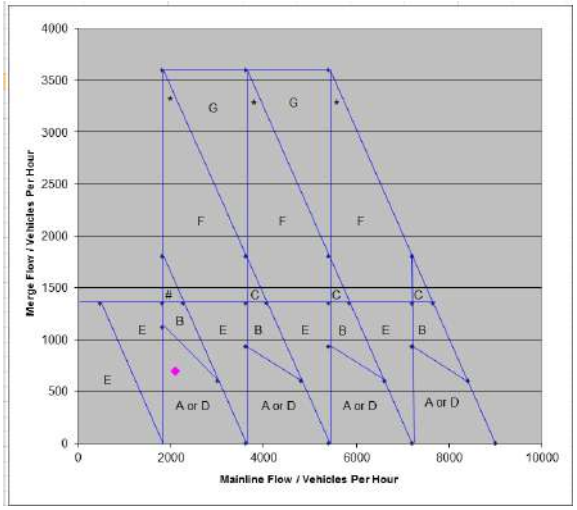

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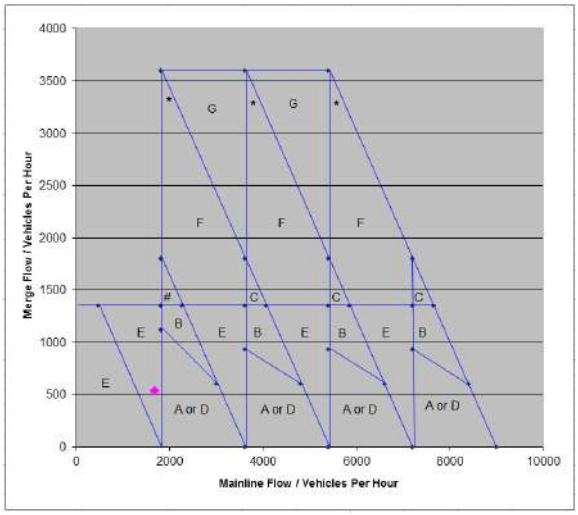

Eastbound

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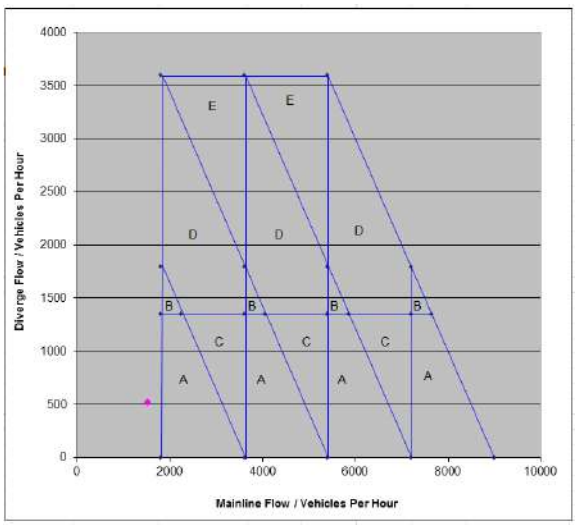

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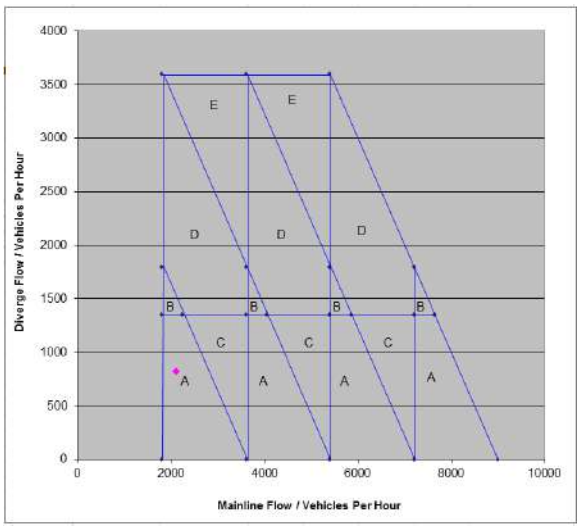

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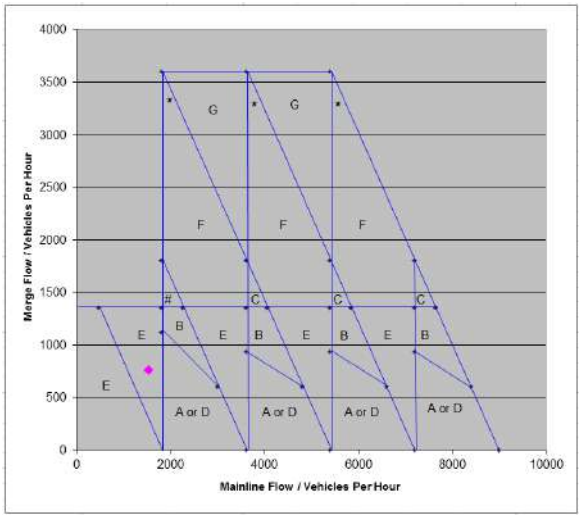

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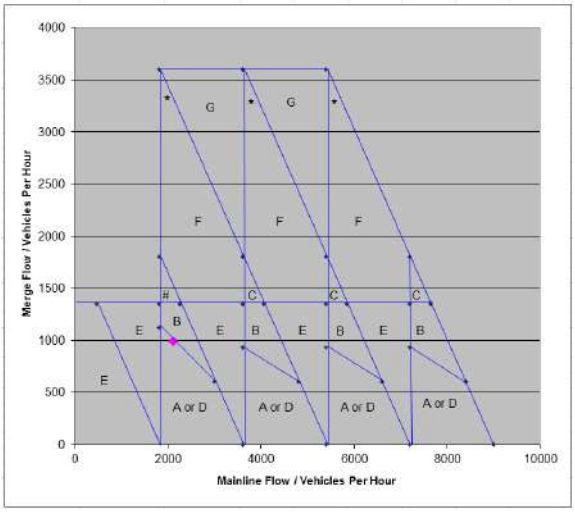

Westbound

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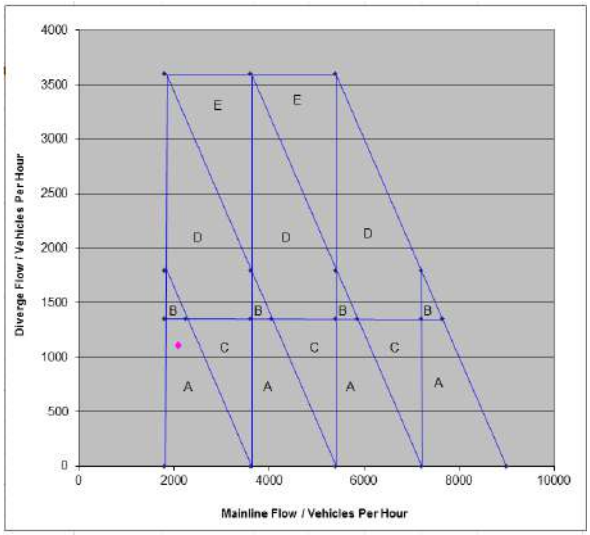

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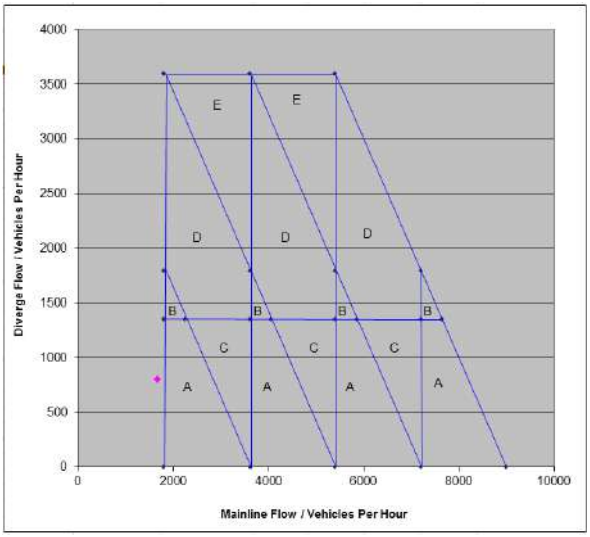

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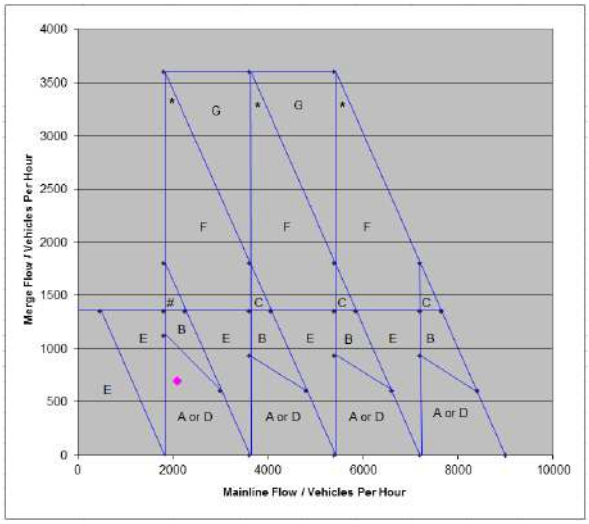

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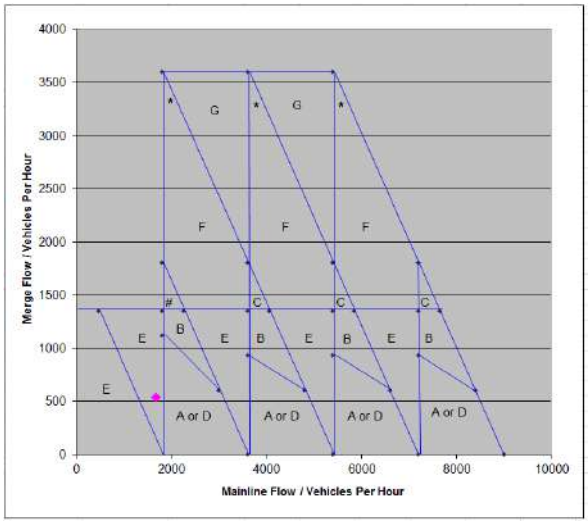
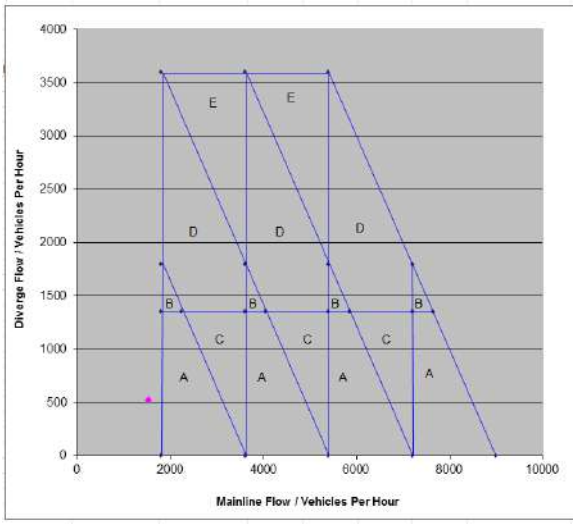
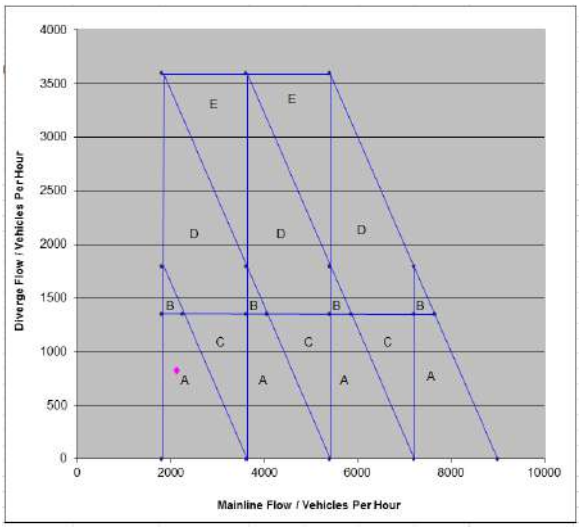


Eastbound

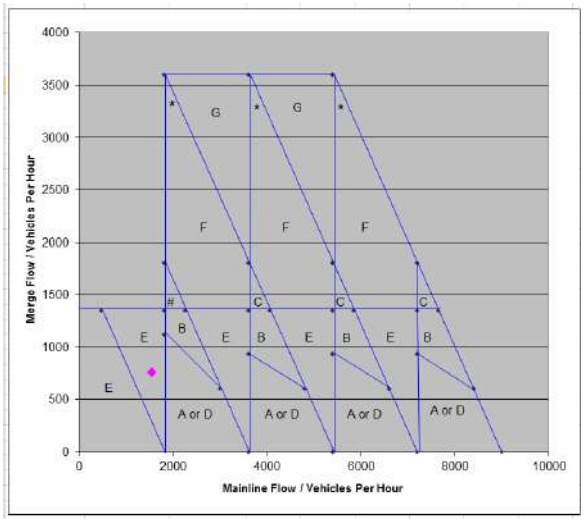
2031 Do Something PPLP AM (EB Diverge)



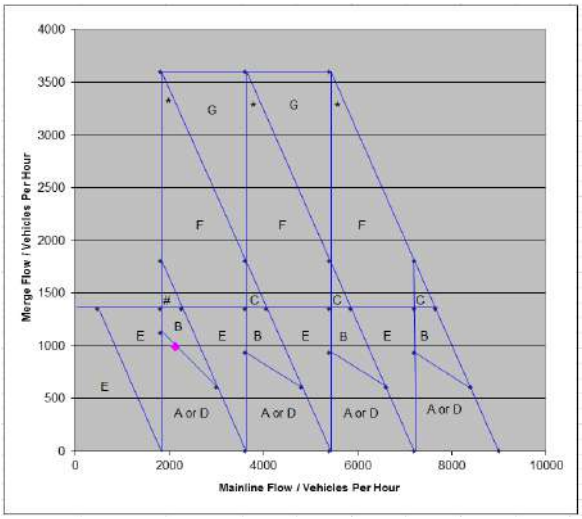
2031 Do Something PPLP PM (EB Diverge)



2031 Do Something PPLP AM (EB Merge)



2031 Do Something PPLP PM (EB Merge)



Westbound

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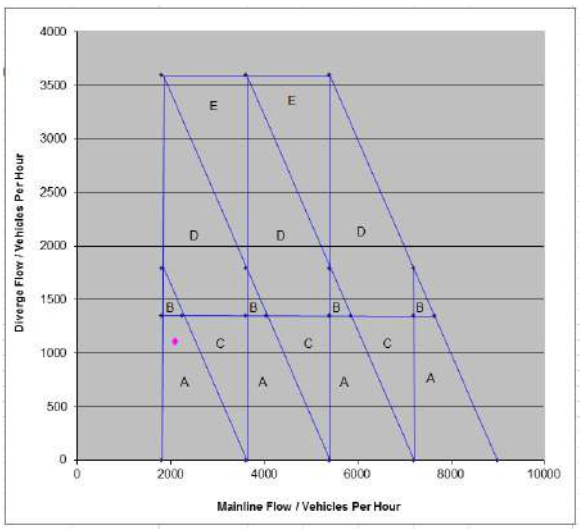

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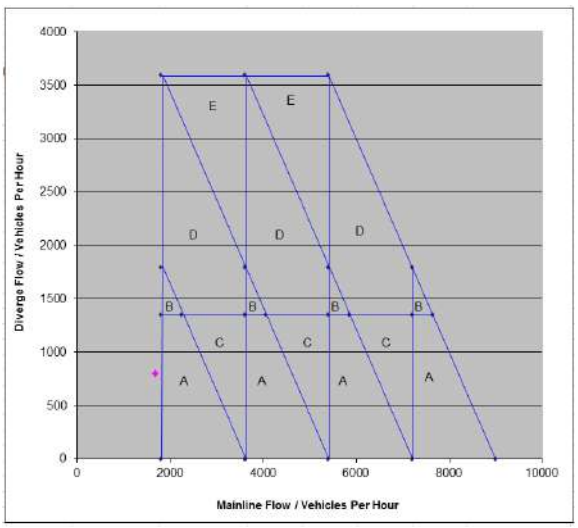
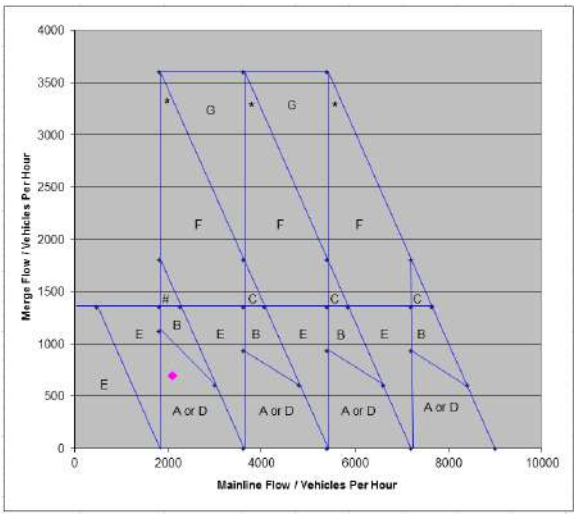
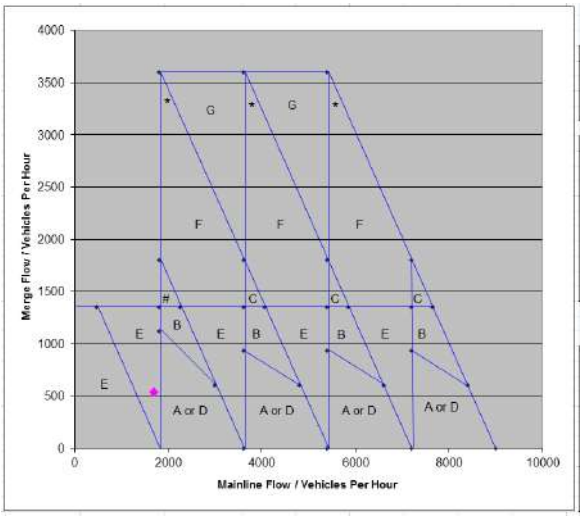


2031 Do Something PPLP AM (WB Merge)



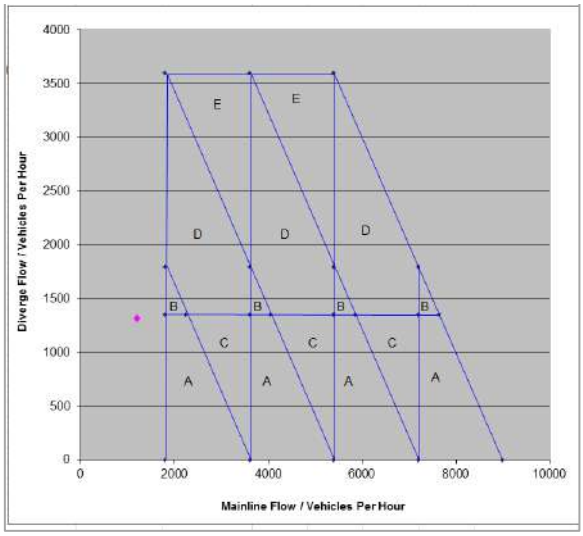
2031 Do Something PPLP PM (WB Merge)



A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange, M20 Jct 13)

Eastbound

2031 Do Minimum AM (EB Diverge)



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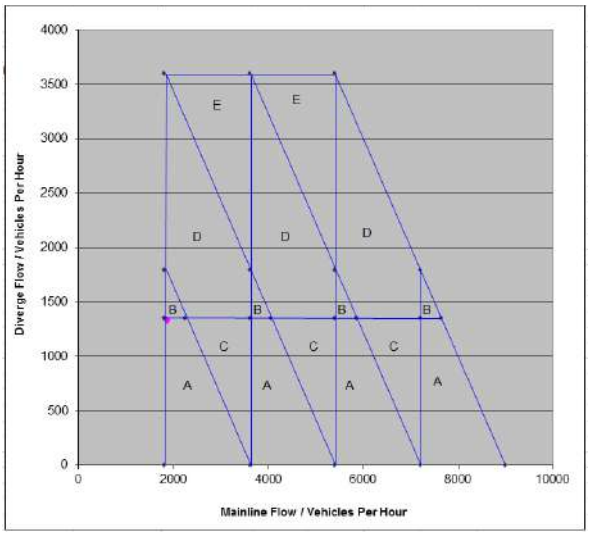
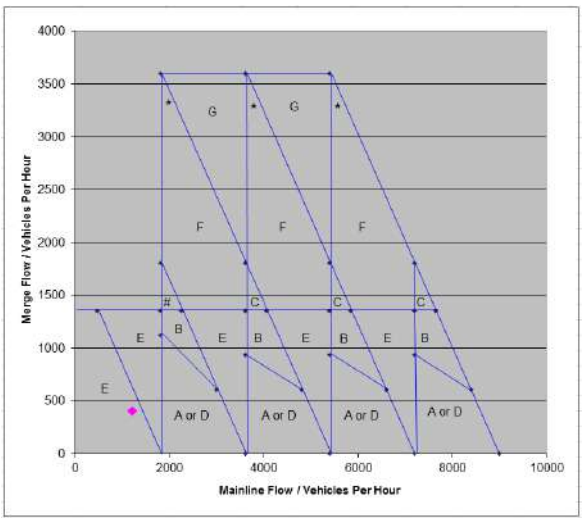


2031 Do Minimum AM (EB Merge)



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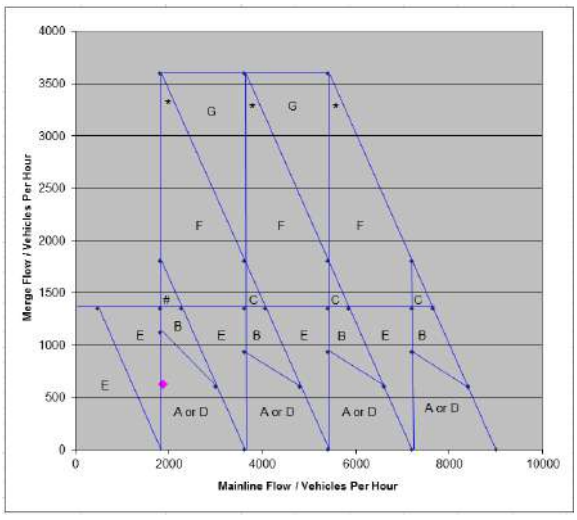
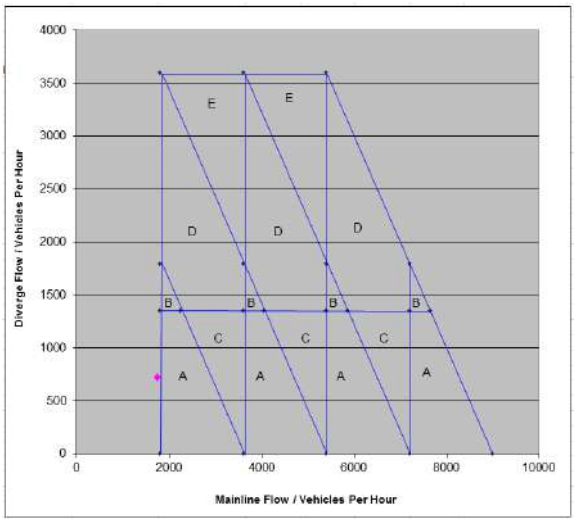


Westbound

2031 Do Minimum AM (WB Diverge)



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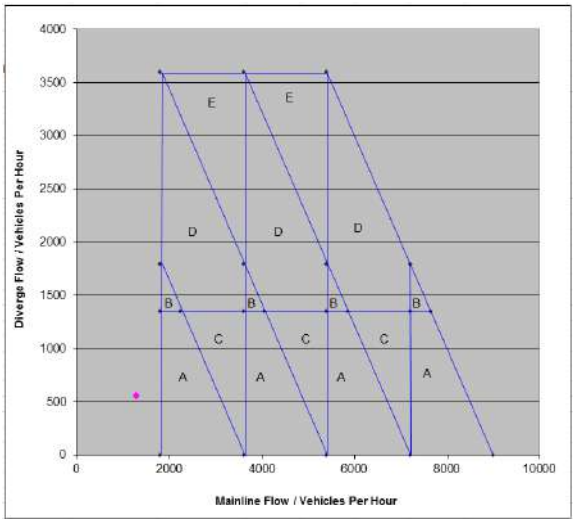

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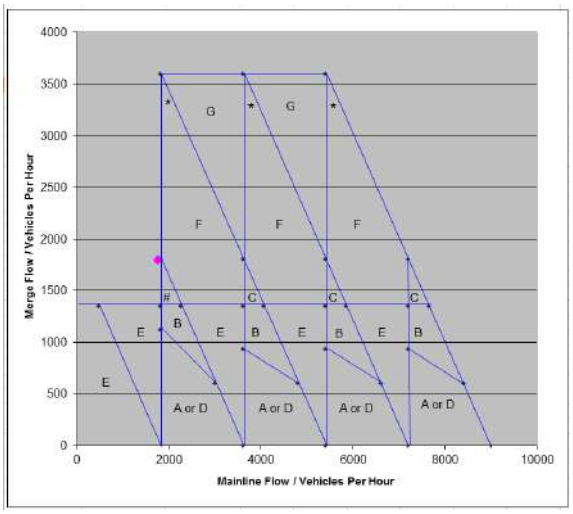

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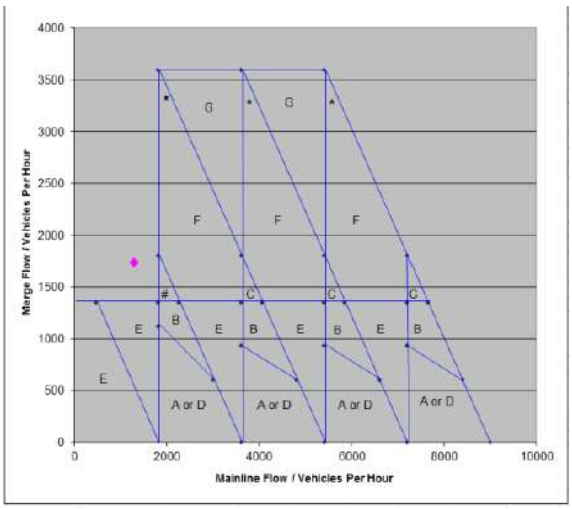

Eastbound

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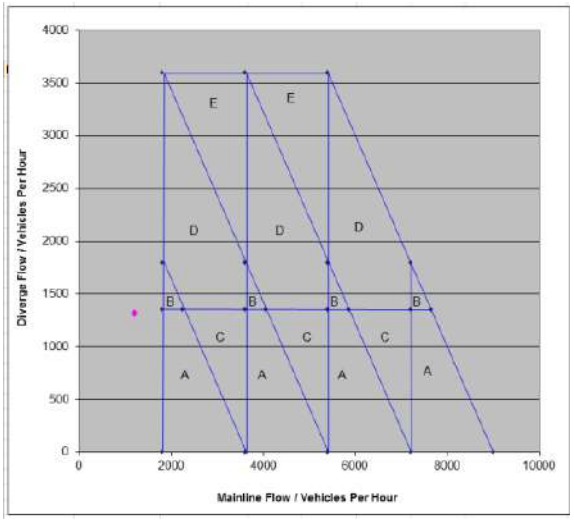
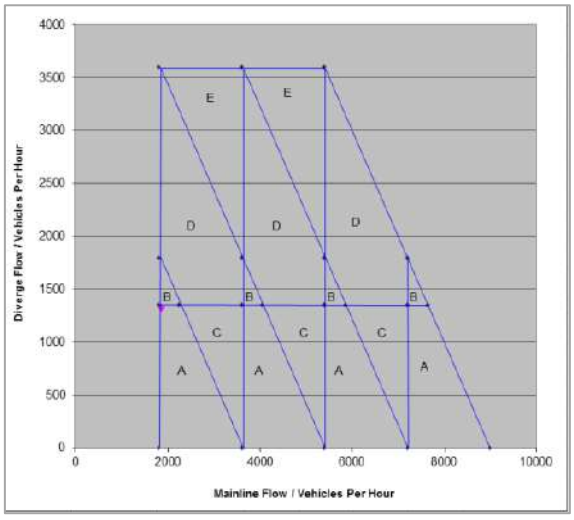


2031 Do Minimum Alternative PM (EB Diverge)



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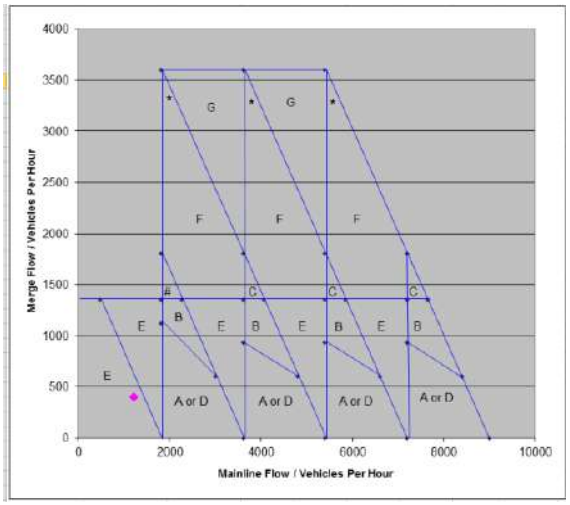

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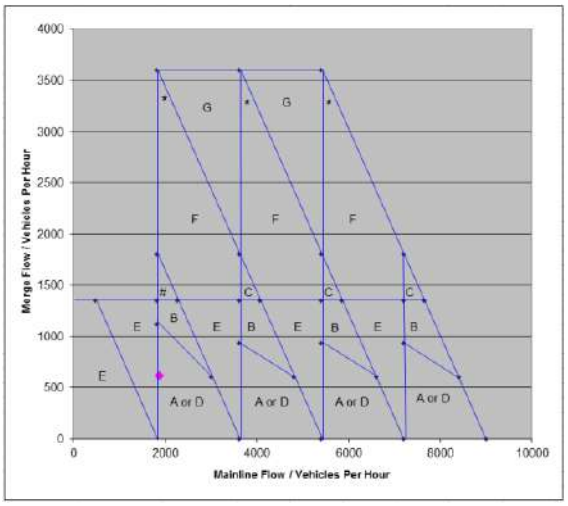

Westbound

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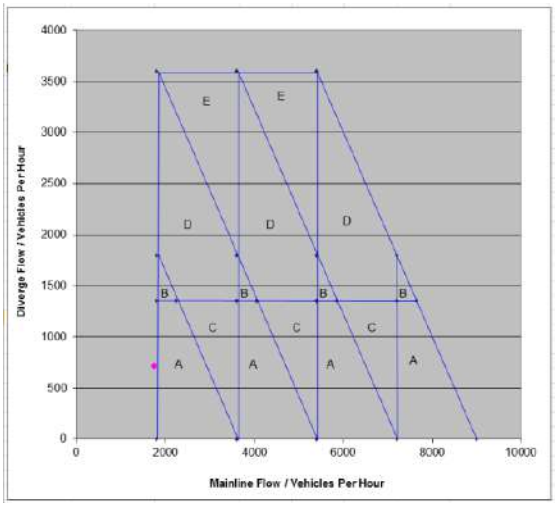

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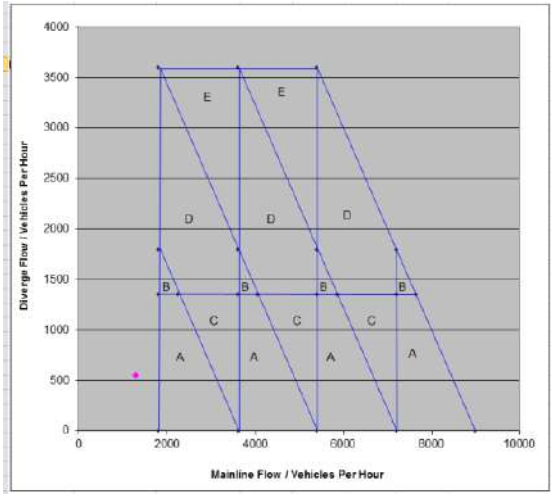

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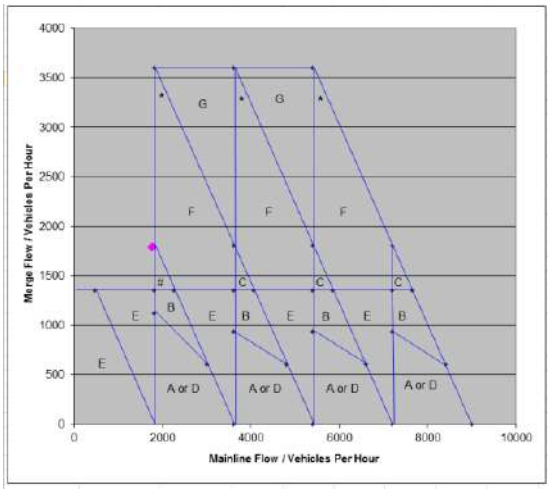

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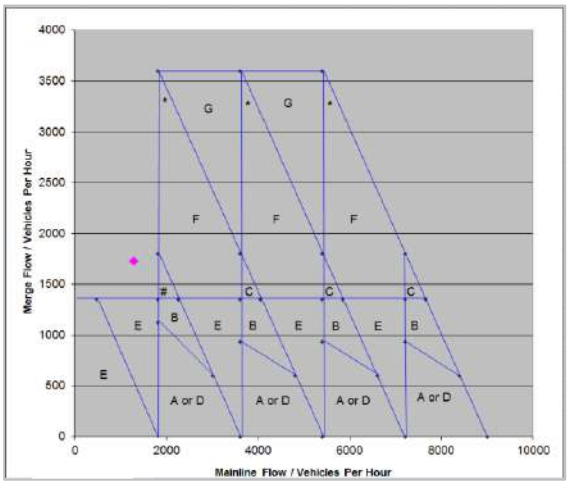
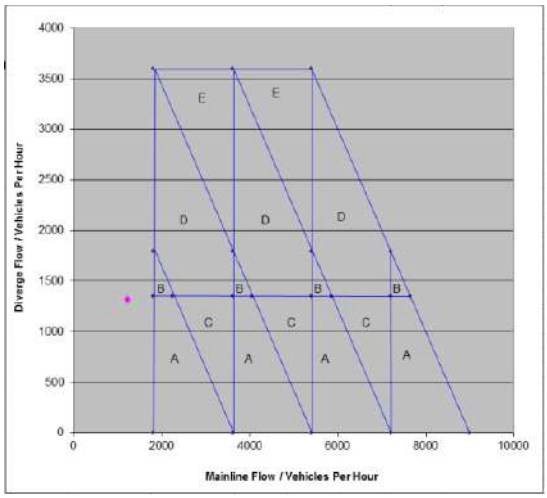


Eastbound

2031 Do Something PPLP AM (EB Diverge)



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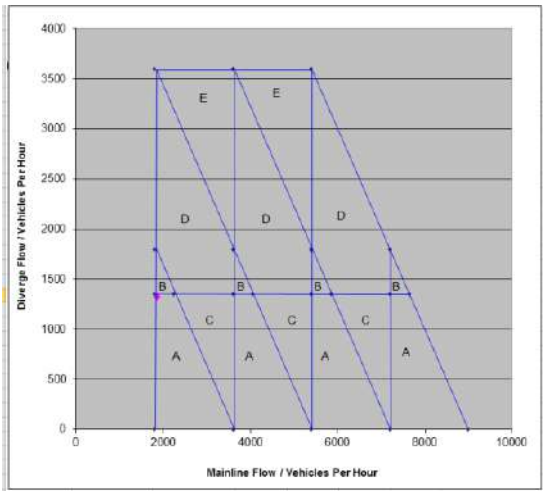
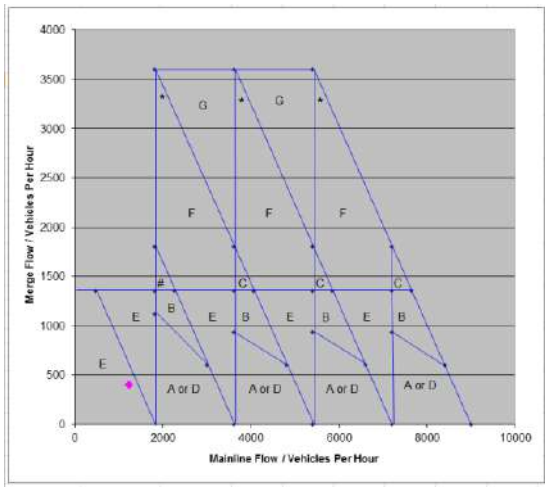
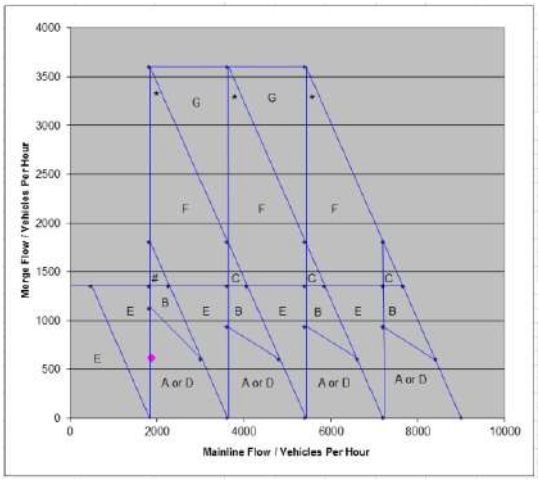


2031 Do Something PPLP AM (EB Merge)



2031 Do Something PPLP PM (EB Merge)



Westbound

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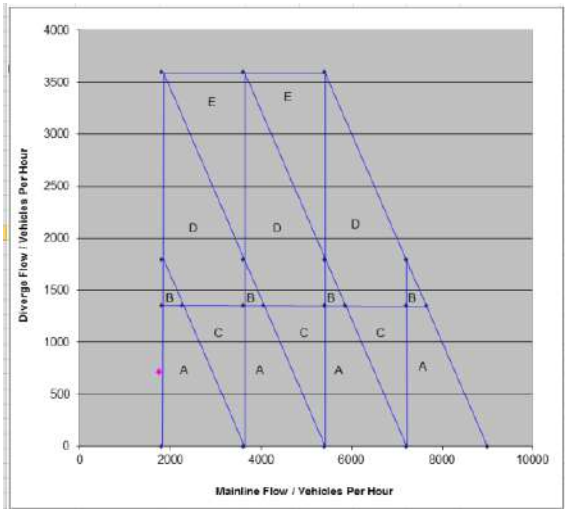
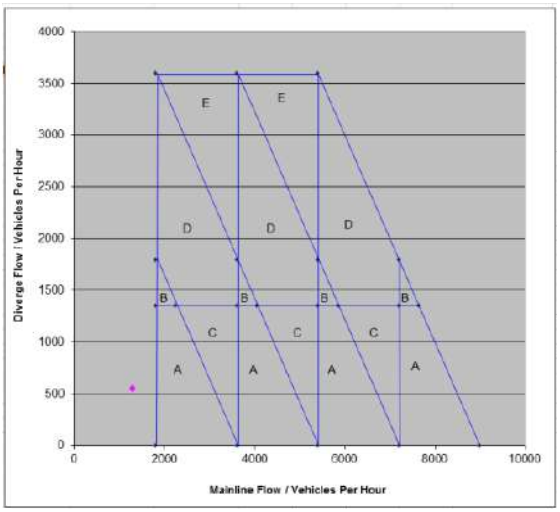


2031 Do Something PPLP PM (WB Diverge)



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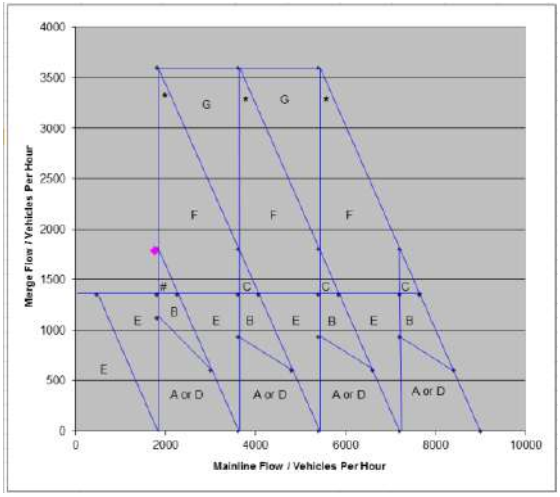

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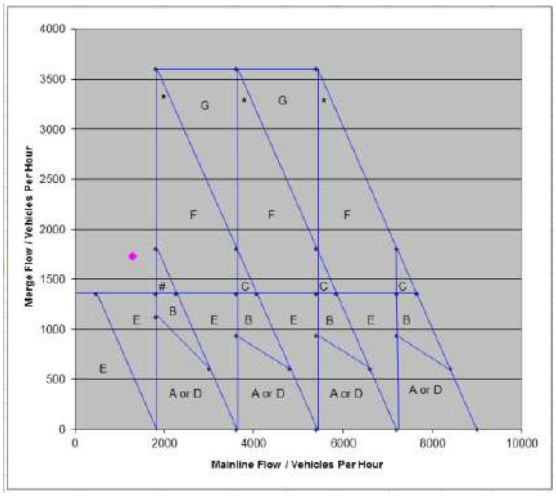
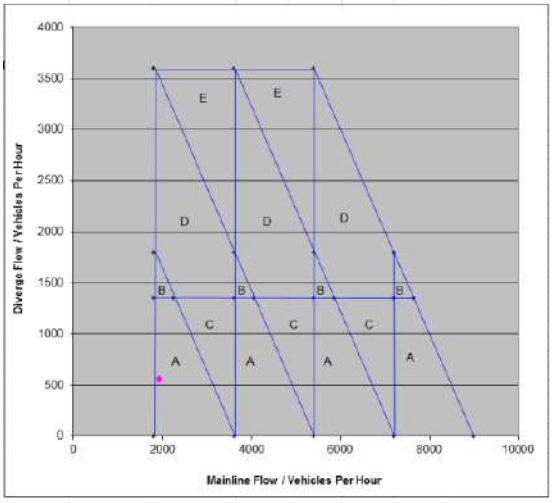


M20 / A20 / B2068 Roundabout (M20 Junction 11)Eastbound

2031 Do Minimum AM (EB Diverge)



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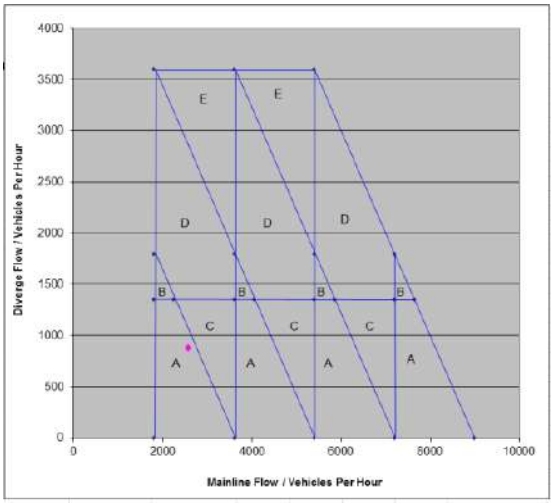

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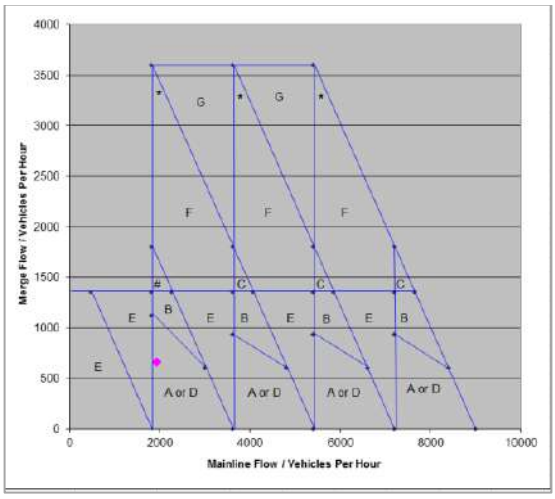

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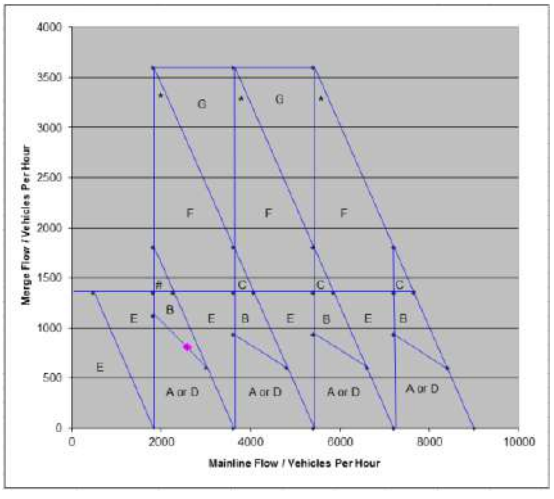

Westbound

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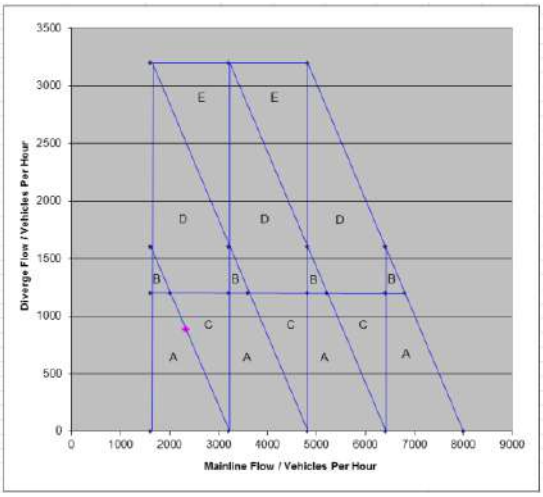

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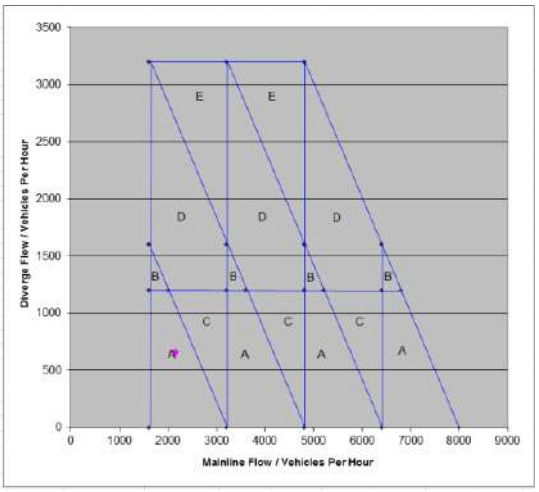

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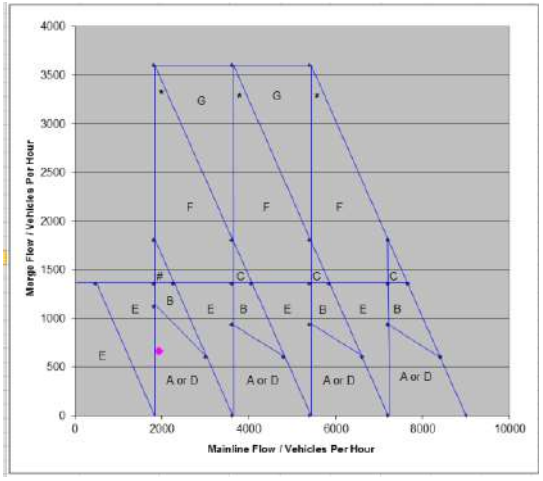

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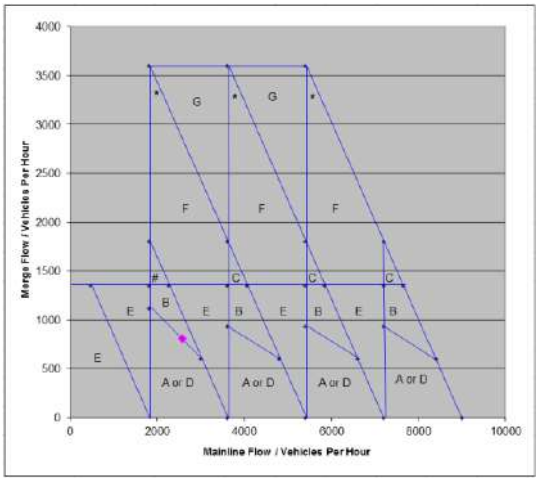
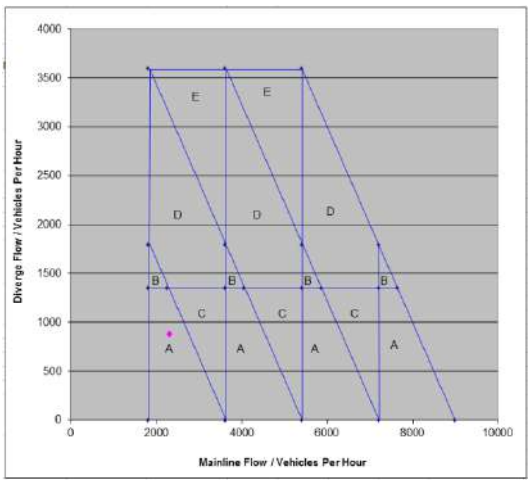


Eastbound

2031 Do Minimum Alternative AM (EB Diverge)



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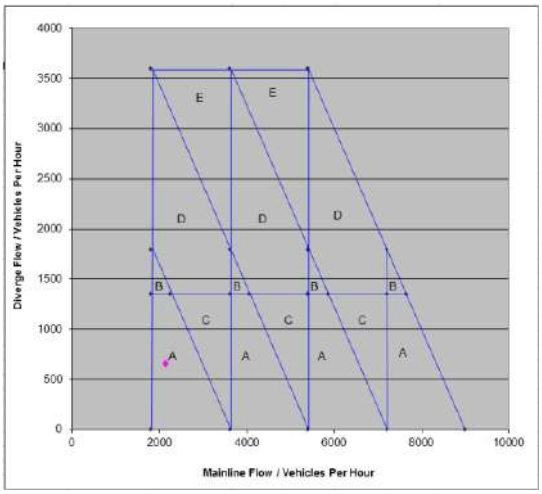

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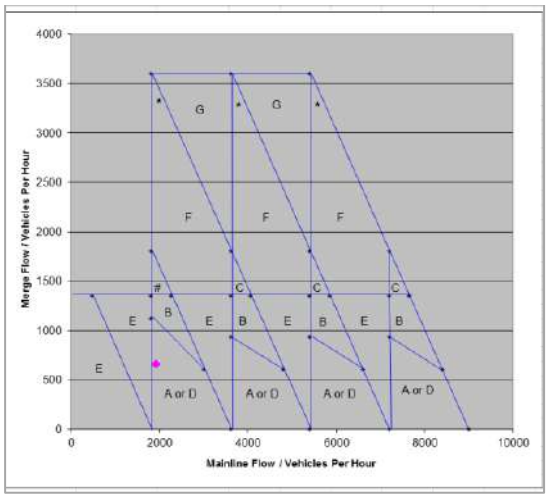
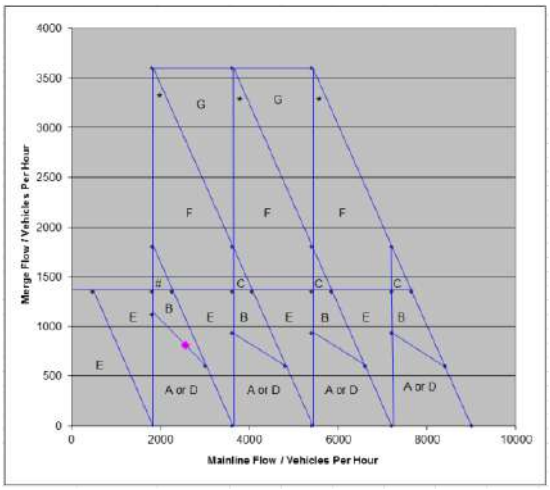
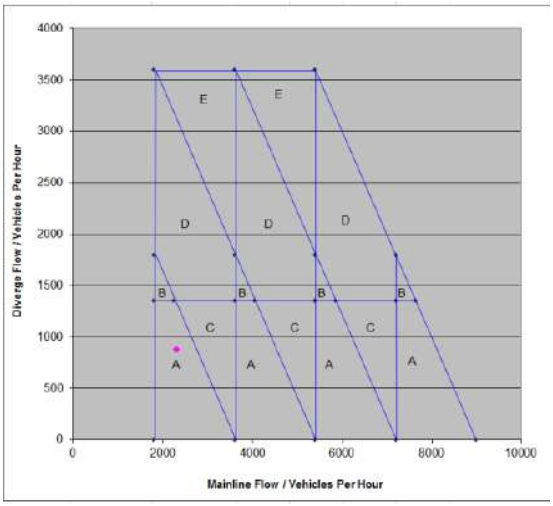


2031 Do Minimum Alternative PM (EB Merge)

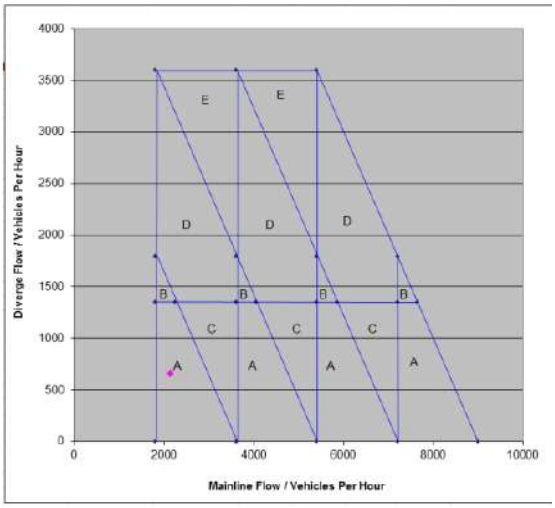


Westbound

2031 Do Minimum Alternative AM (WB Diverge)



2031 Do Minimum Alternative PM (WB Diverge)



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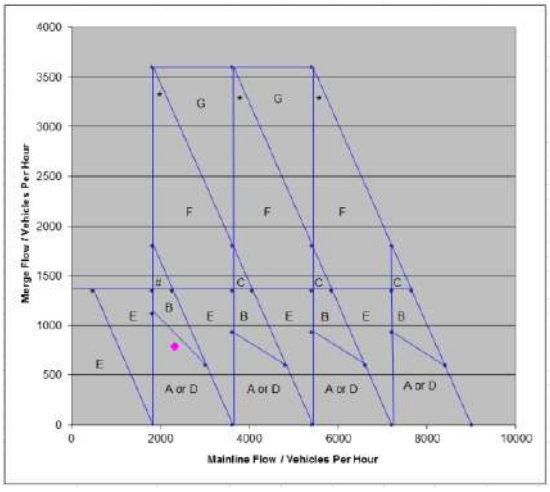

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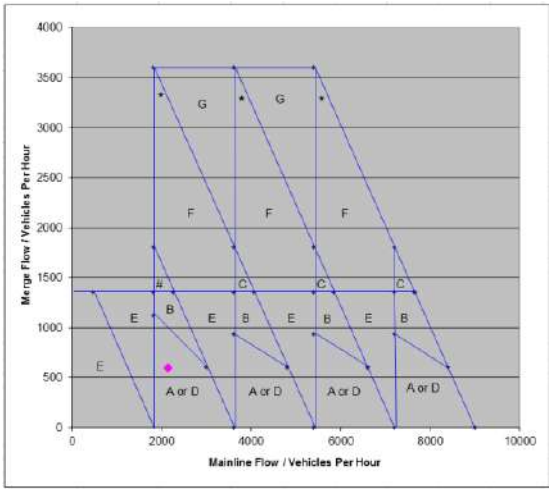
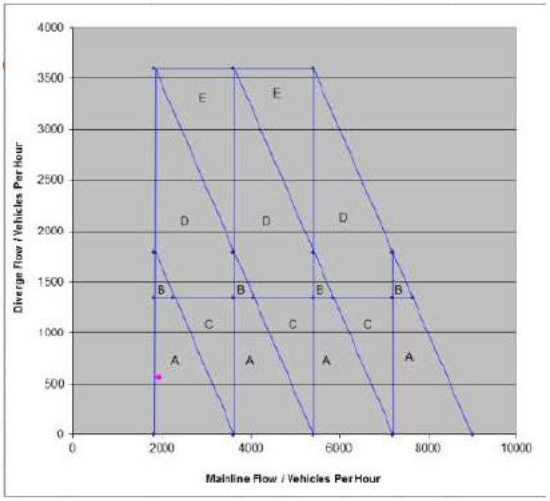


Eastbound

2031 Do Something PPLP AM (EB Diverge)



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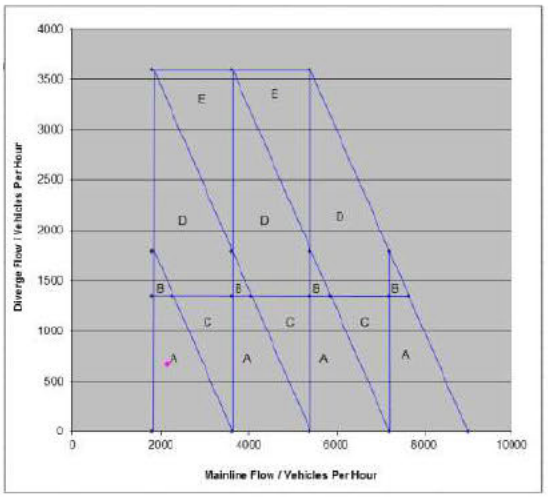

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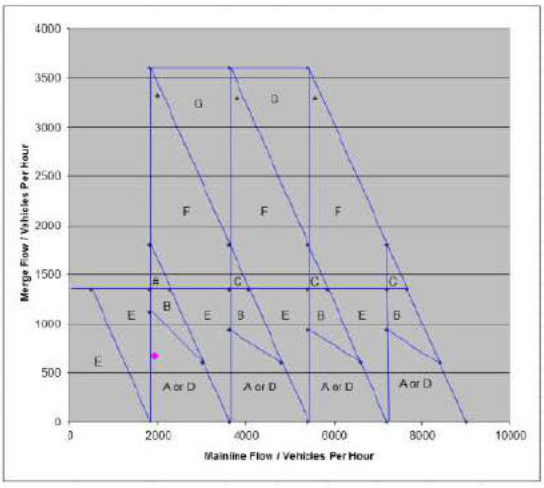
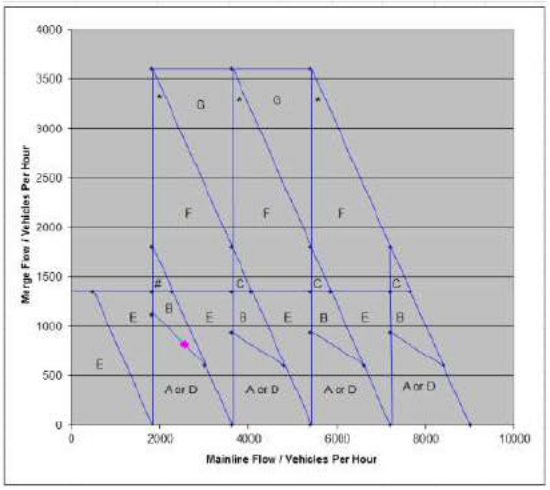


2031 Do Something PPLP PM (EB Merge)



Westbound

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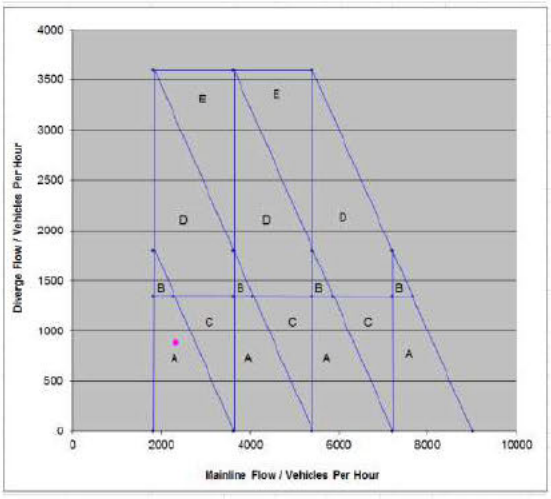

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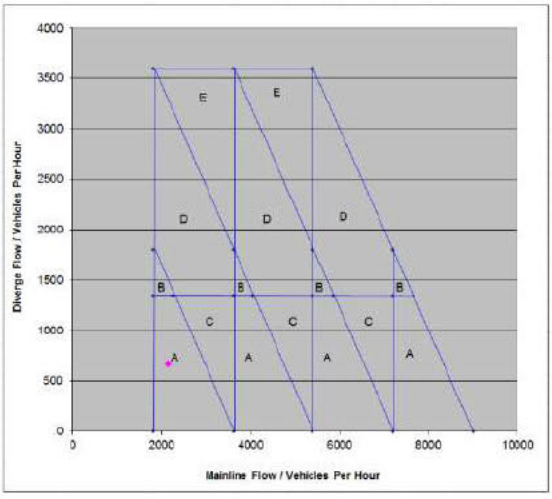

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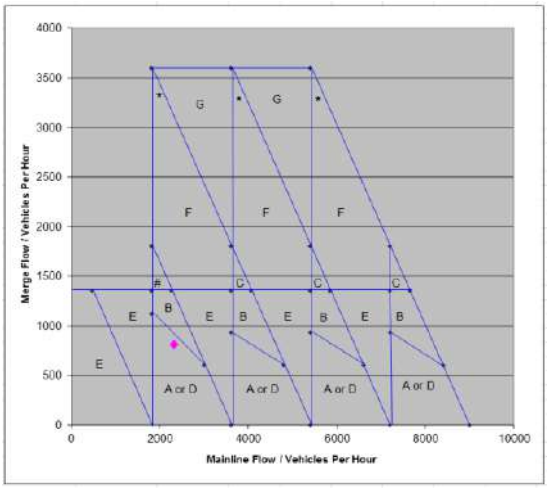

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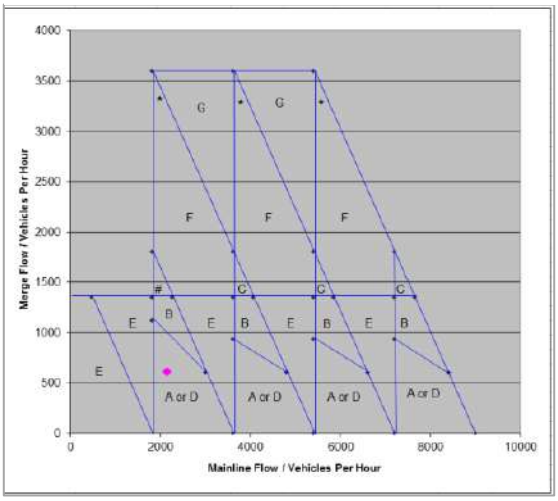


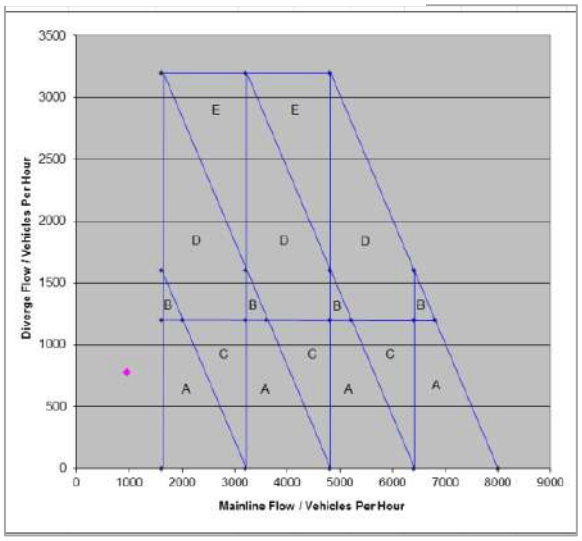
Appendix C 2037 Merge and Diverge Outputs

Merge and Diverge Appraisal

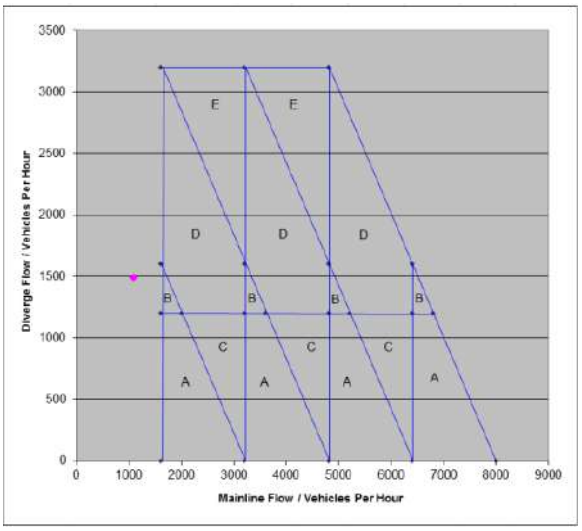
2037 Scenarios

A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Road

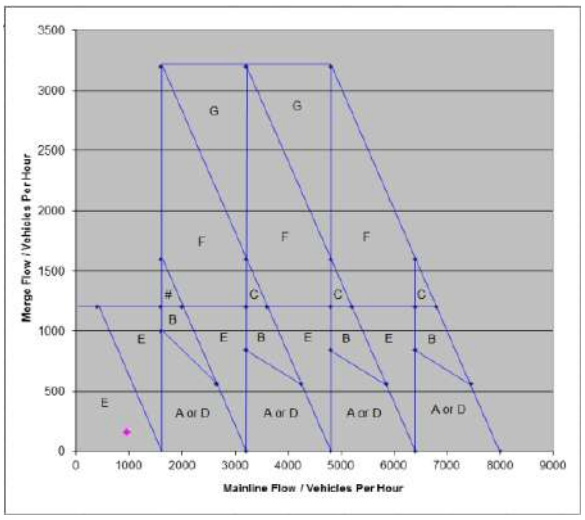
2037 Do Minimum AM (Diverge)



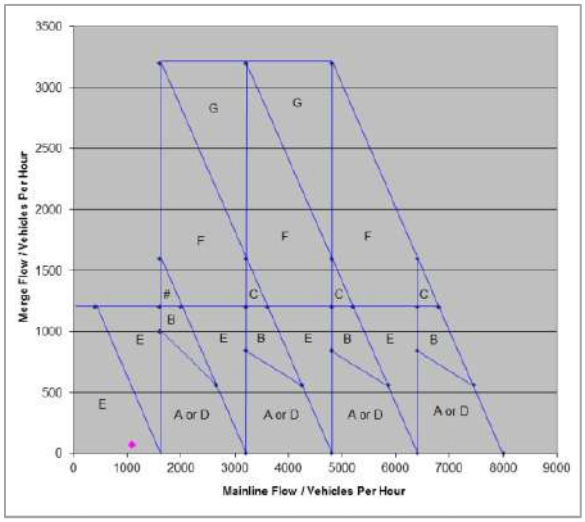
2037 Do Minimum PM (Diverge)



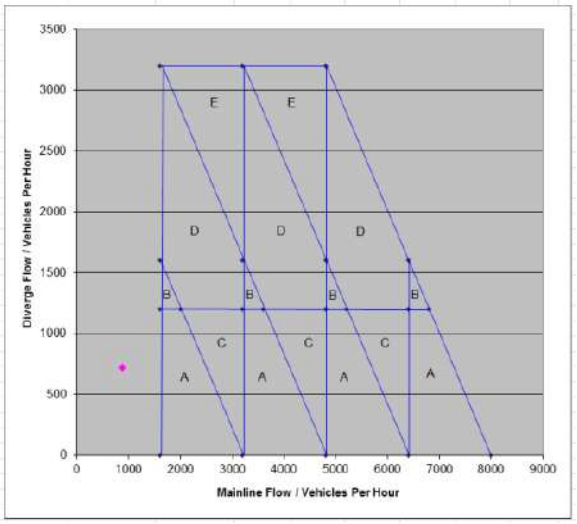
2037 Do Minimum AM (Merge)



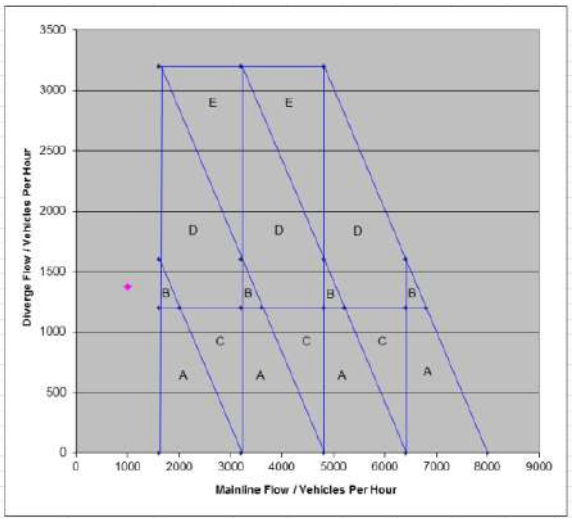
2037 Do Minimum PM (Merge)



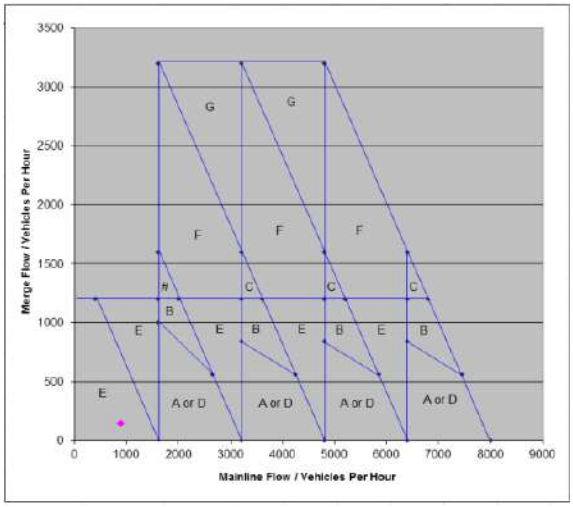
2037 Do Minimum Alternative AM (Diverge)



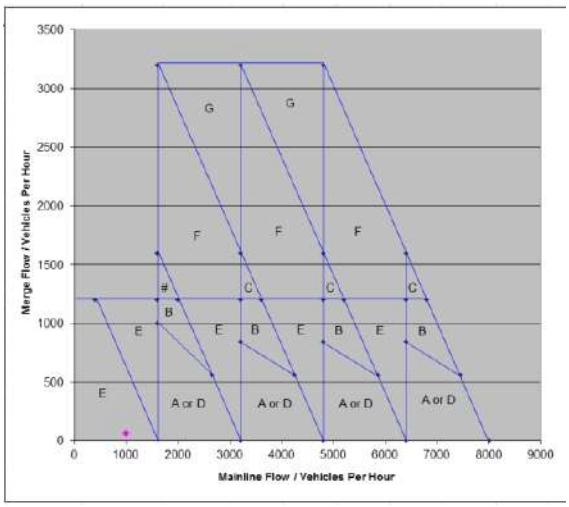
2037 Do Minimum Alternative PM (Diverge)



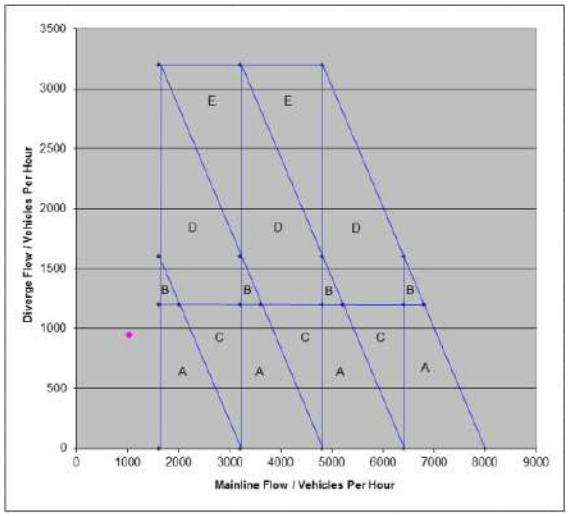
2037 Do Minimum Alternative AM (Merge)



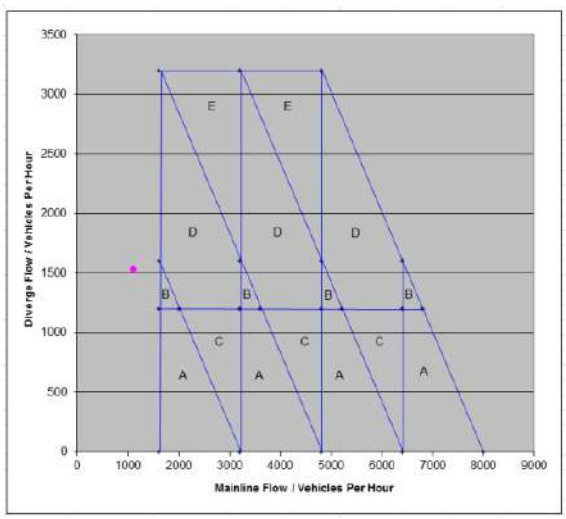
2037 Do Minimum Alternative PM (Merge)



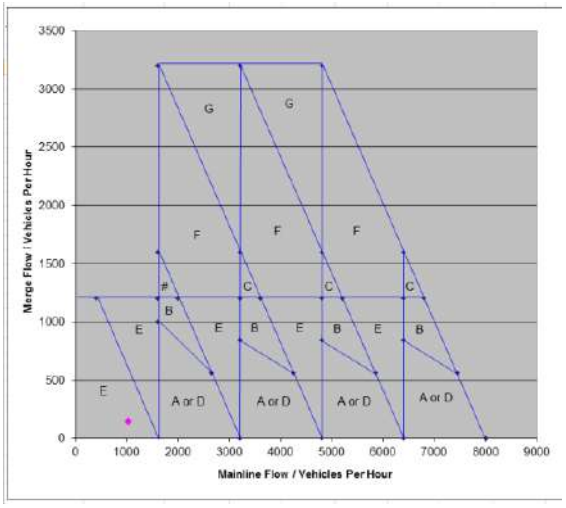
2037 Do Something CSR 6500 AM (Diverge)



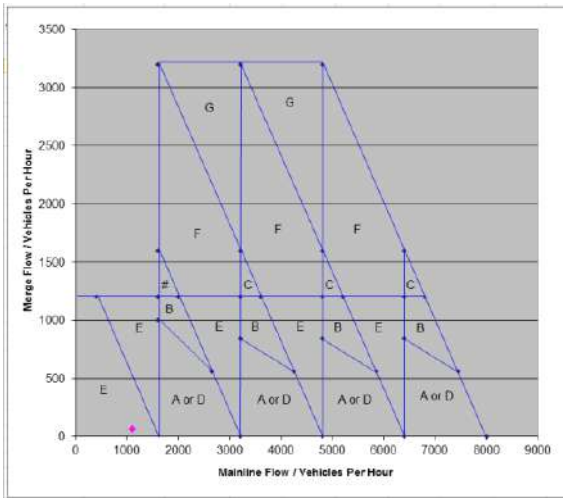
2037 Do Something CSR 6500 PM (Diverge)



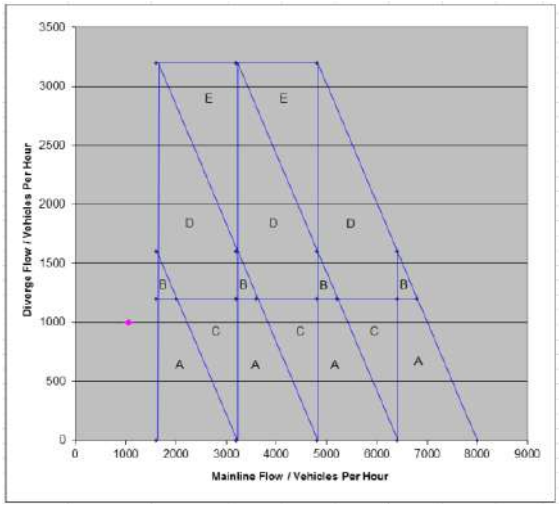
2037 Do Something CSR 6500 AM (Merge)



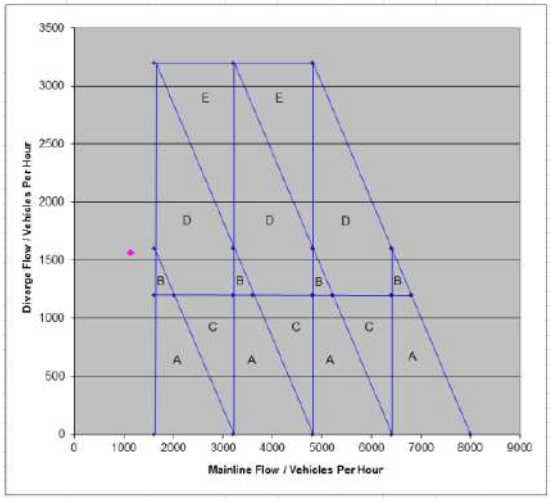
2037 Do Something CSR 6500 PM (Merge)



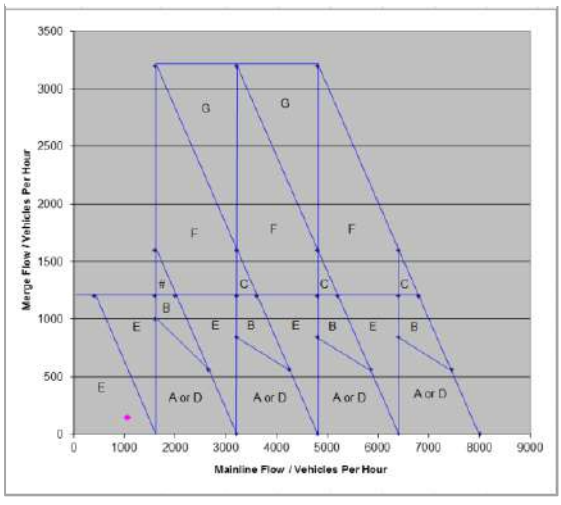
2037 Do Something CSR 8000 AM (Diverge)



2037 Do Something CSR 8000 PM (Diverge)



2037 Do Something CSR 8000 AM (Merge)



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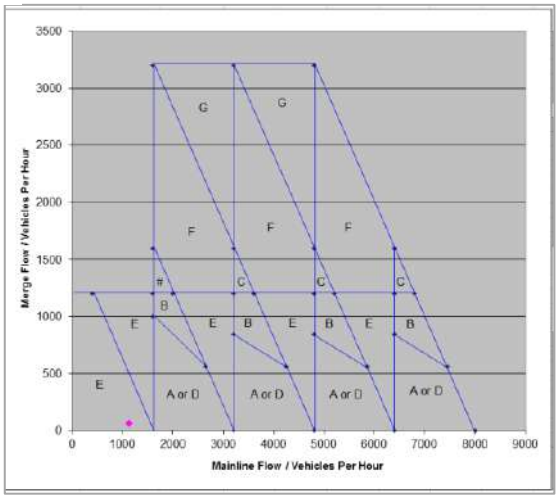
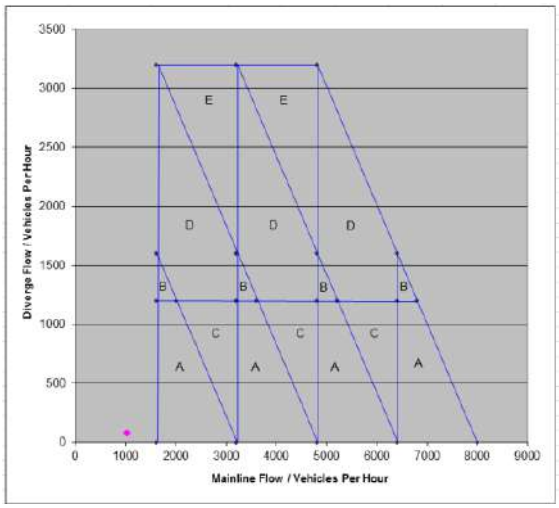
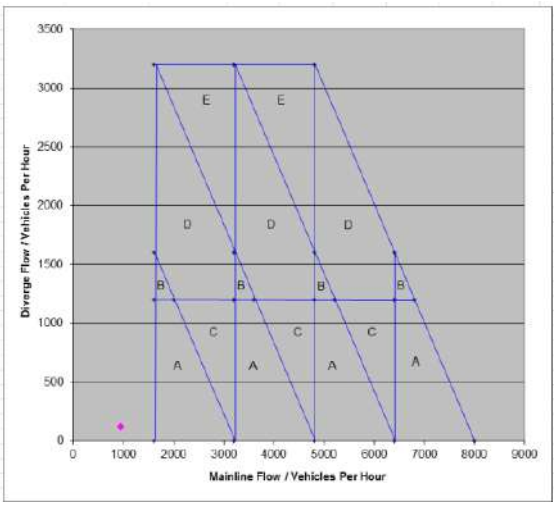


Alkham Valley Road / A20 Off Slip / A20 On Slip

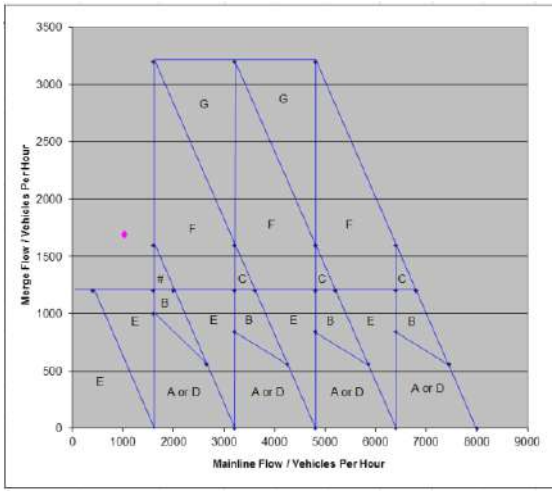
2037 Do Minimum AM (Diverge)



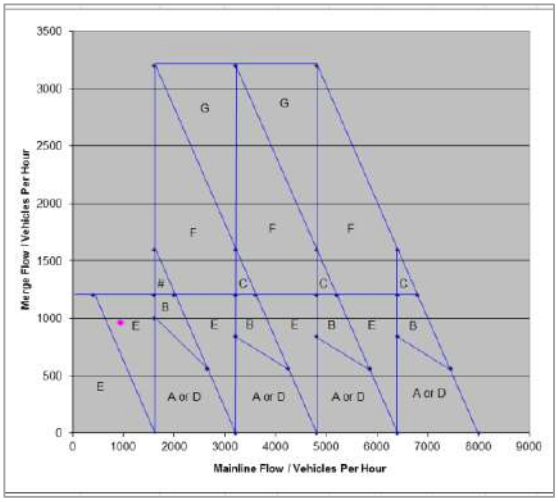
2037 Do Minimum PM (Diverge)



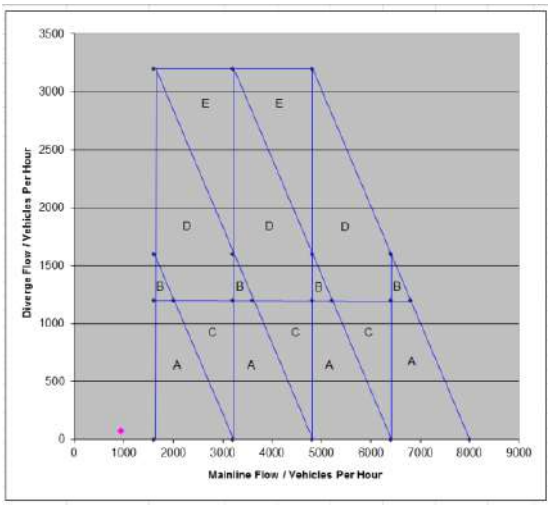
2037 Do Minimum AM (Merge)



2037 Do Minimum PM (Merge)



2037 Do Minimum Alternative AM (Diverge)



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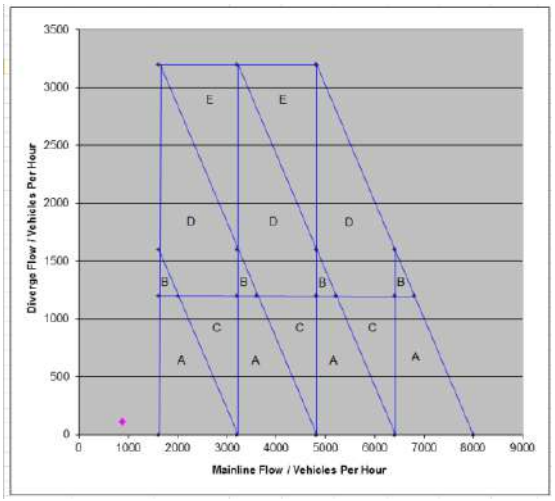
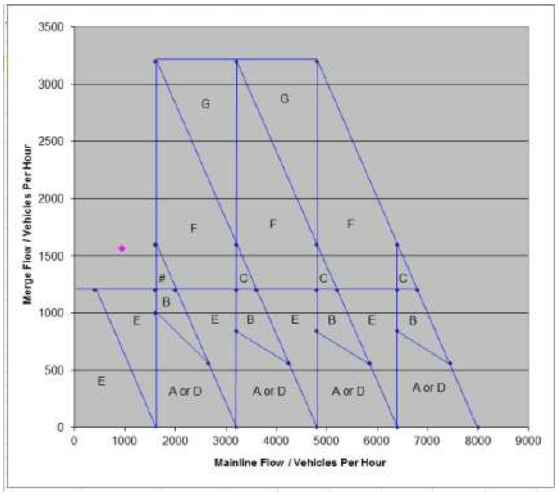
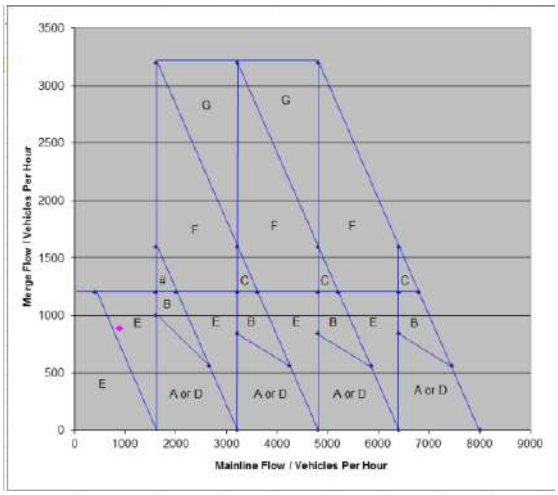


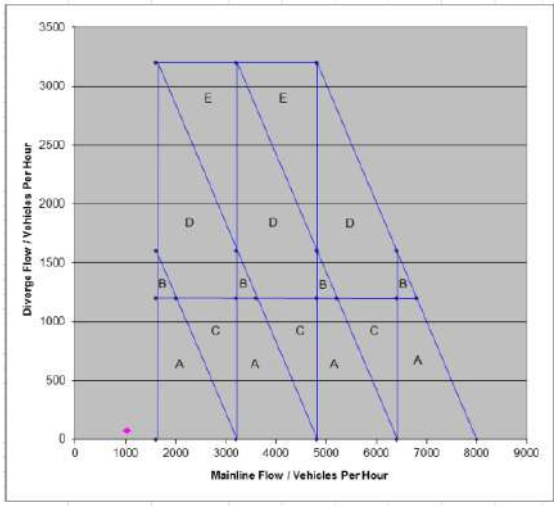
2037 Do Minimum Alternative AM (Merge)



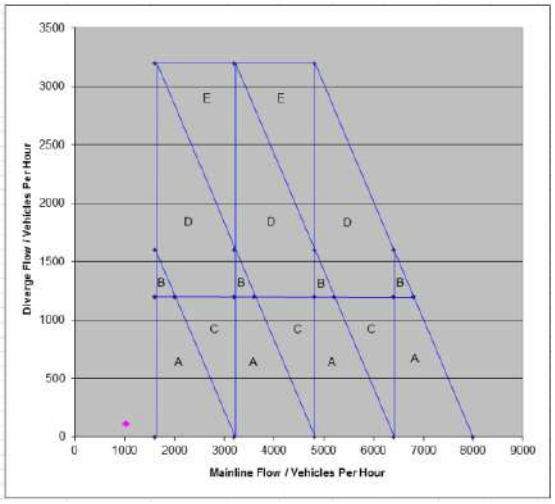
2037 Do Minimum Alternative PM (Merge)



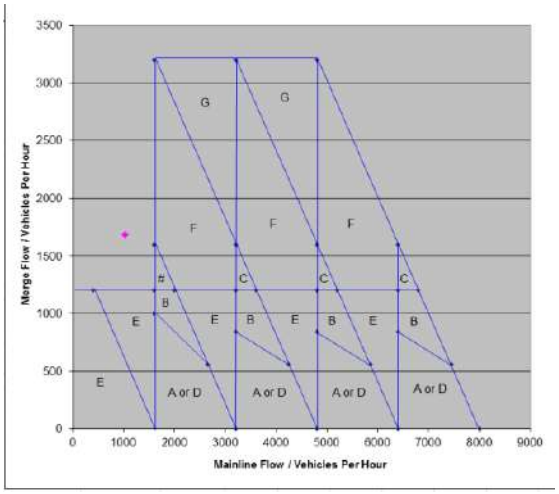
2037 Do Something CSR 6500 AM (Diverge)



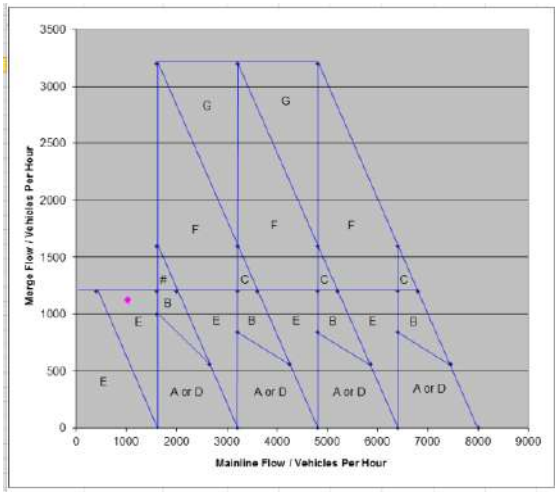
2037 Do Something CSR 6500 PM (Diverge)



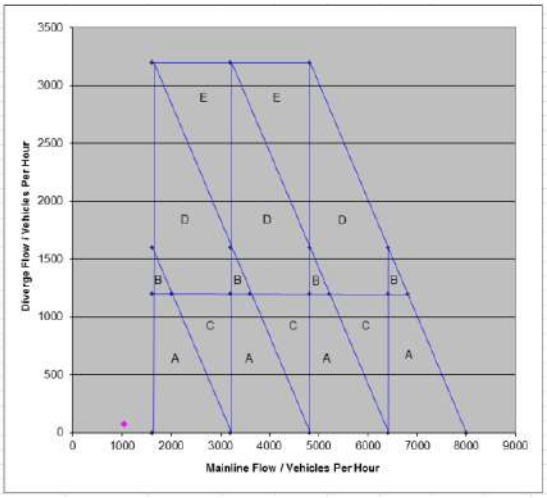
2037 Do Something CSR 6500 AM (Merge)



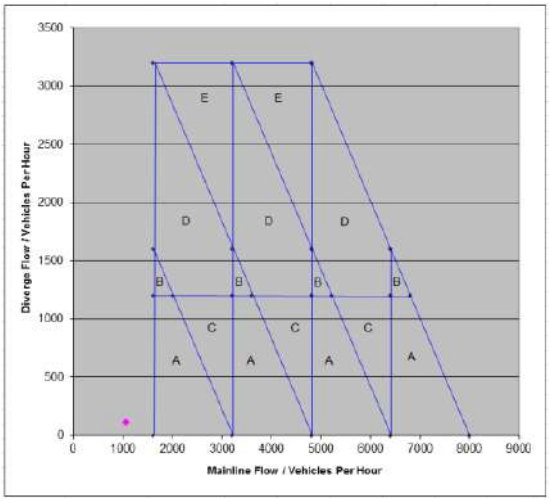
2037 Do Something CSR 6500 PM (Merge)



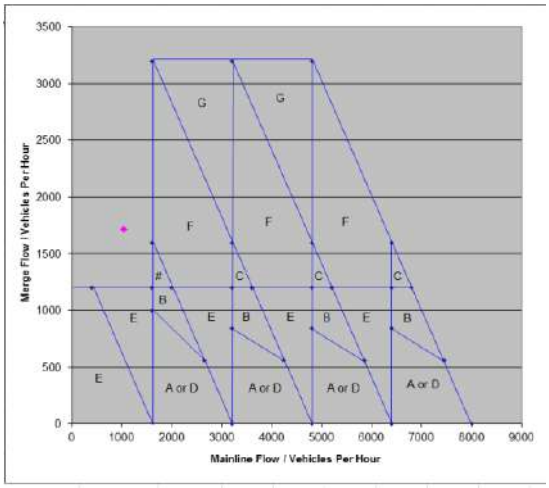
2037 Do Something CSR 8000 AM (Diverge)



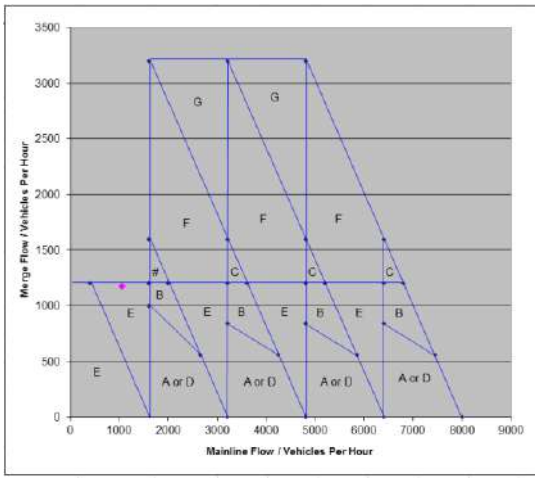
2037 Do Something CSR 8000 PM (Diverge)



2037 Do Something CSR 8000 AM (Merge)



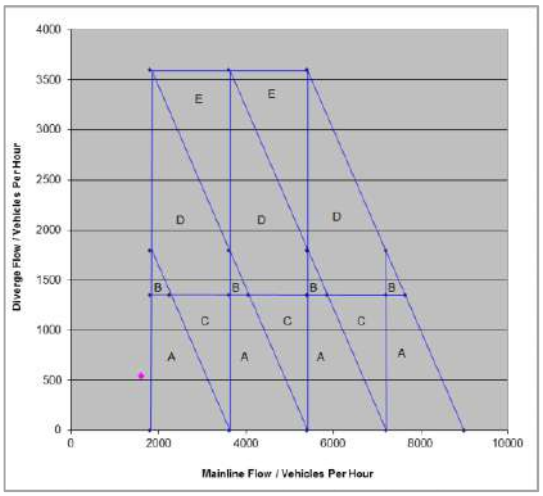
2037 Do Something CSR 8000 PM (Merge)



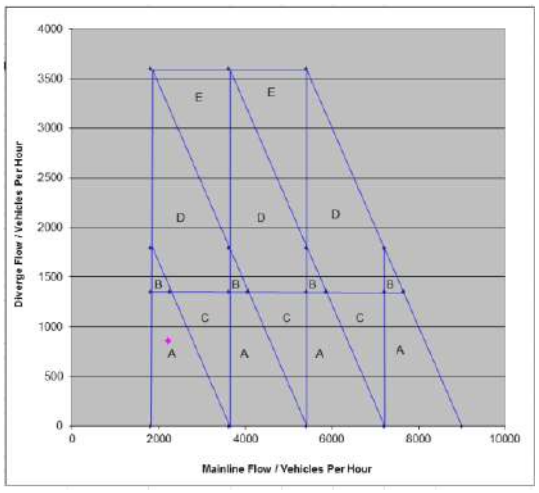
A20 / M20 / B2064 (Cheriton Interchange, M20 Junction 12)

Eastbound

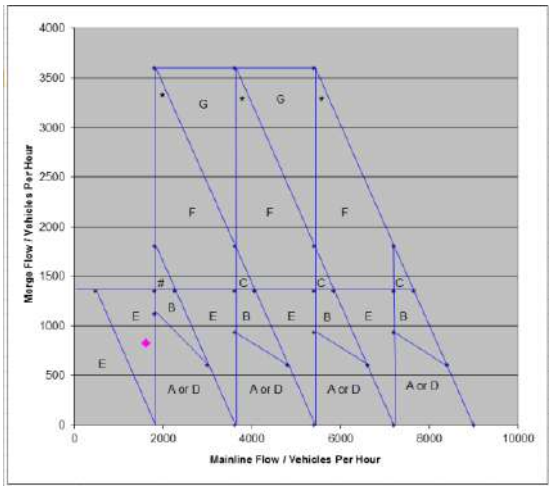
2037 Do Minimum AM (EB Diverge)



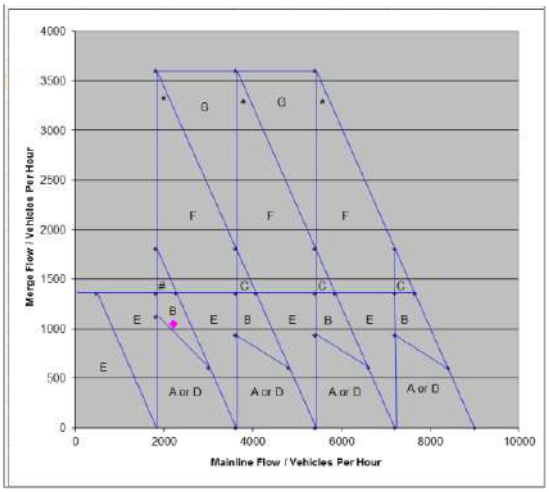
2037 Do Minimum PM (EB Diverge)



2037 Do Minimum AM (EB Merge)

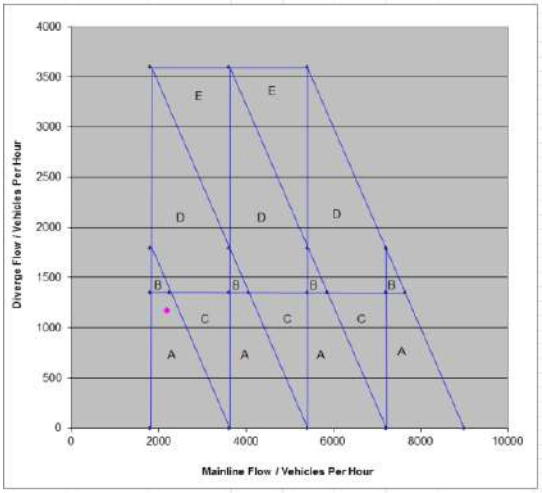


2037 Do Minimum PM (EB Merge)



Westbound

2037 Do Minimum AM (WB Diverge)



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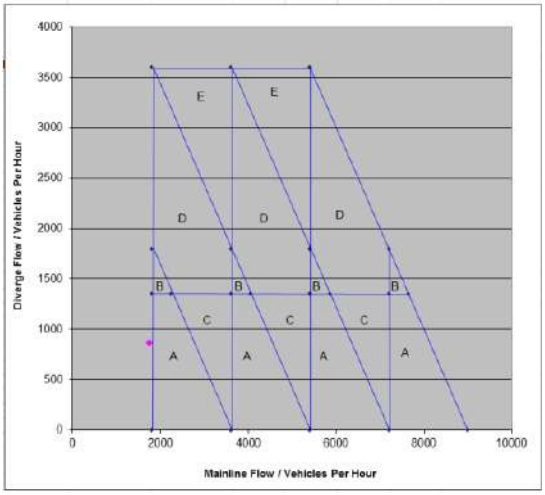
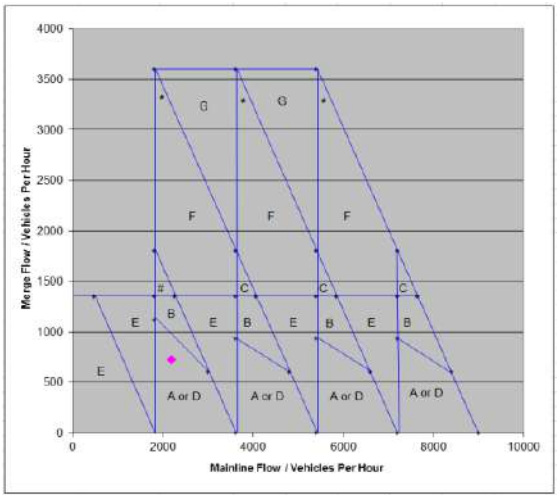
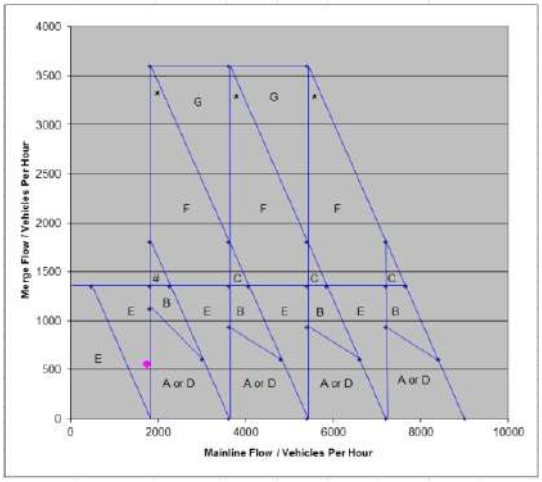


2037 Do Minimum AM (WB Merge)

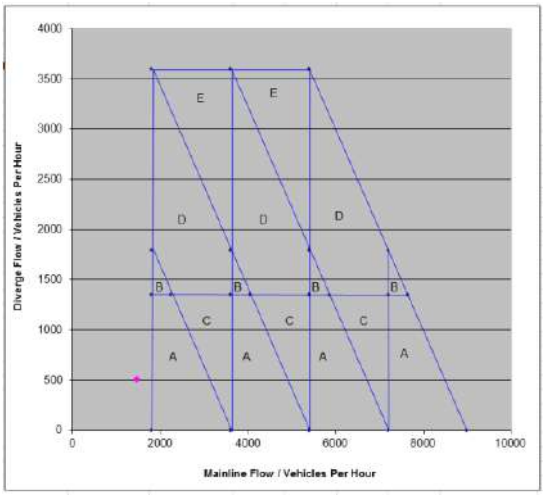


2037 Do Minimum PM (WB Merge)

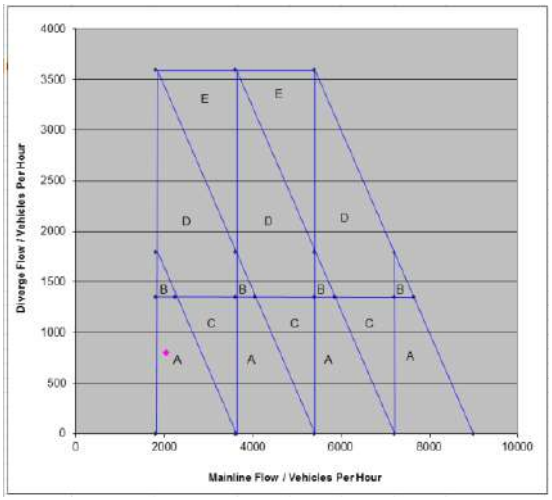


Eastbound

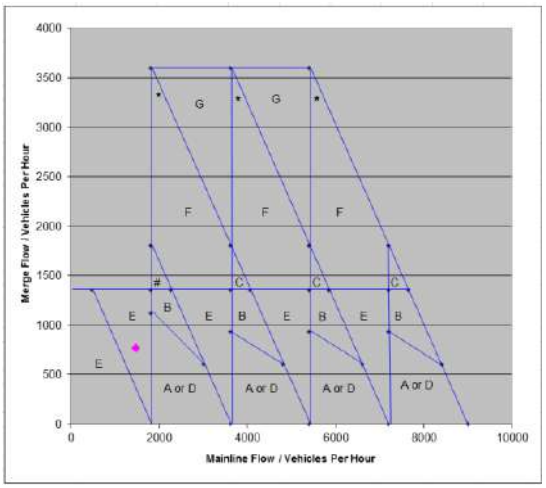
2037 Do Minimum Alternative AM (EB Diverge)



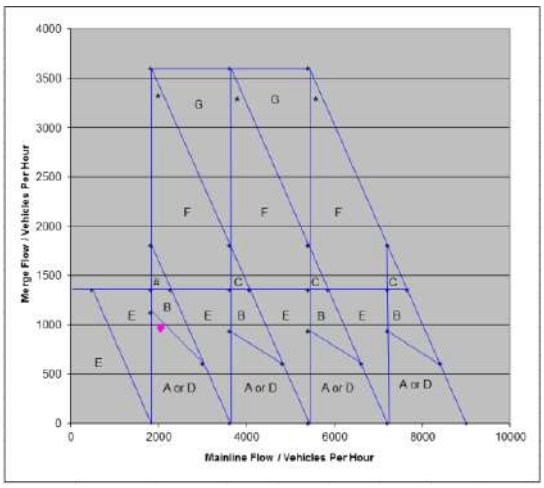
2037 Do Minimum Alternative PM (EB Diverge)



2037 Do Minimum Alternative AM (EB Merge)

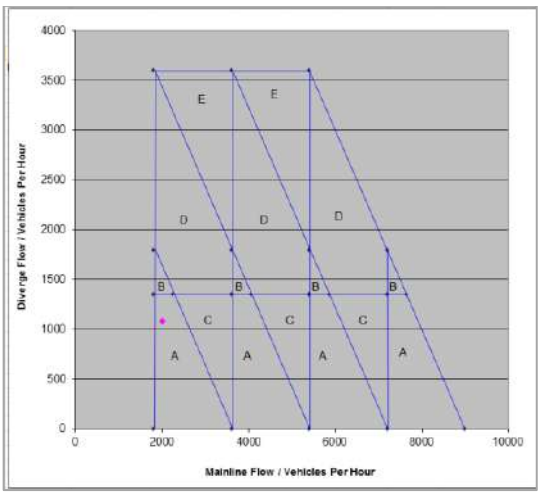


2037 Do Minimum Alternative PM (EB Merge)

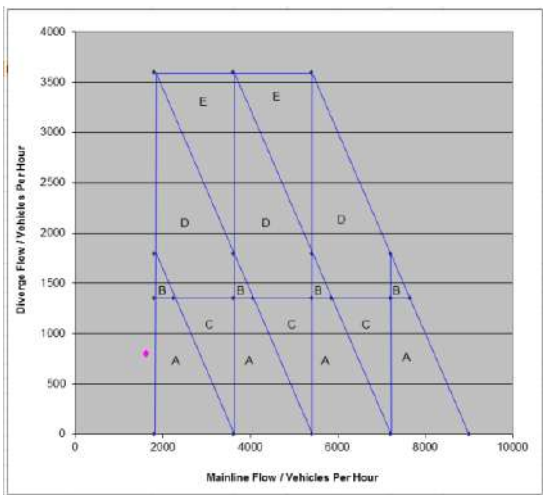


Westbound

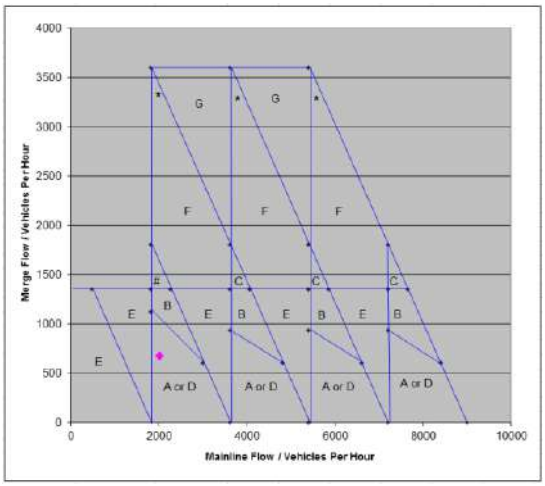
2037 Do Minimum Alternative AM (WB Diverge)



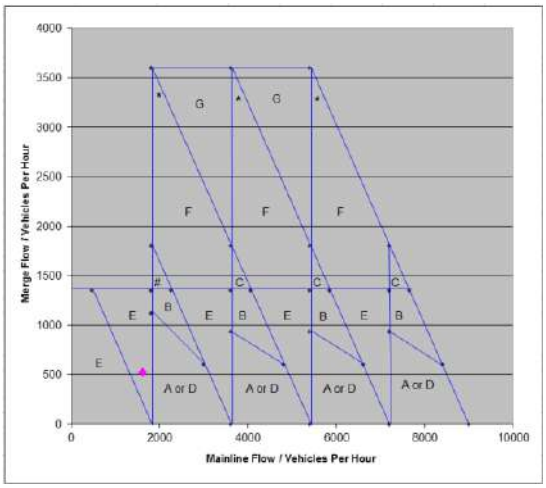
2037 Do Minimum Alternative PM (WB Diverge)



2037 Do Minimum Alternative AM (WB Merge)

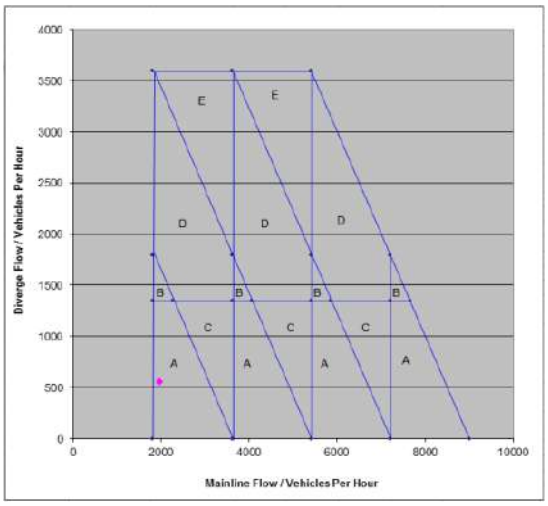


2037 Do Minimum Alternative PM (WB Merge)

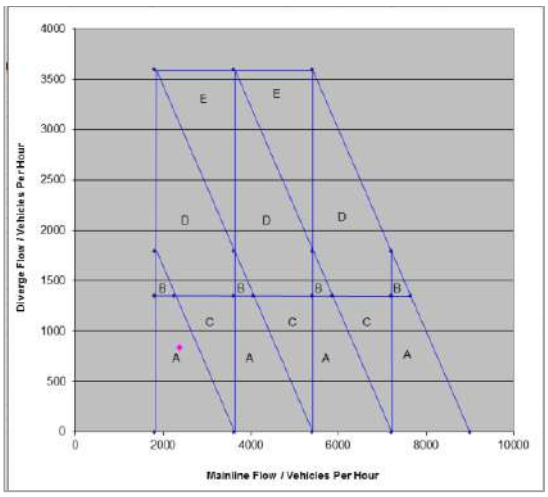


Eastbound

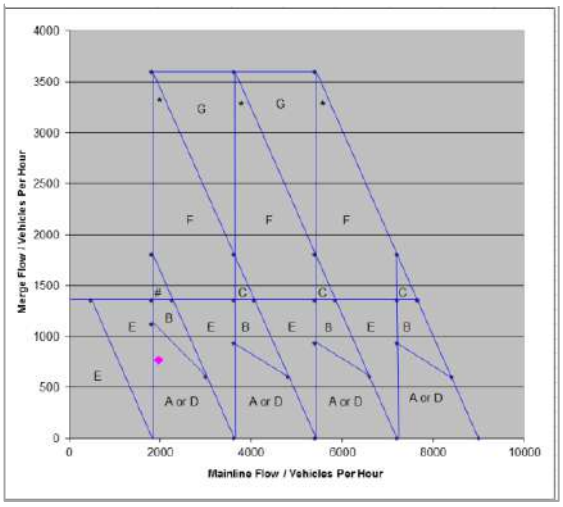
2037 Do Something CSR 6500 AM (EB Diverge)



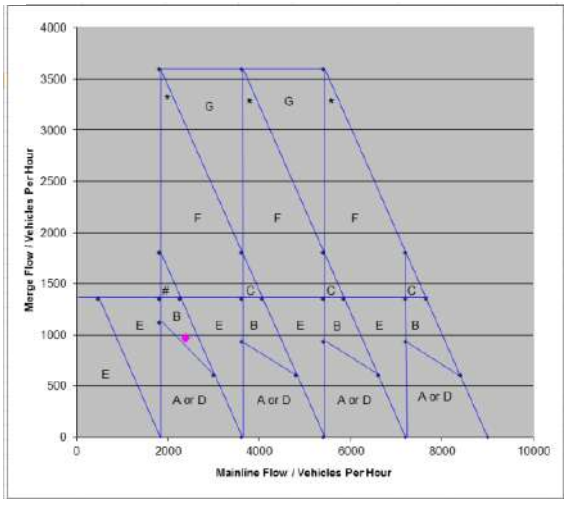
2037 Do Something CSR 6500 PM (EB Diverge)



2037 Do Something CSR 6500 AM (EB Merge)

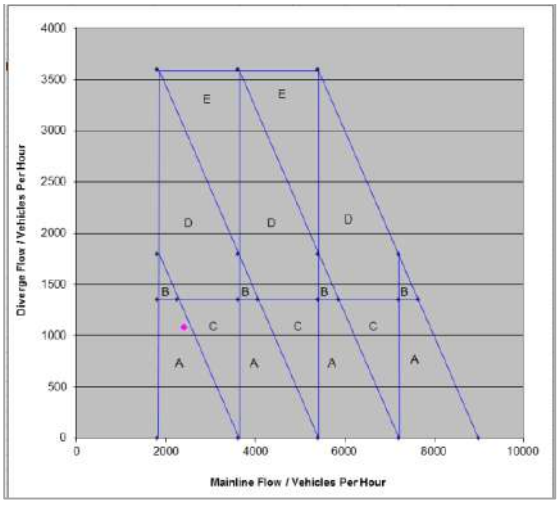


2037 Do Something CSR 6500 PM (EB Merge)

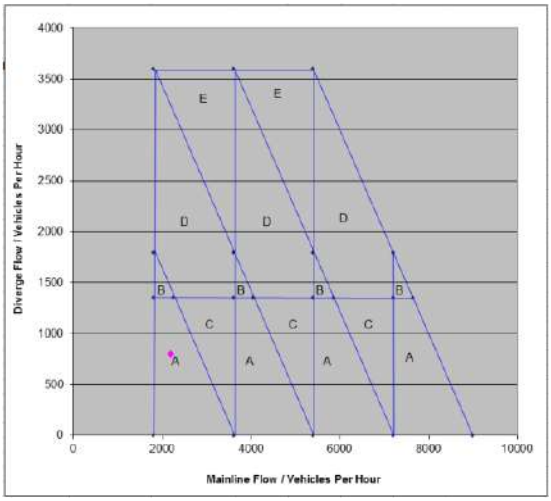


Westbound

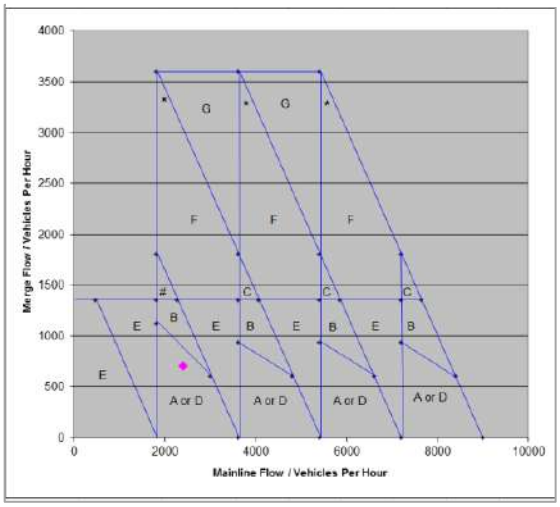
2037 Do Something CSR 6500 AM (WB Diverge)



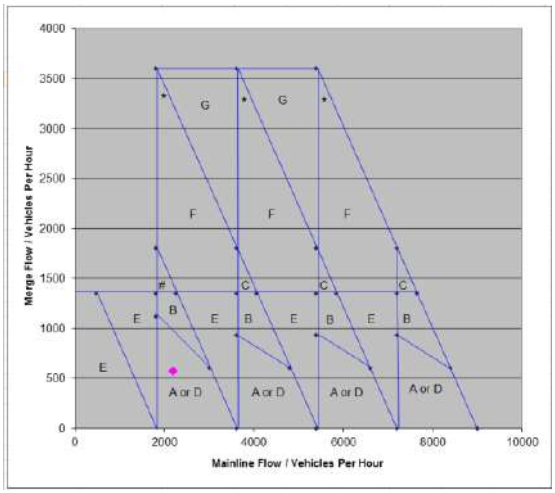
2037 Do Something CSR 6500 PM (WB Diverge)



2037 Do Something CSR 6500 AM (WB Merge)

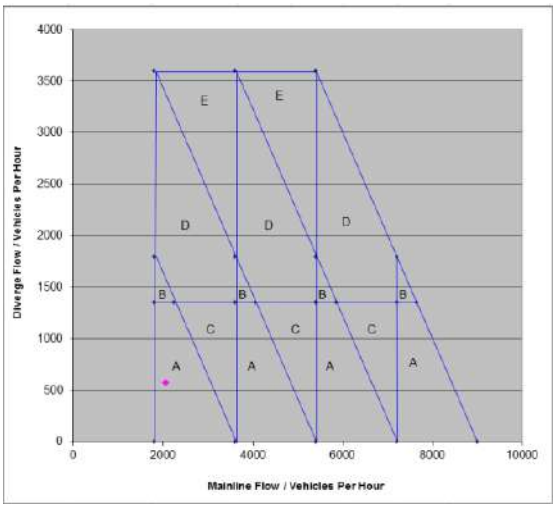


2037 Do Something CSR 6500 PM (WB Merge)

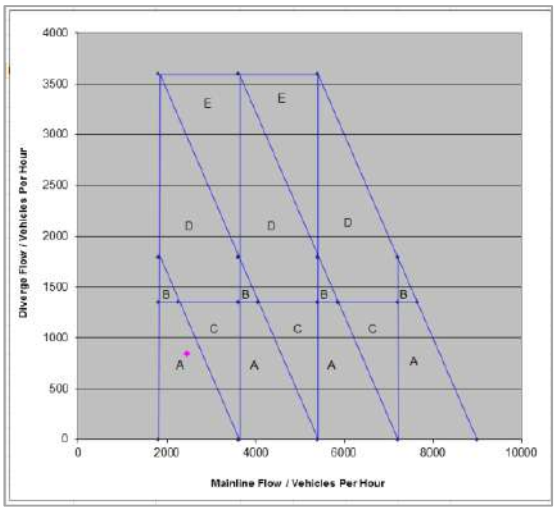


Eastbound

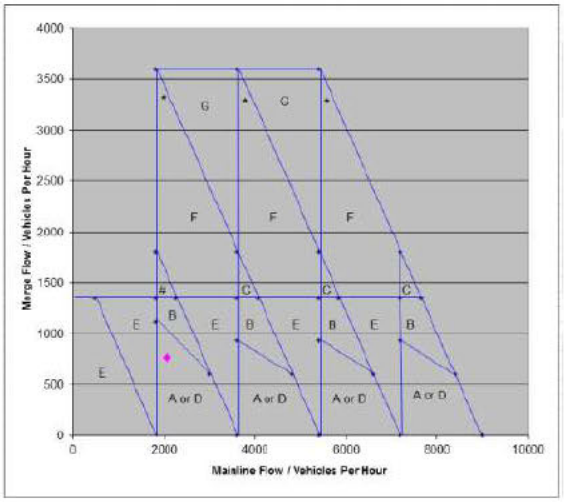
2037 Do Something CSR 8000 AM (EB Diverge)



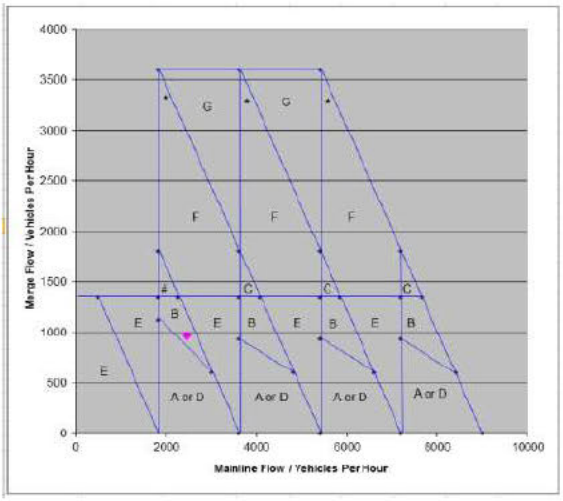
2037 Do Something CSR 8000 PM (EB Diverge)



2037 Do Something CSR 8000 AM (EB Merge)

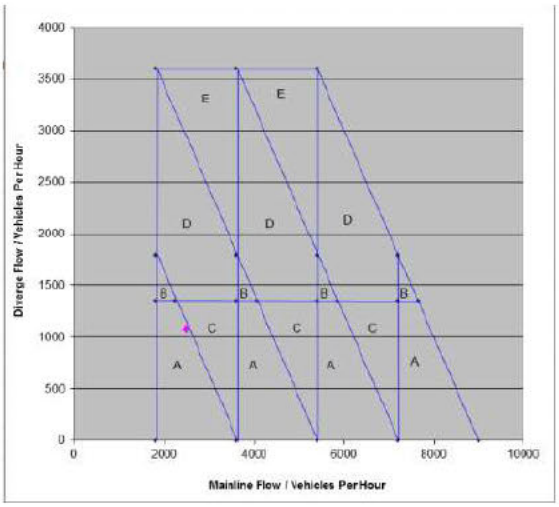


2037 Do Something CSR 8000 PM (EB Merge)

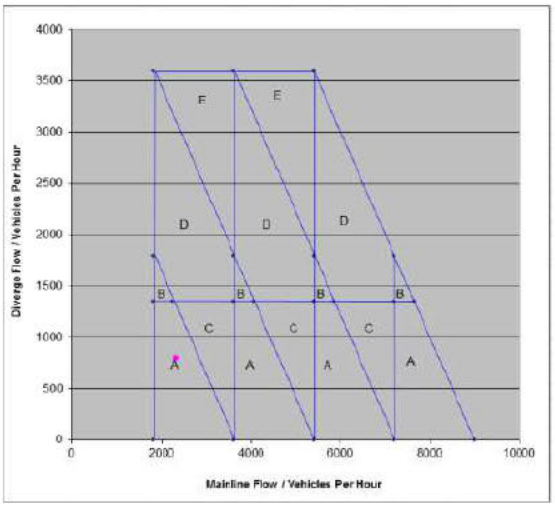


Westbound

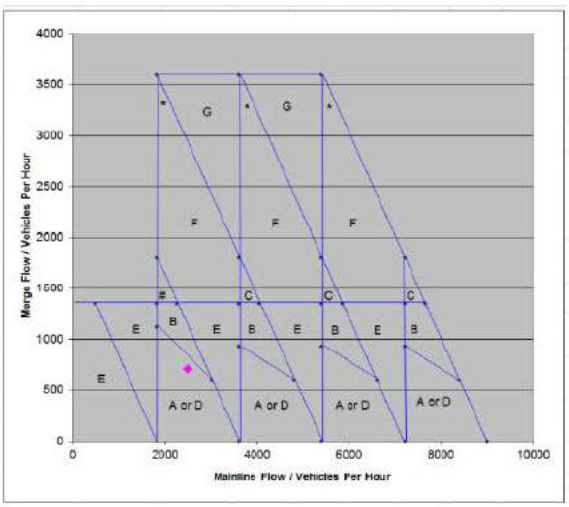
2037 Do Something CSR 8000 AM (WB Diverge)



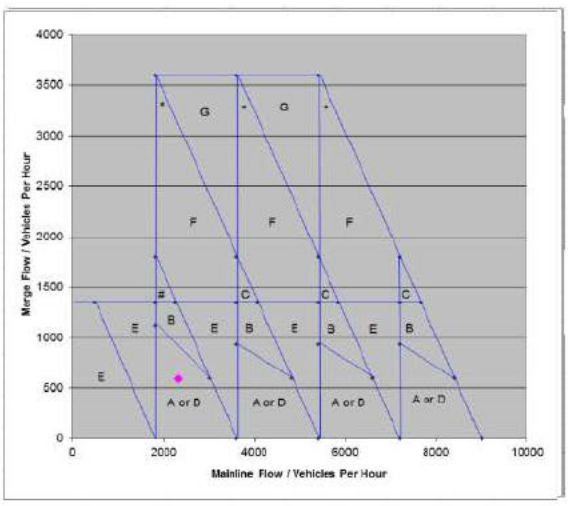
2037 Do Something CSR 8000 PM (WB Diverge)



2037 Do Something CSR 8000 AM (WB Merge)



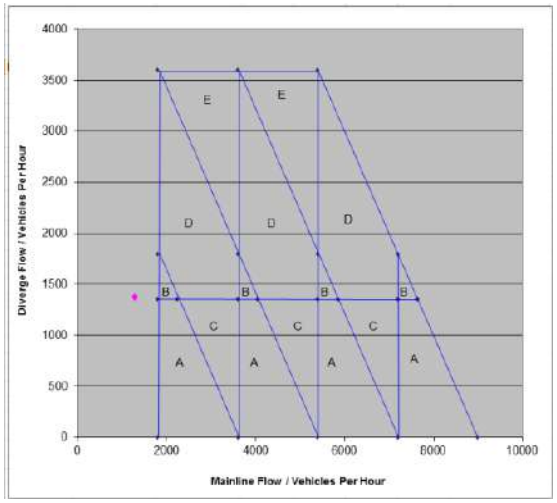
2037 Do Something CSR 8000 PM (WB Merge)



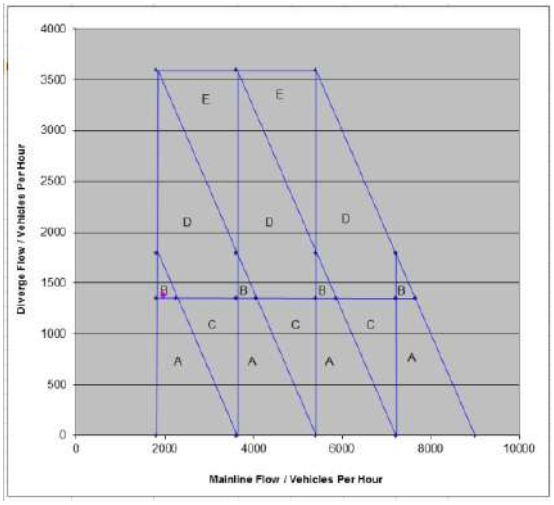
A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange, M20 Jct 13)

Eastbound

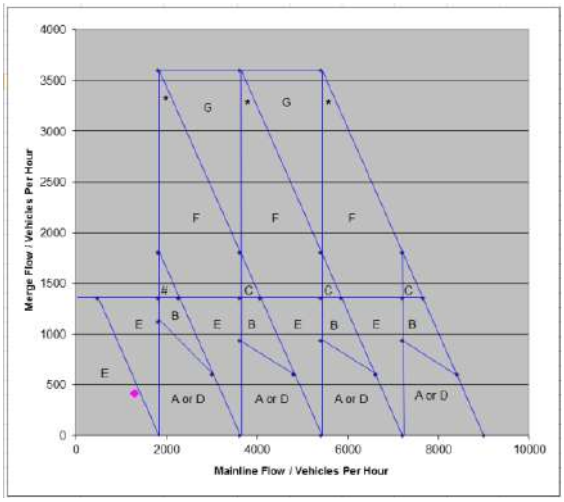
2037 Do Minimum AM (EB Diverge)



2037 Do Minimum PM (EB Diverge)



2037 Do Minimum AM (EB Merge)



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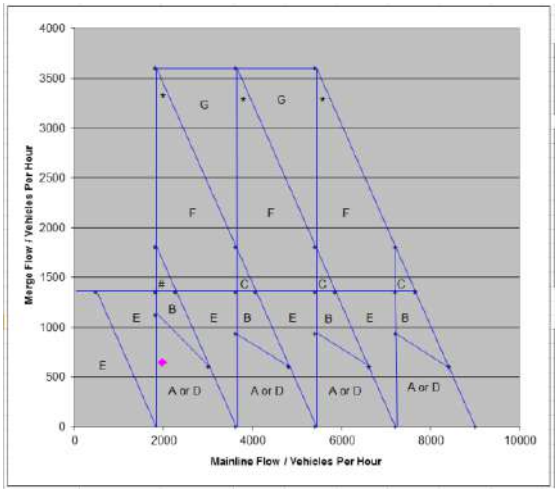
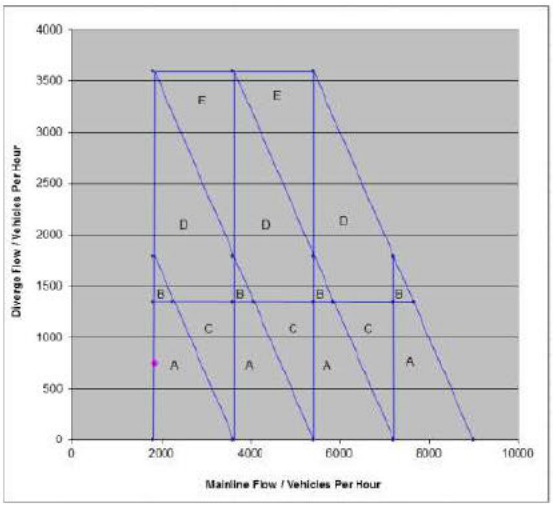


Westbound

2037 Do Minimum AM (WB Diverge)



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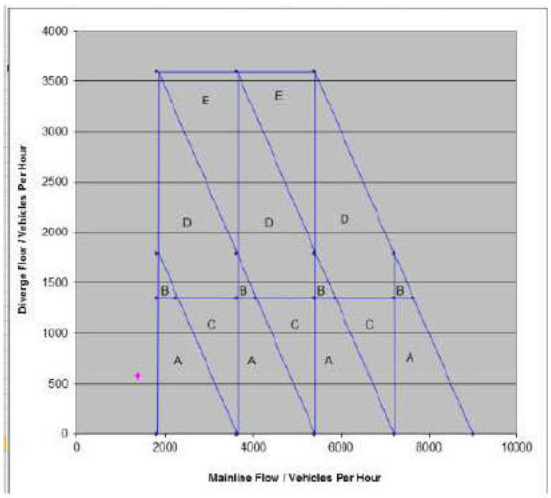

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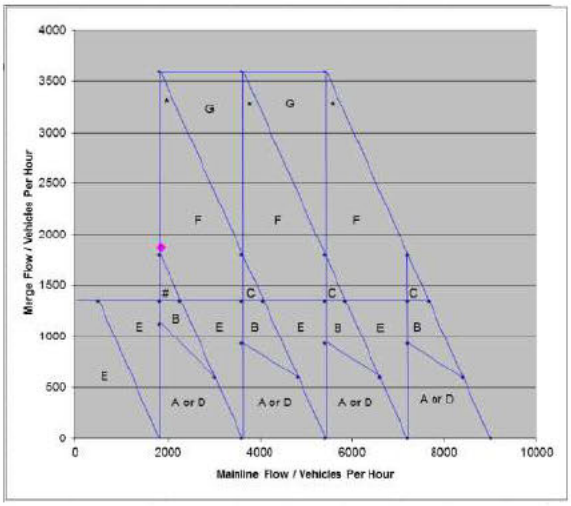

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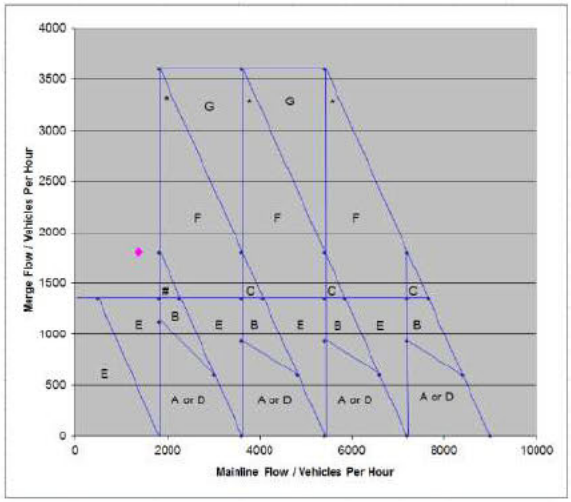

Eastbound

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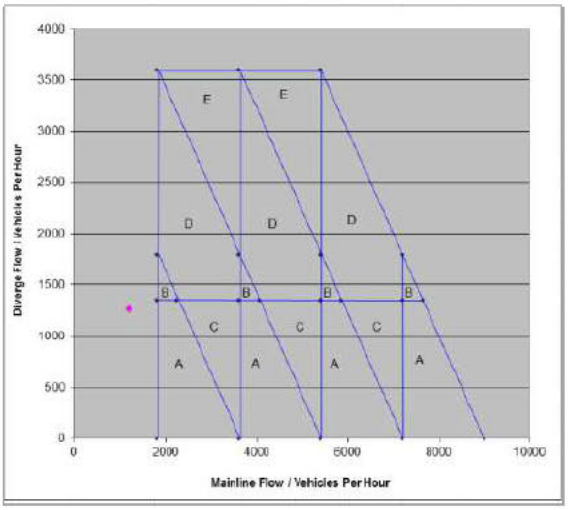

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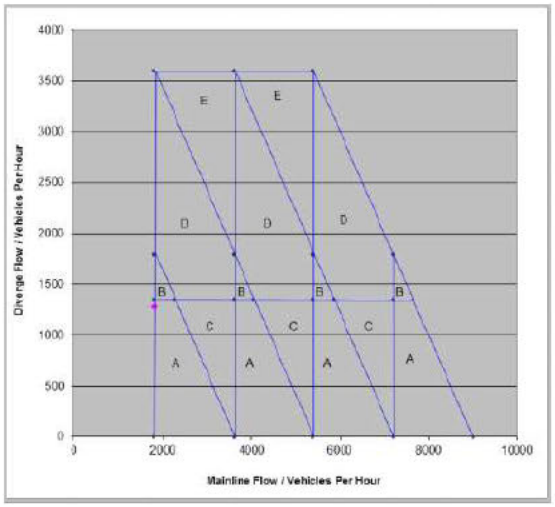

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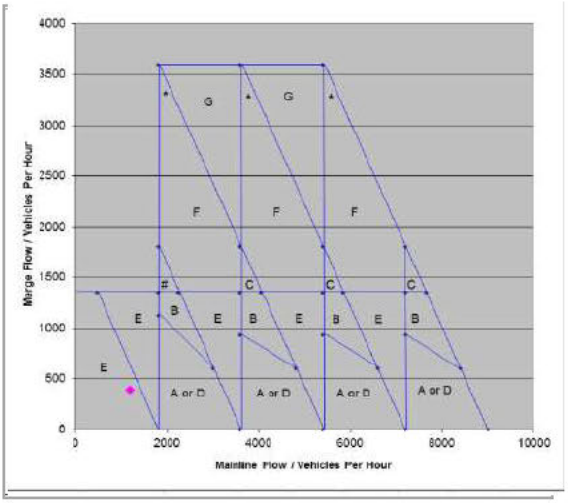

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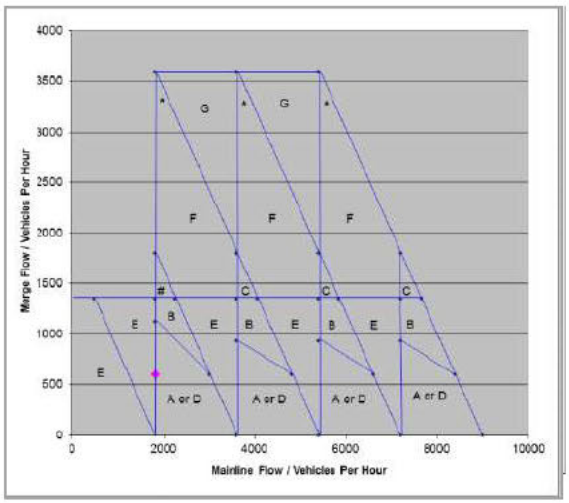

Westbound

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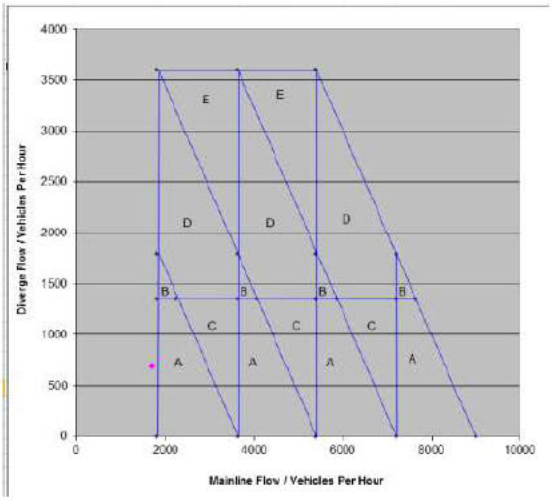

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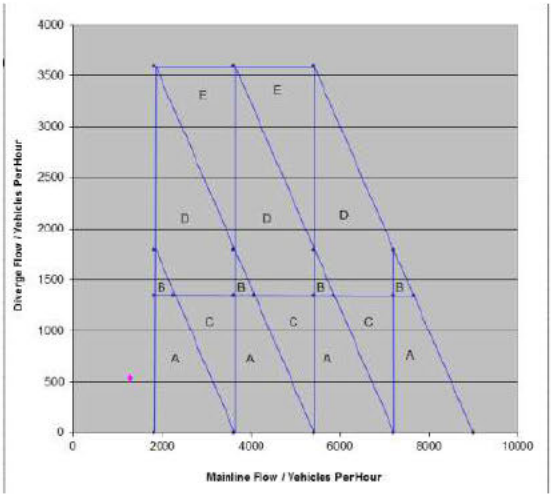

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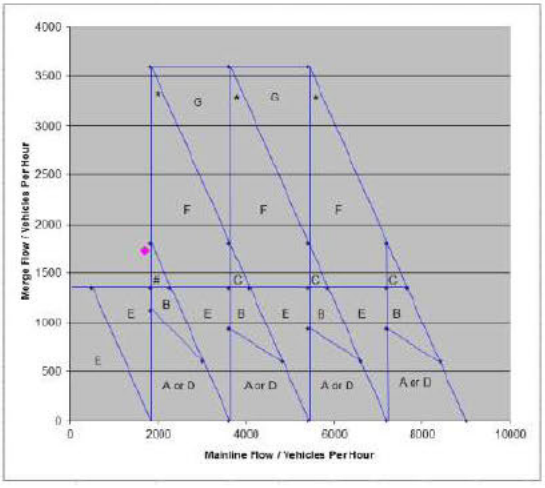

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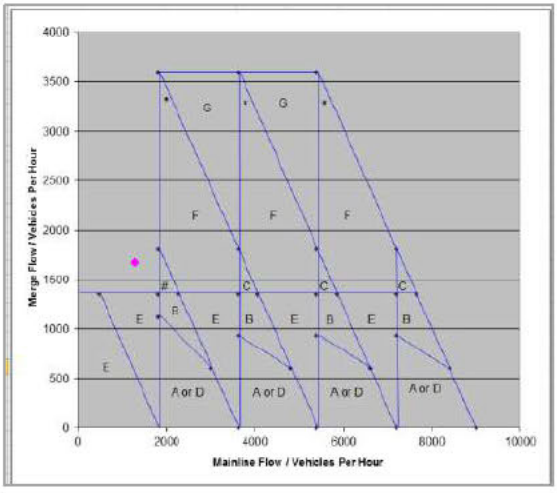
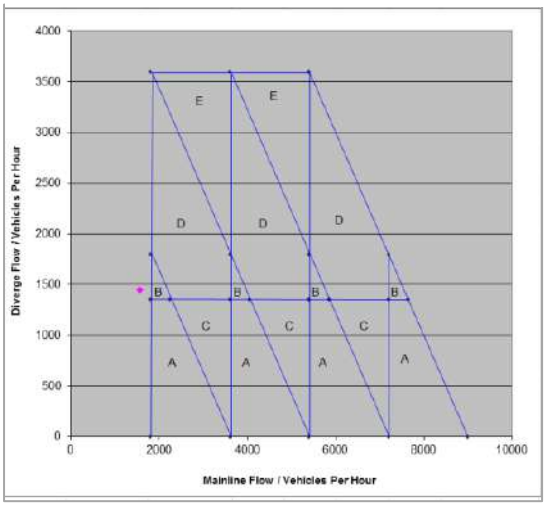


Eastbound

2037 Do Something CSR 6500 AM (EB Diverge)



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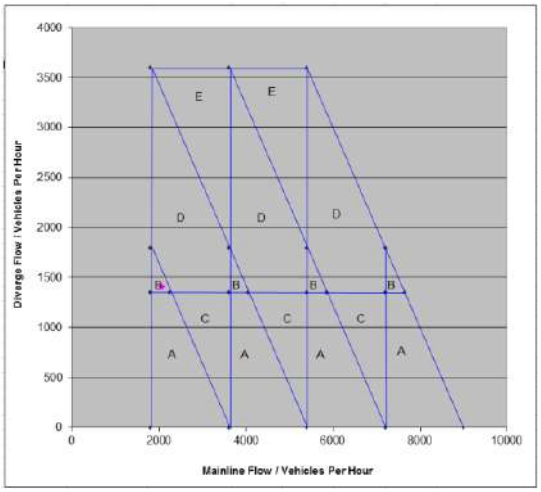

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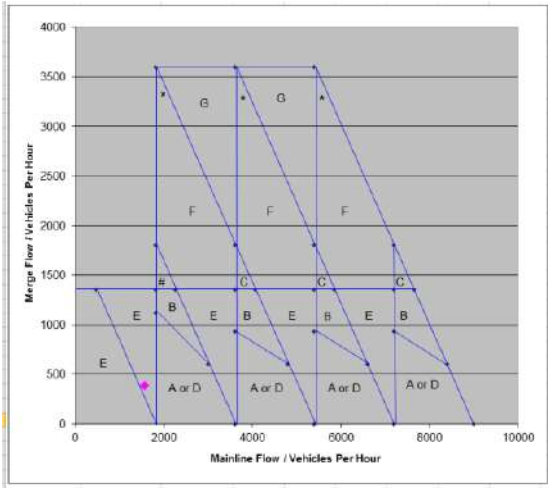

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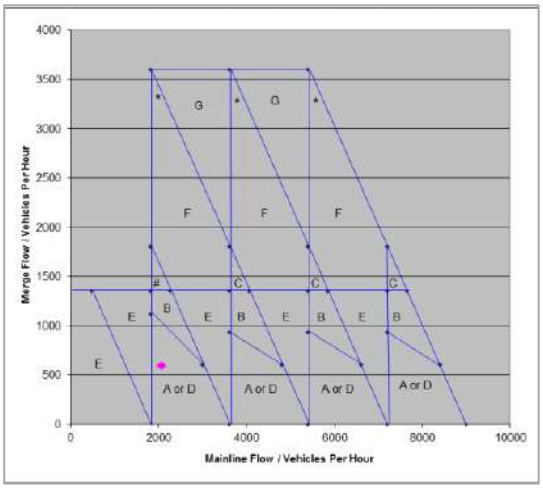

Westbound

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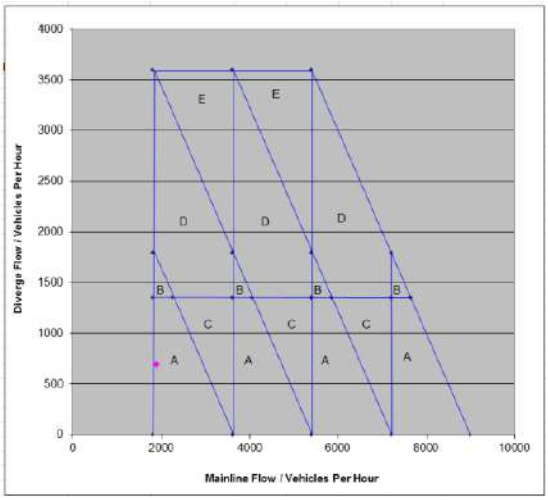

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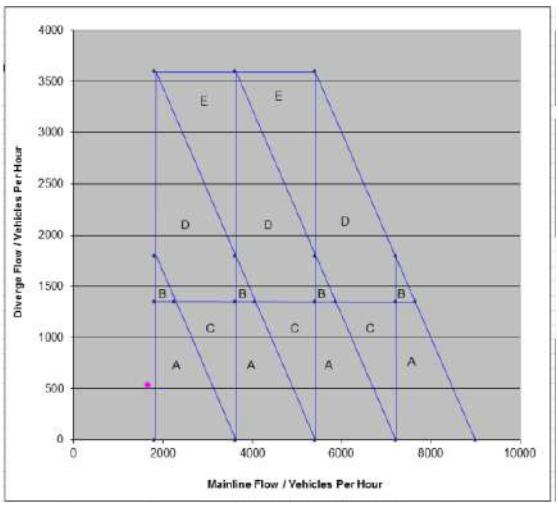

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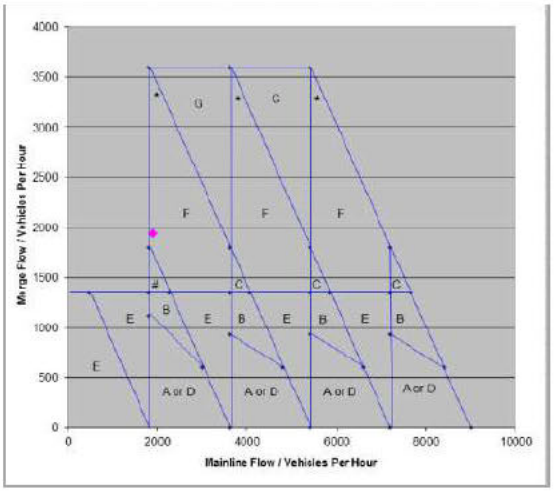

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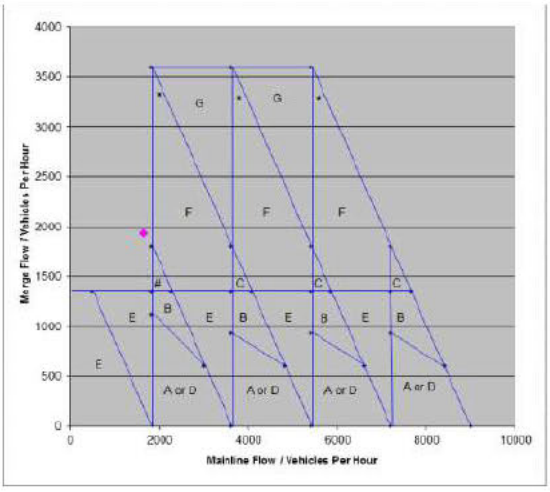
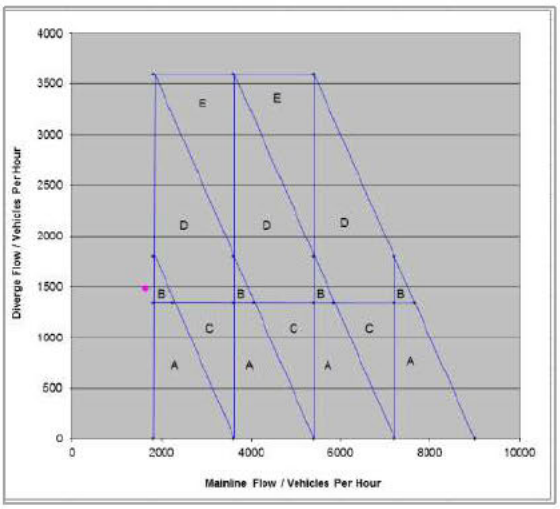


Eastbound

2037 Do Something CSR 8000 AM (EB Diverge)



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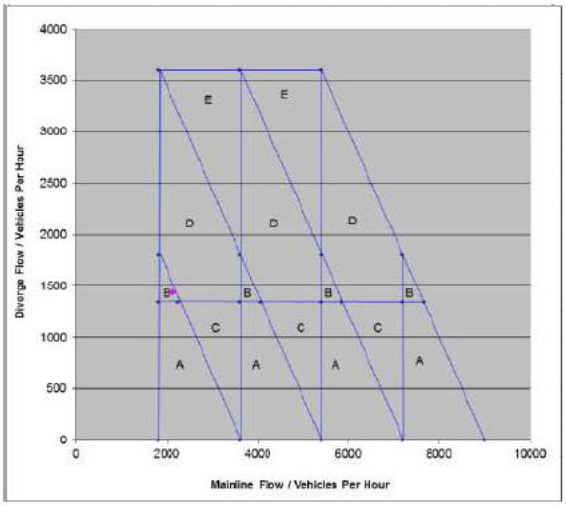

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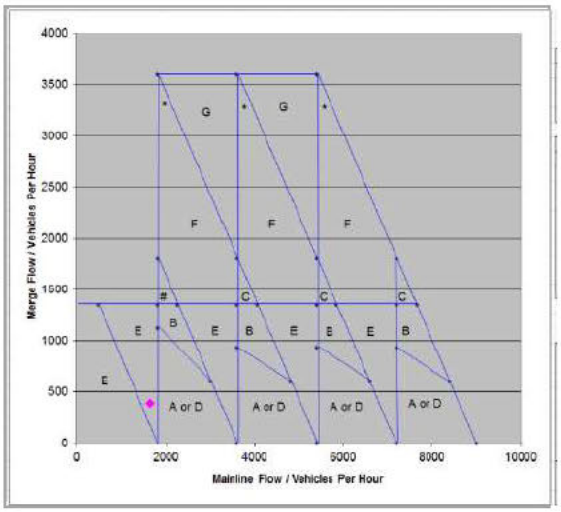
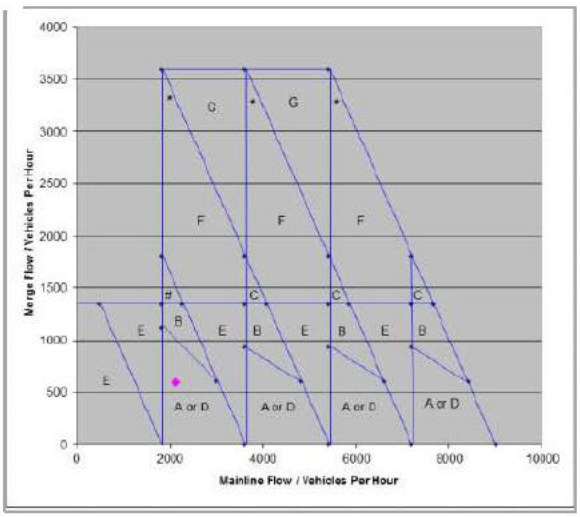
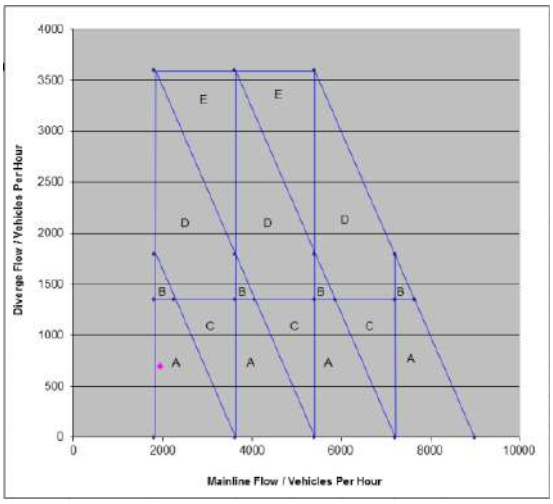


2037 Do Something CSR 8000 PM (EB Merge)



Westbound

2037 Do Something CSR 8000 AM (WB Diverge)



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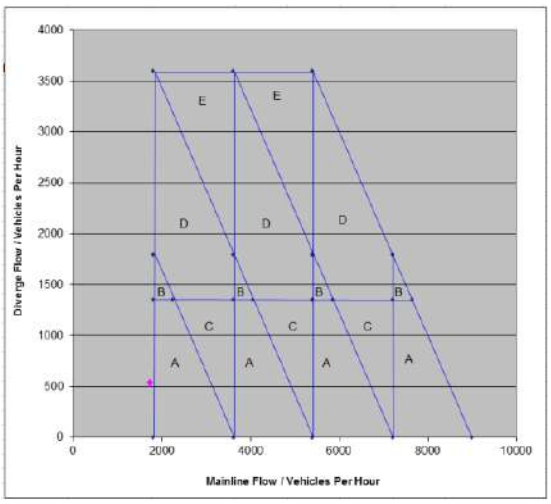
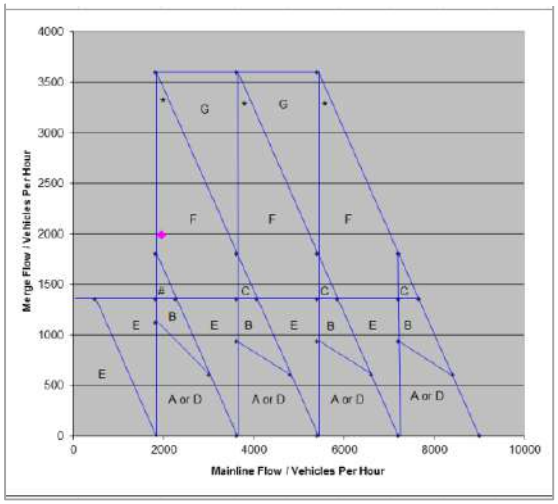
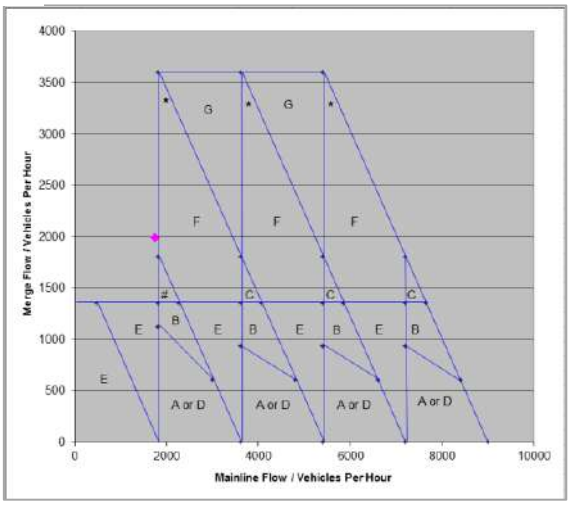


2037 Do Something CSR 8000 AM (WB Merge)



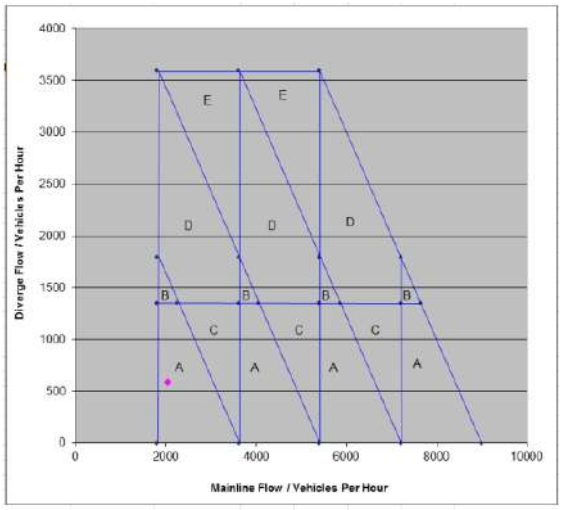
2037 Do Something CSR 8000 PM (WB Merge)



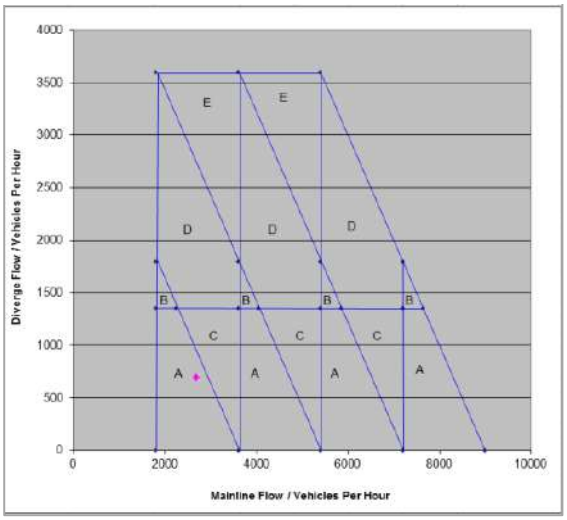
M20 / A20 / B2068 Roundabout (M20 Junction 11)

Eastbound

2037 Do Minimum AM (EB Diverge)



2037 Do Minimum PM (EB Diverge)



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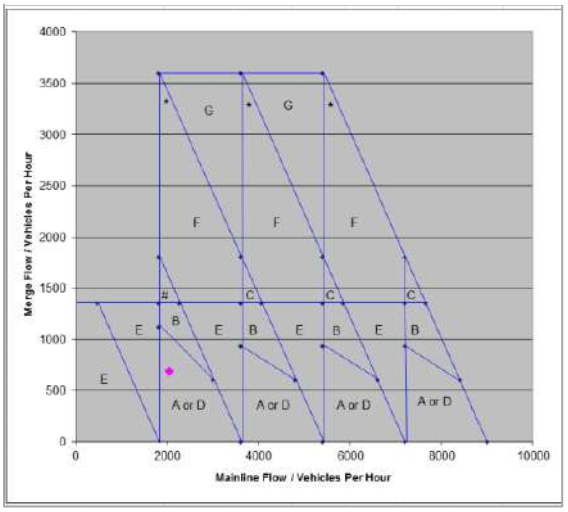
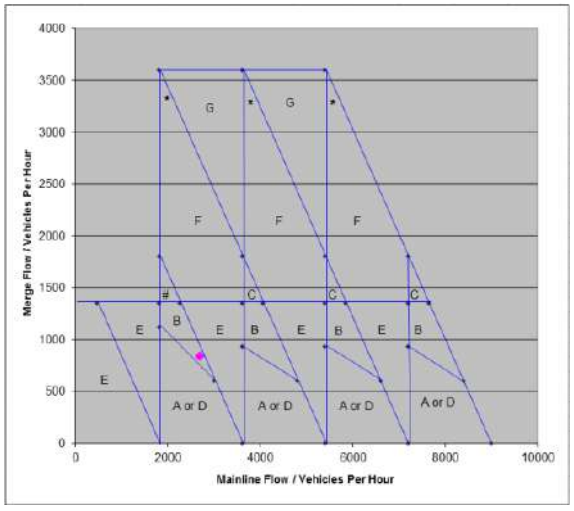
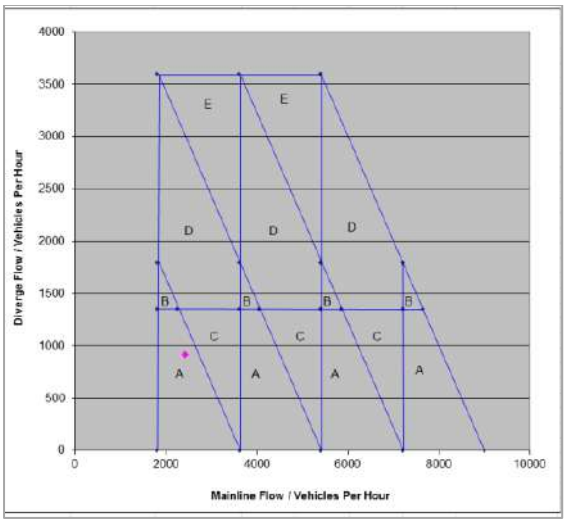


2037 Do Minimum PM (EB Merge)

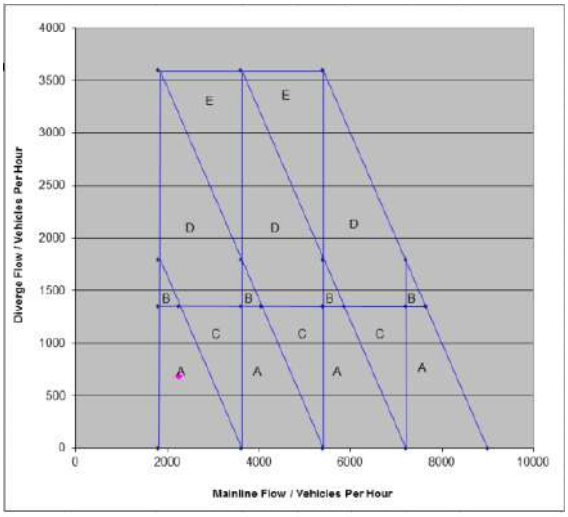


Westbound

2037 Do Minimum AM (WB Diverge)



2037 Do Minimum PM (WB Diverge)



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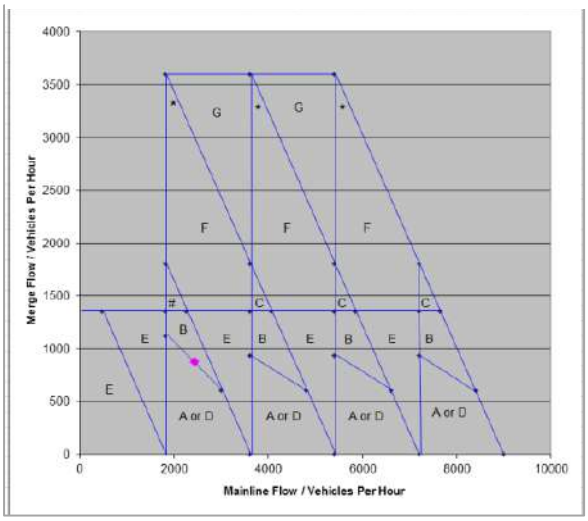
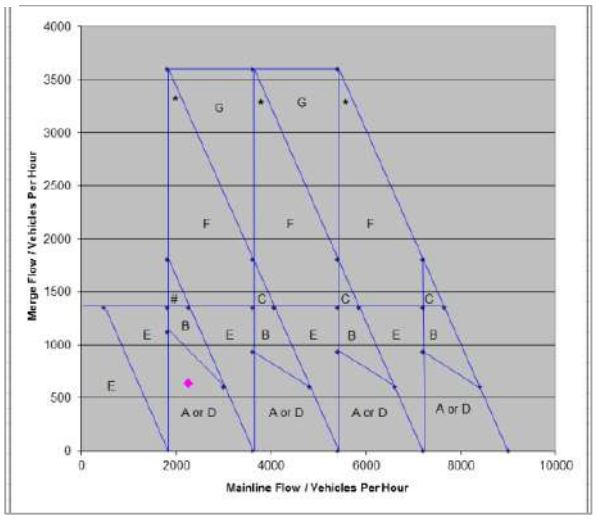
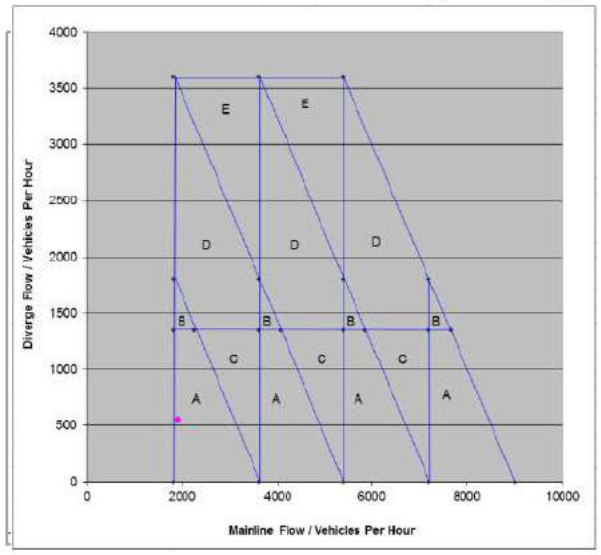


2037 Do Minimum PM (WB Merge)

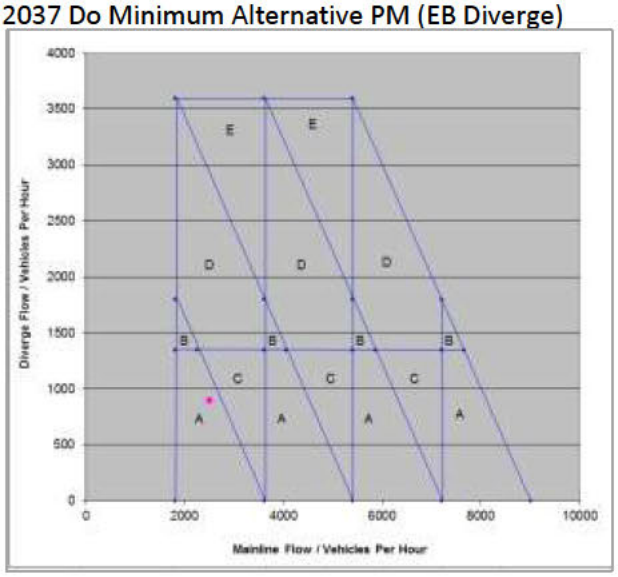


Eastbound

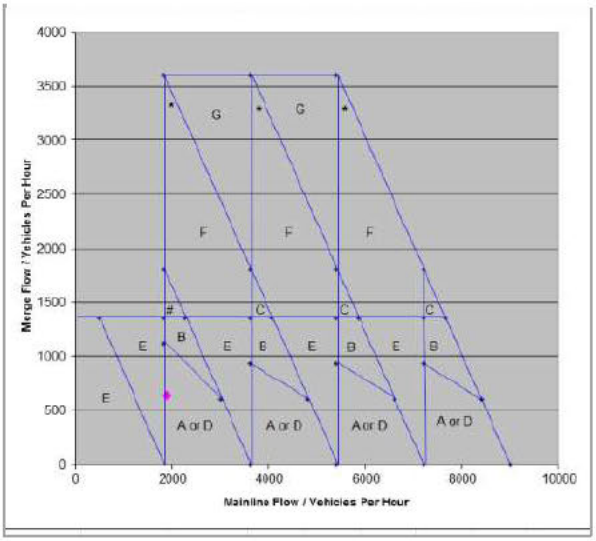
2037 Do Minimum Alternative AM (EB Diverge)



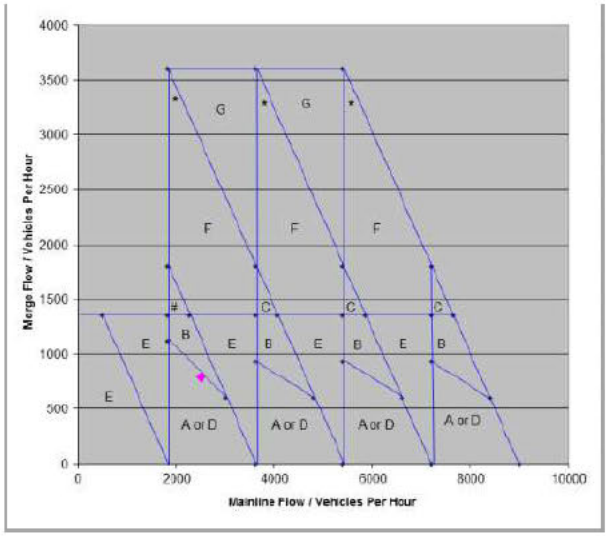
2037 Do Minimum Alternative PM (EB Diverge)



2037 Do Minimum Alternative AM (EB Merge)

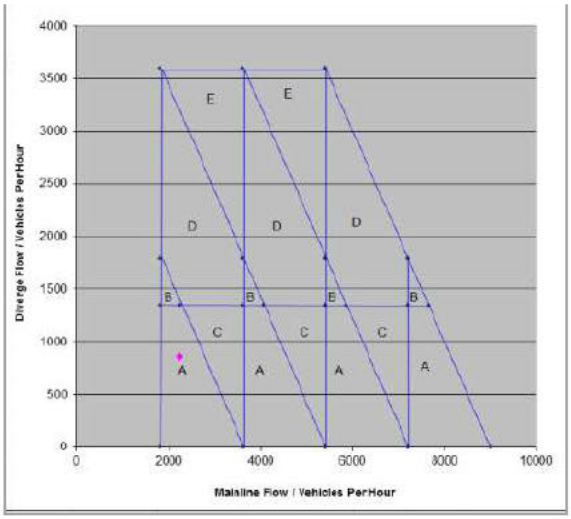


2037 Do Minimum Alternative PM (EB Merge)



Westbound

2037 Do Minimum Alternative AM (WB Diverge)



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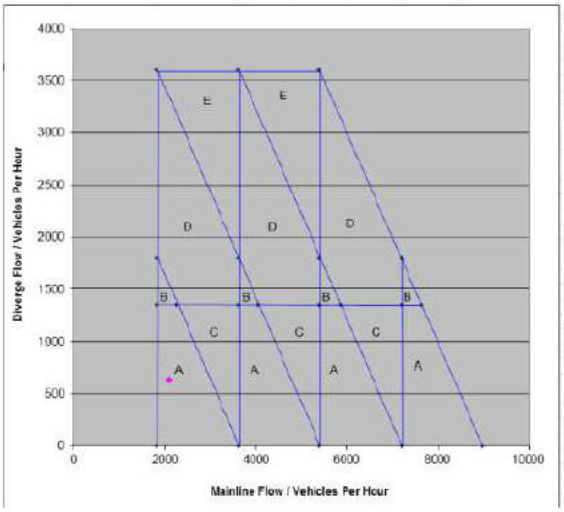
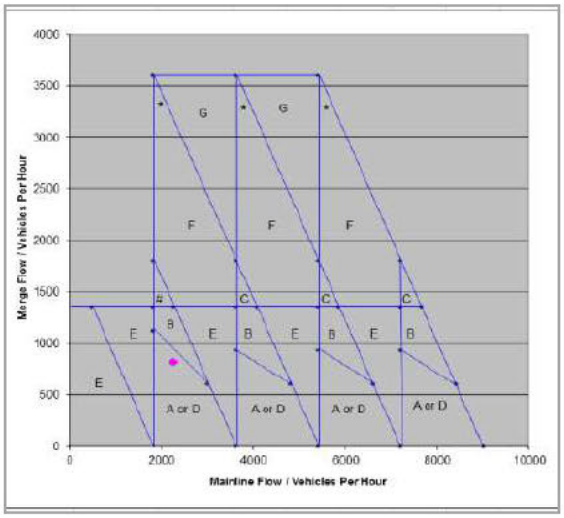
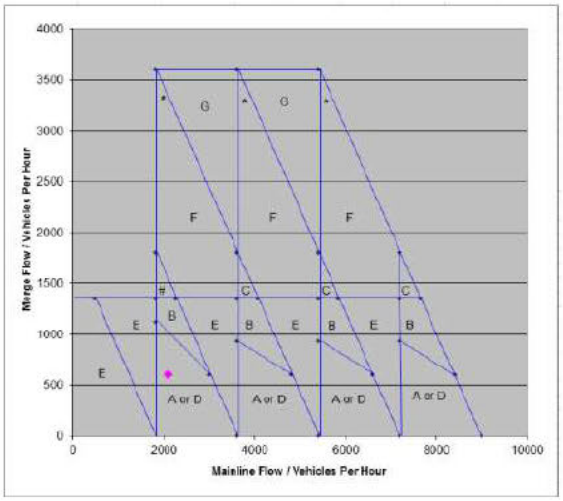


2037 Do Minimum Alternative AM (WB Merge)

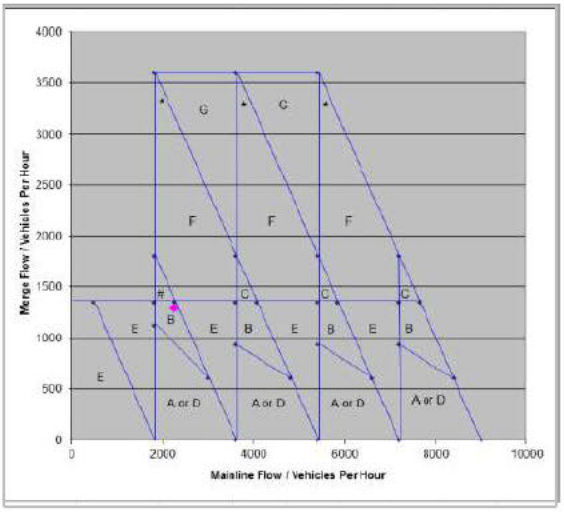


2037 Do Minimum Alternative PM (WB Merge)



Eastbound

2037 Do Something CSR 6500 AM (EB Diverge)



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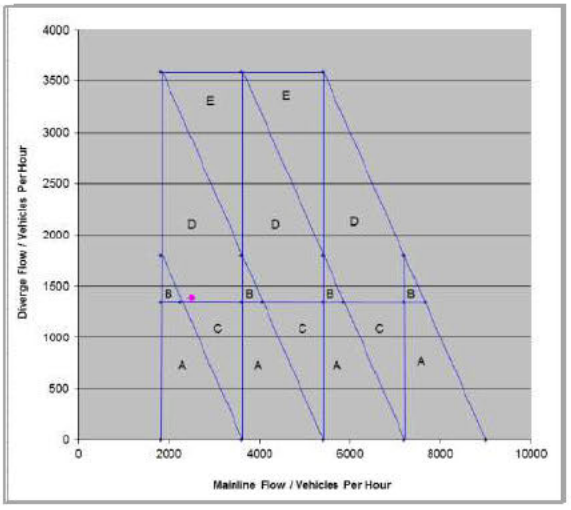

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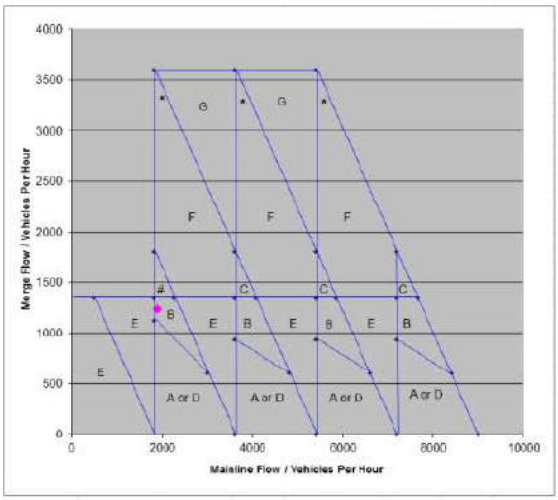
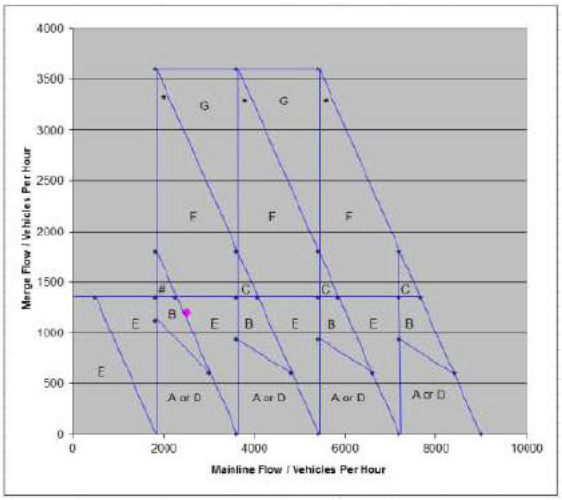


2037 Do Something CSR 6500 PM (EB Merge)



Westbound

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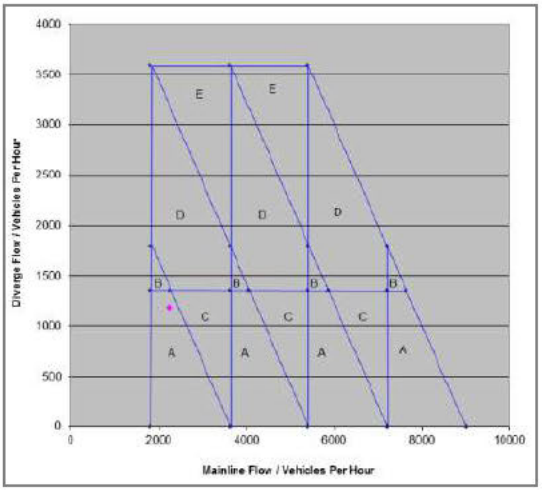

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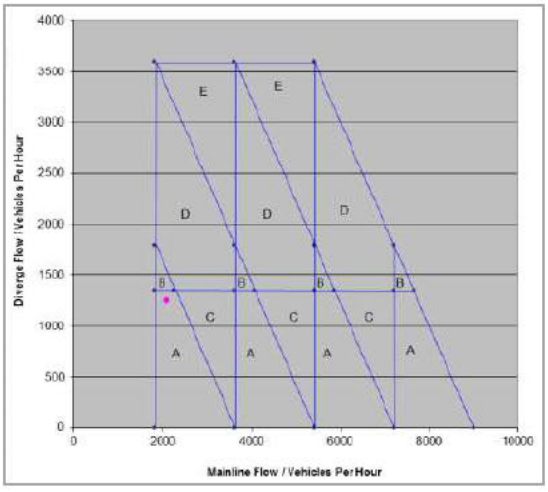
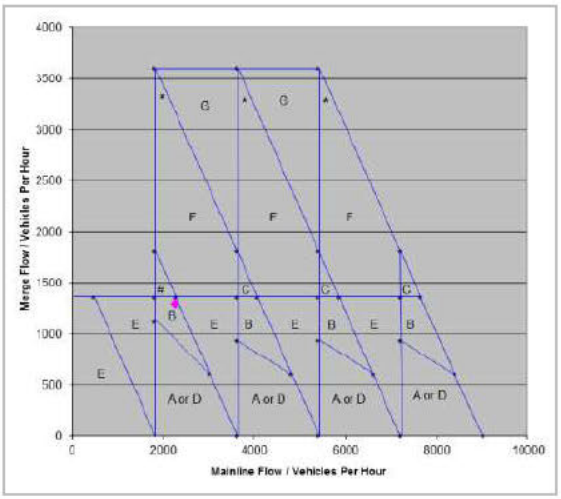
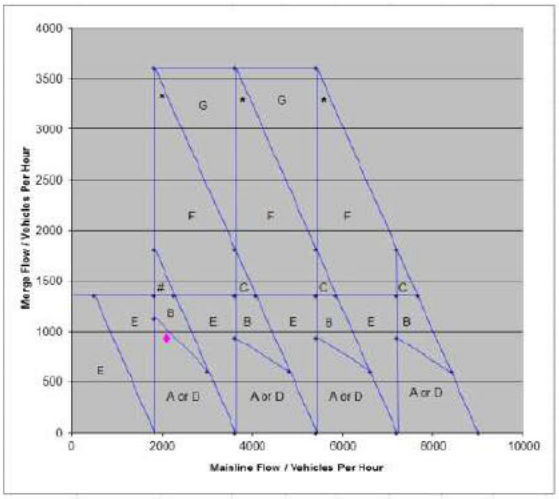


2037 Do Something CSR 6500 AM (WB Merge)



2037 Do Something CSR 6500 PM (WB Merge)



Eastbound

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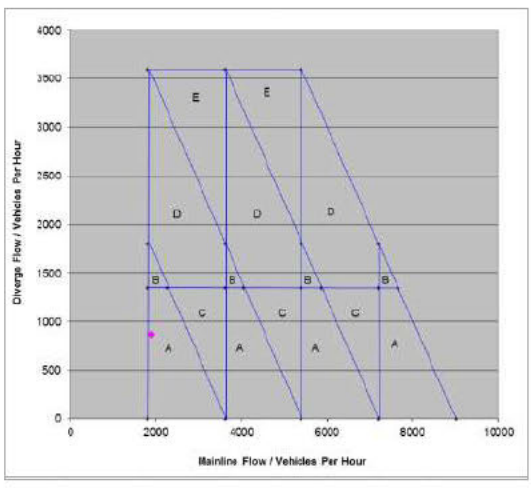

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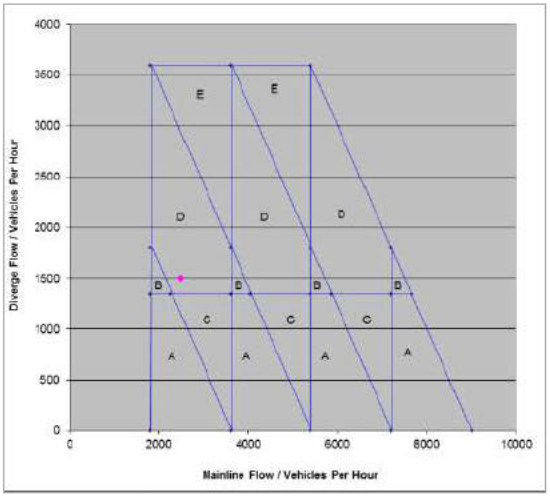
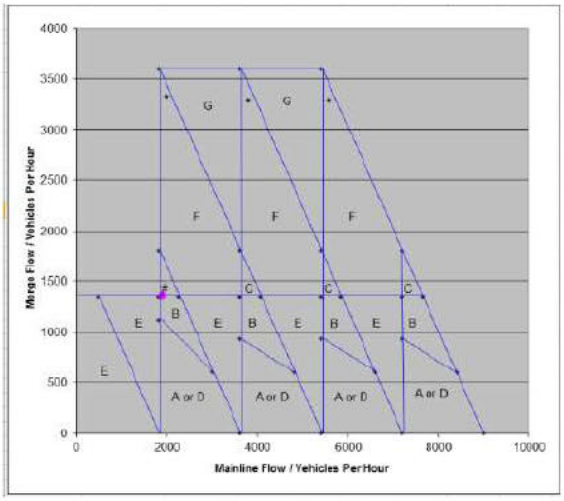


2037 Do Something CSR 8000 AM (EB Merge)



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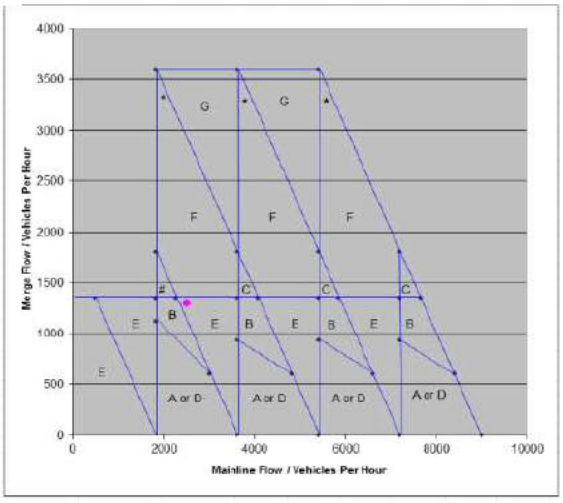
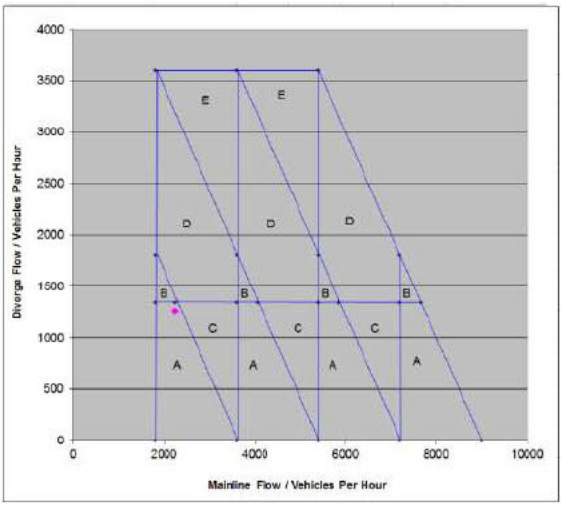


Westbound

2037 Do Something CSR 8000 AM (WB Diverge)



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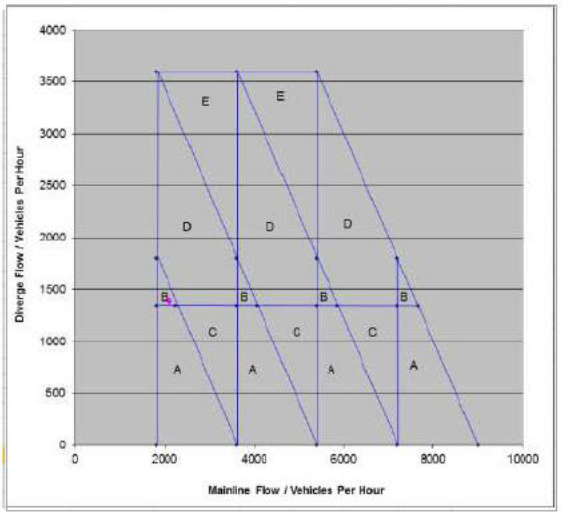
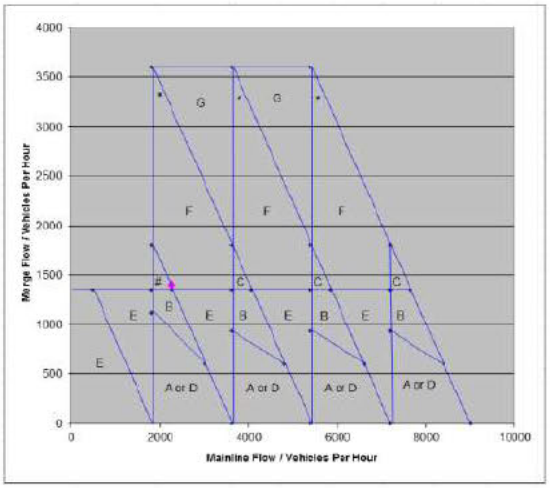
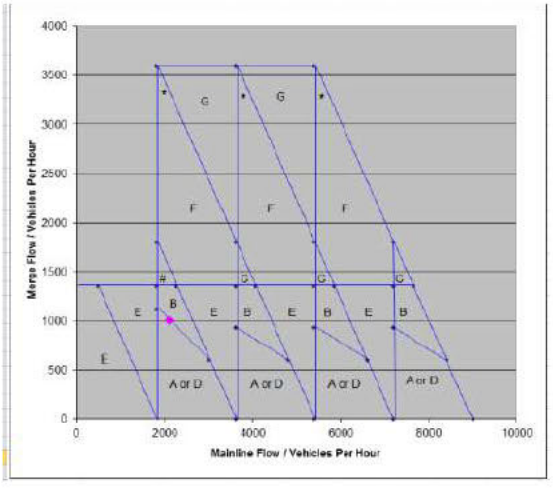


2037 Do Something CSR 8000 AM (WB Merge)



2037 Do Something CSR 8000 PM (WB Merge)



APPENDIX 3: MODEL UPDATE BRIEFING NOTE MARCH 2017

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Briefing Note: Shepway Transport Model Update – Review & Findings

Project	Shepway Transport Model Update	Reference: 60514687
Created by	[redacted] Senior Transport Planner	Status: Draft
Reviewed by	[redacted], Associate Director	Date: March 2017

Introduction

AECOM (formerly as Scott Wilson and URS) prepared the Transport Strategy that formed part of the evidence base for the Core Strategy, which was supported by a transport spreadsheet model ('Shepway Transport Model') for Shepway District Council (SDC).

The Transport Strategy work, including the spreadsheet model, was carried out during 2010 and completed in 2011. The model has since been updated at various points to inform local modelling and impact assessments of development options.

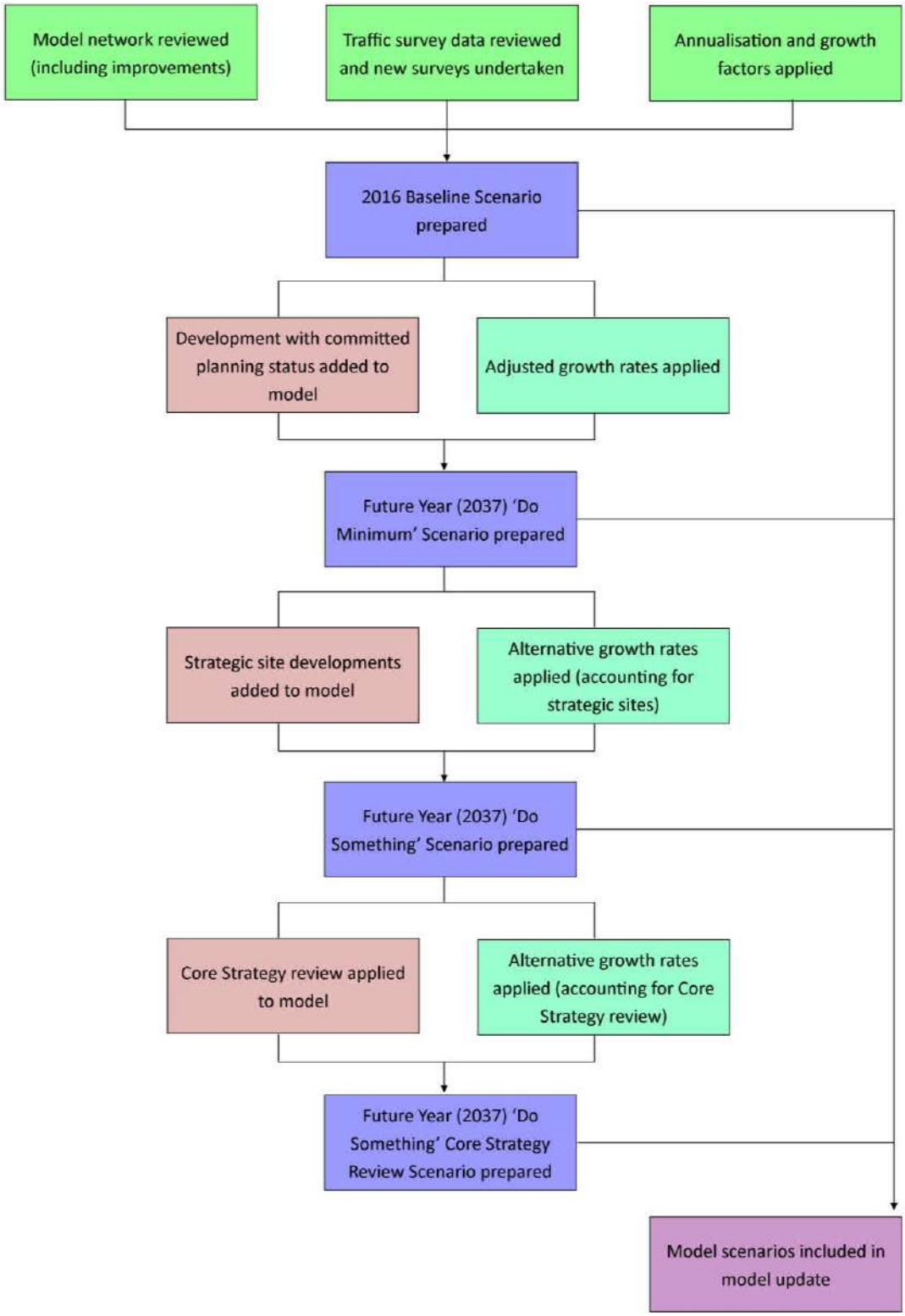
In 2016, AECOM was commissioned by SDC to undertake a comprehensive update of the Shepway Transport Model, incorporating the latest available data since the 2011 model was completed. The Shepway Transport Model has therefore been updated following discussions with SDC, Kent County Council (KCC) and Highways England (HE) and the full methodology employed for the update is presented in the *Shepway Transport Model - Modelling Methodology* Briefing Note (October 2016); a copy of which is enclosed at **APPENDIX A**.

For ease of reference, the flow chart presented at **FIGURE 1** overleaf summarises the core steps presented in the modelling methodology note which have been followed to update the model.

The updated model, plus a series of initial outputs and findings, was presented to SDC during a project meeting at Shepway Civic Offices on Thursday 12th January 2017.

Feedback received during that meeting has been used to further refine and finalise the model. Details of this feedback, plus the final outputs and findings, are presented in the remainder of this Briefing Note.

FIGURE 1: Model Update Process



Shepway Transport Model Update: Feedback and Finalisation

The updated spreadsheet model was presented during the meeting between AECOM and SDC, including a brief demonstration of the model and its functionality, plus the assumptions and methodology applied. A series of outputs and findings based on the model setup as demonstrated were subsequently discussed.

Following this, representatives of SDC provided three main points of feedback relating to the model setup and these are presented in **TABLE 1**.

TABLE 1: SDC Feedback regarding the Finalisation of the Shepway Transport Model Update

Feedback	Outcome
A number of **junction improvements and network changes** have taken place since the original Shepway Transport Model was prepared, plus further junction improvements are committed to take place between now and the model end year of 2037.	Following the meeting, SDC provided a summary of the junction improvements and network changes in the area encompassed by the model. *Only changes which affect the potential distribution of traffic have been included in the model. As such, the main change made to the model arising from the improvements relates to the introduction of a new right turn movement at Cheriton Interchange (from Cheriton High Street west to east). This is expected to be in place circa 2018, and therefore is not enabled in the model for years prior to this.* *Other changes concerning the potential capacity and operation of the network can be considered in the context of any future operational analysis, as appropriate.* *A schedule of the junction improvements and network changes as identified by SDC is included at **APPENDIX B** for reference.*
The total **Otterpool Park development quanta** of 12,000 dwellings and 100,000sqm of commercial floorspace were agreed to not be representative of the expected levels of potential development, at the end of the Local Plan period (2037).	SDC estimated that 6,500 dwellings was a more realistic estimate of the number of homes that may be delivered during the Local Plan period for the Otterpool Park development. An assumption has been made that the 100,000sqm commercial should be adjusted proportionally (in line with the housing) to 54,000sqm (rounded to the nearest 1,000sqm). *The model has been updated to reflect this change.*
The possibility / feasibility of adding the new **M20 Motorway Junction 10A** into the model was raised.	It was agreed that this can be examined further as part of any subsequent sensitivity scenario modelling.

Shepway Transport Model: Outputs and Findings

Following the updates made to the Shepway Transport Model, two of the scenarios from **FIGURE 1** have been output from the model for comparison with the original model outputs. The developments which are included in each scenario are presented at **FIGURE 2**, with the 2037 Do Something comprising: Committed Schemes (2010 Method), Further Committed Schemes (2010 Method), Additional Committed Schemes (2016 HIA), Additional Sites and Strategic Sites – but excluding Otterpool Park, which is added to the 2037 Do Something to form the 2037 Do Something (Core Strategy Review) scenario.

FIGURE 2: Scenarios Presented and Developments Included

2037 Do Something	Link Park, Lydd Airport, Leas Club, Encombe, Monument House (The Leas), 72 Cheriton High Street, 50-60 & 62 Shorncliffe Road, Former St. Mary's Westbrook School, 52-54 Guildhall Street, 1 Dover Road (Folkestone), Land at Hurricane Way (Hawkinge), Land Adj. Fairlight Terrace, Littlestone Road, Land Adj. 143 Queens Road, Land Adj. End House, Land Adj. 1 Westview Cottages, Coach Depot (King Street), Land Adj. Greenacres, Hurricane Way (Hawkinge), Former St. Mary's Bay Holiday Village, Stoneleigh House (Folkestone), Biggins Wood, Westbrook House, Hotel Imperial, Church Lane, Dymchurch Road (St. Mary's Bay), Hawkinge Youth Adventure Centre, Anaerobic Digester, Holiday Extras, Folkestone Seafront, Risborough and Napier Barracks, Nickolls Quarry, Sellindge, New Romney Site 1, New Romney Site 2, New Romney Site 3
2037 Do Something (Core Strategy Review)	*2037 Do Something developments* + Otterpool Park

A series of outputs from the updated Shepway Transport Model are presented below, comparing total junction flows for both the AM peak hour (0800-0900) and PM peak hour (1700-1800) as follows:

- 2026 Do Something (derived from the Original Model, 2011) versus 2037 Do Something (Updated Model)
- 2026 Do Something (Original Model, 2011) versus 2037 Do Something (Core Strategy Review) (Updated Model)

The outputs also include, for reference and where available, the RAG[1] score associated with junction modelling undertaken for the original model outputs and the percentage change in junction flow from the original model compared to the updated Shepway Transport Model.

The tables within this Briefing Note present a subset of the results, for each of the locations contained within the model where the following criteria are met by comparing the updated model results against the original model results:

- Original model RAG score of 'R';
- Original model RAG score of 'A';
- Original model RAG score of 'G', but with a predicted increase in junction flows; or,
- No previous RAG score, but with a predicted increase of 10% or more in junction flows

[1] Red, Amber, Green (RAG) results from original model outputs refer to:

- Red (R): Junction predicted to operate over capacity.
- Amber (A): Junction predicted to operate above its ideal capacity threshold, but within its theoretical capacity threshold.
- Green (G): Junction predicted to operate within capacity.

2026 Do Something (Original Model) vs. 2037 Do Something (Updated Model)

TABLE 2 presents the subset of results comparing the original model outputs ('2026 DS') with the 2037 Do Something outputs from the Updated Shepway Transport Model ('2037 DS').

TABLE 2: 2026 DS (Original Model) vs. 2037 DS (Updated Model) Total Junction Flow

ID	Junction	AM Peak Hour (0800-0900)				PM Peak Hour (1700-1800)			
		2026 DS	2026 DS RAG	2037 DS	Change (%)	2026 DS	2026 DS RAG	2037 DS	Change (%)
131	New Street / Foresters Way / Shellons Street / Dover Road	1,395	G	2,177	56.1%	1,421	R	2,825	98.8%
136	Alkham Valley Road / A20 Off Slip / A20 On Slip	1,898	R	2,446	28.8%	1,677	A	1,984	18.3%
122	A2034 Cheriton Road / A2034 Cherry Garden Avenue	2,738	R	3,130	14.3%	2,663	R	3,209	20.5%
132	Spitfire Way / Canterbury Road / A260	1,520	R	1,534	0.9%	1,444	R	1,666	15.4%
135	A260 / Alkham Valley Road	2,826	R	3,173	12.3%	3,033	R	3,205	5.7%
7	A20 / Stone Street / Hythe Road	2,532	R	2,650	4.6%	2,646	R	2,692	1.7%
30	B2064 / Cheriton High Street	3,424	R	3,333	-2.7%	3,523	R	3,784	7.4%
117	A2033 Foord Road N / New Street	1,282	A	1,444	12.6%	No Data		1,778	
128	Dover Road / Ton ine Street	466	G	1,014	117.6%	307	G	733	138.5%
4	M20 / A20 / B2068 Roundabout	2,437	G	3,620	48.5%	2,284	G	3,709	62.4%
124	A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)	3,911	G	5,410	38.3%	4,070	G	5,420	33.2%
118	Bouverie Road W / Cheriton Gardens	1,377	G	1,665	20.9%	1,587	G	1,985	25.0%
36	Beachborough Road / Shorncliffe Road	1,870	G	1,965	5.1%	1,906	G	2,074	8 8%
26	A20 / M20 / B2064 Cheriton Interchange	3,885	G	3,791	-2.4%	3,595	G	3,809	5 9%
123	A2034 Cherry Garden Avenue / Cherry Garden Lane	1,977		3,120	57.8%	1,810		2,993	65.4%
129	A2033 Dover Road / A260 Dover Road	891		1,147	28.7%	928		1,323	42.6%
3	Ashford Road / Sandling Road	374		512	36.9%	332		386	16.4%
137	A259 Black Bull Road / A259 Churchill Ave / A260	3,090		4,159	34.6%	3,561		4,182	17.4%
10	Aldington Road / Lympne Hill	786		885	12.6%	676		876	29.6%
22	Aerodrome Road / Spitfire Way	1,700		1,753	3.1%	1,417		1,834	29.4%
8	B2067 Aldington Road / B2067 Otterpool Lane	476		613	28.7%	540		551	2 0%
20	A259 / A259 Straight Lane / B2080 / A2070	1,910		1,905	-0.2%	1,605		2,017	25.7%
130	A2033 Dover Road / A260	749		737	-1.6%	930		1,066	14.6%
9	Aldington Road / Stone Street	961		996	3.6%	898		1,005	11.9%
134	A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	2,994		3,297	10.1%	3,368		3,743	11.1%

A total of 25 junctions meet the subset criteria, of which 14 were examined using junction capacity assessments associated with the original model. All of the junctions classified as Red or Amber have been retained, due to the performance issues identified previously, and any junctions classified as Green have been retained if an increase in traffic is predicted. 11 junctions were not previously assessed, but have been included in the list due to the predicted change in flow from the original model to the updated model.

2026 Do Something (Original Model) vs. 2037 Do Something (Core Strategy Review)

As outlined previously, the Core Strategy Review scenario includes the 6,500 homes estimated by SDC and the pro-rated 54,000sqm of commerce associated with Otterpool Park at the model end state year of 2037. **TABLE 3** presents the subset of results comparing the original model outputs ('2026 DS') with the 2037 Do Something (Core Strategy Review) outputs from the Updated Shepway Transport Model ('2037 CSR').

TABLE 3: 2026 DS (Original Model) vs. 2037 DS SC Review (Updated Model) Total Junction Flows

ID	Junction	AM Peak Hour (0800-0900)				PM Peak Hour (1700-1800)			
		2026 DS	2026 DS RAG	2037 CSR	Change (%)	2026 DS	2026 DS RAG	2037 CSR	Change (%)
7	A20 / Stone Street / Hythe Road	2,532	R	4,736	87.0%	2,646	R	5,051	90.9%
131	New Street / Foresters Way / Shellons Street / Dover Road	1,395	G	2,004	43.7%	1,421	R	2,603	83.1%
132	Spitfire Way / Canterbury Road / A260	1,520	R	1,722	13.3%	1,444	R	1,881	30.2%
136	Alkham Valley Road / A20 Off Slip / A20 On Slip	1,898	R	2,376	25.2%	1,677	A	2,057	22.7%
122	A2034 Cheriton Road / A2034 Cherry Garden Avenue	2,738	R	3,073	12.2%	2,663	R	3,171	19.1%
135	A260 / Alkham Valley Road	2,826	R	3,051	7.9%	3,033	R	3,186	5 0%
30	B2064 / Cheriton High Street	3,424	R	3,168	-7.5%	3,523	R	3,597	2.1%
117	A2033 Foord Road N / New Street	1,282	A	1,330	3.7%	No Data		1,641	
4	M20 / A20 / B2068 Roundabout	2,437	G	5,115	109.9%	2,284	G	5,353	134.3%
128	Dover Road / Ton ine Street	466	G	934	100.4%	307	G	678	120.8%
124	A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)	3,911	G	5,267	34.7%	4,070	G	5,315	30.6%
118	Bouverie Road W / Cheriton Gardens	1,377	G	1,529	11.0%	1,587	G	1,824	14.9%
36	Beachborough Road / Shorncliffe Road	1,870	G	1,822	-2.5%	1,906	G	1,926	1 0%
26	A20 / M20 / B2064 Cheriton Interchange	3,885	G	3,599	-7.4%	3,595	G	3,631	1 0%
3	Ashford Road / Sandling Road	374		674	80.3%	332		583	75.7%
10	Aldington Road / Lympne Hill	786		1,162	47.8%	676		1,194	76.7%
5	A20 Ashford Road / B2067	1,533		2,527	64.8%	1,554		2,714	74.6%
123	A2034 Cherry Garden Avenue / Cherry Garden Lane	1,977		3,055	54.5%	1,810		2,962	63.7%
6	A20 roundabout south of M20	3,064		4,784	56.1%	3,029		4,903	61.9%
8	B2067 Aldington Road / B2067 Otterpool Lane	476		739	55.2%	540		705	30.5%
9	Aldington Road / Stone Street	961		1,306	36.0%	898		1,361	51.6%
22	Aerodrome Road / Spitfire Way	1,700		1,925	13.2%	1,417		2,037	43.7%
129	A2033 Dover Road / A260 Dover Road	891		1,056	18.5%	928		1,221	31.6%
137	A259 Black Bull Road / A259 Churchill Ave / A260	3,090		3,940	27.5%	3,561		3,977	11.7%
1	A20 Ashford Road / Swan Lane	1,025		1,246	21.6%	1,188		1,335	12.3%
20	A259 / A259 Straight Lane / B2080 / A2070	1,910		1,766	-7.5%	1,605		1,871	16.5%
18	Romney Road / Lydd Airport	962		1,101	14.4%	1,107		1,244	12.4%
134	A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	2,994		3,388	13.2%	3,368		3,841	14.0%
119	A2033 Sandgate Rd / Castle Hill Ave / Clifton Gardens / Langhorne Gardens	2,085		2,247	7.8%	2,113		2,334	10.5%

A total of 29 junctions meet the subset criteria, of which 14 were previously examined for the original model work. All junctions classified as Red or Amber have been retained, due to the performance issues identified previously, and junctions classified as Green have been retained if an increase in traffic is predicted. 15 junctions not previously assessed have been included in the list due to the predicted change in flow from the original model to the updated model.

All of the junctions presented in **TABLES 2 & 3** are carried forward to the summary table, **TABLE 4**, which presents those junctions which may benefit from further assessment. For ease of reference, a plan showing the location of each of the identified junctions is included at **APPENDIX C**.

Summary

The Shepway Transport Model has been updated following detailed discussions with SDC, as well as feedback provided by KCC and HE. The initial outputs and findings from the updated model were presented to SDC during a meeting at Shepway Civic Offices and the additional feedback provided has been incorporated into the final update of the model.

A selection of outputs from the updated model, in the form of overall junction flows, has been presented and compared against the 2026 Do Something ('2026 DS') junction flows from the original model. This assists with identifying junctions which may require further assessment. A summary of all the junctions identified is presented at **TABLE 4**, which shows the maximum 2026 DS RAG score (where applicable) and the maximum change from the 2026 DS to the respective 2037 Do Something and 2037 Do Something Core Strategy Review scenarios.

TABLE 4: Junction Flow Change, Summary

ID	Junction	Max. 2026 DS RAG	Max. Change to 2037 DS	Max. Change to 2037 CSR
131	New Street / Foresters Way / Shellons Street / Dover Road	R	98.8%	83.1%
7	A20 / Stone Street / Hythe Road	R	4.6%	90.9%
132	Spitfire Way / Canterbury Road / A260	R	15.4%	30.2%
136	Alkham Valley Road / A20 Off Slip / A20 On Slip	R	28.8%	25.2%
122	A2034 Cheriton Road / A2034 Cherry Garden Avenue	R	20.5%	19.1%
135	A260 / Alkham Valley Road	R	12.3%	7.9%
30	B2064 / Cheriton High Street	R	7.4%	2.1%
117	A2033 Foord Road N / New Street	A	12.6%	3.7%
128	Dover Road / Tontine Street	G	138.5%	120.8%
4	M20 / A20 / B2068 Roundabout	G	62.4%	134.3%
124	A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)	G	38.3%	34.7%
118	Bouverie Road W / Cheriton Gardens	G	25.0%	14.9%
36	Beachborough Road / Shorncliffe Road	G	8.8%	1.0%
26	A20 / M20 / B2064 Cheriton Interchange	G	5.9%	1.0%
3	Ashford Road / Sandling Road		36.9%	80.3%
10	Aldington Road / Lympne Hill		29.6%	76.7%
5	A20 Ashford Road / B2067		-13.7%	74.6%
123	A2034 Cherry Garden Avenue / Cherry Garden Lane		65.4%	63.7%
6	A20 roundabout south of M20		-12.2%	61.9%
8	B2067 Aldington Road / B2067 Otterpool Lane		28.7%	55.2%
9	Aldington Road / Stone Street		11.9%	51.6%
22	Aerodrome Road / Spitfire Way		29.4%	43.7%
129	A2033 Dover Road / A260 Dover Road		42.6%	31.6%
137	A259 Black Bull Road / A259 Churchill Ave / A260		34.6%	27.5%
20	A259 / A259 Straight Lane / B2080 / A2070		25.7%	16.5%
1	A20 Ashford Road / Swan Lane		6.1%	21.6%
130	A2033 Dover Road / A260		14.6%	5.3%
18	Romney Road / Lydd Airport		6.6%	14.4%
134	A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads		11.1%	14.0%
119	A2033 Sandgate Rd / Castle Hill Ave / Clifton Gardens / Langhorne Gardens		4.6%	10.5%

A total of 30 junctions have been identified which are expected to experience increases in traffic flows in the 2037 DS and / or 2037 Core Strategy Review scenario(s). 14 of these were previously assessed and 16 have been included due to the increase in predicted flows from the original model to the updated model.

Further analysis has been undertaken to present a summary of this information below:

- Of the seven junctions previously classified as Red, all are predicted to experience an increase in traffic demand, based upon the findings of the updated model. These increases range from 7.4% at Junction 30 (B2064 / Cheriton High Street) to 98.8% at Junction 131 (New Street / Foresters Way / Shellons Street / Dover Road).
- The single junction classified as Amber previously, Junction 117 (A2033 Foord Road N / New Street), is expected to experience relatively modest increases in demand (in the order of 10% in the AM peak) however, this may be a sufficient increase to change the category of the junction from Amber to Red.
- Of the six junctions previously classified as Green, two are predicted to experience increases in traffic demand of less than 10% (Junctions 36 and 26). The remaining four junctions are predicted to experience increases in demand of between 25% and 138.5%. These junctions are as follows:
    - 128 (Dover Road / Tontine Street);
    - 4 (M20 / A20 / B2068 Roundabout);
    - 124 (A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)); and,
    - 118 (Bouverie Road W / Cheriton Garden).
- Of the 16 junctions not previously assessed, two are predicted to experience reductions in demand in the AM peak, although there would be increases in the PM peak (Junctions 5 and 6). Some of the other junctions are predicted to experience reasonably modest increases in demand, for example, Junctions 130, 18, 134 and 119 with the remaining junctions ranging between 21.6% and 80.3%.

Appendix A

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Briefing Note: Shepway Transport Model – Modelling Methodology

Project	Shepway Transport Model	Reference: 60514687
Created by	[redacted] Transport Planner	Status: Draft (Revision 2)
Reviewed by	[redacted], Transport Planner [redacted] Associate Director	Date: October 2016
Approved by	[redacted] Regional Director	

Context

AECOM (formerly as Scott Wilson and URS) prepared the Transport Strategy which was supported by a transport spreadsheet model for Shepway District Council (SDC), which formed part of the evidence base for the Core Strategy. The Transport Strategy work, including the spreadsheet model, was carried out during 2010 and completed in 2011; however it has been updated at various points to inform local modelling and impact assessments of development options.

The model has been used as recently as June 2015 to help inform the assessment of proposed development in the district, as well as being used to consider potential development scenarios in the vicinity of Junction 11 of the M20.

The spreadsheet model utilises observed traffic survey data factored to a common base year for the AM and PM peak hours to represent the traffic conditions in Shepway. Functionality is then included for traffic growth, for any year during the plan period, to be incorporated and adjusted in the context of committed development and potential strategic development options. Any combination and mix of sites can be modelled and different development options at each site can also be chosen.

The methodology for the model was originally set out in the 'Modelling Methodology' Briefing Note in June 2010 with an updated Briefing Note prepared in December 2011 to set out the extent of updates to the spreadsheet model encompassing the calculation of traffic growth, trip generation and potential development quantums of the Strategic Site allocations at that time.

AECOM worked closely with the key stakeholders, including officers of SDC, Kent County Council (KCC) and Highways England (HE) throughout the preparation and subsequent application of the spreadsheet model.

Purpose

The initial draft of this Briefing Note was issued to stakeholders on 14th September 2016 to present the proposed method for updating the spreadsheet model and feedback from each has now been received.

As the requested changes have now been incorporated, this revised Briefing Note is being recirculated to the aforementioned stakeholders as a record of the final methodology.

Following recent discussions with SDC, as well as KCC and HE, it has been agreed that the spreadsheet model will be updated to reflect and help inform emerging growth options in the district. Furthermore, during subsequent statutory stages, it will support the complete review of the Core Strategy Local Plan.

SDC expect to commission consultants to carry out a review of growth options, with this work split into two phases:

- Phase 1 involves producing a summary paper of high-level growth options including a supporting narrative with illustrative mapping on a suitable OS base. The summary paper is likely to be considered for public consultation by SDC's Cabinet in January 2017 and should identify the capacity and deliverability for growth in the areas assessed, also identifying where significant infrastructure investment may be needed to unlock the potential of a growth area. The high-level growth options paper will be informed by the Shepway Transport Model and will seek to identify how the housing need identified in the emerging Strategic Housing Market Assessment will be met for the period 2014-2017.

- Phase 2 involves testing the high-level growth options identified in phase 1, considering responses to consultation and producing a strategic growth options report as a significant evidence base document to support the Core Strategy review.

This Briefing Note therefore sets out the methodology which will be followed as part of a comprehensive update of the Shepway Transport Model, to ensure that it is able to fully inform both phases of the strategic review of growth options in Shepway District.

The period of the plan is likely to be from 2014 to 2037 as a result of the Strategic Housing Market Assessment (SHMA), which identifies objectively assessed housing need based on housing data produced in 2014 by the Office for National Statistics (ONS).

Methodology

Where possible the methodology which will be employed will be kept consistent with the approach followed in preparing the existing model, as this will allow any outputs to be provided in a comparable format and it will build upon the approach that was previously agreed with the stakeholders.

In this section of the Briefing Note, the methodology is therefore presented and this generally follows the same approach as was adopted previously. Where this is not the case, an alternative / updated method is presented.

Network

The 'network' established for the existing model, covering the district and including the key links and junctions throughout Shepway, including specifically those areas in the vicinity of the Strategic Site allocations will be used as the starting point for the updated model.

The main structure of the network will again be determined by Manual Classified Count (MCC) data for junctions and Automatic Traffic Count (ATC) data for highway links, mainly ranging between 2012 and 2016. Supplementary surveys will be undertaken for key junctions and links where the existing data is considered to be out of date (generally earlier than 2012).

Where possible the data will cover 12 hour weekday periods between 07:00 and 19:00 and, as in the existing model, the focus will be on the AM (08:00-09:00) and PM (17:00-18:00) peak hours.

Annualisation

Given the wide extent of the model area and the amount of data that will be obtained for this, the information will range across many months as well as years.

The traffic data will therefore be 'annualised' by applying factors to the baseline traffic data derived from ATC data. This is consistent with the existing model and allows seasonal variations in traffic demand, including tourist traffic, to be reflected.

Growth

The annualised baseline data will subsequently be factored up to a common base year, in this case 2016 although the model will also be able to provide a 'base' scenario for 2014, representing the start of the plan period. The model will include the option to forecast future year scenarios, comprising all years between 2016 up to and including 2037 (local plan year). The spreadsheet allows the traffic situation to be viewed on a year-by-year basis.

Traffic growth factors will be calculated using the latest version of TEMPRO (7.0) and the NTEM database[1], which provide traffic growth factors based on the predicted number of households and jobs that are expected to be delivered in each future year, relative to existing levels.

In the absence of detailed development forecast data for an area, TEMPRO therefore provides an estimate of background traffic growth.

Previously the traffic growth forecasts within TEMPRO were adjusted based on the projected delivery of the Core Strategy sites, using SDCs detailed development programme covering the period up until 2026 and the latest available Strategic Housing Land Availability Assessment (SHLAA) information at that time. For the updated model, equivalent detailed development programme information covering the period up until 2037 will be used.

Two examples of the methodology are summarised below, for indicative purposes:

Table 1 – Example 1

Example 1	**TEMPRO Forecast**		**Shepway Growth Option**	
Time Period	Housing	Employment	Housing	Employment
2010 to Year "X"	250	150	125	75

In this case, for Future Year "X", the Core Strategy / SHLAA is predicted to only deliver half the level of growth in terms of housing and employment that TEMPRO predicts. The TEMPRO growth forecast would be reduced in this situation by the Core Strategy element and then applied to the background traffic levels. The remaining growth would then be considered in the spreadsheet model based on traffic associated with the actual Core Strategy / SHLAA allocations, rather than generically.

Table 2 – Example 2

Example 2	**TEMPRO Forecast**		**Shepway Growth Option**	
Time Period	Housing	Employment	Housing	Employment
2010 to Year "Y"	250	150	500	300

[1] Version 7.0 of the NTEM dataset includes: population data, using Office for National Statistics 2012-based projections; dwellings data, using local authority annual monitoring reports; employment data, using UK Commission for Employment and Skills 2012-based employment projections ("working futures"); distribution of employment and workers data, using workforce jobs and the labour force survey, by region from a base year of 2012; a comprehensive update and re-estimation of the National Car Ownership Model; re-estimated trip rates based on the National Travel Survey. *Source: Updating to TEMPro 7.0 and frequently asked questions additional guidance, DfT (2016).*

In this case, for Future Year "Y", the Core Strategy / SHLAA would be predicted to deliver in excess of the amount of growth in terms of housing and employment that TEMPRO predicts. In this situation, no TEMPRO background traffic growth would have been applied and the specific information relating to the Core Strategy / SHLAA allocations would be input.

Review of Traffic Data (2016)

All of the sites (junctions and links) used in the existing model, including the month and year of the base survey, are presented in **Appendix A**, with the location of these sites presented on the maps included in **Appendix B**. A review of this data has been undertaken to identify all of the locations which are considered to be:

- Out of date (but not essential to the model update and therefore sites which new data is not required for)
- Out of date (and needed for the model), i.e. new data is needed
- In date (and to be retained in the model)

Where new survey data is anticipated to be required to update the model, existing data from the following sources has been considered:

- TRADS data from HE
- Department for Transport (DfT) data (e.g. count points)
- Data from Transport Assessments (for developments in Shepway and neighbouring authorities)

Where available, TRADS and DfT data in the vicinity of the existing sites has been listed in **Appendix A**. Data in Transport Assessments may also be available for the following sites:

- Link Park
- Lydd Airport
- Leas Club
- Biggins Wood
- Fisherman's Landing

For those sites where existing data is not available, new surveys have been undertaken in September / October 2016 outside of the school holidays, following the agreement of the stakeholders[2]. Manual Classified Count (MCC) surveys were undertaken between the hours of 0700-1000 and 1600-1900 on weekdays and Automatic Traffic Count (ATC) surveys were undertaken for one week.

Review of Development Flows – Committed Schemes (2010-2016)

The spreadsheet model allows development sites to be 'plugged in' at their respective locations on the network. A number of committed schemes with extant planning permissions were identified within the district and included within the existing model, meaning that they were expected to be delivered during the life of the Core Strategy. The developments identified as part of the 2010 modelling methodology included:

[2] Since the initial Briefing Note was issued, taking account of feedback from the stakeholders, an independent survey company was commissioned to undertake ATC traffic surveys for seven days commencing Wednesday 13th October 2016 and MCC traffic surveys on Thursday 14th October 2016.

Table 3 – Committed Schemes (2010 Methodology)

Development	Description	Implemented?
Sainsbury's, Hythe (Y09/0627/SH)	5,573sqm superstore together with car parking, delivery yard and vehicular access	Yes
Link Park (Y06/0552/SH) (Y15/0880/SH)	B1 office (5,200sqm), B2 industrial (15,600sqm), B8 warehousing (31,200sqm)	Extension to time limit of planning permission approved in 2015
Shearway, Phase I	Offices in the Folkestone Enterprise Centre	Yes
Lydd Airport (Y06/1648/SH) (Y06/1647/SH)	Airport expansion – runway extension and new terminal building approved in 2014.	Minor works have commenced to secure the planning permission but construction has not begun

Since the initial model was prepared the following committed developments have also been included in the spreadsheet model:

Table 4 – Further Committed Schemes (2010 Methodology)

Development	Description	Implemented?
Cheriton Parc (Y05/0294/SH) (Y06/0503/SH) (Y06/0536/SH)	B1 office (15,334sqm), Hotel (2,648sqm), Nursery (744sqm)	Yes
Leas Club (Y08/1212/SH)	Conversion from bar to gymnasium and erection of 68 residential dwellings and 2 commercial units	No
Encombe (Y11/0122/SH) (Y16/0447/SH)	36 residential units	No
HWRC (Y09/1050/SH)	Household Waste Recycling Centre	Yes
Hawkinge	300 residential dwellings plus extension to Battle of Britain Museum	No active consent
Shearway Glenmore (Y06/1664/SH)	24 business units (B1, B2, B8)	Yes
Shearway Home Office	B1 office (5,415sqm)	Yes

The traffic assumptions for each of these developments was derived from their respective Transport Assessments and documentation supporting their associated planning applications, allowing their impact to be considered on the network.

As some of the committed developments have now been implemented they will therefore be picked up in the new baseline. The tables above have identified which sites have been implemented and no longer need to be 'added' to the model and which sites are still due to come forward and therefore do need to be retained in the model as committed developments.

Following the request for feedback from stakeholders, SDC provided a list of all sites which have planning permission within Shepway District in the form of the 2016 Housing Information Audit (HIA). AECOM has examined this to identify housing sites that are not already presented herein and which

are planned to include a forthcoming net gain of 10 or more dwellings. Details of the permitted developments which meet these criteria, and will therefore also be added into the model, are presented in **Table 5**.

Table 5 – Additional Committed Development Schemes (2016 HIA)

Development	Description	Net Gain (Dwellings)
Monument House, The Leas (Y11/0334/SH)	17 flats, above existing and proposed retail/restaurant units.	17
72 Cheriton High Street (Y12/1000/SH)	12 terrace dwellings with associated parking and landscaping.	12
50-60 & 62 Shorncliffe Road (Y14/1149/SH)	42 flats, arranged in three separate four-storey buildings.	42
Former St. Mary's Westbrook School (Y14/0688/SH) (Y14/0687/SH)	Erection of 25 houses.	25
52-54 Guildhall Street (Y13/0166/SH)	Mixed-use development, containing 14 flats.	14
1 Dover Road, Folkestone (Y15/0631/SH)	Conversion of a Funeral Directors building into 10 self-contained flats, together with external alterations.	10
Land at Hurricane Way, Hawkinge (Y14/0336/SH)	Erection of retirement village (C2 use) providing 61 cottages and 50 apartment buildings).	111
Land Adj. Fairlight Terrace (Y14/1428/SH)	Erection of 21 two-storey dwellings.	21
Littlestone Road (Y11/0121/SH)	11 self-contained flats, above retail.	11
Land Adj.143 Queens Road (Y13/1206/SH)	18 apartments and lower floor office, with associated access, parking and landscaping.	18
Land Adj. End House (Y15/0581/SH)	Erection of a building for 11 residential flats, together with landscaping and parking.	11
Land Adj. 1 Westview Cottages (Y09/0763/SH)	Erection of 15 three storey houses with associated car parking and access road.	15
Coach Depot, King Street (Y14/0578/SH)	Erection of 11 dwellings.	11
Land Adj. Greenacres (Y15/0806/SH)	Erection of 48 houses and 8 home/worker houses.	56
Hurricane Way, Hawkinge (Y14/0341/SH)	Erection of 21 dwellings (class C3) together with associated access and landscaping.	21
Former St. Mary's Bay Holiday Village (Y10/0746/SH)	Erection of 72 dwellings and associated access.	72
Stoneleigh House, Folkestone (Y13/0858/SH)	Outline application (all matters reserved) for the redevelopment of the site for 14 residential units.	14

Additional Sites

A number of additional sites were also included in the existing spreadsheet model, as follows:

Table 6 – Additional Sites

Development	Description	Implemented?
Ingles Manor (Y12/0767/SH)	Full application for 13 dwellings plus 3 storey office building Outline application for 46 dwellings	Yes – 13 dwellings have been built
Biggins Wood (Y13/0024/SH) (Y16/0403/SH)	Outline planning permission for mixed use commercial 660sqm and industrial 5,142sqm and 77 residential dwellings. Reserved matters application currently in progress.	No
Mountfield Road	No further details available	No active consent
Folkestone Primary Academy (Y11/1132/SH)	130 dwellings following demolition of Folkestone Primary Academy	Yes
Westbrook House	127 residential dwellings and 80 bedroom nursing home	Work started
Marine Parade	No further details available	No active consent
Fisherman's Landing (Y11/0284/SH)	Mixed use development of 60 dwellings, 9 commercial/recreational huts	Yes – development is complete
Hotel Imperial (Y10/0898/SH)	75 residential units and new golf clubhouse	Yes – some phases of houses have been built
Church Lane (Y08/1002/SH)	60 dwellings	Approved
Dymchurch Road, St. Mary's Bay (Y07/1566/SH)	Erection of 85 dwellings.	No - Planning permission granted
Hawkinge Youth Adventure Centre (Y15/0030/SH)	Erection of 76 dwellings at Hawkinge Youth Adventure Centre.	No - Planning permission granted
Hawkinge Mixed Use (Y15/1035/SH)	Commercial space and erection of 47 dwellings. (Alternative to Y14/0336/SH; outline planning permission Y10/0738/SH)	No - Planning permission granted
Anaerobic Digester (Y14/0774/SH)	Construction of an anaerobic digestion plant	No
Holiday Extras (Y15/0175/SH)	1,415sqm extension to existing office building, extension to car park & new vehicular access to Stone Street	No

For those schemes that have been implemented, it is proposed that these will be removed from the model, with all other sites retained. HE has requested that the following new additional site should also be included in the updated spreadsheet model:

Table 7 – Additional Sites (New)

Development	Description
M20 Stanford West Lorry Park	M20 motorway lorry parking area to the north of the M20, near Stanford. HE has requested that this site is included for a worst case assessment, or is included as a sensitivity test as a minimum.

Review of Development Flows – Strategic Sites (2010-2016)

The Strategic Sites identified as part of the Core Strategy allocations were as follows:

Table 8 – Strategic Sites

Development	Description	Consent?
Folkestone Seafront (Y12/0897/SH)	1,000 residential dwellings, 10,000sqm commercial	Approved with conditions - work to start in 2016
Risborough and Napier Barracks / Shorncliffe Garrison (Y14/0300/SH)	Up to 1,200 residential dwellings Community services and facilities (1,998sqm) Primary school and nursery (3,500sqm) Development of 'St Martins Plain' and 'The Stadium'	Outline planning permission for residential development and new school, full permission for St Martins Plain and The Stadium granted in Dec 2015. 294 homes under construction as part of Phase 1.
Nickolls Quarry (Y06/1079/SH)	1,050 residential dwellings plus employment (15,000sqm), commercial (5,000sqm) and community (1,000sqm)	Approved with conditions - 192 residential dwellings built
Sellindge (Y14/0873/SH)	250 residential dwellings	Planning permission Jan 2016 - works to start 2017
New Romney Site 1 - Romney Marsh Potato Company (Y15/0710/SH)	55 residential dwellings	Planning permission granted
New Romney Site 2 (Y14/1411/SH)	117 residential dwellings	Resolution to grant planning permission
New Romney Site 3 (Y15/0164/SH)	110 residential dwellings	Resolution to grant planning permission
Otterpool Quarry Y16/0068/SH	Temporary Use as a lorry park	Retrospective application

A number of the strategic sites have now obtained planning consent and can therefore be moved to the 'committed' list. The others may need to be retained, removed or revised and there may also be new sites to be added, which will be confirmed with the authorities.

The sites in the Places and Policies Local Plan will also be included and AECOM will liaise with SDC as part of the model development to ensure the latest options are included, in the context of the preferred growth options.

The spreadsheet model will enable the developments to be included, year-by-year according to projected build-out rates. The developments can therefore be chosen based on the scenario that is being considered.

The following information was previously sourced for the sites and will again be required to update the model:

- Schedule of accommodation
- Delivery programme, including phasing, for the life of the scheme
- Access arrangements
- Information concerning infrastructural and / or offsite improvements
- Other mitigation options
- Trip generation
- Trip distribution
- Parking proposals

Trip Generation

Where there are no trip generation forecasts for a development or site allocation, 'standard' trip rates will be applied to the respective mix of land uses that are being proposed. The rates included in the 2011 model update are proposed to be retained and these are set out below.

Table 9 – AM Peak Hour Trip Rates (per 100sqm)

Land Use	Trip Rates		
	Arrivals	Departures	Combined
Residential[1]	0.14	0.30	**0.44**
B1 (Office)	1.37	0.23	**1.60**
B2 (Industrial)	0.45	0.21	**0.66**
B8 (Warehousing)	0.08	0.05	**0.13**
Primary School	4.92	3.49	**8.41**
Secondary School	1.75	1.19	**2.94**
Doctors	5.69	2.56	**8.25**
Dentists	7.14	1.43	**8.57**
Local Shops	4.52	4.33	**8.86**
Leisure[2]	14.53	11.82	**26.35**
Restaurant	0.00	0.00	**0.00**
Café	0.40	0.00	**0.40**
Hotel	0.28	0.45	**0.73**

[1] Trip Rate by household (rather than 100sqm)

[2] Trip Rate by Hectare (rather than 100sqm)

Table 10 – PM Peak Hour Trip Rates (per 100sqm)

Land Use	Trip Rates		
	Arrivals	Departures	Combined
Residential[1]	0.32	0.19	**0.51**
B1 (Office)	0.18	1.13	**1.31**
B2 (Industrial)	0.12	0.39	**0.51**
B8 (Warehousing)	0.03	0.09	**0.12**
Primary School	0.28	0.55	**0.82**
Secondary School	0.16	0.26	**0.42**
Doctors	2.73	4.14	**6.87**
Dentists	1.43	5.71	**7.14**

Local Shops	5.18	5.25	**10.43**
Leisure[2]	36.22	26.30	**62.52**
Restaurant	2.87	2.22	**5.08**
Café	12.00	12.51	**24.51**
Hotel	0.38	0.23	**0.61**

[1] Trip Rate by household (rather than 100sqm)

[2] Trip Rate by Hectare (rather than 100sqm)

Trip Distribution

In addition, 'standard' estimates will also be made for trip distribution where a transport consultant has not prepared trip distribution in support of a planning application for a development. This will follow the same methodology as the existing model, by deriving trip distribution for Shepway, however will be based on Journey-to-Work data contained within the Census 2011 database, instead of the Census 2001 database which was used previously.

Summary

This Briefing Note has set out the proposed methodology to undertake a comprehensive update of the Shepway Transport Model. The note has been submitted to the stakeholder group, comprising SDC, KCC and the HE for their review and agreement.

Appendix A

Junctions

ID	Junction	Date of Base Survey	Survey To Be Retained?[1]	Alternative Data Available	New Survey Needed?
1	A20 Ashford Road / Swan Lane	June 2010	No	-	Yes
2	Stone Street / Blindhouse Lane	June 2010	No	-	Yes
3	Ashford Road / Sandling Road	June 2010	No	-	Yes
4	M20 / A20 / B2068 Roundabout	September 2005	No	TRADS: M20/7016J 2015 M20/7016M 2015 M20/7019K 2015 M20/7019L 2015	Yes
5	A20 Ashford Road / B2067	July 2005	No	-	Yes
6	A20 roundabout south of M20	July 2005	No	DfT: 80736 (A20) 80737 (A20)	Yes
7	A20 / Stone Street / Hythe Road	July 2005	No	DfT: 36876 (A261)	Yes
8	B2067 Aldington Road / B2067 Otterpool Lane	July 2005	No	-	Yes
9	Aldington Road / Stone Street	July 2005	No	-	Yes
10	Aldington Road / Lympne Hill	July 2005	No	-	Yes
12	A261 London Road / A259 Military Road Eastbound	February 2009	No	DfT: 78180 (A261) 48175 (A2008) 7826 (A259) 74505 (A261) 56800 (A259)	No
13	A259 Military Road / A259 Dymchurch Road / A259	February 2009	No	DfT: 7826 (A259) 74505 (A261) 56800 (A259)	No
14	A259 / A259 Dymchurch Road	February 2009	No	DfT: 48175 (A2008) 7826 (A259)	No
15	A259 Dymchurch Road / Botolph's Bridge Road	June 2003	No	-	Yes
17	A259 Lydd Road / Romney Road	July 2005	No	DfT: 36867 (A259)	No

[1] Existing surveys included in the model undertaken during or since 2012 to be retained

ID	Junction	Date of Base Survey	Survey To Be Retained?[1]	Alternative Data Available	New Survey Needed?
18	Romney Road / Lydd Airport	June 2010	No	-	Yes
20	A259 / A259 Straight Lane / B2080 / A2070	November 2005	No	-	Yes
22	Aerodrome Road / Spitfire Way	December 2007	No	-	Yes
99	Canterbury Road / Harvest Way	December 2007	No	-	Yes
100	Canterbury Road / Aerodrome Road	December 2007	No	-	No
101	Spitfire Way / Swann Way / Haven Drive	December 2007	No	DfT: 36875 (A260)	No
132	Spitfire Way / Canterbury Road / A260	July 2009	No	-	Yes
133	Haven Drive / Hurricane Way	July 2009	No	-	No
134	A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	July 2009	No	TRADS: A260/7113A 2014 A20/7111J 2015 A20/7112K 2015	Yes
135	A260 / Alkham Valley Road	July 2009	No	-	Yes
136	Alkham Valley Road / A20 Off Slip / A20 On Slip	July 2009	No	TRADS: A20/7113M 2015	Yes
26	A20 / M20 / B2064 Cheriton Interchange	October 2013	Yes	-	-
30	B2064 / Cheriton High Street	October 2013	Yes	-	-
36	Beachborough Road / Shorncliffe Road	October 2013	Yes	-	-
39	A259 Seabrook Road / Horn Street	October 2013	Yes	-	-
110	Cheriton High Street / Horn Street	October 2013	Yes	-	-
113	A259 Earls Avenue / A259 Sandgate Road / A2033	May 2004	No	DfT: 17914 (A2033)	No
114	A259 Earls Avenue / Shorncliffe Road	May 2004	No	-	No
115	Castle Hill Avenue / Bouverie Road W	May 2004	No	-	Yes
116	The Leas / West Terrace / Road of Remembrance	May 2004	No	-	No
117	A2033 Foord Road N / New Street	May 2004	No	-	Yes
118	Bouverie Road W / Cheriton Gardens	July 2010	No	-	Yes
119	A2033 Sandgate Road / Castle Hill Avenue / Clifton Gardens / Langhorne Gardens	July 2010	No	DfT: 74616 (A2033)	Yes
120	Shorncliffe Road / Castle Hill Avenue / A259	July 2010	No	-	Yes
121	A259 / Cheriton Road	July 2010	No	DfT: 76062 (A259)	Yes
122	A2034 Cheriton Road / A2034 Cherry Garden Avenue	October 2013	Yes	-	-

ID	Junction	Date of Base Survey	Survey To Be Retained?[1]	Alternative Data Available	New Survey Needed?
123	A2034 Cherry Garden Avenue / Cherry Garden Lane	July 2010	No	DfT: 27897 (A2034)	Yes
124	A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)	July 2012	No	-	Yes (to include free-flow left turn)
125	Road of Remembrance / Marine Terrace	July 2010	No	-	Yes
126	Lower Sandgate Road / A260	July 2010	No	DfT: 70220 (A260)	No
127	A260 / A260 Tram Road	July 2010	No	DfT: 70220 (A260)	No
128	Dover Road / Tontine Street	July 2010	No	-	Yes
129	A2033 Dover Road / A260 Dover Road	July 2010	No	-	Yes
130	A2033 Dover Road / A260	July 2010	No	-	Yes
131	New Street / Foresters Way / Shellons Street / Dover Road	July 2010	No	-	Yes
137	A259 Black Bull Road / A259 Churchill Ave / A260	July 2010	No	-	Yes
138	Tram Road / A2033	July 2010	No	-	No
139	Tram Road / Harbour Way	July 2010	No	-	No
145	B2064 Cheriton High Street / B2063	October 2013	Yes	-	-
147	Horn Street / Church Road	October 2013	Yes	-	-
148	Church Road / Pond Hill Road	October 2013	Yes	-	-
149	Church Road / Gordon Road	October 2013	Yes	-	-
150	Church Road / Royal Military Avenue / Kings Road	October 2013	Yes	-	-
151	B2063 / Risborough Way	October 2013	Yes	-	-
153	B2063 West Road / North Road / Pond Hill Road	October 2013	Yes	-	-
154	B2063 North Road / Royal Military Avenue	October 2013	Yes	-	-
155	B2063 North Road / B2063 Military Road	October 2013	Yes	-	-
156	B2063 Hospital Hill / A259 Seabrook Road	October 2013	Yes	-	-
157	B2063 Military Road / A259 Sandgate High Street	October 2013	Yes	-	-
158	A20 / M20 On Slip / M20 Off Slip / Castle Hill	July 2012	Yes	-	-
159	M20 Channel Tunnel Entrance Slip Road	New site, requested by HE	N/A	-	Yes
160	M20 Channel Tunnel Exit Slip Road	New site, requested by HE	N/A	-	Yes

Links

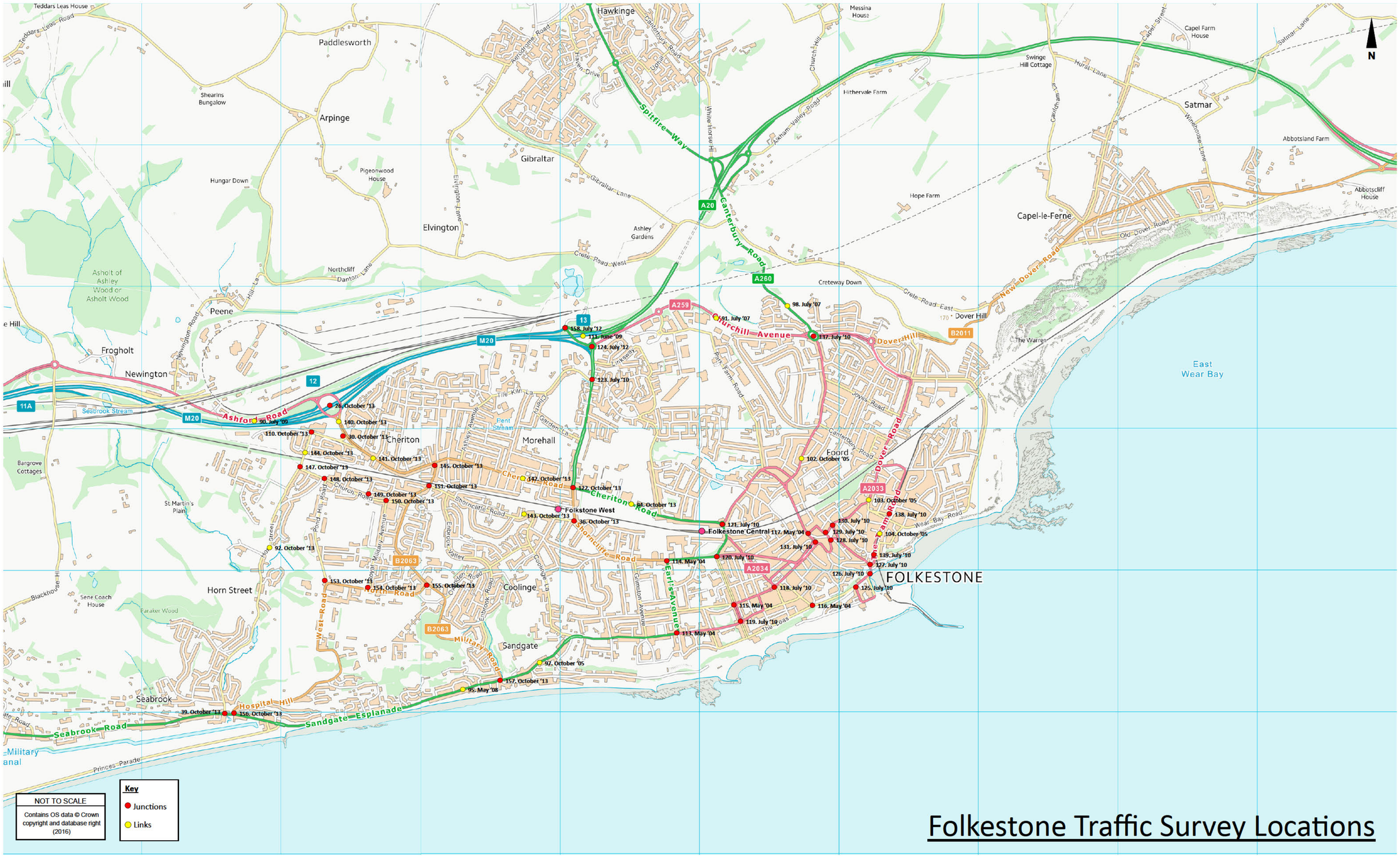
ID	Link	Date of Base Survey	Survey To Be Retained? [2]	Alternative Data Available	New Survey Needed?
64	A20 Ashford Road (West of Sellindge)	July 2007	No	DfT: 16234 (A20)	No
65	A20 Barrow Hill	June 2008	No	-	Yes
66	B2067 Aldington Road W	July 2007	No	-	Yes
67	Aldington Road E	July 2007	No	-	Yes
68	Stone Street	December 2008	No	-	Yes
69	A261 Hythe Road	All Year 2009	No	-	Yes
70	W Hythe Road	February 2010	No	-	No
71	Botolph's Bridge Road	August 2005	No	-	No
72	A259 Dymchurch Road (Hythe)	February 2010	No	DfT: 80881 (A259)	No
73	A259 Dymchurch Road (West of Hythe)	All Year 2009	No	-	No
75	A259 Seabrook Road	May 2005	No	-	Yes
76	A259 Dymchuch Road (New Romney)	December 2007	No	-	Yes
77	B2071 Station Road	February 2010	No	-	Yes
78	A259 Lydd Road	April 2010	No	DfT: 6827 (A259)	No
79	Coast Drive	May 2009	No	-	No
80	B2075 Romney Road	February 2010	No	-	Yes
81	B2080 (Brenzett)	July 2007	No	-	No
82/90	A20 Ashford Road (approach to Cheriton Interchange)	July 2009	No	DfT: 80738 (A20)	No
83	A260 Canterbury Road (N of Hawkinge)	April 2008	No	-	Yes
84	White Horse Hill	February 2007	No	-	No
85	A260 Canterbury Road (S of A20)	July 2007	No	-	Yes
86	A20 (East of Hawkinge)	April 2008	No	TRADS: A20/7113A 2015 A20/7133B 2015	No
87	Stone Street (North)	June 2010	No	-	No
88	Sandling Road	June 2010	No	-	No

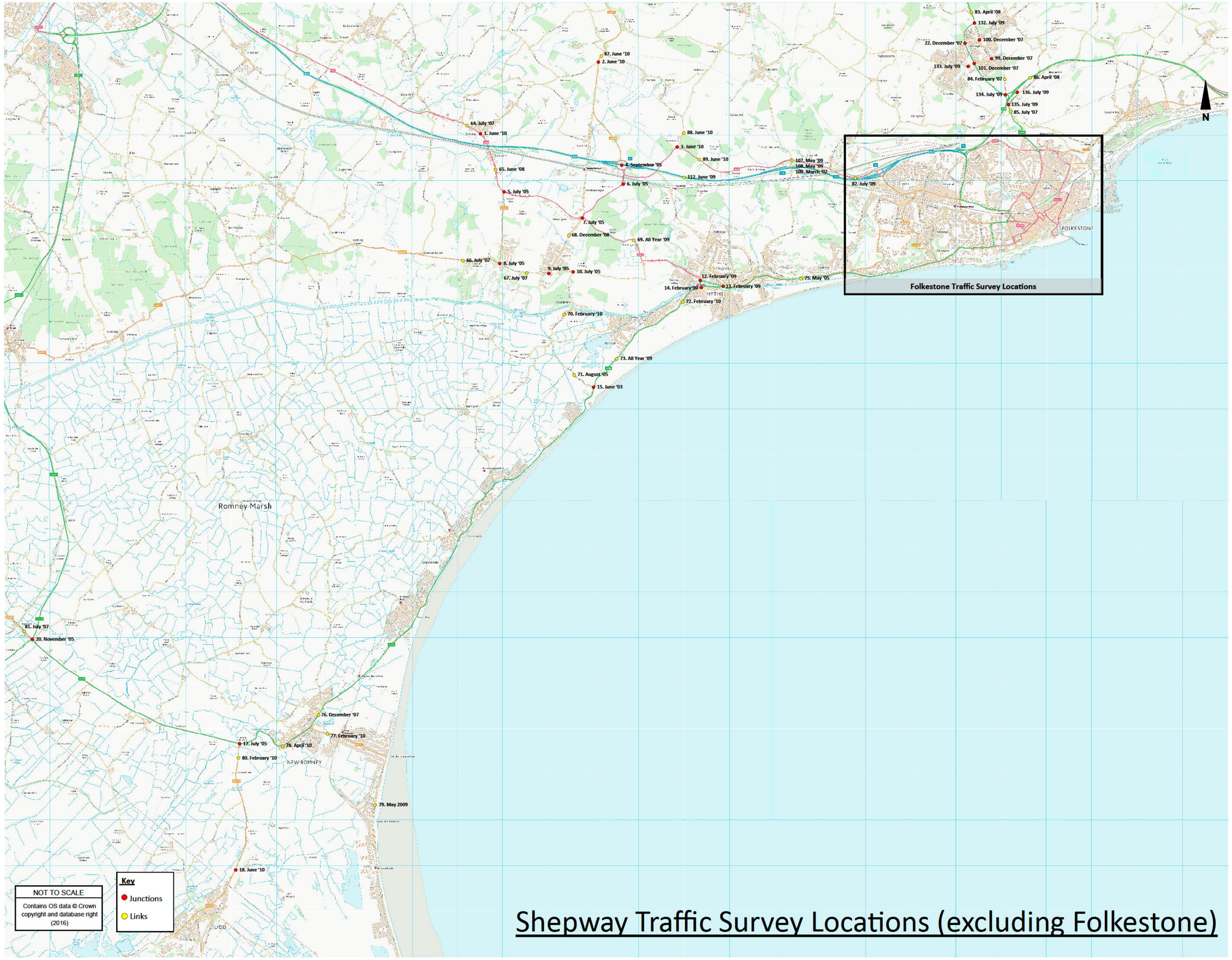
[2] Existing surveys included in the model undertaken during or since 2012 to be retained

ID	Link	Date of Base Survey	Survey To Be Retained? [2]	Alternative Data Available	New Survey Needed?
89	A20 Ashford Road (North of Sandling)	June 2010	No	-	Yes
107	A20 near junction with Beachborough and Bargrove	May 2009	No	-	No
108	A20 near junction with Beachborough and Bargrove	May 2009	No	-	No
109	A20 near junction with Beachborough and Bargrove	March 2007	No	-	No
112	M20 (North of Sandling)	June 2009	No	DfT: 27895 (M20)	No
91	A259 Churchill Avenue	July 2007	No	DfT: 99222 (A259)	No
92	Horn Street	October 2013	Yes	-	-
94	A2034 Cheriton Road	October 2013	Yes	-	-
95	A259 Sandgate Esplanade	May 2008	No	DfT: 6826 (A259)	No
97	A259 Sandgate Hill	October 2005	No	-	No
98	A260 Canterbury Road (N of A259 roundabout)	July 2007	No	DfT: 16809 (A260)	No
102	A259 Black Bull Road	October 2005	No	DfT: 46869 (A259)	No
103	A260 Dover Road (near junction with Harbour Way)	October 2005	No	-	Yes
104	A260 The Tram Road	October 2005	No	DfT: 99921 (A260)	No
111	M20 at Castle Hill Interchange	June 2009	No	TRADS: M20/7095A 2015 M20/7095B 2015	No
140	B2064 Cheriton Approach	October 2013	Yes	-	-
141	B2064 Cheriton High Street	October 2013	Yes	-	-
142	B2064 Cheriton Road	October 2013	Yes	-	-
143	Shorncliffe Road	October 2013	Yes	-	-
144	Horn Street (North of Church Road)	October 2013	Yes	-	-
161	M20 (west of Junction 11)	New site, requested by HE	N/A	TRADS: M20/7869A M20/7869B	No

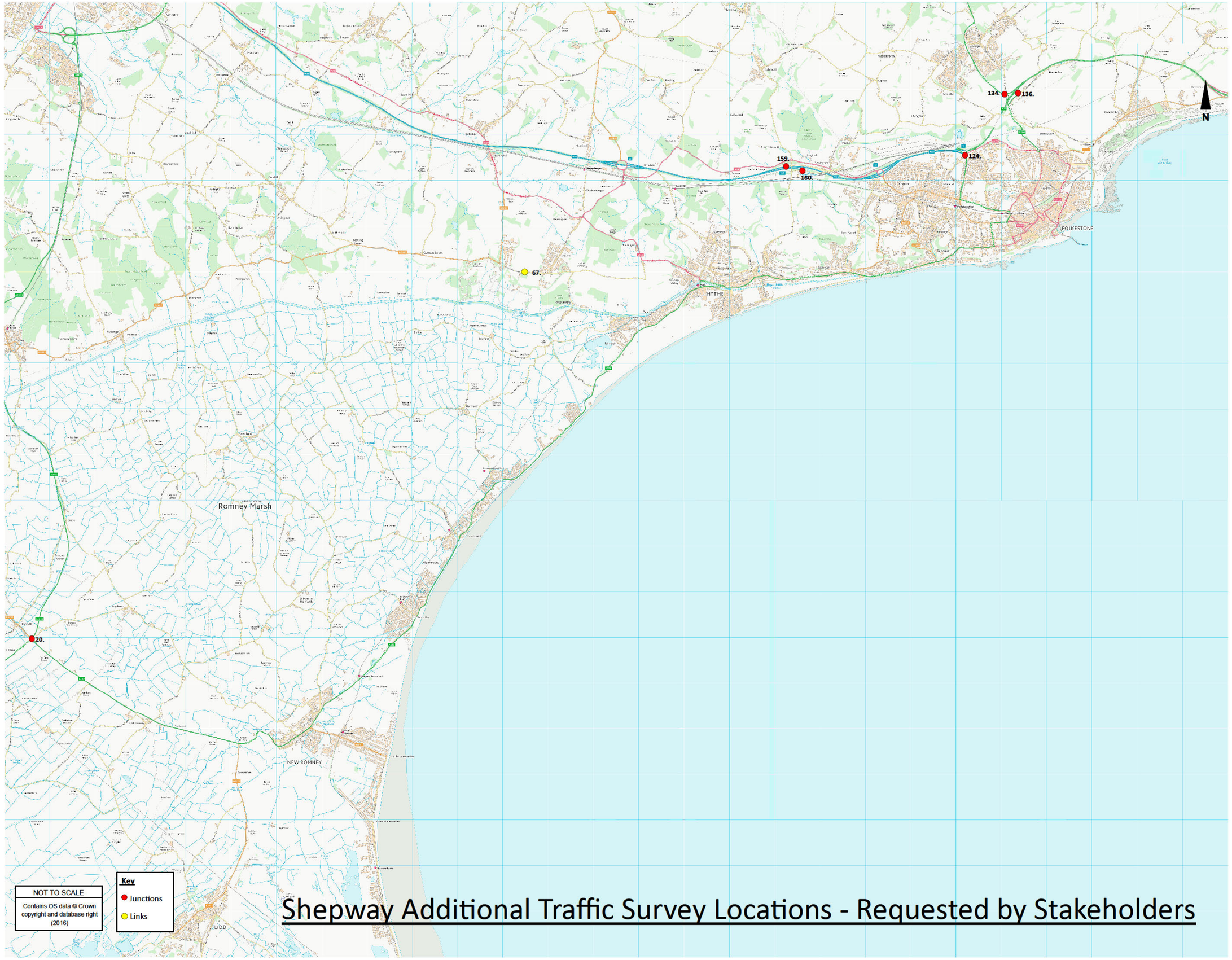
Appendix B

Folkestone Traffic Survey Locations





Shepway Traffic Survey Locations (excluding Folkestone)



Shepway Additional Traffic Survey Locations - Requested by Stakeholders

Appendix B

Highway improvements

1. **Folkestone Seafront – Y112/0987/SH**

- Improvements to the junction of Cheriton High Street/Cherry Garden Avenue to provide additional right turn storage capacity for turns from Cheriton High Street onto Cherry Garden Avenue with dedicated right turn green time associated with movements from Cheriton High Street – Required by occupation of the 240th dwelling.
- Two-way movement for bus using Tontine Street (now in operation)

2. **Shorncliffe Garrison – Y14/0300/SH**

a) Highway network enhancements

- Horn Street/Cheriton High Street signal junction – prior to first occupation of the 'St Martin's Plain' phase of development. Apparently Dean has agreed a change in the phasing of works and allowing up to 300 dwellings to be occupied until completion of this junction improvement, but this needs a variation of condition planning application. These works are therefore likely to be completed in 2018-2019 in my opinion.
- Horn Street/Church Road – change in priority (completed end of 2016). Signals for one-way working not yet in operation but will be shortly.
- A20 Cheriton High Street/Cheriton Interchange – prior to first occupation of any phase of development. Apparently Dean has agreed a change in the phasing of works and allowing up to 300 dwellings to be occupied until completion of this junction improvement, but this needs a variation of condition planning application. These works are therefore likely to be completed in 2018-2019 in my opinion.

b) Public transport infrastructure improvements

- the provision of additional bus stops on Horn Street, Church Road, Royal Military Avenue, West Street and Pond Hill Lane; enhanced and/or relocated bus stops on Church Road, Royal Military Avenue, Cheriton High Street; and the closure of bus stops on Church Road – Trigger points set out in the Section 106 Agreement, will be delivered as a Section 278 Agreement.

3. **New Romney Broad Location – Y15/0164/SH + Y14/1411/SH - Planning permission not yet granted**

    - Change of priority at the junction of St Mary's Road and Cockreed Lane – Required by occupation of 1st dwelling (Y15/0164/SH)
    - Signalised junction enhancement scheme at junction of High Street/Station Road/Church Road (reversing operation of Church Road) – Section 106 payment from the two sites, split according to number of dwellings and traffic movements
    - Build out to the High Street at the junction with Ashford Road to improve visibility for exit manoeuvres from Ashford Road – Required by occupation of 1st dwelling (Y14/1411/SH).

4. **Sellindge – Y14/0873/SH**

    - A20 corridor scheme to lower the speed limit to 30 mph and to provide better connectivity (pedestrians and cyclists) and crossing facilities. Two phased approach, phase 1 is due before occupation of 1st dwelling and phase 2 is due prior to the occupation of any dwelling on phase 2.

5. **Lydd Airport – Y06/1648/SH**
    - Improvement at Hammonds Corner – Throughput is limited to 30,000 passengers per annum until the upgrade works are required.

6. **Nickolls Quarry – Y06/1079/SH**
    - Minor works to improve flare widths of minor arms (Stone Street and A261 Hythe Road). S106 monies paid to KCC, and works to be completed.
    - The Highway Authority are currently investigating the potential for a signalised junction on the back of a proposed development by Quinn Estates in Sellindge. Should planning permission be granted then we will be seeking to develop a signalisation scheme further together with the contributions we have received from Nickolls Quarry.

Appendix C

Junctions:

131. New Street / Foresters Way / Shellons Street / Dover Road

7. A20 Ashford Road / Stone Street / Hythe Road

132. Spitfire Way / A260 / Canterbury Road

136. A20 WB slips / Alkham Valley Rd

122. A2034 Cheriton Road / A2034 Cherry Garden Avenue

135. A260 / Alkham Valley Road

30. B2064 / Cheriton High Street

117. A2033 Foord Road N / New Street

128. Dover Road / Tontine Street

4. M20 / A20 / B2068 roundabout

124. M20 WB slips / A259 Churchill Ave / A2034 Cherry Garden Ave / A20 Castle Hill Bridge

118. Bouverie Road W / Cheriton Gardens

36. Beachborough Road / Shorncliffe Road

26. A20 / M20 / B2064 Cheriton Interchange

3. A20 Ashford Road / Sandling Road

10. Aldington Road / Lympne Hill

5. A20 Ashford Road / B2067 Otterpool Lane

123. A2034 Cherry Garden Avenue / Cherry Garden Lane

6. A20 roundabout (south of M20)

8. B2067 Aldington Road / B2067 Otterpool Lane

9. Aldington Road / Stone Street

22. Aerodrome Road / Spitfire Way

129. A2033 Dover Road / A260 Dover Road

137. A259 Black Bull Road / A259 Churchill Avenue / A260

20. B2080 Old Beams Yard / A2070 / A259 / A259 Straight Ln

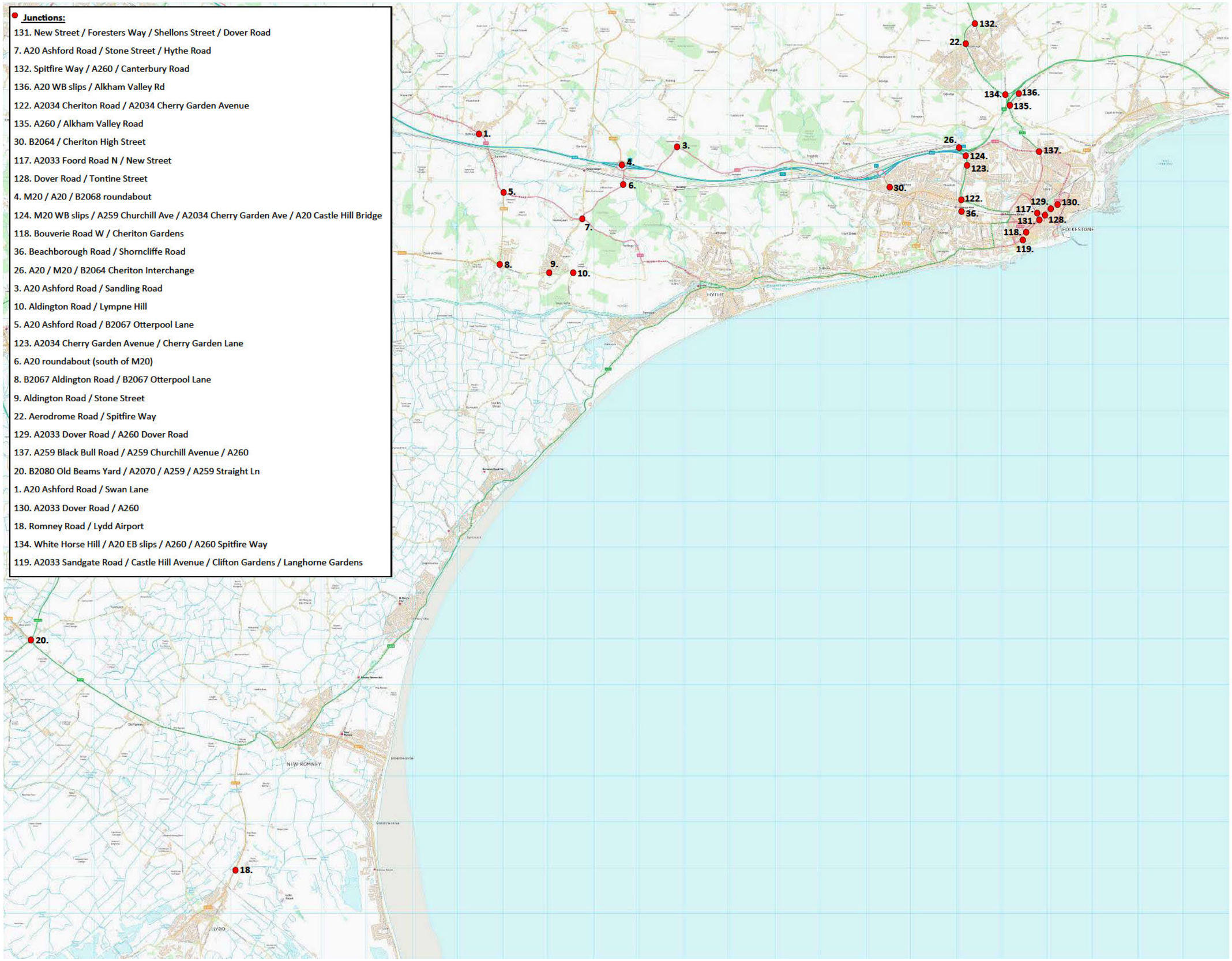
1. A20 Ashford Road / Swan Lane

130. A2033 Dover Road / A260

18. Romney Road / Lydd Airport

134. White Horse Hill / A20 EB slips / A260 / A260 Spitfire Way

119. A2033 Sandgate Road / Castle Hill Avenue / Clifton Gardens / Langhorne Gardens



APPENDIX 4: TRANSPORT MODEL UPDATE DECEMBER 2017

Briefing Note: Shepway Transport Model Update – Review & Findings

Project	Shepway Transport Model Update	
Created by	Richard Corbin, Senior Transport Planner	Reference: 60514687
Reviewed by	Colin Romain, Associate Director	Status: Final
Approved by	Nicholas Anderson, Regional Director	Date: December 2017

Introduction

AECOM (formerly as Scott Wilson and URS) prepared the Transport Strategy that formed part of the evidence base for the Core Strategy, which was supported by a transport spreadsheet model ('Shepway Transport Model') for Shepway District Council (SDC). The Transport Strategy work, including the spreadsheet model, was carried out during 2010 and completed in 2011. The model has since been updated at various points to inform local modelling and impact assessments of development options.

In 2016, AECOM was commissioned by SDC to undertake a comprehensive update of the Shepway Transport Model, incorporating the latest available data since the 2011 model was completed. The Shepway Transport Model was updated following discussions with SDC, Kent County Council (KCC) and Highways England (HE) and the findings were presented in the *Shepway Transport Model Update* Briefing Note (March 2017).

Building on the updated model, and following feedback from SDC and other stakeholders, a further update to the model has been requested. This is to incorporate the latest available information relating to the People and Places Local Plan (2031) and Core Strategy Review (2037).

Junction capacity assessments have been undertaken using the latest assessment scenarios and a series of initial outputs and findings have previously been issued to SDC for review and discussion. A summary of the assessment scenarios, the outputs from the junction capacity assessments and the associated findings are presented in this Briefing Note.

Shepway Transport Model Update

As part of this commission, and through liaison with SDC, AECOM has updated the model using the latest available information relating to developments in Shepway District.

Beyond applying the latest development quanta to the model, an additional 2031 model scenario has been prepared in respect of the People and Places Local Plan. Furthermore, two 2037 Do Something scenarios have been included to reflect growth associated with 6,500 and 8,000 residential units at Otterpool Park. A definition for each scenario forming part of the assessment is provided at **Figure 1**.

FIGURE 1: Scenario Definitions

2017 Base	The current, baseline situation, derived from traffic survey data which has been adjusted to the standard year using appropriate TEMPRO growth factors.
2031 Do Minimum (DM)	The future year 2031 situation, including all known committed developments in Shepway District and TEMPRO growth from 2017 (adjusted to reflect the committed schemes)
2031 Do Something (DS) People and Places Local Plan (PPLP)	The future year 2031 situation (2031 DM), plus the non-committed schemes from the People and Places Local Plan. Growth in this case is adjusted by both the committed schemes and the PPLP.
2037 Do Minimum (DM)	The future year 2037 situation, including all known committed developments in Shepway District and TEMPRO growth from 2017 (adjusted to reflect the committed schemes)
2037 Do Something Core Strategy Review (CSR) 6500	The future year 2037 situation (2037 DM), plus the Otterpool Park Development with 6,500 dwelling and a proportionate amount of employment space. Growth in this case is adjusted by the committed schemes, PPLP and CSR.
2037 Do Something Core Strategy Review (CSR) 8000	The future year 2037 situation (2037 DM), plus the Otterpool Park Development with 8,000 dwelling and a proportionate amount of employment space. Growth in this case is adjusted by the committed schemes, PPLP and CSR.

Each of the scenarios considered, the assumptions regarding future years, development details and growth forecasts were discussed and agreed in advance with officers of SDC. Regular liaison has also been held with KCC and HE to inform the model update work.

Results & Findings

Prior to the assessment being undertaken, the study area of junctions was agreed with SDC and the stakeholders. The junctions being assessed have subsequently been separated into zones, where clusters of junctions exist:

- Hawkinge
- Folkestone
- Sellindge
- New Romney

These zones are presented in the plans at **Appendix A**, with HE junctions differentiated from those under the jurisdiction of KCC.

Junction capacity assessments have been undertaken for these locations using the traffic flows associated with the assessment, to estimate the indicative performance of junctions based on the different plan scenarios.

The full summary of the outputs from the junction capacity assessments is available in **Appendix B**, and this also includes scoring as Red, Amber or Green depending on predicted performance. The Red, Amber, Green (RAG) results from original model outputs refer to:

- Red (R): Junction predicted to operate over capacity.
- Amber (A): Junction predicted to operate above its ideal capacity threshold, but within its theoretical capacity threshold.
- Green (G): Junction predicted to operate within capacity.

Herein, the RAG scores are presented by area with the worst score from either the AM peak or PM peak presented. The HE junctions are also reproduced separately.

Hawkinge

Table 1 presents the worst peak RAG scores for the Hawkinge area, for each of the assessment scenarios.

TABLE 1: Hawkinge Area Junctions Results

ID	Junction	Worst Peak RAG Score					
		2017 Base	2031 DM	2031 DS PPLP	2037 DM	2037 DS CSR 6500	2037 DS CSR 8000
1	Spitfire Way / Canterbury Road / A260	G	A	A	A	R	R
2	Aerodrome Road / Spitfire Way	G	G	G	G	G	G
3	A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	G	A	A	R	R	R
4	Alkham Valley Road / A20 Off Slip / A20 On Slip	A	A	A	R	A	R
5	A260 / Alkham Valley Road	A	R	R	R	R	R

The main findings are as follows:

- **1 - Spitfire Way / Canterbury Road / A260:** This is a three-arm roundabout junction at the northern end of Hawkinge. Predicted to operate within capacity in the 2017 Base scenario. Predicted to operate over ideal capacity in 2031 DM and this continues to be the case for the 2031 DS PPLP and 2037 DM scenarios. Predicted to be over theoretical capacity in 2037 DS CSR scenarios. Particular issues are predicted for the approach to the roundabout on the A260 from the north. Mitigation may therefore need to be investigated for 2031 DM onwards.
- **2 - Aerodrome Road / Spitfire Way:** This is a four-arm roundabout junction in Hawkinge. The junction is predicted to operate within capacity in all scenarios.

Junctions 3 and 4 are Highways England junctions, whilst Highways England have expressed an interest in junction 5 as it forms part of a junction complex. These junctions are therefore discussed in a dedicated section later in this Note.

Folkestone

Table 2 presents the worst peak RAG scores for the Folkestone area, for each of the assessment scenarios.

TABLE 2: Folkestone Area Junctions Results

ID	Junction	Worst Peak RAG Score					
		2017 Base	2031 DM	2031 DS PPLP	2037 DM	2037 DS CSR 6500	2037 DS CSR 8000
6	A20 / M20 / B2064 Cheriton Interchange	G	G	G	G	G	G
7	A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)	G	A	A	R	R	R
8	A259 Black Bull Road / A259 Churchill Ave / A260	G	R	R	R	R	R
9	A2034 Cherry Garden Avenue / Cherry Garden Lane	A	A	A	R	A	A
10	B2064 / Cheriton High Street	R	G	G	G	G	G

ID	Junction	Worst Peak RAG Score					
		2017 Base	2031 DM	2031 DS PPLP	2037 DM	2037 DS CSR 6500	2037 DS CSR 8000
11	A2034 Cheriton Road / A2034 Cherry Garden Avenue	R	R	R	R	R	R
12	Beachborough Road / Shorncliffe Road	G	G	G	G	G	G
13	A2033 Foord Road N / New Street*	-	-	-	-	-	-
14	A2033 Dover Road / A260 Dover Road*	-	-	-	-	-	-
15	A2033 Dover Road / A260*	-	-	-	-	-	-
16	New Street / Foresters Way / Shellons Street / Dover Road	R	R	R	R	R	R
17	Dover Road / Tontine Street*	-	-	-	-	-	-
18	Bouverie Road W / Cheriton Gardens	G	G	G	G	G	G
19	A2033 Sandgate Rd / Castle Hill Ave / Clifton Gardens / Langhorne Gardens	G	A	A	A	R	R

*Modelling results are not provided for these junctions as they comprise non-standard priority junctions, part of gyratory.

The main findings are as follows:

- **8 - A259 Black Bull Road / A259 Churchill Ave / A260:** This is a four-arm roundabout junction. It is predicted to be operating within capacity in the 2017 Base scenario. However, it is predicted to be over capacity in the 2031 and 2037 scenarios. Specifically, queueing is expected on the A260 (north) approach to the roundabout. Mitigation may therefore need to be investigated for 2031 DM onwards.
- **9 - A2034 Cherry Garden Avenue / Cherry Garden Lane:** This is a four-arm signalised junction, and Junction 13 (Castle Hill Interchange) of the M20 Motorway is a short distance to the north. The main approaches to the junction are Cherry Garden Avenue from the north and south, and Cherry Garden Lane from the west. Papworth Close is a minor arm, serving a small number of residential properties. The junction is predicted to experience capacity issues is all assessment scenarios. In particular, issues are predicted to occur on the Cherry Garden Avenue approaches to the junction. Mitigation may therefore need to be investigated. It is understood that a potential mitigation scheme associated with the Folkestone Harbour redevelopment may be implemented at this junction.
- **10 - B2064 / Cheriton High Street:** This is a priority junction in its current form, with traffic on Cheriton High Street (west) giving way to the B2064 flows. There is no right turn out of Cheriton High Street (west), with that movement accommodated through U-turning at the roundabout (M20 Motorway Junction 12) to the north. A scheme to signalise this junction and introduce all movements, associated with the Barracks committed development, is to be introduced. The signals have been assessed for all future year scenarios. The results show that in the 2017 Base scenario, using the current layout, the junction is predicted to operate over capacity. In all future year assessment scenarios, despite the greater traffic flows, the proposed signalised junction is predicted to operate within capacity.
- **11 - A2034 Cheriton Road / A2034 Cherry Garden Avenue:** This junction is a four-arm signalised crossroads. Beachborough Road is constrained to a single lane approach. The junction is predicted to be over capacity in all assessment scenarios. In particular, issues are predicted to occur on the Cherry Garden Avenue and Beachborough Road approaches to the junction. Mitigation may therefore need to be investigated.
- **12 - Beachborough Road / Shorncliffe Road:** This is a three-arm signalised junction, with yellow box hatching to facilitate right turns in to and out of the Shorncliffe Road (west) arm. The junction is predicted to operate within capacity in all scenarios.
- **16 - New Street / Foresters Way / Shellons Street / Dover Road:** This is a roundabout junction which in effect serves two entry/exit pairs, plus a bus-only exit from the Shellons Street car park bus stop. The junction is predicted to be over capacity in all assessment scenarios. Foresters Way in particular is expected to experience queues and delays. Mitigation may therefore need to be investigated.
- **18 - Bouverie Road W / Cheriton Gardens:** This is a priority junction, with Bouverie Road West traffic giving way to the circulatory flow on the Middleburg Square gyratory. The junction is predicted to operate within capacity in all scenarios.

- **19 - A2033 Sandgate Rd / Castle Hill Ave / Clifton Gardens / Langhorne Gardens:** This is a four-arm roundabout junction, which is predicted to be operating within capacity in the 2017 Base scenario. In the 2031 scenarios, the junction is predicted to be operating beyond its ideal capacity but within its theoretical capacity, which is also the case for the 2037 DM scenario. The application of the traffic flows associated with the 2037 CSR DS scenarios lead to the junction being over capacity. It is predicted that the main issue will occur on the Sandgate Road (west) approach to the junction. Mitigation may therefore need to be investigated for 2031 DM onwards and specifically for the 2037 DS CSR scenarios.

Junctions 6 and 7 are Highways England junctions and are discussed in a dedicated section later in this Note.

Sellindge

Table 3 presents the worst peak RAG scores for the Sellindge area, for each of the assessment scenarios.

TABLE 3: Sellindge Area Junctions Results

ID	Junction	Worst Peak RAG Score					
		2017 Base	2031 DM	2031 DS PPLP	2037 DM	2037 DS CSR 6500	2037 DS CSR 8000
20	A20 Ashford Road / Swan Lane	G	G	G	G	G	G
21	M20 / A20 / B2068 Roundabout	G	G	G	G	R	R
22	Ashford Road / Sandling Road	G	G	G	G	G	G
23	A20 Ashford Road / B2067	G	G	G	G	R	R
24	A20 roundabout south of M20	G	G	G	G	R	R
25	A20 / A261 Hythe Road	A	R	R	R	R	R
26	A20 / Stone Street	G	R	R	R	R	R
27	B2067 Aldington Road / B2067 Otterpool Lane	G	G	G	G	G	G
28	Aldington Road / Stone Street	G	G	G	G	R	R
29	Aldington Road / Lympne Hill	G	G	A	A	R	R
30	A261 London Road / A259 Military Road / A259 Scanlons Bridge*	-	-	-	-	-	-
31	A259 Scanlons Bridge / A259 Dymchurch Road*	-	-	-	-	-	-
32	A259 Military Road / A259 Rampart Road / A259 Dymchurch Road*	-	-	-	-	-	-
33	Station Road / A259 East Street / A259 Prospect Road	A	R	R	R	R	R

*Traffic flow information not available.

The main findings are as follows:

- **20 - A20 Ashford Road / Swan Lane:** This is a priority junction, with traffic on Swan Lane giving way to traffic on the A20 Ashford Road. The junction is predicted to operate within capacity in all scenarios.
- **22 - Ashford Road / Sandling Road:** This is a priority junction, with traffic on Sandling Road giving way to traffic on the A20 Ashford Road. The junction is predicted to operate within capacity in all scenarios.
- **23 - A20 Ashford Road / B2067:** This is a three-arm signalised junction, which is predicted to operate within capacity in all assessment scenarios except the 2037 DS CSR scenarios, when all approaches are predicted to be operating over capacity. Mitigation may therefore need to be investigated for the 2037 CSR scenarios.
- **24 - A20 roundabout south of M20:** This is a two-arm roundabout approximately 270m to the south of Junction 11 of the M20 Motorway. The junction is predicted to operate within capacity in all assessment scenarios except the 2037 DS CSR scenarios. Mitigation may therefore need to be investigated for the 2037 CSR scenarios.
- **25 & 26 - A20 / A261 Hythe Road / Stone Street:** This junction complex comprises two priority junctions in close proximity, with the A261 Hythe Road and Stone Street both giving way to the A20. The Hythe Road junction is predicted to operate over capacity in all assessment scenarios, whilst the Stone Street junction is predicted to operate over capacity from the 2031 DM scenario onwards. Mitigation may therefore need to be investigated in the near term, and it is understood that a scheme may be in development. It is understood that KCC has been investigating an improvement scheme for this junction to introduce extended flares.

- **27 - B2067 Aldington Road / B2067 Otterpool Lane:** This is a priority junction, with traffic on Otterpool Lane giving way to Aldington Rod traffic. The junction is predicted to operate within capacity in all scenarios.
- **28 - Aldington Road / Stone Street:** This is a priority junction, with Stone Street traffic giving way to Aldington Road. This junction operates within capacity until the 2037 DS CSR scenarios. Mitigation may therefore need to be investigated for the 2037 CSR scenarios.
- **29 - Aldington Road / Lympne Hill:** This is a priority junction, with Lympne Hill traffic giving way to Aldington Road traffic. The junction is predicted to operate within capacity in the 2017 Base and 2031 DM scenarios. In the 2031 DS PPLP and 2037 DM scenarios, the junction is predicted to be operating beyond its ideal capacity but within its theoretical capacity. In the 2037 DS CSR scenarios, the junction is predicted to be over capacity. Mitigation may therefore need to be investigated for the 2031 DS PPLP scenario and specifically for the 2037 DS CSR scenarios.
- **33 - Station Road / A259 East Street / A259 Prospect Road:** This is a four-arm roundabout junction, which is predicted to experience capacity issues in all assessment scenarios. Specifically, queues and delays are predicted to occur on the A259 Prospect Road approach to the junction. Mitigation may therefore need to be investigated.

Junction 21 is a Highways England junction and is examined in a dedicated section later in this Note.

New Romney

Table 4 presents the worst peak RAG scores for the New Romney area, for each of the assessment scenarios.

TABLE 4: New Romney Area Junctions Results

ID	Junction	Worst Peak RAG Score					
		2017 Base	2031 DM	2031 DS PPLP	2037 DM	2037 DS CSR 6500	2037 DS CSR 8000
34	A259 / A259 Straight Lane / B2080 / A2070	G	G	G	G	G	G
35	Romney Road / Lydd Airport	G	G	G	G	G	G

Both junctions are predicted to operate within capacity in all assessment scenarios.

Highways England

Table 5 presents the worst peak RAG scores for the Highways England junctions, for each of the assessment scenarios.

TABLE 5: Highways England Junctions Results

ID	Junction	Worst Peak RAG Score					
		2017 Base	2031 DM	2031 DS PPLP	2037 DM	2037 DS CSR 6500	2037 DS CSR 8000
3	A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	G	A	A	R	R	R
4	Alkham Valley Road / A20 Off Slip / A20 On Slip	A	A	A	R	A	R
5	A260 / Alkham Valley Road	A	R	R	R	R	R
6	A20 / M20 / B2064 Cheriton Interchange	G	G	G	G	G	G
7	A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)	G	A	A	R	R	R
21	M20 / A20 / B2068 Roundabout	G	G	G	G	R	R
34	A259 / A259 Straight Lane / B2080 / A2070	G	G	G	G	G	G

The main findings are as follows:

- **3 - A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads:** This is a four-arm roundabout junction to the south of Hawkinge, forming part of the Alkham Valley Interchange with slip roads from and to the A20 eastbound. This junction is predicted to experience capacity issues from the 2031 DM onwards, with a worsening of performance in the 2037 scenarios. Mitigation may therefore need to be investigated.

- **4 - Alkham Valley Road / A20 Off Slip / A20 On Slip:** This is a three-arm roundabout junction to the south of Hawkinge, forming part of the Alkham Valley Interchange with slip roads from and to the A20 westbound. This junction is predicted to experience some capacity issues in all scenarios, with a worsening of performance in the 2037 scenarios. Mitigation may therefore need to be investigated.
- **5 - A260 / Alkham Valley Road:** This is a priority junction, forming the link between the two slip road roundabouts (junctions 3 & 4) and completing the Alkham Valley Interchange. This is a KCC junction but a capacity assessment was specifically requested by HE, hence it has been included in this section alongside the other Alkham Valley Interchange junctions. The traffic on Alkham Valley Road gives way to the flows on the A260. This junction is predicted to experience some capacity issues in all assessment scenarios, particularly from the 2031 DM onwards. Mitigation may therefore need to be investigated. It is understood that a KCC scheme at this location is being considered as a 'Crash Remedial Measure' site, comprising a mini roundabout junction.
- **6 - A20 / M20 / B2064 Cheriton Interchange:** M20 Junction 12 is predicted to operate within capacity in all scenarios.
- **7 - A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange):** M20 Junction 13 is predicted to experience capacity issues from the 2031 DM scenario onwards. Mitigation may therefore need to be investigated for the 2031 DM scenario onwards and specifically for the 2037 scenarios.
- **21 - M20 / A20 / B2068 Roundabout:** M20 Junction 11 is predicted to operate within capacity in all scenarios, except for the two 2037 DS CSR scenarios. With the addition of the Otterpool Park traffic flows, traffic from the service area begins to experience difficulty accessing the roundabout. Mitigation may therefore need to be investigated for the 2037 CSR scenarios.
- **34 - A259 / A259 Straight Lane / B2080 / A2070:** This is a four-arm roundabout at Brenzett, which is situated on the Highways England trunk road network. It is predicted to operate within capacity in all scenarios.

Summary

The Shepway Transport Model has been updated following liaison with SDC, specifically in relation to development information, as well as officers of KCC and HE. Following completion of the model update, junction capacity assessments have been undertaken and a summary of results have been presented within this Briefing Note in the form of RAG scores. Based on these scores and through interpretation of the modelling results, junctions which may require mitigation measures have been identified. A summary of the junctions which may require mitigation, and the potential trigger points for this, is presented in **Table 6**.

TABLE 6: Junctions with Capacity Issues, Potentially Requiring Mitigation Measures

Potential Mitigation Trigger Point	Study Area (Highway Authority)	ID	Junction	Highway Authority
2017 Base	Hawkinge	4	Alkham Valley Road / A20 Off Slip / A20 On Slip	HE
	Hawkinge	5	A260 / Alkham Valley Road	KCC
	Folkestone	9	A2034 Cherry Garden Avenue / Cherry Garden Lane	KCC
	Folkestone	11	A2034 Cheriton Road / A2034 Cherry Garden Avenue	KCC
	Folkestone	16	New Street / Foresters Way / Shellons Street / Dover Road	KCC
	Sellindge	33	Station Road / A259 East Street / A259 Prospect Road	KCC
2031 DM	Hawkinge	3	A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	HE
	Hawkinge	1	Spitfire Way / Canterbury Road / A260	KCC
	Folkestone	7	A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)	HE
	Folkestone	8	A259 Black Bull Road / A259 Churchill Ave / A260	KCC
	Folkestone	19	A2033 Sandgate Rd / Castle Hill Ave / Clifton Gardens / Langhorne Gardens	KCC
	Sellindge	25 & 26	A20 / A261 Hythe Road / Stone Street	KCC
2031 DS PPLP	Sellindge	29	Aldington Road / Lympne Hill	KCC

Potential Mitigation Trigger Point	Study Area (Highway Authority)	ID	Junction	Highway Authority
2037 DS CSR 6500	Sellindge	21	M20 / A20 / B2068 Roundabout	HE
	Sellindge	23	A20 Ashford Road / B2067	KCC
	Sellindge	24	A20 roundabout south of M20	KCC
	Sellindge	28	Aldington Road / Stone Street	KCC

In the near term (i.e. against the 2017 Base assessment scenario flows) there are six junctions which have been identified as experiencing capacity issues, including:

- Two of the three junctions forming the Alkham Valley Interchange, including the roundabout serving the A20 westbound slip roads which are under HE control and the priority junction of the A260 and Alkham Valley Road which is under KCC control;
- Two signalised junctions at either end of the A2034 Cherry Garden Avenue, both under KCC control;
- A roundabout junction at Foresters Way / Dover Road / New Street in the centre of Folkestone, under KCC control; and,
- The roundabout serving Station Road / A259 East Street / A259 Prospect Road / High Street in Hythe, under KCC control.

By the 2031 DM scenario, with the application of background growth and committed developments, a further six junctions are predicted to be over capacity and therefore potentially require mitigation measures. These include:

- The remaining junction forming the Alkham Valley interchange, which is the roundabout serving the A20 eastbound slip roads, the A260 and White Horse Hill;
- The Spitfire Way / Canterbury Road / A260 roundabout in Hawkinge, under KCC control;
- Castle Hill Interchange (M20 Junction 13), at Folkestone, under HE control;
- Two roundabout junctions in Folkestone, under KCC control; and,
- The A20 / A261 Hythe Road / Stone Street junction complex, in the Sellindge area, also under KCC control.

By the 2031 DS PPLP scenario, a further junction is predicted to experience capacity issues:

- The priority junction of Aldington Road and Lympne Hill, under KCC control.

With the introduction of the Otterpool Park traffic for the 2037 DS CSR scenarios, four further junctions are predicted to experience capacity issues, all in the Sellindge area in the vicinity of Otterpool Park, including:

- The M20 / A20 / B2068 roundabout (M20 Junction 11), under HE control;
- The signalised junction of the A20 Ashford Road with the B2067 Otterpool Lane, under KCC control;
- The roundabout to the south of M20 Junction 11, under KCC control; and,
- The priority junction of Aldington Road and Stone Street, under KCC control.

Next Steps

Following the presentation of the results and findings within this Briefing Note, including the junctions which potentially require mitigation, it is advised that SDC identify which junctions should be subject to a concept mitigation task. For each junction identified, it is recommended that the following work is undertaken:

- Creation of a two-dimensional concept junction improvement plan, in accordance with relevant guidance, with the junction capacity assessment test re-run to consider the comparative performance level, and;
- A brief narrative to accompany the concept plan, to explain the results, opportunities and constraints and the anticipated reliance or otherwise upon highway and / or third party land

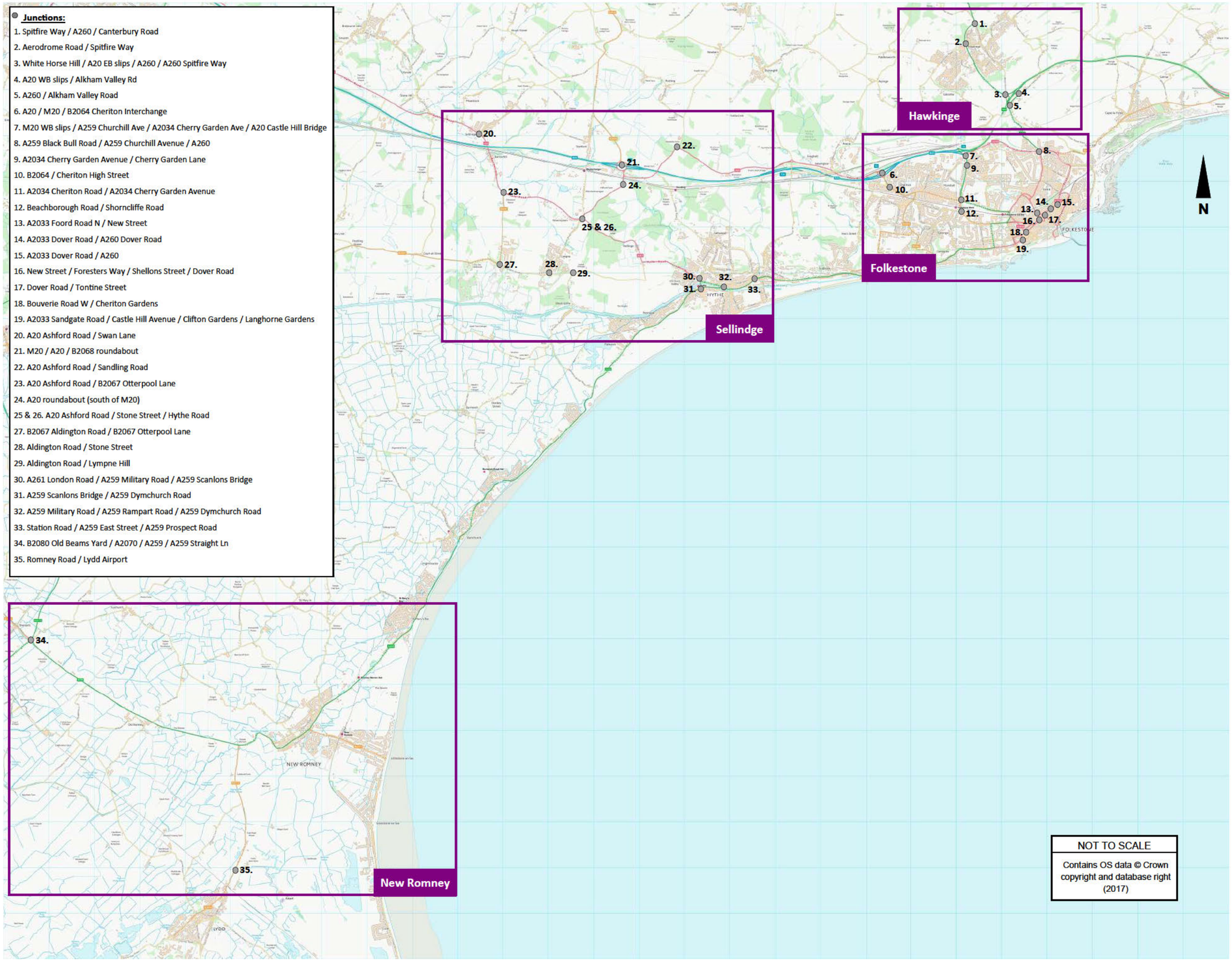
For any junctions where concept mitigation plans have already been, or are being, developed - such as in connection with a proposed development (e.g. Otterpool Park) - it may be appropriate to critically review the proposed mitigation rather than developing and appraising a new mitigation scheme.

Once it is understood which junctions require concept mitigation plans, and which junctions require a review of existing mitigation plans, AECOM will liaise with SDC to confirm the approach and scope of works.

Appendix A

Junctions:

1. Spitfire Way / A260 / Canterbury Road
2. Aerodrome Road / Spitfire Way
3. White Horse Hill / A20 EB slips / A260 / A260 Spitfire Way
4. A20 WB slips / Alkham Valley Rd
5. A260 / Alkham Valley Road
6. A20 / M20 / B2064 Cheriton Interchange
7. M20 WB slips / A259 Churchill Ave / A2034 Cherry Garden Ave / A20 Castle Hill Bridge
8. A259 Black Bull Road / A259 Churchill Avenue / A260
9. A2034 Cherry Garden Avenue / Cherry Garden Lane
10. B2064 / Cheriton High Street
11. A2034 Cheriton Road / A2034 Cherry Garden Avenue
12. Beachborough Road / Shorncliffe Road
13. A2033 Foord Road N / New Street
14. A2033 Dover Road / A260 Dover Road
15. A2033 Dover Road / A260
16. New Street / Foresters Way / Shellons Street / Dover Road
17. Dover Road / Tontine Street
18. Bouverie Road W / Cheriton Gardens
19. A2033 Sandgate Road / Castle Hill Avenue / Clifton Gardens / Langhorne Gardens
20. A20 Ashford Road / Swan Lane
21. M20 / A20 / B2068 roundabout
22. A20 Ashford Road / Sandling Road
23. A20 Ashford Road / B2067 Otterpool Lane
24. A20 roundabout (south of M20)
25 & 26. A20 Ashford Road / Stone Street / Hythe Road
27. B2067 Aldington Road / B2067 Otterpool Lane
28. Aldington Road / Stone Street
29. Aldington Road / Lympne Hill
30. A261 London Road / A259 Military Road / A259 Scanlons Bridge
31. A259 Scanlons Bridge / A259 Dymchurch Road
32. A259 Military Road / A259 Rampart Road / A259 Dymchurch Road
33. Station Road / A259 East Street / A259 Prospect Road
34. B2080 Old Beams Yard / A2070 / A259 / A259 Straight Ln
35. Romney Road / Lydd Airport



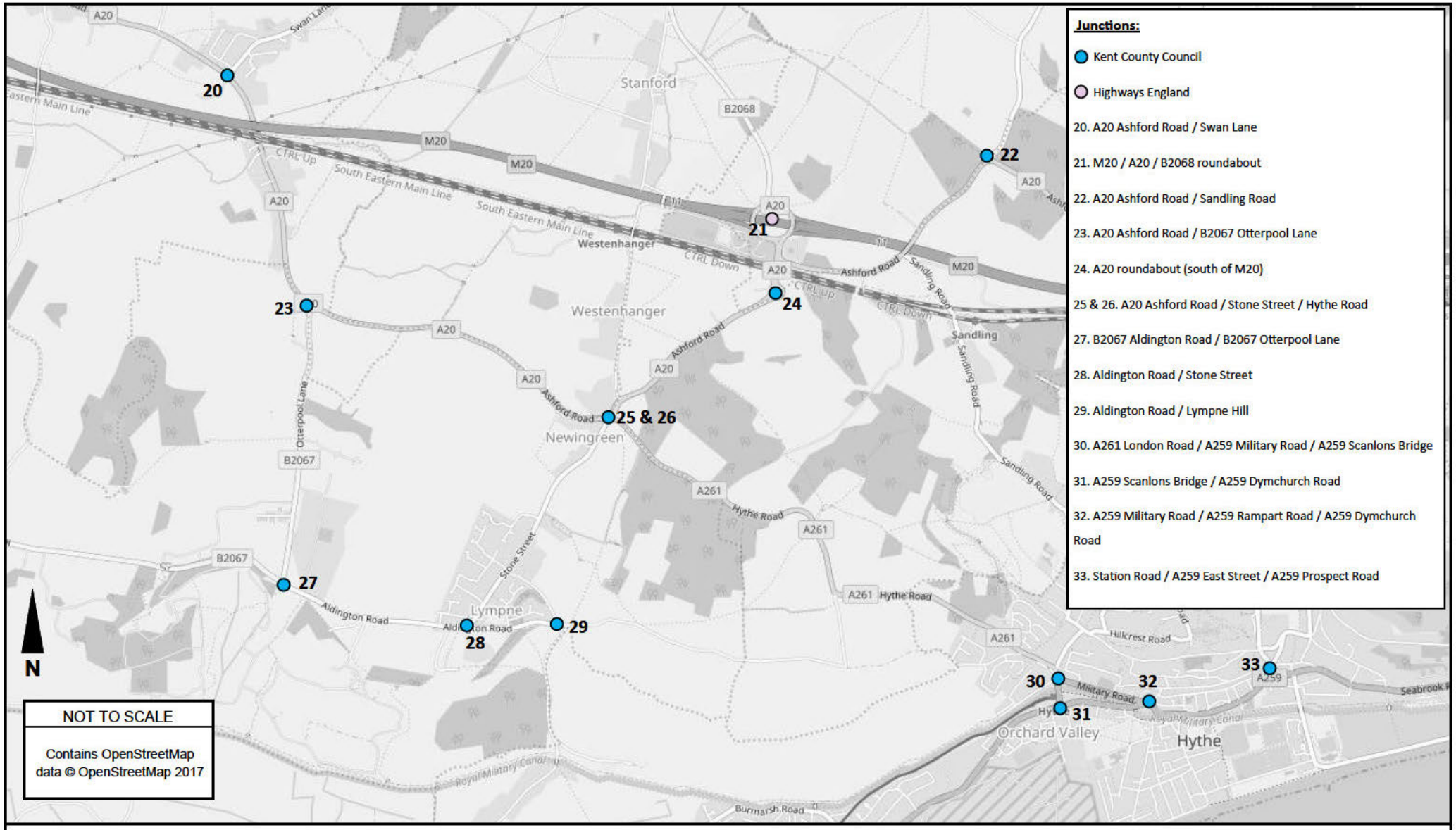
NOT TO SCALE


Junctions:
Kent County Council
Highways England
1. Spitfire Way / A260 / Canterbury Road
2. Aerodrome Road / Spitfire Way
3. White Horse Hill / A20 EB slips / A260 / A260 Spitfire Way
4. A20 WB slips / Alkham Valley Rd
5. A260 / Alkham Valley Road
N
Hawkinge
Old Hawkinge
Hawkinge Crematorium and Cemetery
Aerodrome Road
Spitfire Way
Canterbury Road
The Street
Mill Lane
Mitchell Avenue
Kestrel Drive
Millfield
Gray Close
Cowgate Lane
Standen Lane
Webster Way
Harvest Way
Coombe Wood Lane
Coombe Way
Church Hill
Alkham Valley Road
Blenheim Drive
Haven Drive
Benson Lane
Sisskin Close
Elvington Lane
Pannell Drive
Page Road
Corbett Road
Petrel Way
Hurricane Way
Heron Forstal Avenue
Uphill
White Horse Hill
Gibraltar Lane
A260
A20
1
2
3
4
5
NOT TO SCALE
Contains OpenStreetMap data © OpenStreetMap 2017

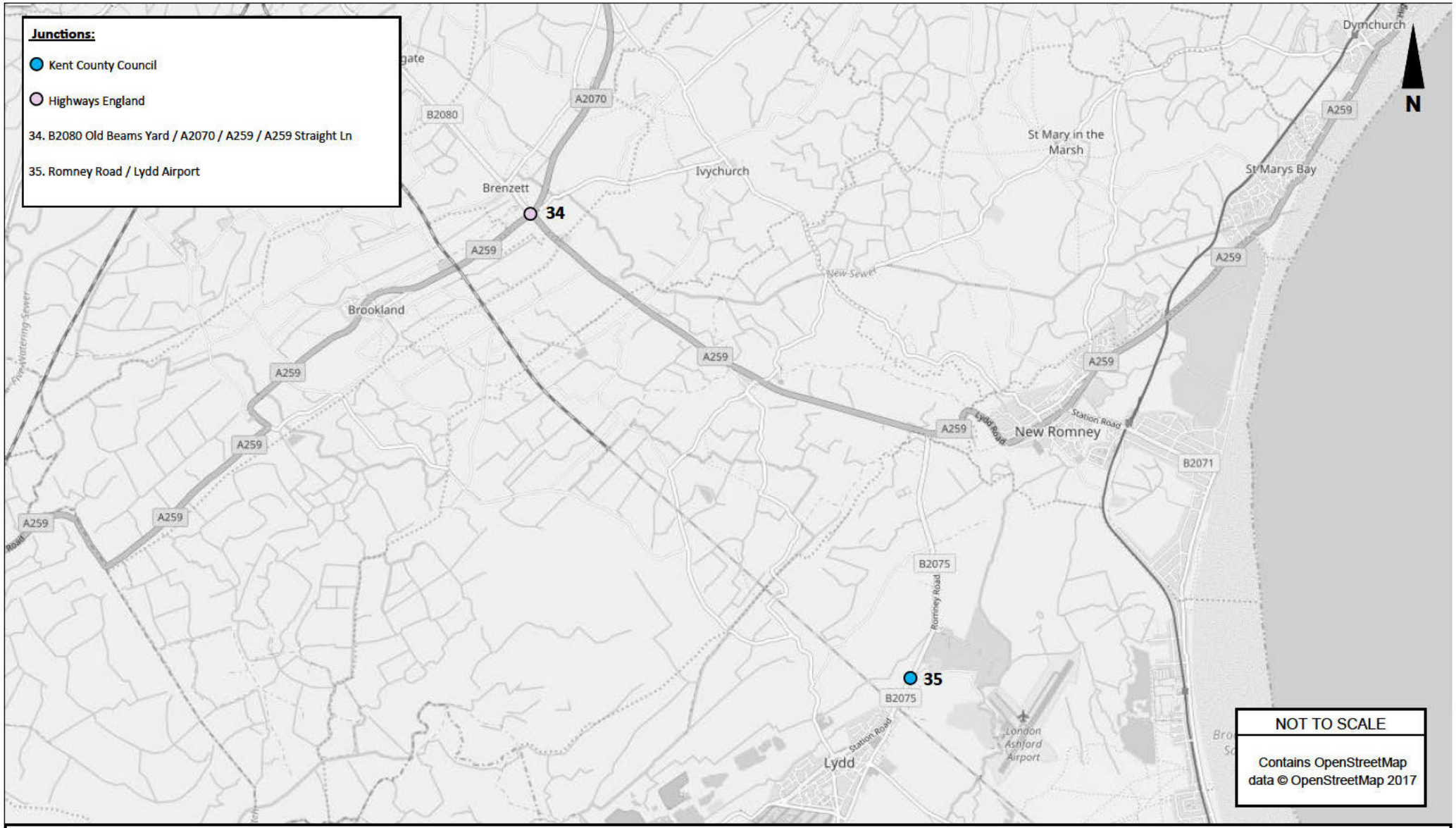
Hawkinge


Junctions:
Kent County Council
Highways England
6. A20 / M20 / B2064 Cheriton Interchange
7. M20 WB slips / A259 Churchill Ave / A2034 Cherry Garden Ave / A20 Castle Hill Bridge
8. A259 Black Bull Road / A259 Churchill Avenue / A260
9. A2034 Cherry Garden Avenue / Cherry Garden Lane
10. B2064 / Cheriton High Street
11. A2034 Cheriton Road / A2034 Cherry Garden Avenue
12. Beachborough Road / Shorncliffe Road
13. A2033 Foord Road N / New Street
14. A2033 Dover Road / A260 Dover Road
15. A2033 Dover Road / A260
16. New Street / Foresters Way / Shellons Street / Dover Road
17. Dover Road / Tontine Street
18. Bouverie Road W / Cheriton Gardens
19. A2033 Sandgate Road / Castle Hill Avenue / Clifton Gardens / Langhorne Gardens
N
NOT TO SCALE
Contains OpenStreetMap data © OpenStreetMap 2017
Cheriton
Morehall
Folkestone
Foord
Coolinge
Sandgate
Shorncliffe Camp
Folkestone West
Folkestone Central
Three Hills Sports Park
Castle Hill
Sugarloaf Hill
Ashford Road
South Eastern Main Line
Cheriton High Street
Cheriton Road
Shorncliffe Road
Sandgate Road
Military Road
Canterbury Road
Churchill Avenue
Black Bull Road
Dover Hill
Joyes Road
Park Farm Road
Linksway
Ashley Avenue
Tile Kiln Lane
Horn Street
Pond Hill Road
Royal Military Avenue
North Road
Hospital Hill
Blackhouse Hill
Foord Road
Tontine Street
M20
A20
A260
A259
A2034
A2033
B2064
B2063
CTRL Up
CTRL Down

Folkestone


Junctions:
Kent County Council
Highways England
20. A20 Ashford Road / Swan Lane
21. M20 / A20 / B2068 roundabout
22. A20 Ashford Road / Sandling Road
23. A20 Ashford Road / B2067 Otterpool Lane
24. A20 roundabout (south of M20)
25 & 26. A20 Ashford Road / Stone Street / Hythe Road
27. B2067 Aldington Road / B2067 Otterpool Lane
28. Aldington Road / Stone Street
29. Aldington Road / Lympne Hill
30. A261 London Road / A259 Military Road / A259 Scanlons Bridge
31. A259 Scanlons Bridge / A259 Dymchurch Road
32. A259 Military Road / A259 Rampart Road / A259 Dymchurch Road
33. Station Road / A259 East Street / A259 Prospect Road
N
NOT TO SCALE
Contains OpenStreetMap data © OpenStreetMap 2017
Stanford
Westenhanger
Newingreen
Lympne
Sandling
Orchard Valley
Hythe
M20
A20
B2068
B2067
A261
A259
Ashford Road
Hythe Road
Aldington Road
Stone Street
Otterpool Lane
Sandling Road
Military Road
Hillcrest Road
Burmarsh Road
Royal Military Canal
South Eastern Main Line
CTRL Up
CTRL Down

Sellindge


Junctions:
Kent County Council
Highways England
34. B2080 Old Beams Yard / A2070 / A259 / A259 Straight Ln
35. Romney Road / Lydd Airport
34
35
N
Dymchurch
St Mary in the Marsh
St Marys Bay
Ivychurch
Brenzett
Brookland
New Romney
Lydd
London Ashford Airport
A2070
B2080
A259
B2071
B2075
Station Road
Lydd Road
Romney Road
New Sewer
Five Watering Sewer
NOT TO SCALE
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New Romney

Appendix B

			AM Peak (0800-0900)						PM Peak (1700-1800)						
Report ID	Model ID	Junction	2017 Base	2031 DM	2031 DS PPLP	2037 DM	2037 DS CSR 6500	2037 DS CSR 8000	2017 Base	2031 DM	2031 DS PPLP	2037 DM	2037 DS CSR 6500	2037 DS CSR 8000	Notes
1	132	Spitfire Way / Canterbury Road / A260	0.55	0.70	0.70	0.75	0.91	0.97	0.69	0.87	0.87	0.94	1.17	1.25	
2	22	Aerodrome Road / Spitfire Way	0.41	0.51	0.52	0 55	0.65	0.69	0 53	0.64	0.64	0.68	0.73	0.69	
3	134	A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads	0.68	0.79	0.79	0 84	0.95	1.02	0.79	0.98	0.99	1.07	1 20	1.27	
4	136	Alkham Valley Road / A20 Off Slip / A20 On Slip	0.86	0.97	0.96	1 04	0.99	1.01	0.65	0.72	0.72	0.76	0 83	0.86	
5	135	A260 / Alkham Valley Road	0.92	1.11	1.10	1 29	1.05	1.07	0.77	0.93	0.92	1.06	1 08	1.15	
6	26	A20 / M20 / B2064 Cheriton Interchange	0.47	0.55	0.55	0 59	0.54	0.55	0.46	0.63	0.62	0.70	0.61	0.62	
7	124	A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)	0.68	0.94	0.93	1.19	1.16	1.30	0 51	0.73	0.72	0.91	0.79	0.85	
8	137	A259 Black Bull Road / A259 Churchill Ave / A26C	0.70	0.91	0.90	1 01	0.88	0.89	0.75	1.11	1.10	1.28	1 06	1.08	
9	123	A2034 Cherry Garden Avenue / Cherry Garden Lane	88 8%	98.8%	98.4%	102.1%	99.2%	99.2%	82.4%	91 8%	91.8%	90.8%	94 8%	95.7%	Modelled without Papworth Close; modelled with long lane for right turn into Cherry Garden Lane
10	30	B2064 / Cheriton High Street	1.04	79.6%	79.2%	83.1%	78.0%	78.9%	1 02	78.4%	78.2%	81.4%	78.6%	78.6%	
11	122	A2034 Cheriton Road / A2034 Cherry Garden Avenue	100.1%	121.2%	120 8%	128.7%	113.8%	111.0%	104 0%	126.1%	126.1%	130 5%	119.5%	119.7%	Pedestrian phase excluded from model run.
12	36	Beachborough Road / Shorncliffe Road	66 8%	77.4%	77.1%	80.7%	74.6%	74.6%	57.6%	80.6%	80.2%	83.7%	77 5%	77.5%	
13	117	A2033 Foord Road N / New Street	-	-	-	-	-	-	-	-	-	-	-	-	Non-standard priority junction, part of gyratory. Modelling results unreliable.
14	129	A2033 Dover Road / A260 Dover Road	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No give way at this location
15	130	A2033 Dover Road / A260	-	-	-	-	-	-	-	-	-	-	-	-	Non-standard priority junction, part of gyratory. Modelling results unreliable.
16	131	New Street / Foresters Way / Shellons Street / Dover Road	1.15	1.23	1.23	1 30	1.18	1.18	2 01	2.13	2.12	2.24	2 04	2.13	
17	128	Dover Road / Tontine Street	-	-	-	-	-	-	-	-	-	-	-	-	Non-standard priority junction, part of gyratory. Modelling results unreliable.
18	118	Bouverie Road W / Cheriton Gardens	0.61	0.65	0.65	0.69	0.62	0.62	0 58	0.62	0.61	0.65	0 59	0.59	
19	119	A2033 Sandgate Rd / Castle Hill Ave / Clifton Gardens / Langhorne Gardens	0.65	0.85	0.86	0 91	1.01	1.05	0.60	0.78	0.79	0.83	0 88	0.91	
20	1	A20 Ashford Road / Swan Lane	0.28	0.33	0.33	0 36	0.36	0.37	0 21	0.31	0.30	0.32	0 35	0.36	
21	4	M20 / A20 / B2068 Roundabout	0.42	0.57	0.58	0.61	Inf.	Inf.	0 50	0.74	0.76	0.84	1.77	2.07	
22	3	Ashford Road / Sandling Road	0.17	0.18	0.18	0.19	0.19	0.19	0 07	0.08	0.08	0.08	0 08	0.08	
23	5	A20 Ashford Road / B2067	45 0%	68.7%	68.3%	71 3%	102.4%	112.4%	44.1%	65 5%	65.2%	67.3%	123.1%	137.0%	Signalised private access and pedestrian phases excluded
24	6	A20 roundabout south of M20	0.49	0.64	0.65	0.67	1.52	1.78	0.44	0.54	0.56	0.58	1.16	1.30	
25	7a	A20 / A261 Hythe Road	0.88	1.48	1.52	1.79	Inf.	Inf.	0 57	0.95	0.98	1.13	Inf.	Inf.	
26	7b	A20 / Stone Street	0.79	1.22	1.33	1 31	10.13	25.85	0 34	0.68	0.76	0.71	21.07	Inf.	
27	8	B2067 Aldington Road / B2067 Otterpool Lane	0.20	0.41	0.41	0.42	0.52	0.55	0.17	0.37	0.37	0.38	0.49	0.52	
28	9	Aldington Road / Stone Street	0.40	0.58	0.67	0.62	0.89	0.94	0.44	0.63	0.72	0.67	1.10	1.20	
29	10	Aldington Road / Lympne Hill	0.44	0.61	0.67	0.63	0.87	0.97	0 58	0.82	0.92	0.86	1.18	1.25	
30	12	A261 London Road / A259 Military Road / A259 Scanlons Bridge	-	-	-	-	-	-	-	-	-	-	-	-	No flows available
31	14	A259 Scanlons Bridge / A259 Dymchurch Road	-	-	-	-	-	-	-	-	-	-	-	-	No flows available
32	13	A259 Military Road / A259 Rampart Road / A259 Dymchurch Road	-	-	-	-	-	-	-	-	-	-	-	-	No flows available
33	161	Station Road / A259 East Street / A259 Prospect Road	0.98	1.19	1.20	1 29	1.38	1.43	0 86	1.10	1.11	1.20	1.46	1.54	
34	20	A259 / A259 Straight Lane / B2080 / A2070	0.41	0.47	0.47	0 50	0.45	0.45	0.47	0.50	0.50	0.53	0.48	0.48	
35	18	Romney Road / Lydd Airport	0.02	0.03	0.03	0 03	0.03	0.03	0 03	0.04	0.04	0.05	0 04	0.04	

APPENDIX 5: HIGHWAYS ENGLAND ADDITIONAL STATEMENT

Folkestone and Hythe District Core Strategy Review Examination

Submission to the Examination

By

Highways England

Date	3 July 2020	
Submission By	[redacted] Spatial (Town) Planning Manager [redacted]	
With Regards To	Matter 5 – Strategy for the Urban Area Matter 7 – Strategy for the North Downs Area (Otterpool) Matter 11 – Other policies (Policy SS5)	Inquiry Day 3 AM Day 5 AM & PM Day 7 PM
Submitted To	Programme.Officer@folkestone-hythe.gov.uk	

Introduction

1. Highways England has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the strategic road network (SRN). The SRN is a critical national asset and as such Highways England works to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

2. Highways England will be concerned with plans and/or proposals that have the potential to impact on the safe and efficient operation of the Strategic Road Network (SRN); in this case those resulting from any adoption of the Folkestone & Hythe District Core Strategy Review.

3. Highways England have engaged with the District Council throughout the Review process. This culminated in the signing of a Statement of Common Ground (SoCG) on 28 January 2020 (See Appendix A).

4. The key matters covered by the SoCG are:

- it is based on the submitted housing figures that in turn are based upon the new national formula
- arising from the allocation and general distribution of housing and other development, a series of SRN junctions were identified to be assessed for impact and, as necessary, to be the subject of local plan led mitigation
- the assessment found that mitigation would be required at
  - A20/A260
  - M20J11
  - M20j12
  - M20J13

- while the Core Strategy, including Policy SS5 were by their nature strategic, the emerging Infrastructure Delivery Plan (IDP) would contain the detail required to demonstrate the soundness of the plan.

5. While not specifically mentioned in the SoCG Highways England interpreted this last statement to mean that the Council, via the IDP, would provide appropriately detailed proposals regarding the mitigation to demonstrate that the plan met the tests set out in NPPF2019 para 35, particularly regarding
    - the effectiveness and deliverability of the plan; and
    - its consistency with national policy; principally the tests set out in NPPF2019 paras 108 to 111 regarding assessing sites that may be allocated for development in plans and DfT C2/13 paras 18 & 19 regarding local plan led capacity enhancement

Current Position

6. Regrettably, although we have sought up-dates from the Council, we have yet to receive further details regarding any of the required junction mitigations.

7. Consequently, our current position is that the Council has not demonstrated that the Core Strategy Review meets the abovementioned NPPF Local Plan soundness tests nor the transport specific NPPF and C2/13 tests.

8. The absence of agreed mitigation is important because

    - The M20 and A20(T) through the District not only serve the local settlements but form part of a key international route to and from Eurotunnel and the Port of Dover. These routes are vital for the national economy and must not be put at risk in terms of their safety, reliability and/or operational efficiency.
    - The roads are operating at or close to capacity during normal conditions. The Local Plan modelling showed that un-mitigated additional traffic would put at risk their safety, reliability and/or operational efficiency; hence the reason for the mitigation being proposed
    - The routes also form part of the local resilience response to cross-channel disruption, including historically being part of Operation Stack (holding of HGVs on M20 J8-10 at times of major disruption), its Brexit related alternative, Operation Brock (mix of M20 storage but maintaining 2 way traffic via a contra-flow); while also forming part of Dover TAP (A20 from A260 to Dover regularly used for holding Port-bound HGVs). Again, any un-mitigated additional traffic would put at risk their safety, reliability and/or operational efficiency.
    - While the commitment to mitigation is welcomed, unless and until more detailed proposals are tabled and agreed, it cannot be certain that the mitigation
        - is appropriate ie it successfully mitigates the traffic related concerns and complies with the Design Manual for Roads and Bridges
        - is funded or fundable ie there are sufficient grounds to be confident the individual allocations charged with funding the mitigation can do so without unacceptably affecting their phasing or viability
        - has governance in place ie where more than one party will be contributing to the funding or relying on the mitigation there are means to ensure that the mitigation comes forward at the right time, even in the event of a delay or non-progression of one of the parties.

- is deliverable in practice ie it can be built without causing unacceptable disruption or other consequences.

These are all matters we would expect to see in the IDP given that much of the allocated development, including Otterpool, is assumed to commence early in the plan period (see Core Strategy Review p179 Appendix 3 Housing Trajectory).

9. Highways England submits, that it would not be appropriate to adopt the plan nor commence development without knowing that sufficiently detailed proposals for key transport mitigation was appropriate, funded, deliverable and agreed.

10. By sufficiently detailed, we mean preliminary level drawings and supporting material.

11. We stand ready to work with the Council and/or individual site promoters to assess and, hopefully, agree the necessary evidence and mitigation.

12. We will therefore provide updates before or during the Examination to reflect any progress made.

Appendix A

Statement of Common Ground

Folkestone & Hythe District Council and Highways England

1. Overview

1.1 This Statement of Common Ground (SCG) has been prepared by Folkestone & Hythe District Council (FHDC) together with Highways England (HE).

1.2 The purpose of this SCG is to set out the basis on which FHDC and HE have actively and positively agreed to work together to meet the requirements of the Duty to Cooperate. FHDC has prepared their Core Strategy Review for submission in early 2020.

1.3 Under section 33A of the Planning and Compulsory Purchase Act 2004 (amended by section 110 of the Localism Act 2011) and in accordance with the National Planning Policy Framework (NPPF) 2019 it is a requirement under the Duty to Cooperate for local planning authorities, county councils and other named bodies to engage constructively, actively and on an ongoing basis in the preparation of development plan documents and other local development documents. This is a test that local authorities need to satisfy at the Local Plan examination stage and is an additional requirement to the test of soundness.

1.4 The Duty to Cooperate applies to strategic planning issues of cross boundary significance. Local authorities all have common strategic issues and as set out in the National Planning Practice Guidance (NPPG):

> *"local planning authorities should make every effort to secure the necessary cooperation on strategic cross boundary matters before they submit their plans for examination."*

1.5 The statutory requirements of the Duty to Cooperate are not a choice but a legal obligation. Whilst the obligation is not a duty to agree, cooperation should produce effective and deliverable policies on strategic cross boundary matters in accordance with the government policy in the NPPF, and practice guidance in the NPPG.

2.0 Strategic matters

2.1 The NPPF defines the topics considered to be strategic matters (para 20). The only strategic matter relevant to FHDC and HE is the cross-boundary matters associated with the movement of vehicular traffic on the Strategic Road Network (SRN), as expanded upon below.

2.2 Government policy places much emphasis on housing delivery as a means for ensuring economic growth and addressing the current national shortage of housing. The NPPF is very clear that:

"strategic policy-making authorities should establish a housing requirement figure for their whole area, which shows the extent to which their identified housing need (and any needs that cannot be met within neighbouring areas) can be met over the plan period."

2.3 Following changes to the NPPF and PPG, the planning policy team has been assessing how the district can meet the new housing need for the Core Strategy Review plan period. This has involved a number of areas of work, assessing past trends as well as reviewing current and future sources of housing supply.

2.4 The Government's new national formula calculated from household formation and housing affordability figures is published regularly by Office for National Statistics, and the most recently published figure for Folkestone & Hythe district currently stands at 738 new homes a year. FHDC's Regulation 19 Plan outlines a housing requirement for 13,284 new homes over plan period (to 2036/37). Meeting this target over the plan period will be provided for by development in Core Strategy Review, Places and Policies Local Plan, existing planning permissions and small sites.

Table 2.1: Core Strategy Review 2019/20-2036/37– elements of housing supply

Source of housing supply	Number of homes
Current planning permissions and sites under construction (with adjustment for lapsed permissions)	4,274
Places and Policies Local Plan and 2013 Core Strategy sites without planning permission	1,703
Windfall allowance (95 homes a year over 15 years)	1,425
New garden settlement (Core Strategy Review policies SS6-SS9)	5,925
Expansion of Sellindge (Core Strategy Review policy CSD9) (part of allocation without permission)	188
Total Core Strategy Review plan period	**13,515**

Transportation (strategic) – evidence base

2.5 FHDC and HE exchanged correspondence during 2017 and 2018 about HE's assessment requirements of the People and Places Local Plan to 2031 and Core Strategy Review to 2037. This was in accordance with the assessment requirements of DfT Circular 02/2013 and NPPF. The assessment covered the following junctions:

- A260 Spitfire Way / White Horse Hill / A260 / A20 Slip Roads
- Alkham Valley Road / A20 Off Slip / A20 On Slip
- A260 / Alkham Valley Road
- A20 / M20 / B2064 Cheriton Interchange
- A2034 / A20 / A259 / M20 On Slip / M20 Off Slip (Castle Hill Interchange)
- M20 / A20 / B2068 Roundabout

2.6 The assessment looked at the junction capacity and merge and diverge assessments in accordance with Design Manual for Roads and Bridges standards. The findings indicated that mitigation would be required for the strategic road network under the following development scenarios:

Junctions:

- A20/A260 eastbound off slip:
- 2037 CS6500 AM and PM
- 2037 CS8000 AM and PM
- M20 Junction 11:
- 2037 CS6500 AM and PM
- 2037 CS8000 AM and PM
- M20 Junction 13:
- 2037 CS6500 and 8000

Merges and Diverges:

M20 Junction 12:

- e/b merge 2037 – needs a parallel merge all scenarios (DM, CSR 6500 and CSR 8000)
- M20 Junction 13:
- w/b merge 2037 needs a lane gain (2 lanes main carriageway +1 slip) with ghost island merge all scenarios
- e/b diverge 2037 needs ghost island all scenarios

M20 Junction 11:

- e/b diverge 2037 needs a lane drop and ghost island diverge for CSR scenarios
- e/b merge 2037 needs parallel merge for DM and lane gain for CSR scenarios
- w/b diverge 2037 – ghost island diverge needed for CSR 8000 scenario
- w/b merge 2037 – parallel merge required for DM and CSR 6500 scenarios and lane gain with ghost island for CSR 8000 scenario

Highways England response to Core Strategy Review Regulation 19 plan document

2.7 Within its response to the Core Strategy Review Regulation 19 plan document (Appendix 1 refers), HE has advised that generally, the direction of, and considerations within, the Core Strategy Review appear to be sound and to concur generally with the approach and policies of HE with regard to development and its impacts on the SRN.

2.8 HE are satisfied that policy SS5 – District Infrastructure Planning – concurs with DfT 02/13, in that it states that planning permissions will only be granted where the development aims to reduce demands on infrastructure; does not jeopardise current or planned physical infrastructure; and allows sustainable travel patterns. HE has commented that whilst the provision of sustainable modes is included, an additional objective should be added, as follows:

'to consider and manage the travel demand of new development proposals, and develop tailored solutions to limit car use generated by new developments.'

2.9 HE concurs that the Core Strategy Review is necessarily 'high-level' and broad in scope. HE also acknowledges that the Core Strategy Review makes reference to identified infrastructure upgrades in Figure 4.4, to include three 'key highway improvements' on the M20, A20 and A259 respectively. However, as no more detail is provided within the body of the Core Strategy Review, HE would like to be consulted further on these schemes as they progress.

2.10 HE has flagged that 'critical' and 'necessary' infrastructure needed to support the spatial strategy is stated as being set out in the Infrastructure Delivery Plan (IDP). FHDC can confirm that whilst the IDP was published as one of the evidence base documents to the Core Strategy Review, HE may not have fully digested its contents and appreciated the breadth of infrastructure schemes expected to come forward in conjunction with planned growth. FHDC would welcome further conversations with HE in respect of the content of the IDP, although this activity can take place outside the SoCG.

2.11 Of course, HE would be consulted further on any schemes affecting the SRN as they progress.

3. Summary of actions going forward

3.1 A summary of key actions going forward is provided below.

Key issue	Agreed action
Infrastructure	FHDC and HE to continue to liaise and work together on all relevant matters relating to the Strategic Road Network, including planning applications. FHDC to propose mitigation for the junctions and slip road merges and diverges identified in 2.6 above

4 Governance arrangements

4.1 Officers of FHDC meet with representatives of HE to discuss cross boundary strategic matters under the Duty to Cooperate. The narrative and outcome of these discussions is demonstrated in this Statement of Common Ground.

4.2 It is intended that the Statement of Common Ground will be updated going forward, particularly as FHDC progresses its Core Strategy Review. The SOCG will then be kept under ongoing review and will be updated at key stages in F&HDC plan making process and/or when new key strategic issues arise which require amendments to this SOCG. If there are any changes of the content of the SOCG these matters can be discussed at future Duty to Co-operate meetings.

5 Signatories/declaration

Signed on behalf of Folkestone & Hythe District Council (Officer)	**Signed on behalf Highways England**

	Kevin Bown [redacted]
Position: Strategy & Policy Senior Specialist	**Position:** Spatial Planning Manager
Date:	**Date:** 28/1/2020

APPENDIX 6: ADDITIONAL MODELLING SCENARIOS OCTOBER 2018

[redacted]

From: [redacted]
Sent: 29 October 2018 17:46
To: H[redacted]
Cc: M[redacted]
Subject: RE: Folkestone and Hythe District additional modelling scenarios

Hello [redacted]

To answer your question the modelling did not show any requirements for mitigation in 2031 for the Places and Policies Local Plan. The mitigation requirements concern the 2037 scenarios.

Perhaps this is as far as we need to go at the present time?

Kind Regards

[redacted]
Managing Consultant, Transportation
UK & Europe
Engineering, Design and Project Management

[redacted]

Atkins, member of the SNC-Lavalin Group
Epsom Gateway, 2 Ashley Avenue, Epsom, Surrey. KT18 5AL

Company 

Sent on behalf of Highways England

Also contactable at Highways England, Guildford

Highways England | Bridge House | 1 Walnut Close | Guildford | GU1 4LZ
Web: http://www.highways.gov.uk

Safe roads, reliable journeys, informed travellers
Highways England:operating, maintaining and improving the strategic road network in England.

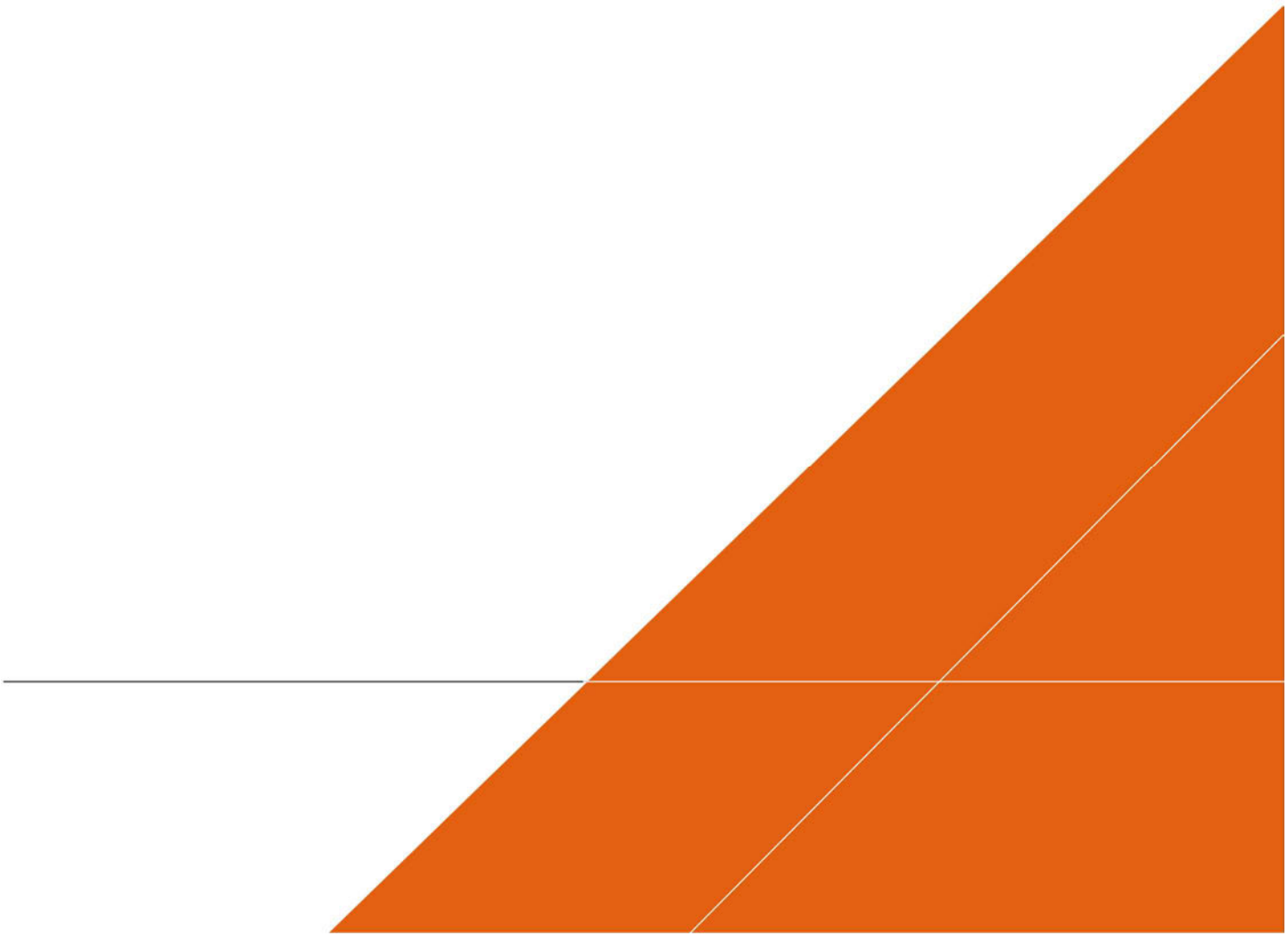
APPENDIX 7: TRAFFIC REPORT (FIRST DRAFT)

ARCADIS Design & Consultancy for natural and built assets

FOLKESTONE & HYTHE DISTRICT COUNCIL

Local Plan Traffic Analysis
Highways England Road Network

NOVEMBER 2020



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34 York Way
London N1 9AB

VERSION CONTROL

Version	Date	Author	Checker	Approver	Changes
1.0	03/10/2020	[redacted]			Initial Draft

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Traffic Analysis

1 Introduction

1.1 Background

At the request of Folkestone and Hythe District Council, Arcadis Consulting (UK) Ltd (Arcadis) is providing support to the District Council for their Core Strategy Review. The support being provided as described in this note relates to the Statement of Common Ground between Folkestone and Hythe District Council and Highways England and, specifically, the submission made to the examination by Highways England in a letter dated 3rd July 2020.

Arcadis held a meeting with Folkestone and Hythe District Council and Highways England on Monday the 14th of September to discuss the scope of work required to work towards a Statement of Common Ground between Folkestone and Hythe District Council and Highways England. Highways England expressed the view that they require further information to be able to support the local plan at the initial hearing in mid-November 2020, which is now postponed until December 2020.

A second meeting took place on Friday 25th of September, between Arcadis, Folkestone and Hythe District Council and Highways England. This meeting clarified the requirement for traffic investigations to support Highways England to determine of the impact of the Folkestone and Hythe Local Plan on its road network. Since then, further meetings have been held between all three parties on Thursday 1st, Wednesday 7th, Monday 12th and Friday 30th of October to discuss progress towards the agreement of the scope, data sources and assumptions required for the study.

1.2 Purpose

The purpose of the study is to enable Folkestone and Hythe District Council to agree on a Statement of Common Ground regarding requirements for highway schemes to mitigate impact related to the Folkestone and Hythe Local Plan on the Highways England road network, or the further work required to identify those requirements.

It is acknowledged that further supporting information will be provided after this study, including Design Manual for Roads and Bridges (DMRB) compliant horizontal alignments and scheme costing.

1.3 Report Structure

This document is composed of:

- Section 2, presenting a review of previous data;
- Section 3, detailing the process for the selection of the study area;
- Section 4, presenting the traffic demand preparation;
- Section 5, summarising the analysis for M20 Junction 11;
- Section 6, summarising the analysis for M20 Junction 11a;
- Section 7, summarising the analysis for M20 Junction 12;
- Section 8, summarising the analysis for M20 Junction 13;
- Section 9, summarising the analysis for A20 / Spitfire Way / Alkham Valley Road; and
- Section 10 presenting the overall conclusion.

2 Previous Data Review

2.1 Available Data

The data sources readily available as input to this study are available in Appendix A and consist of:

- AECOM, *Briefing Note: Shepway Transport Model Update – Review & Findings*, December 2017;
- AECOM, *Shepway Transport Model – Merge and Diverge Appraisal (with spreadsheet model)*, September 2018;
- AECOM, *Shepway Transport Model, Local Junction Modelling and outputs*; November 2017;
- Taylor Wimpey, *Cheriton High Street Junction, committed scheme drawing*, May 2018;
- Email correspondence from Highways England to Folkestone & Hythe District Council dated October 2018 to confirm that no mitigation would be required for the 2031 Do Something scenario for the Places and Policies Local Plan (additional modelling scenarios);
- Arcadis, *Otterpool Park – Transport Assessment*, February 2019 (with supporting information and traffic models);
- Folkestone & Hythe District Council and Highways England, *Statement of Common Ground*, January 2020;
- Highways England, *Folkestone and Hythe District Core Strategy Review Examination Submission to the Examination by Highways England*, July 2020; and
- Folkestone & Hythe District Council, *Core Strategy Review – Inspector's Matters*, July 2020.

Further information can be found as required on the Folkestone and Hythe District Council Local Plan website (https://folkestone-hythe.gov.uk/planning/planning-policy/local-map/examination-news-and-updates).

2.2 Traffic Demand Consistency with the Previous Stage

Two previous traffic models were available at the inception of this study. These were:

- The AECOM Shepway transport model, and
- The VISUM cordon model prepared as part of the Otterpool Park transport assessment.

For consistency with the existing Statement of Common Ground between Folkestone & Hythe District Council and Highways England (2020), it was decided to update the key assumptions of the 2017 AECOM Shepway transport model, rather than using the information available in the Otterpool Park transport assessment.

The Otterpool Park transport assessment information was, however, used for the traffic assessment within Ashford, as it is outside the Shepway model.

Following a detailed review of the AECOM Shepway transport model, the following information was identified as requiring an update:

- The Local Plan development housing and employment projections;
- The TEMPro factors, to account for the latest version of the database;
- The M20 motorway growth factor, to be superseded by an independent factor, accounting for through traffic values;
- The merge/diverge calculation methods to account for the 2020 DMRB; and
- The introduction of the junction upgrades immediately South of M20 Junction 12 (U-turning movement removal in the interchange).

No updates were undertaken of the Shepway transport model traffic assignment on the road network or individual development description and trip generation ratios. The 2017 traffic volumes are also closely matching between various sources.

3 Study Area Selection

3.1 Identifying Highways England Road Network

Folkestone and Hythe District Council Location

As shown in Image 1, Folkestone and Hythe District Council is located on the coast of the English Channel and includes the port town of Folkestone and the coastal market town of Hythe. Both towns are located within the northern half of the district. To the West is the town of Ashford, and to the East is the port of Dover.

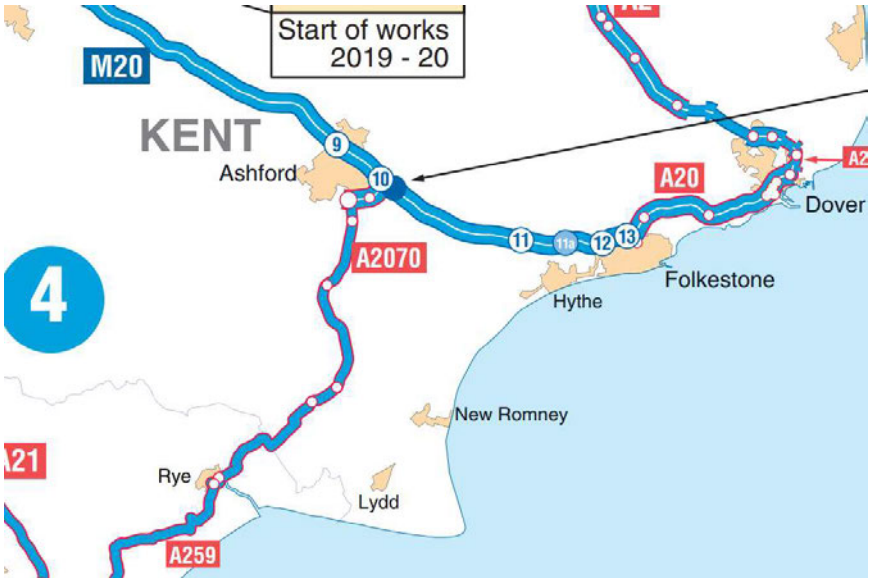
Image 1 – Folkestone and Hythe District Council Location

Highways England Road Network within the Area

Image 2 shows the Highways England road network in the area. It consists of:

- The M20, passing through Ashford, linking it to Folkestone;
- The A20, prolonging the M20 from Folkestone to Dover; and
- The A2070, linking Ashford to Rye.

Image 2 – Highways England Road Network



3.2 Channel Crossing

The M20 and A20 correspond to a key road transport corridor giving access to both:

- Dover port ferry terminal; and
- The Eurotunnel terminal.

Both facilities generate a significant volume of HGVs on the Highways England road network. Beyond the large volume of HGVs, traffic disruptions are anticipated concerning new customs rules expected to be implemented in late 2020.

3.3 Local Plan Description

2037 Local Plan in Numbers

Table 1 shows the Local Plan proposed development description for 2037 per housing and employment, based on the latest information available. This table also presents the projection used by AECOM in 2017. The comparison of the two datasets shows an increase in overall housing. Employment projections, on the other hand, remain stable.

Table 1 – 2037 Local Plan Housing and Employment Projections

From	To	2017 Data		2020 Data	
		Housing	Jobs	Housing	Jobs
2016	2016	49843	51458	51164	48200
2016	2017	50423	51760	52311	48530
2016	2018	51002	52062	52800	48860
2016	2019	51582	52363	53232	49190
2016	2020	52161	52665	53832	49520
2016	2021	52741	52967	54433	49850
2016	2022	53127	53125	55078	50180
2016	2023	53513	53283	55779	50510
2016	2024	53898	53441	56584	50840
2016	2025	54284	53599	57615	51170
2016	2026	54670	53757	58577	51500
2016	2027	55170	53889	59496	51830
2016	2028	55670	54021	60405	52160
2016	2029	56170	54153	61162	52490
2016	2030	56670	54285	61929	52820
2016	2031	57170	54417	62652	53150
2016	2032	57614	54583	63404	53480
2016	2033	58058	54749	64097	53810
2016	2034	58502	54914	64787	54140
2016	2035	58946	55080	65515	54470
2016	2036	59390	55246	66271	54800
2016	2037	59812	55412	66949	55130

Key Development Locations

Image 3 identifies the location of all the key developments considered explicitly in the AECOM Shepway transport model. With the updated Local Plan projections, these developments represent 72% of the growth in housing and 83% of the employment growth. They are located in the vicinity of existing urban areas of Folkestone and Hythe, North of the district.

Image 3 also shows, in dark blue, the junctions considered impacted by the Local Plan in the January 2020 statement of common ground between Folkestone and Hythe and Highways England. Visible in light blue are other junctions considered for inclusion within the study area of this updated assessment.

Table 2, on the next page, lists the names of the 13 developments explicitly included in the local plan.

Image 3 – Key 2037 Local Plan Developments

2031 Do Something Scenario - Places and Policies Local Plan (PPLP)

The 2031 Do Something scenario of the Places and Policies Local Plan includes developments 1 to 12 in Table 3. Highways England confirmed the absence of impact requiring mitigation of these developments (see Appendix A.5).

Site 13 is the only major development in the Local Plan not included in the PPLP.

2037 Growth Complement

The housing and employment growth in the Local Plan for 2037 not accounted for by the 13 developments is calculated using a TEMPro factor adjustment and applied to the base traffic volumes of the local road network.

The traffic growth from these developments is therefore distributed equally across the road network, except for the motorway mainline that has its own TEMPro growth factor taken directly from the TEMPro database.

Table 2 – Key Development Descriptions

Site Number	Scenario Inclusion	Site Name
1	2031 PPLP & 2037 Local Plan	Former Rotunda Amusement Park, Marine Parade, Folkestone, Kent
2	2031 PPLP & 2037 Local Plan	Shorncliffe Garrison, Folkestone
3	2031 PPLP & 2037 Local Plan	Street Record, Hurricane Way, Hawkinge, Kent, CT18 7SU
4	2031 PPLP & 2037 Local Plan	Philbeach House, Tanners Hill, Hythe, Kent CT21 5UQ
5	2031 PPLP & 2037 Local Plan	Land Adjoining Enterprise Way Enterprise Way Link Park Lympne Kent
6	2031 PPLP & 2037 Local Plan	Land Adjoining The Link Park Lympne Industrial Estate Lympne Kent
7	2031 PPLP & 2037 Local Plan	Land Read Rhodes House Main Road Sellindge Kent
8	2031 PPLP & 2037 Local Plan	Remainder of land at Aerodrome, Hawkinge
9	2031 PPLP & 2037 Local Plan	Nickolls Quarry Dymchurch Road Hythe Kent CT21 4NF
10	2031 PPLP & 2037 Local Plan	Land Adjacent The Surgery, Main Road, Sellindge, Kent
11	2031 PPLP & 2037 Local Plan	Land at Hurricane Way, Hawkinge, Kent CT18 7SU
12	2031 PPLP & 2037 Local Plan	Plot 1, Hurricane Way, Hawkinge, Kent CT18 7SU
13	2037 Local Plan	Otterpool Park

3.4 Ashford M20 Junctions

Key Interchanges

West of Folkestone and Hythe District Council is the town of Ashford. Three M20 interchanges are present:

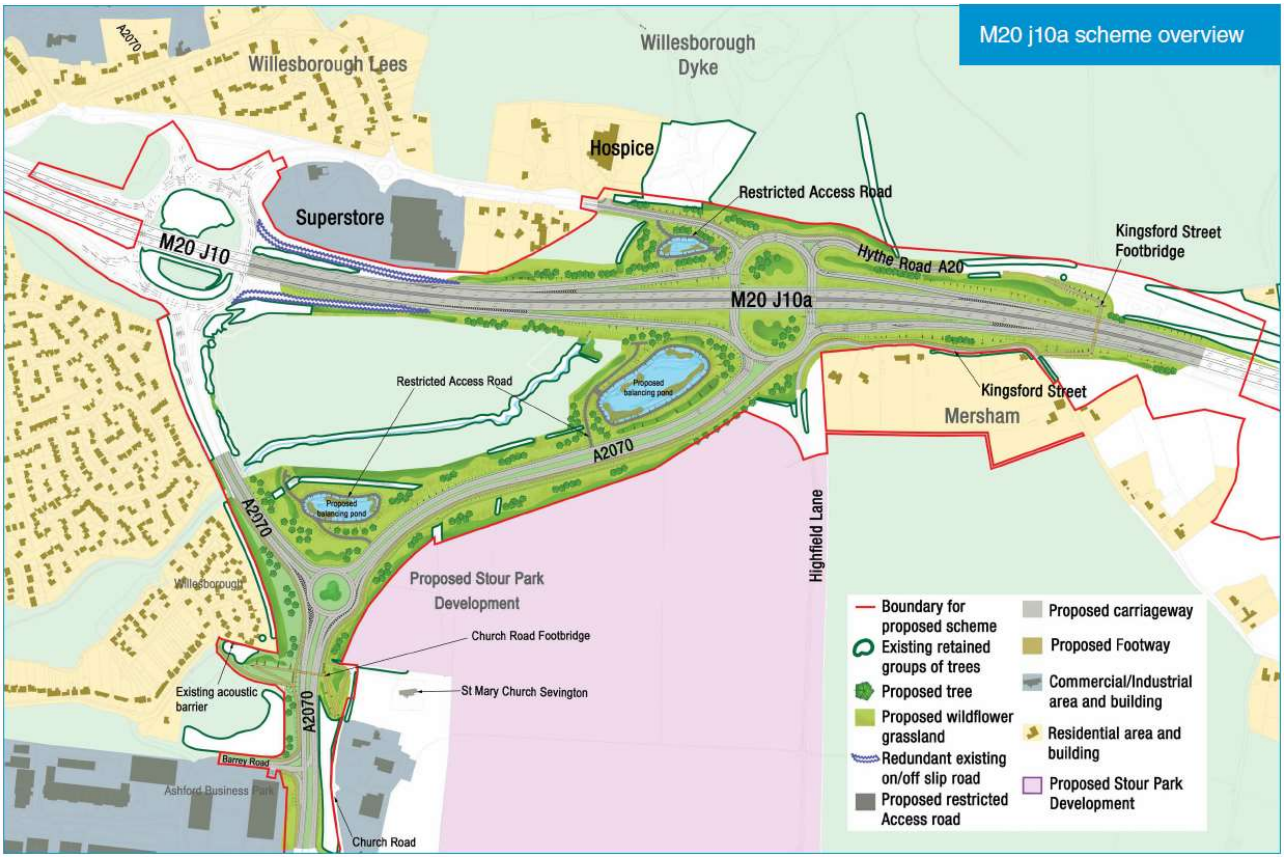
- M20 Junction 9;
- M20 Junction 10; and
- M20 Junction 10a.

M20 Junction 10a improvement scheme is recent. According to Highways England scheme presentation leaflet, works started in January 2018 and were completed in the summer of 2020. Image 4 presents a scheme that includes:

- The construction of a new interchange junction (Junction 10a);
- The closure of East facing ramps at Junction 10.

The fact that Junction 10a has recently been constructed as well as the COVID19 situation does not permit the reliable collection of traffic counts to assess the split of traffic for West facing splits.

Image 4 – M20 Junction 10a Scheme



Total Traffic from Folkestone and Hythe Local Plan

Using the updated transport model, the assessment of the 2037 traffic volumes from the Local Plan travelling to and from district council towards the West (the number within parenthesis as volumes from Otterpool Park), using the M20 are:

- AM Peak: Westbound 929(450) veh, - Eastbound 550(252) veh;
- PM Peak: Westbound 671(316) veh, - Eastbound 950(468) veh

Merge / Diverge Assessment

A merge and diverge assessment using the latest DMRB guidelines has been undertaken using the most recent WebTRIS counts available. Traffic demand on the West facing ramps of Junction 10 and 10a have been split equally as road users now have two ramps to chose from.

The key findings from this assessment are:

- The mainline through traffic volumes are low;
- Junction 9 traffic volumes on the ramp already exceed the design limit with DMRB, but there are no signs of congestion, likely as a result of very low mainline traffic; and
- The traffic volume from the Folkestone and Hythe Local Plan is not expected to be sufficient to require an upgrade of the merge / diverge segments.

Due to the very low mainline traffic volume, any upgrade of the merge / diverge segment would likely correspond to a lane gain, lane drop solution, with the hatching of lane 1 within the interchange.

Interchange Roundabout Assessment

Table 3 shows the 2037 junction traffic analysis within the 2019 Otterpool Park transport assessment, in which the Do-Minimum scenario is equal to Local Plan growth without Otterpool Park and the Do-Something scenario is Local Plan growth including Otterpool Park. This assessment shows the limited impact of the Folkestone and Hythe Local Plan, and the fact that it would not trigger the need for mitigation measures.

Table 3 – Junction 10, 10A and 9 2037 Degree of Saturation

Junction ID / Name		Maximum Degree of Saturation / Ratio of Flow to Capacity					
		2018		2037			
		Baseline		Do-Minimum		Do-Something	
		AM	PM	AM	PM	AM	PM
J1	M20 J10	84.5%	83.2%	70.7%	78.4%	75.0%	77.6%
J42	M20 J10A			41.0%	45.0%	68.3%	75.0%
J23	M20 J9	75.3%	92%	83.9%	95.1%	83.9%	93.3%

Conclusion

In conclusion, it is not anticipated that the Folkestone and Hythe Local Plan would lead to required mitigation measures within the Highways England network in Ashford.

3.5 Selected Study Area

For this study, the road network of interest was defined as:

- Highways England road network (SRN) directly impacted by the increase in traffic from Folkestone and Hythe District Council Local Plan, to the extent that it would trigger the need for network upgrades; and
- The local junctions at risk of blocking back into the SRN as a result of traffic increase generated by the Local Plan.

The proposed study area is presented in Image 5. It corresponds, West to East, to interchanges:

- M20 Junction 11;
- M20 Junction 11a;
- M20 Junction 12;
- M20 Junction 13; and
- A20, A20 / Spitfire Way / Alkham Valley Road.

Image 5 – Proposed Study Area

4 Traffic Demand

4.1 2017 Baseline

The 2017 baseline data used in the AECOM Shepway Transport Model and the Arcadis Otterpool transport assessment were compared. The data is available in Appendix C.1 and is presented in Table 4. The key findings are:

- Except for Junction 12 in the AECOM model, all data sources are from 2016/2017 and consistent;
- AECOM applied a seasonality factor to the October traffic. The peak traffic is in August, likely related to the Dover port activities;
- AECOM traffic volumes are always higher than the non-factored counts.

The AECOM traffic volumes being a worst-case scenario, the original baseline traffic in the AECOM Shepway Transport Model has been retained. The increase in baseline traffic for M20 Junction 11 and the A20 junction, however, is significant.

Table 4 – 2017 Data Review

Junction	Date of survey		AM (8-9)			PM (17-18)		
	Arcadis model	AECOM model	Arcadis model	AECOM model	Difference	Arcadis model	AECOM model	Difference
M20 J11	13 October 2016	13 October 2016	2,361	2,672	+13%	2,356	2,690	+14%
M20 J11a	13 October 2016	13 October 2016	508	539	+6%	548	582	+6%
M20 J12	29 June 2017	22 October 2013*	2,931	3,074	+5%	3,045	3,070	+1%
M20 J13 Southern rdb	29 June 2017	13 October 2016	3,306	3,768	+14%	3,301	3,659	+11%
A20 Spitfire rdb	13 October 2016	13 October 2016	2,452	2,721	+11%	2,803	3,115	+11%
A20 Alkham rdb	13 October 2016	13 October 2016	1,903	2,112	+11%	1,523	1,693	+11%

Factored up to 2016 baseline

4.2 2037 Traffic Demand Model

The travel demand models are contained in Appendix C.2.

Local Plan Horizon

The local plan horizon is 2037 and this is the core assessment year.

Local Plan Scenario Description

Within the Shepway Transport Model, the core scenarios selected are:

- 2037 DS, corresponding to the Local Plan projection, also labelled Core Strategy Review (CSR 6,500); and
- 2037 DM, corresponding to the Places and Policies Local Plan (PPLP).

The description of individual development has evolved, but by consistency with the previous stage, developments descriptions have been retained as per the AECOM model version.

Local Plan Housing and Employment Projections

The housing and employment project are:

- As per the Local Plan in the 2037 DS;
- Discounted by Otterpool Park development in the 2037 DM.

The reason for the application of the discount is to ensure the transport model does not re-allocate the Otterpool Park traffic via the TEMPro Factor.

Motorway Growth Rate

For the motorway mainline traffic, an independent TEMPro factor has been included in the model. This change enables the assessment to reflect the increase of through traffic, which was not included in the original model developed in 2017 by AECOM.

Junction 12 U-Turning Traffic Removal

The Taylor Wimpey Cheriton High Street Junction, committed scheme drawing, clearly shows the ability to perform the right turning movement from the side road. Thus, the traffic from the South using Junction 12 to U-turn in the AECOM model has been removed.

TEMPro 7b

All TEMPro rates in the model have been superseded using the latest available version of the rates. The version is indicated as 7b.

5 M20 Junction 11

5.1 Assessment Overview

General Description

M20 Junction 11 is a major motorway interchange with the following characteristics:

- The M20 at this location is composed of 3 lanes in each direction (no lane drop/lane gain);
- To the West of the interchange, an overbridge is located that will constrain future road widening at this location;
- Ramps are wide, but are marked as one lane;
- The at-grade junction is a two-lane, non-signalised, roundabout, widened to three lanes at some locations;
- The at-grade junction has 5 arms (including 2 motorway arms). To the South, a further left-in left-out junction gives access to a depot; and
- Another roundabout further South enable U-turning movements.

Initial Mitigation Requirements Identification

The traffic analysis mitigation requirements at M20 Junction 11 based on the 2037 DS CSR 6,500 has been summarised in Image 6 on the next page. The key requirements are:

- Merge and diverge type upgrade at three locations;
- The widening to two lanes of three ramps;
- The upgrade of the main roundabout.

5.2 Merge / Diverge Assessment

The merge and diverge assessment are presented in Table 5 and 6. The key findings are:

- The motorway mainline never requires more than two lanes; and
- Three ramps require widening to two lanes.

Image 6 – M20 Junction 11 High-Level Mitigation Requirements

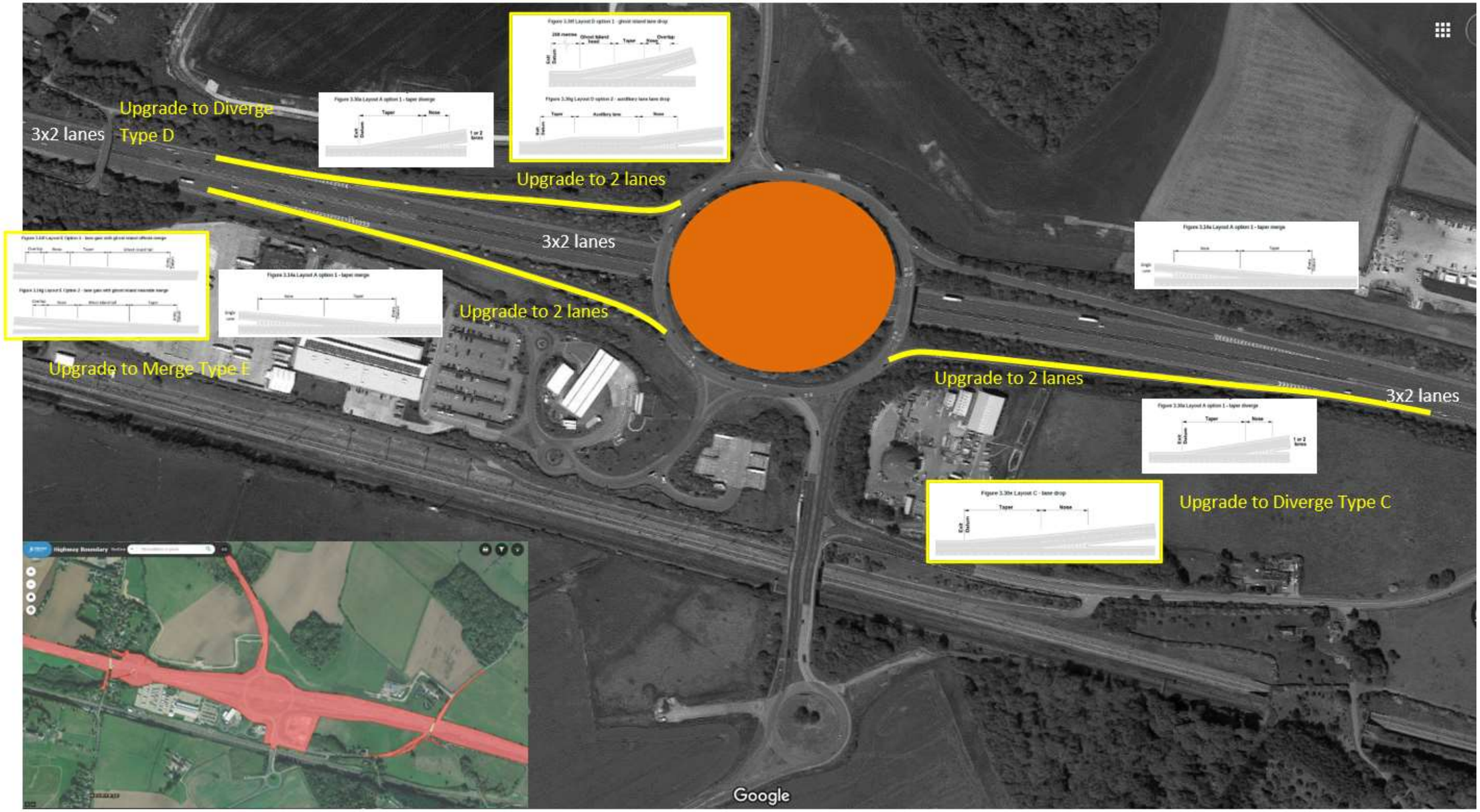
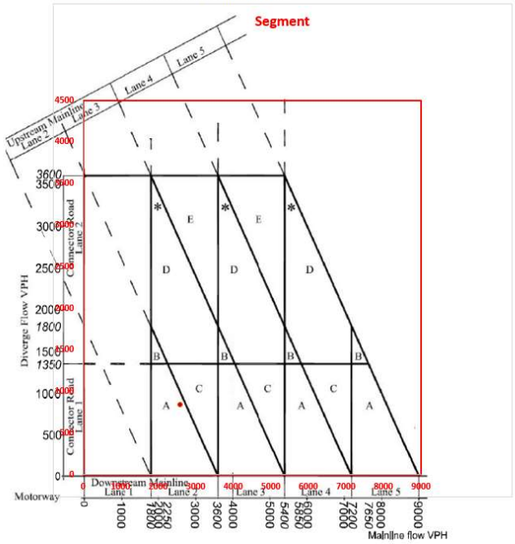


Table 5 – M20 Junction 11 – 2037 AM Merge/Diverge Assessment

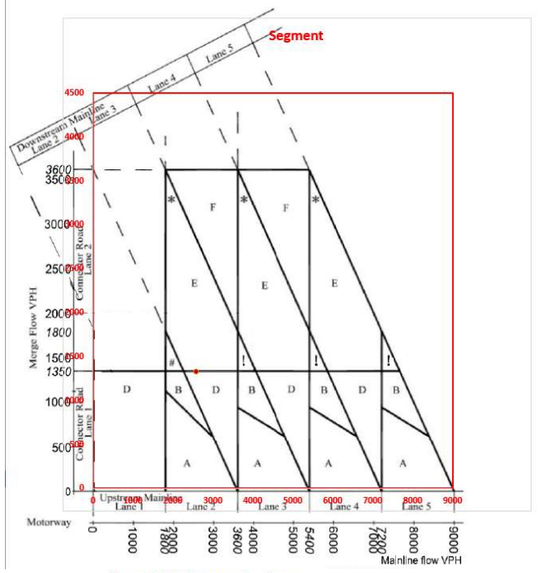
Figure 3.26b Motorway diverging diagram



M20 J11 EB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2580	844

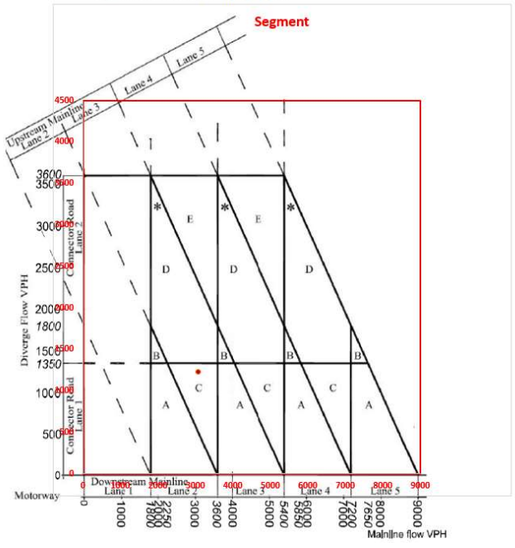
Figure 3.12b Motorway merging diagram



M20 J11 EB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2580	1335

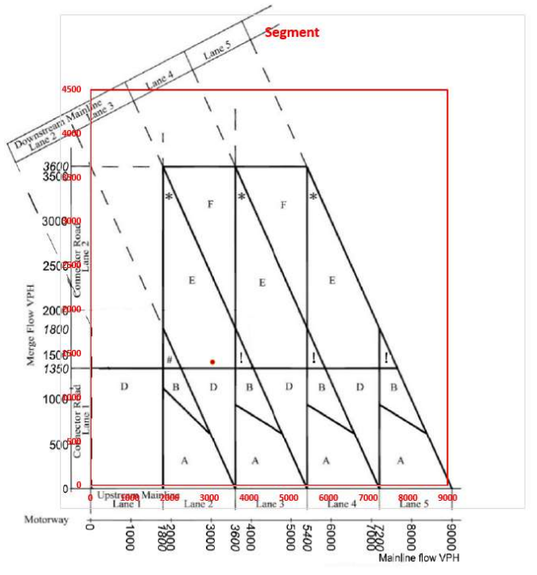
Figure 3.26b Motorway diverging diagram



M20 J11 WB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
3073	1232

Figure 3.12b Motorway merging diagram



M20 J11 WB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
3073	1405

Table 6 – M20 Junction 11 – 2037 PM Merge/Diverge Assessment

Figure 3.26b Motorway diverging diagram

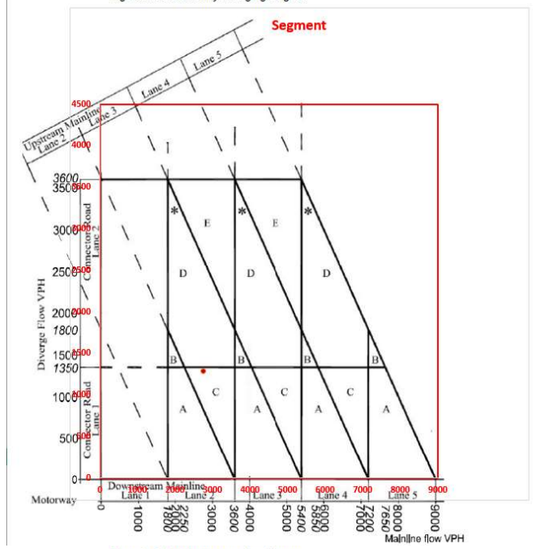
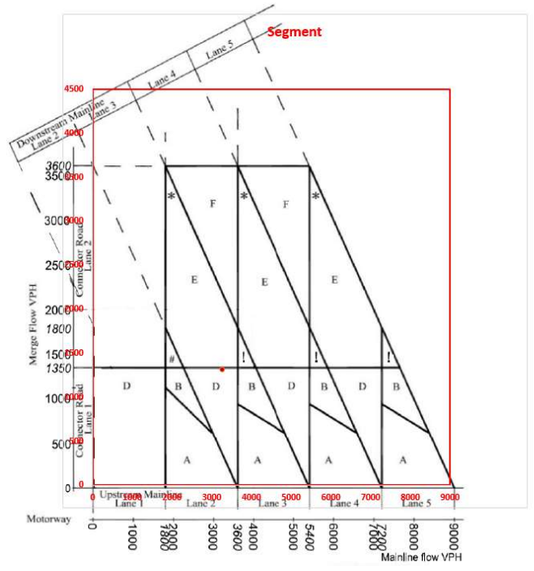


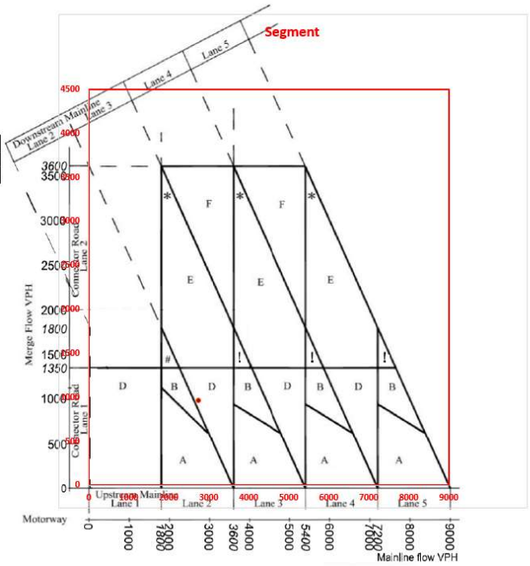
Figure 3.12b Motorway merging diagram



M20 J11 WB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2747	1291

Figure 3.12b Motorway merging diagram



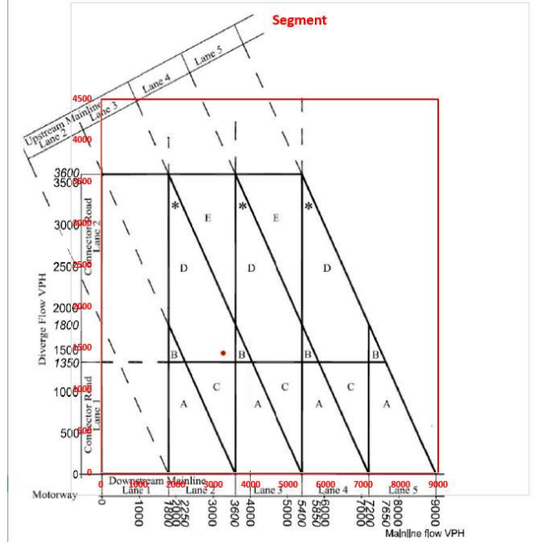
M20 J11 WB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2747	962

M20 J11 EB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
3263	1305

Figure 3.26b Motorway diverging diagram



M20 J11 EB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
3263	1441

5.3 Traffic Demand Impact

Overall Changes in Traffic Volumes (in Veh.)

For M20 Junction 11, the comparison of total traffic at an at-grade junction in 2037 between the DM scenario (DS PPLP) and the DS scenario (DS CSR 6,500) is as follows:

- AM Peak – DM (3708) / DS (5327), or an increase of 1619 (30%)
- PM Peak – DM (3807) / DS (5573), or an increase of 1766 (32%)

Based on the figures described above, the increase in traffic at the junction is very important between the 2037 DM and DS scenarios. Such a traffic increase is expected and is related mostly to Otterpool Park development.

5.4 Existing Layout at Grade Traffic Assessment

Table 7 presents the traffic analysis of the existing junction layout in both 2037 DM and DS scenarios.

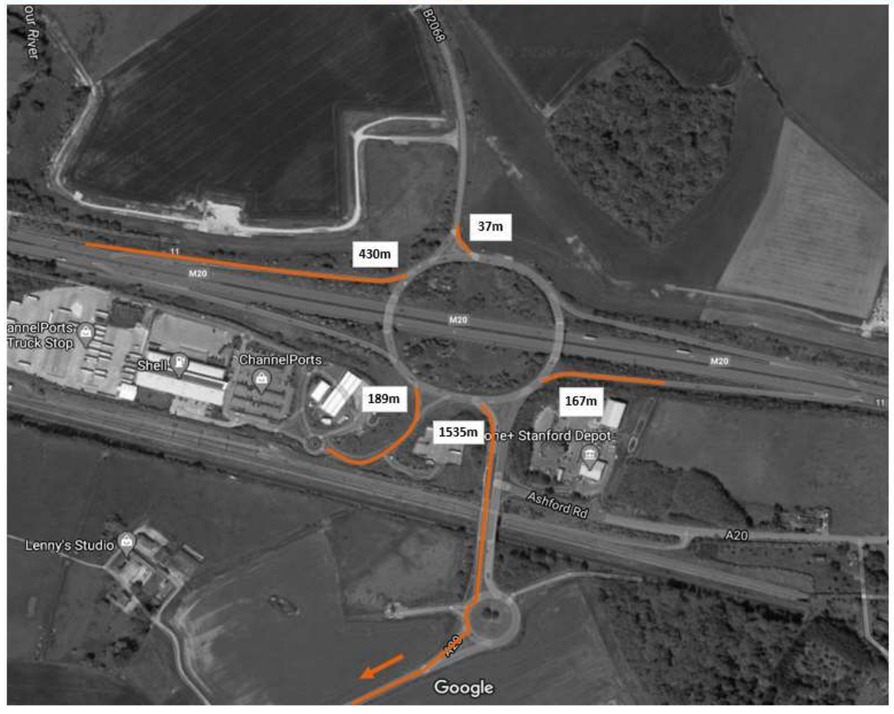
The key findings are:

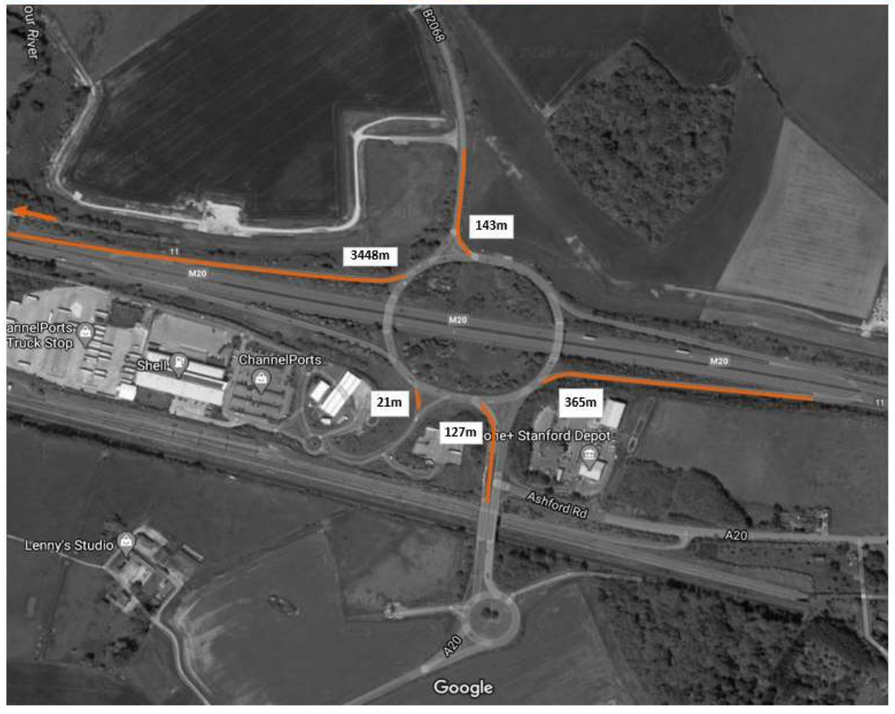
- In the DM PM peak scenario, one approach reaches capacity, but the impact is minor, with no risk of blocking back queue onto the M20;
- In the DS AM and PM peak scenarios, most approaches have reached oversaturation, indicating the need for a widening of the junction layout.

Table 7 – M20 Junction 11 – 2037 Existing Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	DM 2037							
M20 OffSlip Westbound	1.9	6.7	0.66	A	2.5	11.7	0.72	B
A20 Ashford Road	2.3	5.11	0.7	A	1.9	4.47	0.66	A
Services	0.4	8.29	0.31	A	0.3	6.31	0.25	A
M20 OffSlip Eastbound	1.3	6.82	0.56	A	16.3	55.15	0.97	F
B2068	0.8	5.76	0.45	A	4	27.89	0.82	D
Arm	DS 2037							
M20 OffSlip Westbound	29	74.95	1.01	F	63.5	202.61	1.07	F
A20 Ashford Road	267	383.77	1.21	F	22	34.23	0.97	D
Services	32.8	1004.84	1.35	F	3.6	74.68	0.83	F
M20 OffSlip Eastbound	74.8	331.4	1.17	F	599.7	2036.32	2.22	F
B2068	6.5	50.38	0.89	F	24.8	167.51	1.05	F

Image 7 – M20 Junction 11 – 2037 Queue Length Comparison





5.5 Proposed Mitigations

Proposed Mitigation Constraints

The proposed concept development was focussed on respecting the following constraints:

- Ensuring free-flowing and safe traffic conditions;
- Avoiding any impact on existing structures as much as possible, for cost reasons; and
- Maintaining the same level of accessibility as in the present situation.

When developing proposed mitigations, the introduction at the junction to the South of a signalised South to East right turning movement was necessary to avoid the need to widen the bridge structures across the M20.

Table 8 presents the traffic analysis of the proposed junction layout for 2037 DS scenario. The key findings are:

- The two junctions at the interchange can be upgraded to free-flowing traffic conditions, without impacting the key structures; and
- Further significant increase in right-turning traffic at the junction to the South, giving access to the depot would potentially require further upgrading.

Table 8 – M20 Junction 11 – 2037 Proposed Layout Assessment

2037 DS with Mitigation M20 Junction 11 Roundabout							
Approach	Lane	AM			PM		
		Queue (PCU)	Delay	DoS	Queue (PCU)	Delay	DoS
M20 OffSlip Westbound	1	7.5	19.1	71.8%	16.7	41.6	71.8%
	2 & 3	7.6	18.7	65.50%	17.9	42.4	65.50%
A20 Ashford Road	1	14.8	12.2	79.9%	12.6	11.4	79.9%
	2 & 3	6.8	7.4	73.40%	9.3	10	73.40%
Services	1	2.6	12	34.6%	1.8	5.9	34.6%
M20 OffSlip Eastbound	1 & 2	6.8	28.8	75.2%	18.7	34.2	75.2%
		6.6	29.3	71.30%	20.7	38.9	71.30%
B2068	1	1.5	7.4	58.3%	9.4	28.0	58.3%
	2	1.9	13.9	47.0%	2.4	29.3	47.0%
2037 DS with Mitigation M20 Junction 11 T-Junction							
Approach	Lane	AM			PM		
		Queue (PCU)	Delay	DoS	Queue (PCU)	Delay	DoS
A20 Ashford Road Southbound	1 & 2	10.5	9.6	71.9%	21.9	12.6	87.7%
	3	11.2	9.9	70.20%	25.3	13.7	87.70%
A20 Ashford Road Northbound Right Turn	1	5.7	31.7	81.3%	6.9	45.2	79.5%

5.6 Timeline Analysis

To provide information regarding the phasing of junction mitigation, a timeline analysis at M20 Junction 11 has been broken down into three key stages. The timeline is expressed in percentage development of Otterpool Park development. Reference to the development programme is required to associate dates against the various infrastructure upgrades requirements. The key stages are:

- **Stage 1 – No Upgrades**
  - The M20 Eastbound Off-slip will reach saturation in 2037, even without the Otterpool Park development. Any additional increase in traffic will require mitigations at the junction.

- **Stage 2 – Main Roundabout Upgrade**
  - Upgrade of the interchange roundabout will be gradually required after 45% of Otterpool Park Development. The widening of the ramp approaches is the first element of junction upgrade required, meaning the complete roundabout upgrade would be recommended to take place in one construction stage.

- **Stage 3 – South Junction Upgrade (A20 Ashford Road Junction)**
  - The South junction upgrade will only be required once approximately 92% of Otterpool Park has been delivered. It is important to underline the initial seasonal factoring of the baseline traffic in our traffic demand. It is likely the junction upgrade will not be required if adequate travel demand controls are put in place, or if the turning proportion does not develop as anticipated in the model.

5.7 Conclusion

In conclusion, M20 Junction 11 is significantly impacted by the Local Plan. A proposed mitigation has been developed and requires further highway design investigation.

It is recommended the junction upgrade is not considered as one development stage, as the South junction might not be required as part of DS CSR 6,500.

It is recommended that any mitigation scheme is subject to a monitor and manage approach to implementation. Traffic volumes should be monitored throughout the Local Plan period to inform when or if the mitigation is required.

Image 8 – M20 Junction 11 Initial Mitigation

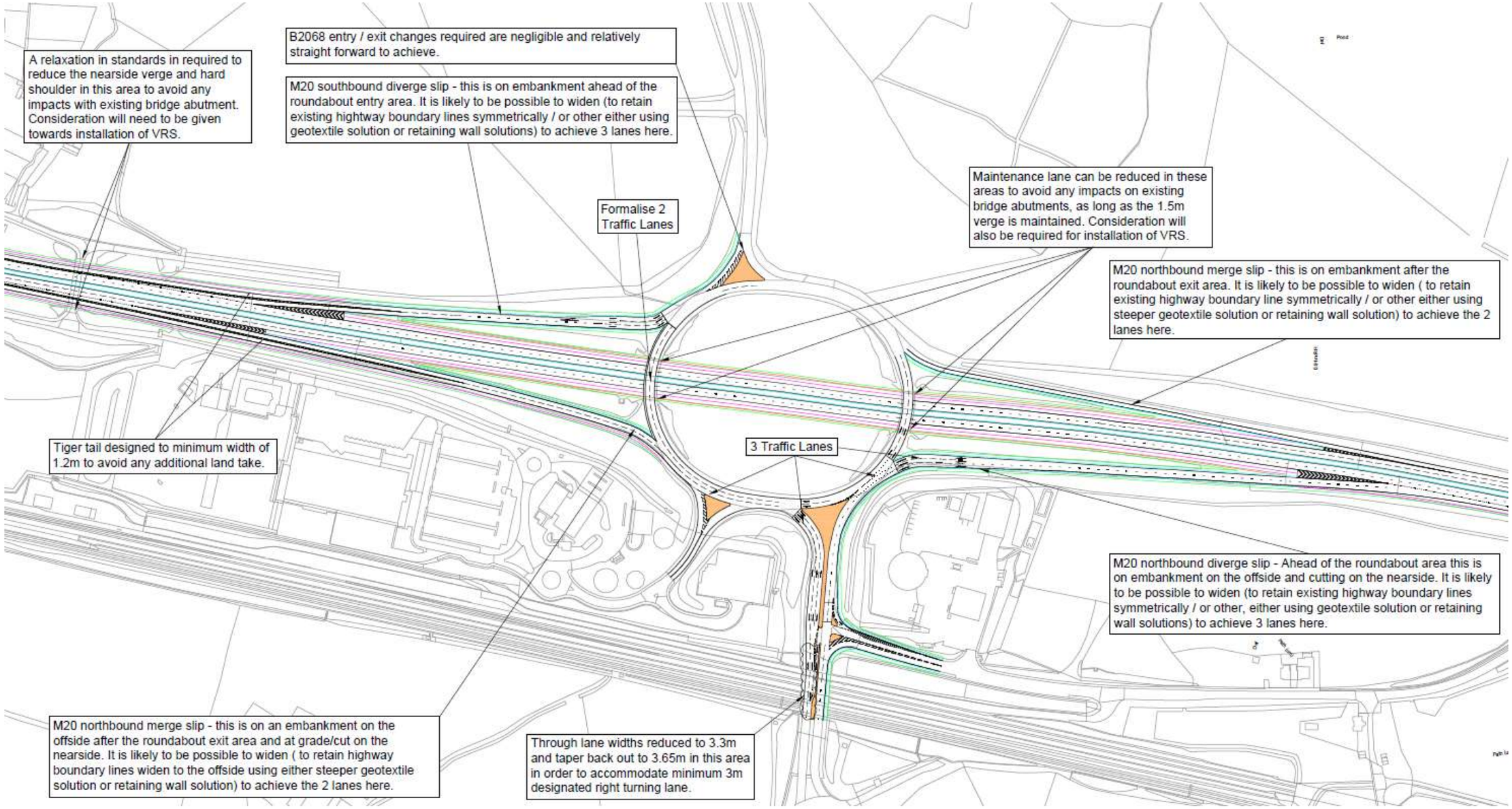
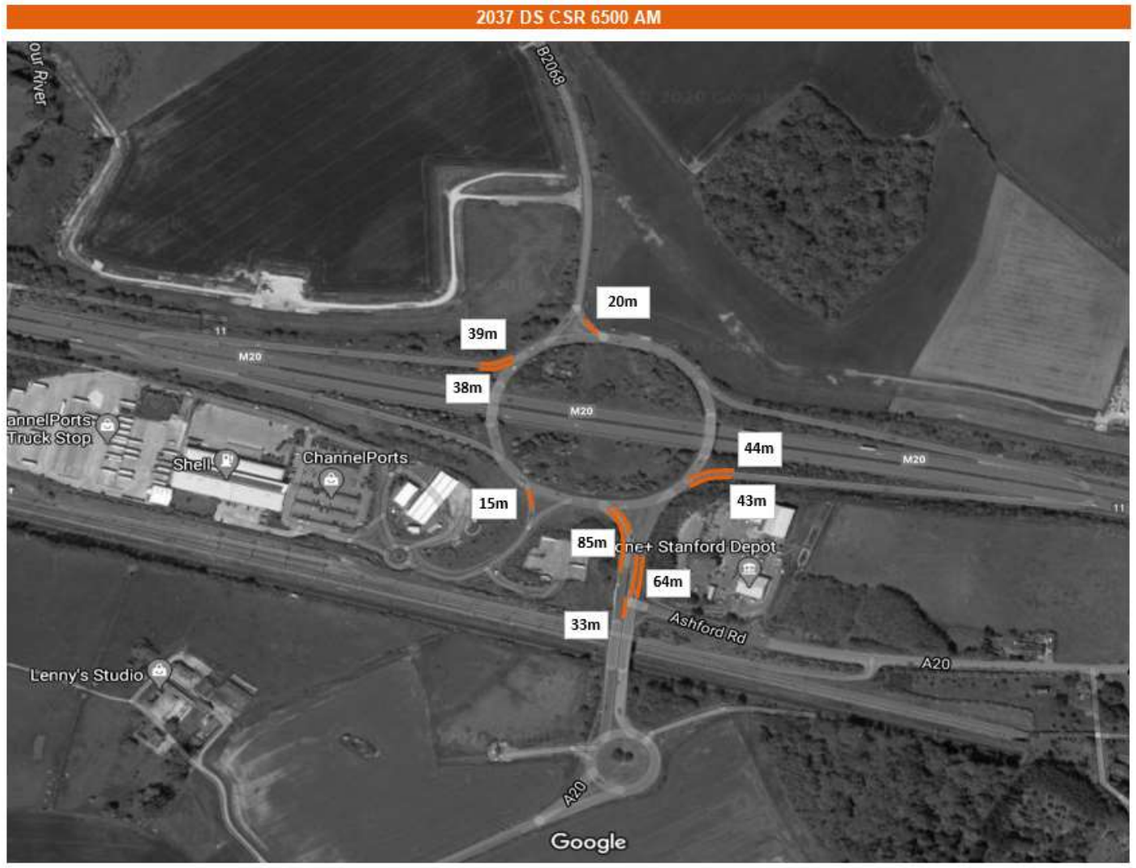
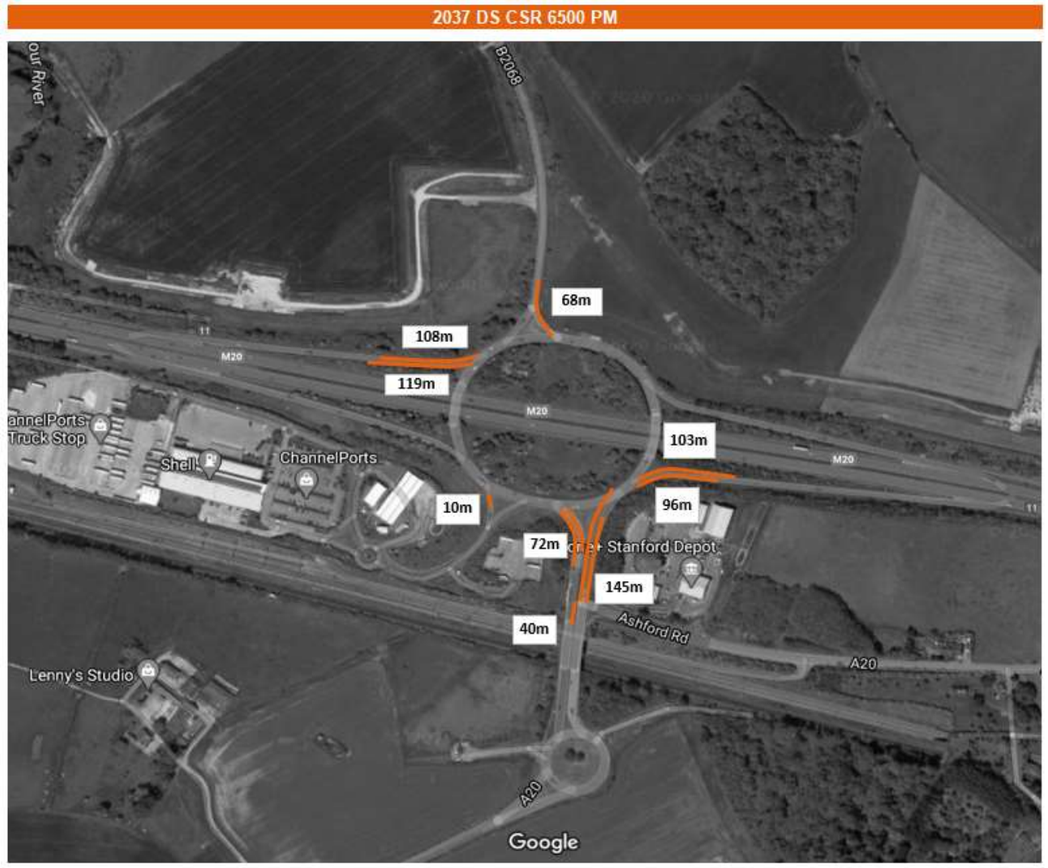


Image 9 – M20 Junction 11 Initial Mitigation 2037 Queue Length





6 M20 Junction 11a

6.1 Assessment Overview

General Description

M20 Junction 11a corresponds to the access and egress to the Eurotunnel terminal. The interchange is composed of:

- West facing ramps only;
- No nearby at-grade junctions on the local network; and
- The tunnel control gate when entering the facility.

It is our understanding that the entrance control gate has only been designed to process vehicles for custom controls in an EU environment. It is possible that more extensive custom control will result in the control gate creating blocking back queues on the M20.

Mitigation Requirements Identification

There are no mitigation requirements identified at Junction 11a, related to the impact of the Folkestone and Hythe Local Plan.

The merge and diverge calculations, however, highlight the fact that the traffic volume to and from the Eurotunnel terminal is low. A three-lane cross-section East of the interchange should be maintained in the 2037 scenario.

6.2 Merge / Diverge Assessment

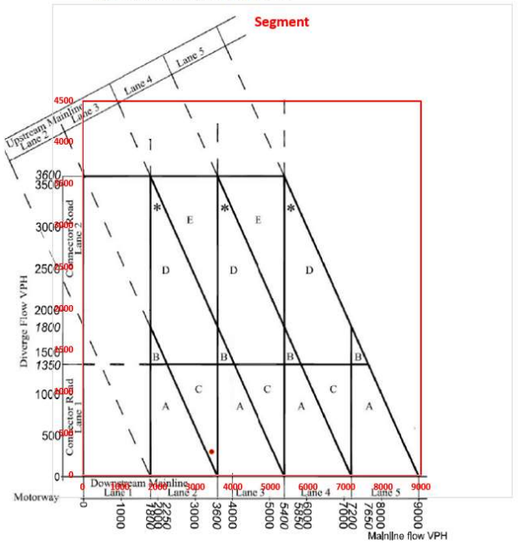
The merge and diverge analysis of M20 Junction 11a is presented in Table 9 on the next page.

6.3 Conclusion

In conclusion, M20 Junction 11a does not require mitigation from Folkestone and Hythe Local Plan DS CSR 6,500 scenario.

Table 9 – M20 Junction 11a – 2037 AM & PM Merge/Diverge Assessment

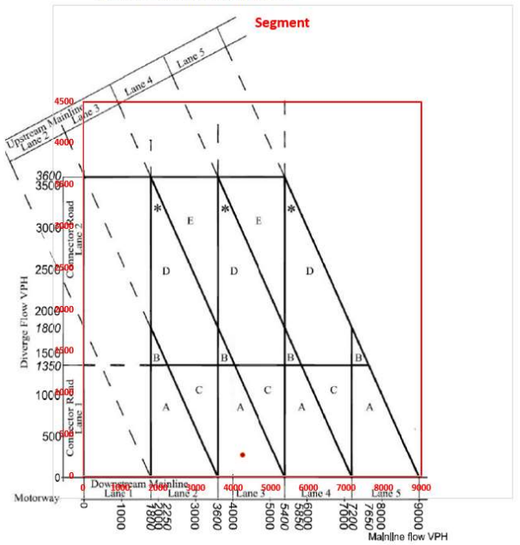
Figure 3.26b Motorway diverging diagram



M20 J11A EB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
3445	283

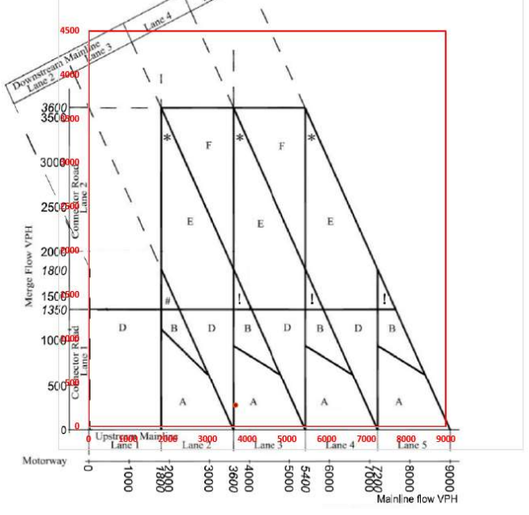
Figure 3.26b Motorway diverging diagram



M20 J11A EB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
4248	258

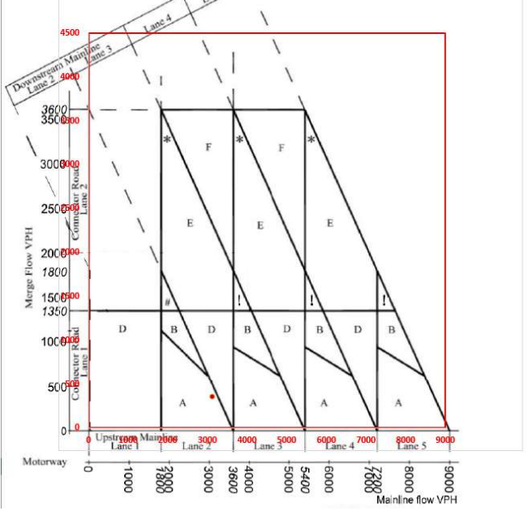
Figure 3.12b Motorway merging diagram



M20 J11A WB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
3711	246

Figure 3.12b Motorway merging diagram



M20 J11A WB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
3125	352

7 M20 Junction 12

7.1 Assessment Overview

General Description

M20 Junction 12 is a major motorway interchange with the following characteristics:

- West of Junction 12 the M20 is composed of 3 lanes in each direction, a lane drop/lane gain arrangement results in the motorway being two lanes in each direction to the east of the junction;
- The at-grade junction is a two-lane, non-signalised, roundabout;
- The junction immediately to the South of the roundabout interchange is being upgraded to include a right-turning movement from the Cheriton High Street (the West side road); and
- Highways England road network only extends to the motorway ramps.

Mitigation Requirements Identification

There are no mitigation requirements identified at Junction 12, traffic volumes are not changing significantly between the DM and the DS scenario. Traffic conditions remain free-flowing, except for the M20 westbound off-ramp approach at the roundabout that has reached capacity.

7.2 Merge / Diverge Assessment

The merge and diverge assessment is presented in Table 10 and 11. The key finding is:

- The motorway mainline East of Junction 12 should be 3 lanes and not 2 as in the existing situation.

Image 10 – M20 Junction 12 High-Level Mitigation Requirements

Table 10 – M20 Junction 12 – 2037 AM Merge/Diverge Assessment

Figure 3.26b Motorway diverging diagram

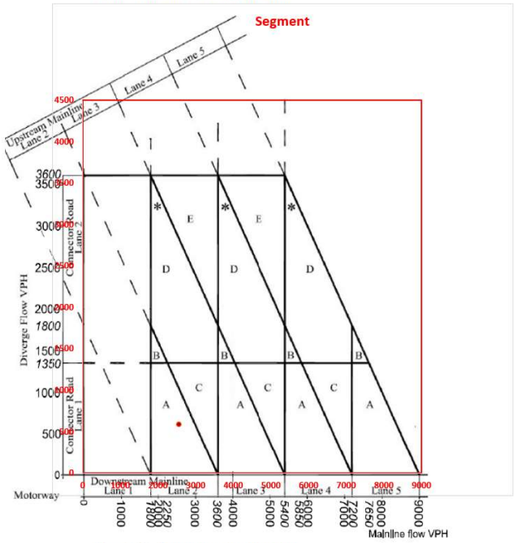
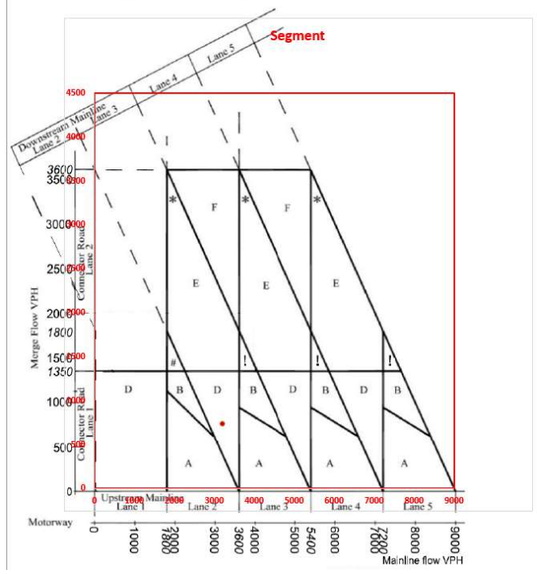


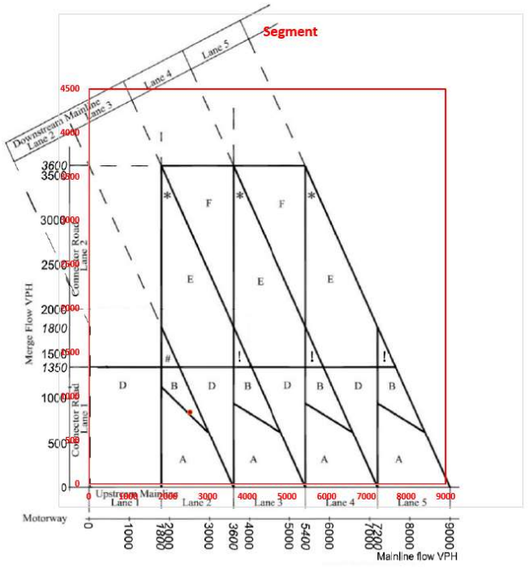
Figure 3.12b Motorway merging diagram



M20 J12 EB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2562	587

Figure 3.12b Motorway merging diagram



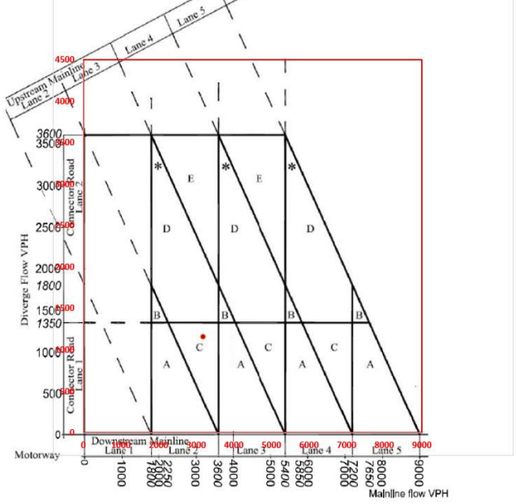
M20 J12 EB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2562	812

M20 J12 WB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
3194	741

Figure 3.26b Motorway diverging diagram



M20 J12 WB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
3194	1153

Table 11 – M20 Junction 12 – 2037 PM Merge/Diverge Assessment

Figure 3.26b Motorway diverging diagram

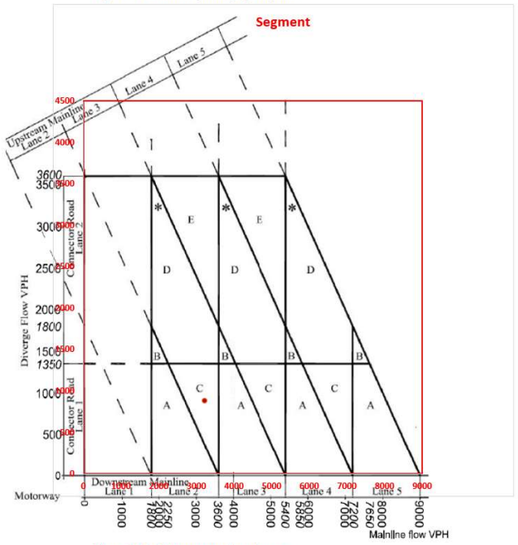
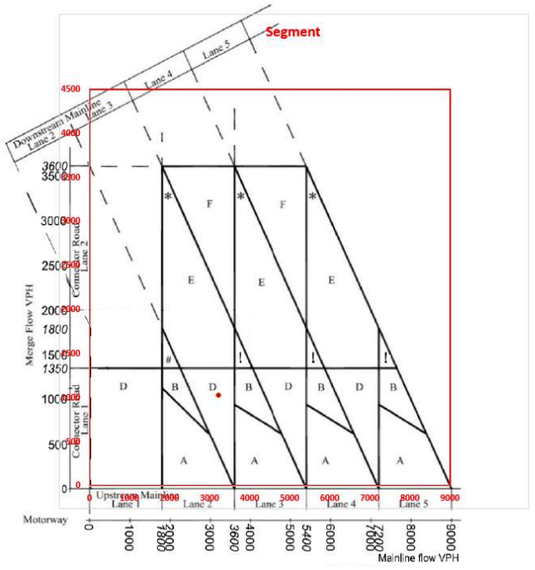


Figure 3.12b Motorway merging diagram

M20 J12 EB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
3228	882

Figure 3.12b Motorway merging diagram



M20 J12 EB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
3228	1031

M20 J12 WB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2838	607

Figure 3.26b Motorway diverging diagram

M20 J12 WB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2838	850

7.3 Traffic Demand Impact

Overall Changes in Traffic Volumes

The M20 Junction 20 comparison of total traffic at an at-grade junction in 2037 between the DM scenario (DS PPLP) and the DS scenario (DS CSR 6,500) is as follows (traffic flows in vehicles):

- AM Peak – DM (3869) / DS (3825), or a decrease of -44 (-1%)
- PM Peak – DM (3898) / DS (3858), or a decrease of -40 (-1%)

The overall change in traffic is negligible.

7.4 Existing Layout at Grade Traffic Assessment

Table 12 presents the traffic analysis of the existing junction layout in both 2037 DM and DS scenarios.

The key findings are:

- Traffic conditions remain similar between the two scenarios; and
- The junction is free-flowing, except for the M20 westbound approach that has reached capacity.

Table 12 – M20 Junction 12 – 2037 Existing Layout Assessment

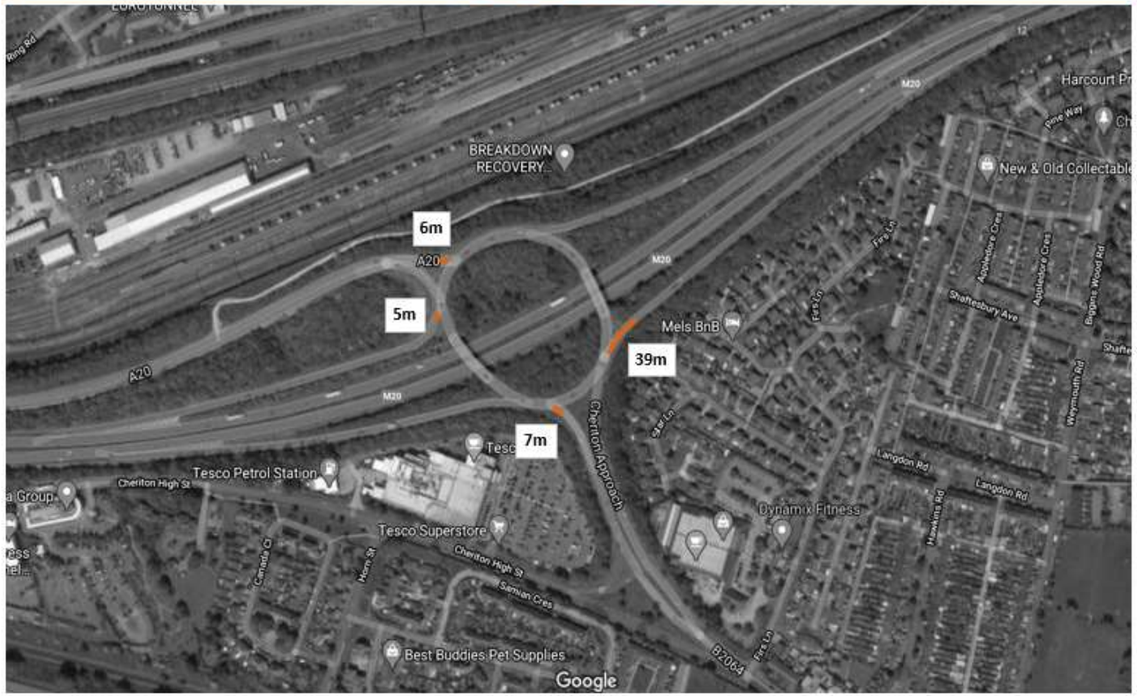
Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	DM 2037							
M20 Westbound	7.7	22.15	0.9	C	4.7	18.06	0.83	C
B2064 Cheriton	1.3	3.14	0.56	A	1.2	2.9	0.54	A
M20 Eastbound	0.9	5.11	0.46	A	3.3	12.57	0.77	B
A20 Ashford Road	1.1	4.55	0.53	A	3	12.56	0.76	B
Arm	DS 2037							
M20 Westbound	6.7	20.07	0.88	C	3.9	15.59	0.8	C
B2064 Cheriton	1.2	3.05	0.55	A	1.2	2.88	0.54	A
M20 Eastbound	0.9	5.12	0.48	A	3	11.28	0.75	B
A20 Ashford Road	1.1	4.54	0.52	A	2.6	11.02	0.73	B

7.5 Conclusion

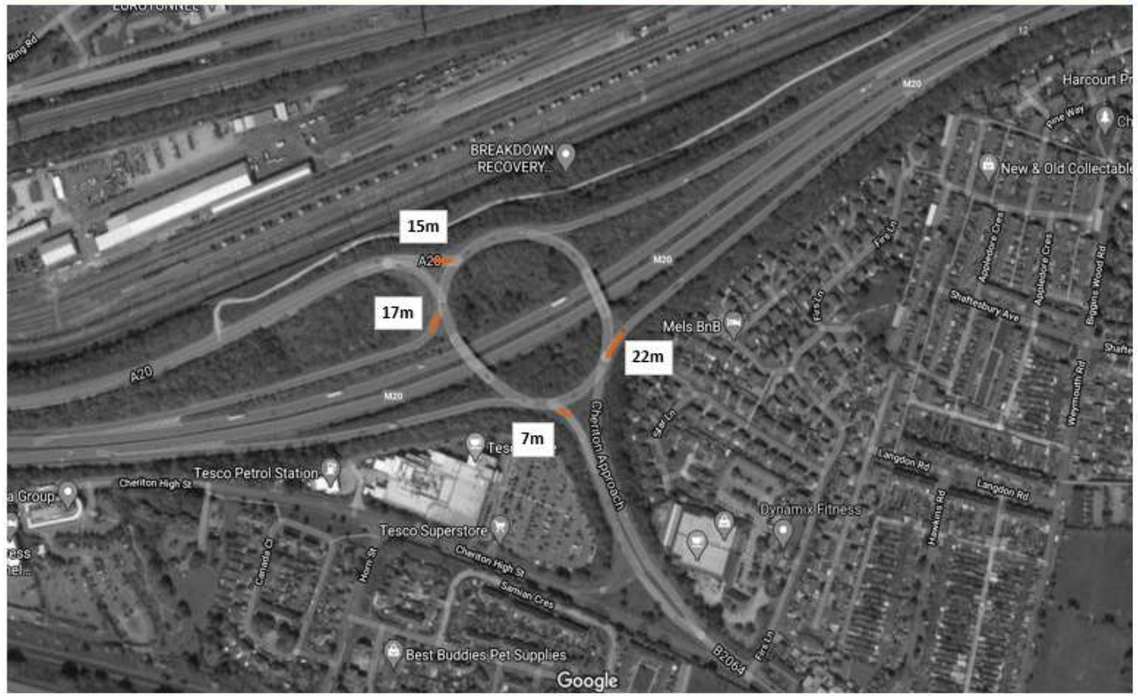
In conclusion, M20 Junction 12 does not require mitigation from Folkestone and Hythe Local Plan DS CSR 6,500 scenario.

Image 11 – M20 Junction 12 – 2037 Queue Length Comparison

2037 DS CSR 6500 AM



2037 DS CSR 6500 PM



8 M20 Junction 13

8.1 Assessment Overview

General Description

M20 Junction 13 is a major motorway interchange with the following characteristics:

- The M20 at this location is composed of 2 lanes in each direction;
- The at-grade junction is a dumbbell with two non-signalised roundabouts;
- The South roundabout includes several free-flow bypasses as part of the existing road layout; and
- Highways England road network includes the full interchange.

Mitigation Requirements Identification

To accommodate 2037 traffic requirement at M20 Junction 13 would include:

- The widening of the M20 to 3 lanes in each direction, West of M20 Junction 13;
- The widening of West facing ramps to 2 lanes, with an upgrade of the corresponding merge / diverge segments; and
- The upgrade of the South roundabout in the dumbbell interchange.

The above upgrades, however, are not required because of the Local Plan CSR 6,500 development, but because of background growth. Although the CSR 6,500 growth increases traffic demand at the roundabout to the South the actual traffic increase is marginal, but as this junction is already saturated, traffic congestion worsens disproportionately.

A traffic increase of 1% to 2% can be mitigated using minor operational improvements. It would typically require geometric improvements.

8.2 Merge / Diverge Assessment

The merge and diverge assessment is presented in Tables 13 and 14. The key finding is:

- The PM peak is the busiest peak;
- The DMRB maximum motorway design value is 1,800 vehicles per lane, but the capacity could, in some circumstances allow up to 2,000 vehicles per lanes depending on the percentage of HGVs. The traffic forecast on the M20 presents values higher than 2,000 vehicles per lane, suggesting an overestimation of the traffic forecast. The widening of the M20 to 3 lanes in each direction, West of M20 Junction 13 is the outcome suggested by the DMRB calculation as well as the road capacity; and
- The widening of West facing ramps to 2 lanes, with an upgrade of the corresponding merge / diverge segments.

Image 12– M20 Junction 13 High-Level Mitigation Requirements

Table 13 – M20 Junction 13 – 2037 AM Merge/Diverge Assessment

Figure 3.26b Motorway diverging diagram

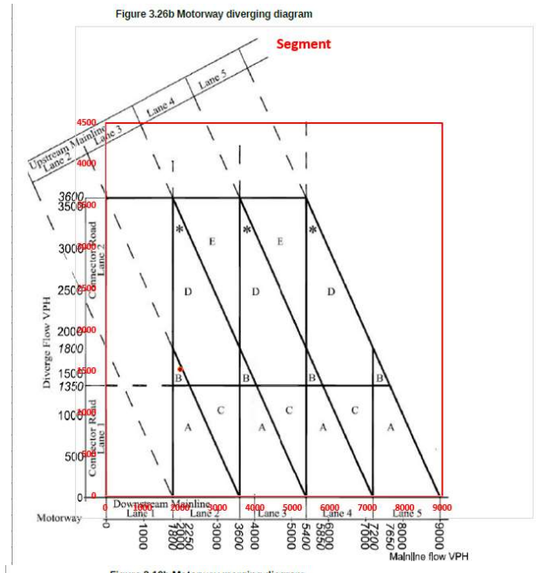
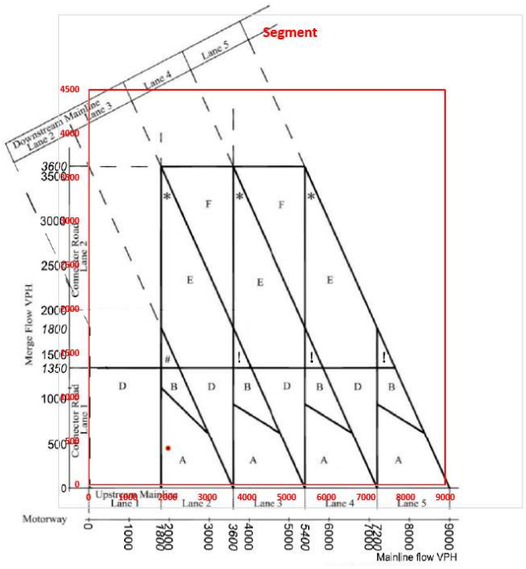


Figure 3.12b Motorway merging diagram

M20 J13 EB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2015	1525

Figure 3.12b Motorway merging diagram



M20 J13 EB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2015	413

M20 J13 WB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2432	2045

Figure 3.26b Motorway diverging diagram

M20 J13 WB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2432	739

Table 14 – M20 Junction 13 – 2037 PM Merge/Diverge Assessment

Figure 3.26b Motorway diverging diagram

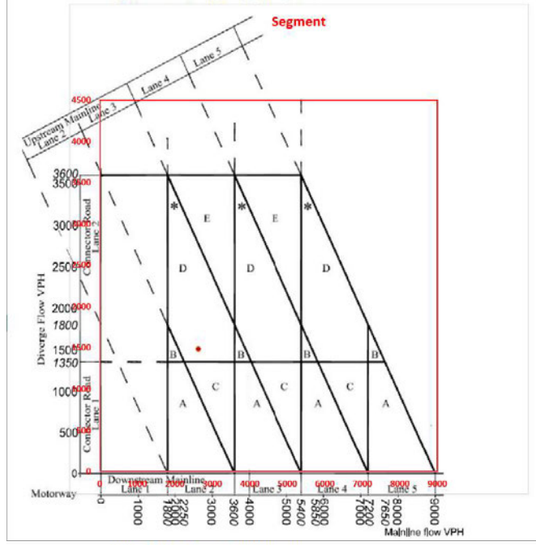
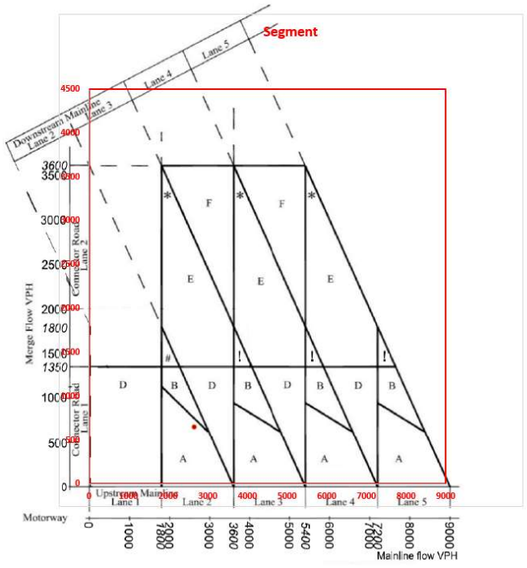


Figure 3.12b Motorway merging diagram

M20 J13 EB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2643	1484

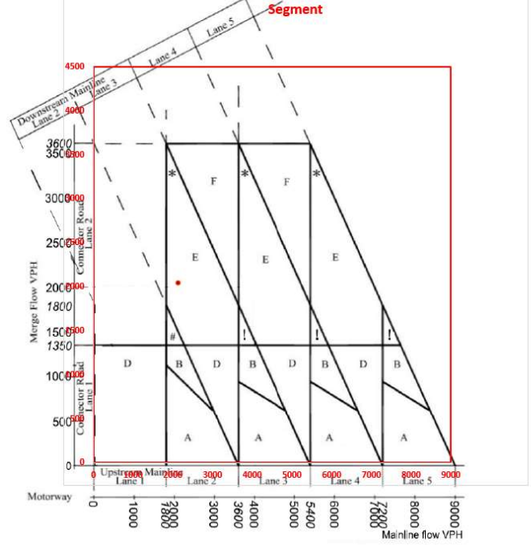
Figure 3.12b Motorway merging diagram



M20 J13 EB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2643	637

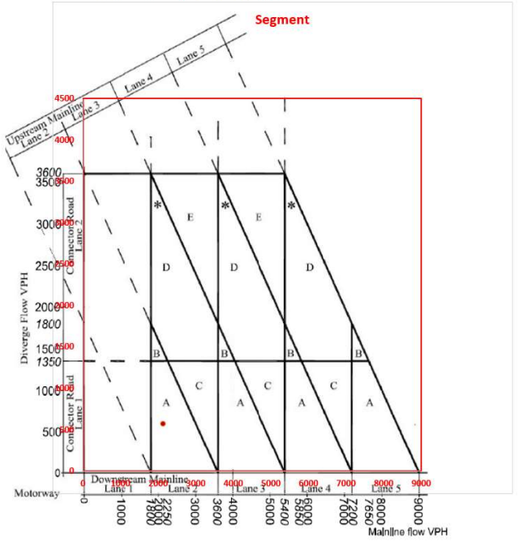
Figure 3.12b Motorway merging diagram



M20 J13 WB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2141	2037

Figure 3.26b Motorway diverging diagram



M20 J13 WB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2141	567

8.3 Traffic Demand Impact

Overall Changes in Traffic Volumes

M20 Junction 13 South roundabout comparison of total traffic at an at-grade junction in 2037 between the DM scenario (DS PPLP) and the DS scenario (DS CSR 6,500) is as follows (traffic flows in vehicles):

- AM Peak – DM (5504) / DS (5581), or an increase of 77 (1%)
- PM Peak – DM (5531) / DS (5636), or an increase of 105 (2%)

The above analysis demonstrates that a very small level of traffic volume from the DS CSR 6,500 is being routed via Junction 13 interchange.

8.4 Existing Layout at Grade Traffic Assessment

Table 15 shows the traffic delay at the non-signalised South roundabout. Three out of four approaches are saturated in both the AM and PM peak. Such a degree of saturation is not surprising considering the very high volume of traffic at the junction.

A physical junction improvement will be required at the junction to accommodate 2037 traffic demand. Moreover, traffic delays are very imbalanced. A signalised option at the junction should be considered to help to balance delays at the junction, but it is not a substitute to physical junction improvements.

Table 15 – M20 Junction 13 Castle Hill Interchange South – 2037 Existing Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	DM 2037							
M20 Westbound Entry Only	1.9	8.42	0.66	A	1	5.52	0.5	A
Churchill Avenue	101.2	202.1	1.14	F	13.2	33	0.95	D
Cherry Garden Avenue	515.5	1266.95	1.5	F	724.2	1641.66	1.69	F
A20 Castle Hill Bridge	17.5	42.97	0.97	E	14.8	36.47	0.95	E
Arm	DS 2037							
M20 Westbound Entry Only	1.9	8.45	0.66	A	0.9	5.51	0.49	A
Churchill Avenue	127.1	276.29	1.18	F	24.4	56.96	0.99	F
Cherry Garden Avenue	584.5	1566.36	1.55	F	862.6	2000.96	1.81	F
A20 Castle Hill Bridge	51.5	101.83	1.04	F	25.1	56.39	0.99	F

8.5 Conclusion

Significant highway improvements will be required at M20 Junction 13. These improvements, however, should be attributed to background traffic growth and not to the DS CSR 6500 scenario. The Local Plan additional 1% to 2% traffic increase can be mitigated using minor operational improvements.

Moreover, clarification about the potential widening of the M20 should be provided to the team preparing the local junction upgrade. Traffic could block back from the M20 into the local road network and queuing space should be provided to prevent a network gridlock.

Image 13 – M20 Junction 13 – 2037 Queue Length Comparison

2037 DS PPLP 6500 AM

2037 DS PPLP 6500 PM

2037 DS CSR 6500 AM

2037 DS CSR 6500 PM

9 A20 / Spitfire Way / Alkham Valley Road

General Description

A20 / Spitfire Way / Alkham Valley Road junction is a major motorway interchange with the following characteristics:

- The M20 at this location is composed of 2 lanes in each direction;
- A number of physical constraints severely restrict geometric alterations at this interchange, including:
  - The presence of a tunnel West of the interchange, impacting the ability to extend merge / diverge segments;
  - The presence of a substation, requiring access to the South of the carriageway;
  - The presence of bridge structures;
  - The topography of the site, with significant elevations on the ramps; and
  - The overbridge width can only accommodate one lane in each direction.
- Highways England road network includes most of the interchange, except for Canterbury Road/Alkham Valley.

Mitigation Requirements Identification

To accommodate 2037 traffic requirement at A20 / Spitfire Way / Alkham Valley Road junction would include:

- A set of geometric upgrades at the junctions, in particular for the A-Road ramp approaches; and
- Probably an improved signage and road safety scheme to limit the risk of blocking back queues and incidents on the A20, that would potentially result from lane change manoeuvres on the A20 mainline.

Further upgrades could be considered, however, the presence of only two lanes on the A20, local site constraints as well as the balanced traffic volume on the corridor might suggest them to be not necessary, despite DMRB standard requirements.

Moreover, the DS CSR 6,500 would only account for up to 6% to 7% traffic increase at local junctions. Such traffic increase could typically be mitigated using limited geometric improvements and operational measures.

9.1 Merge / Diverge Assessment

The merge and diverge assessment is presented in Tables 16 and 17. The key finding is:

- The dominant traffic seems tidal, from the local area towards the West in the morning, and back in the afternoon;
- The traffic staying on the motorway mainline never requires more than one lane, and overall, the traffic density on the A20 at this location is low;
- There are no lane restrictions for HGVs in the tunnel;
- The projected traffic volume on the ramps can be high and would require two lanes, however, a single lane would have sufficient capacity, and a two-lane ramp on a 2 lane mainline would require extended merge diverge segments.

Image 14 – A20 / Spitfire Way / Alkham Valley Road High-Level Mitigation Requirements

Table 16 – A20 / Spitfire Way / Alkham Valley Road– 2037 AM Merge/Diverge Assessment

Figure 3.26b Motorway diverging diagram

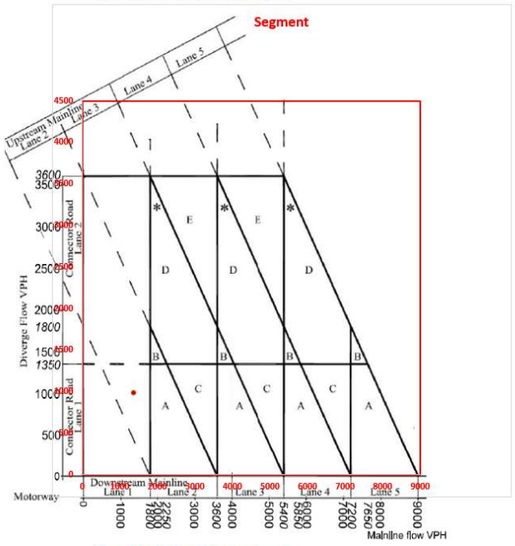
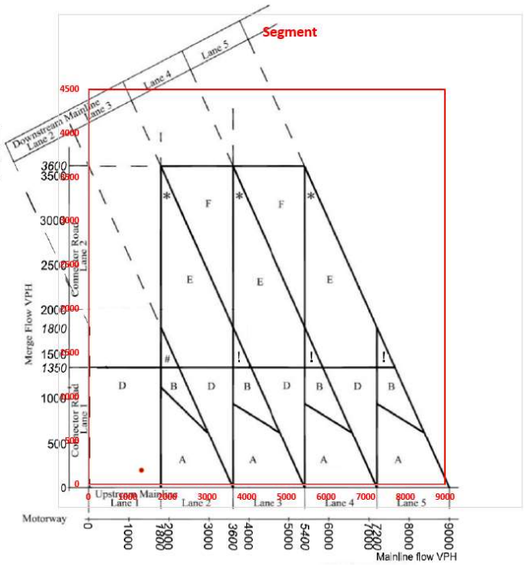


Figure 3.12b Motorway merging diagram

A20 Spitfire EB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
1356	990

Figure 3.12b Motorway merging diagram



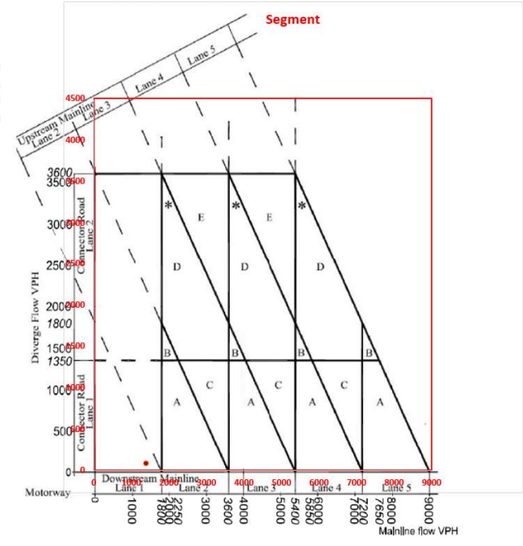
A20 Spitfire EB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
1356	154

A20 Alkham WB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
1392	1785

Figure 3.26b Motorway diverging diagram



A20 Alkham WB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
1392	81

Table 17 – A20 / Spitfire Way / Alkham Valley Road– 2037 PM Merge/Diverge Assessment

Figure 3.26b Motorway diverging diagram

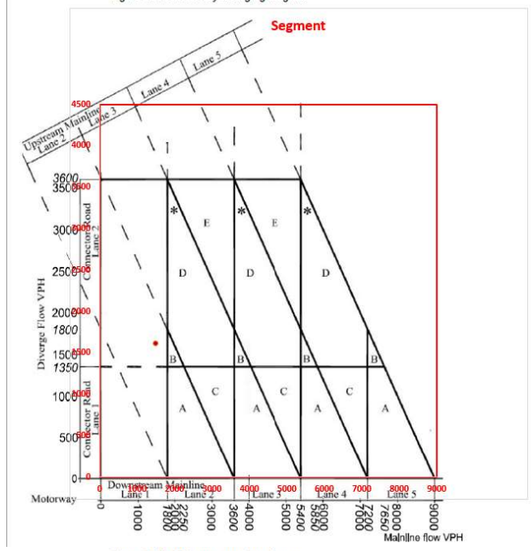
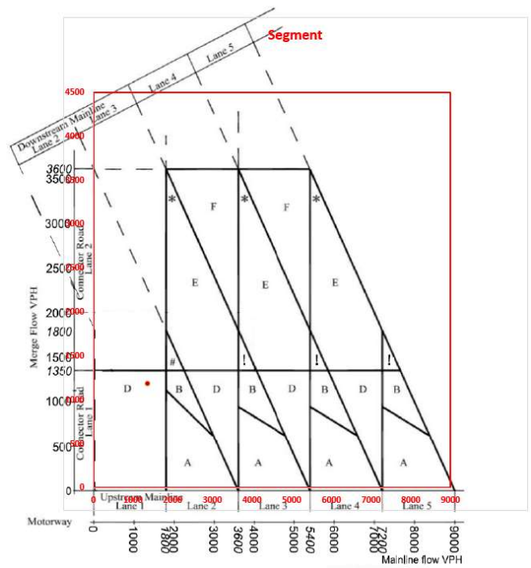


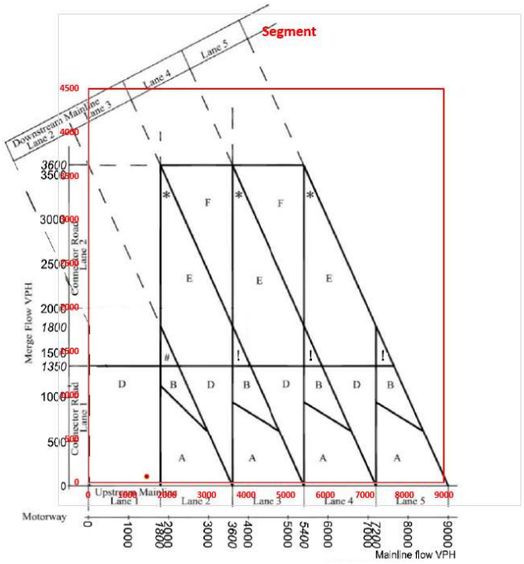
Figure 3.12b Motorway merging diagram



A20 Spitfire EB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
1497	1619

Figure 3.12b Motorway merging diagram



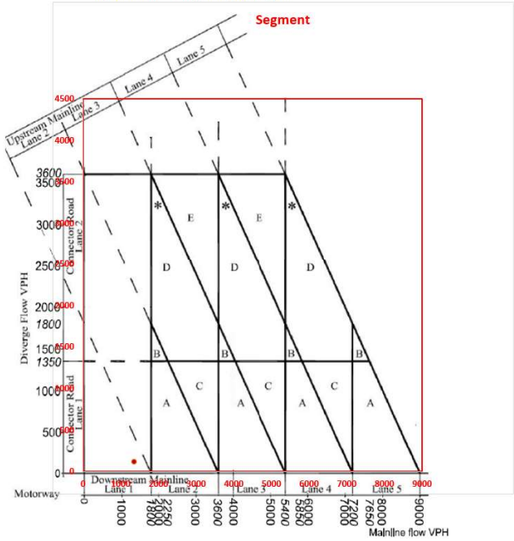
A20 Spitfire EB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
1497	67

A20 Alkham WB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
1361	1177

Figure 3.26b Motorway diverging diagram



A20 Alkham WB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
1361	116

9.2 Traffic Demand Impact

The A20 / Spitfire Way / Alkham Valley Road interchange is composed of three junctions. As indicated below, the Spitfire Way junction to the North is more impacted than others. This is logical as most of the development is taking place North of the A20.

Overall Changes in Traffic Volumes (in Veh.) – Spitfire Way

The comparison of total traffic at an at-grade junction in 2037 between the DM scenario (DS PPLP) and the DS scenario (DS CSR 6,500) is as follows:

- AM Peak – DM (3363) / DS (3585), or an increase of 222 (6%)
- PM Peak – DM (3829) / DS (4069), or an increase of 240 (6%)

Overall Changes in Traffic Volumes (in Veh.) – Alkham Valley

The comparison of total traffic at an at-grade junction in 2037 between the DM scenario (DS PPLP) and the DS scenario (DS CSR 6,500) is as follows:

- AM Peak – DM (2491) / DS (2523), or an increase of 32 (1%)
- PM Peak – DM (2032) / DS (2184), or an increase of 152 (7%)

Overall Changes in Traffic Volumes (in Veh.) – Canterbury Road/Alkham Valley

The comparison of total traffic at an at-grade junction in 2037 between the DM scenario (DS PPLP) and the DS scenario (DS CSR 6,500) is as follows:

- AM Peak – DM (3231) / DS (3238), or an increase of 7 (0%)
- PM Peak – DM (3279) / DS (3385), or an increase of 106 (3%)

9.3 Existing Layout at Grade Traffic Assessment

Table 18 shows the traffic delay at the non-signalised North roundabout. The four approaches are unevenly saturated, however, typically two or more approaches have reached capacity at the junction at each peak hour.

Road geometric improvements will be required at the junction, which will have to be combined with a signalised (or part-signalised) solution to ensure the absence of blocking back queues on the A20.

Table 18 – Spitfire Way-White Horse Hill-A260 – 2037 Existing Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	DM 2037							
White House Hill	2.1	14.93	0.68	B	0.7	6.29	0.4	A
A20 Slip Roads	20.1	82.1	1	F	289.4	742.35	1.45	F
Canterbury Rd	1.2	5.57	0.54	A	3.6	12.69	0.79	B
Spitfire Way	91.5	191.54	1.12	F	3.8	12.97	0.8	B
Arm	DS 2037							
White House Hill	2.1	15.16	0.68	C	0.9	8.04	0.47	A
A20 Slip Roads	116.8	447.95	1.25	F	503.7	1350.49	1.75	F
Canterbury Rd	1.2	5.74	0.54	A	2.8	10.01	0.74	B
Spitfire Way	119.7	277.65	1.15	F	9.3	28	0.92	D

Image 15 – Spitfire Way-White Horse Hill-A260 – 2037 Queue Length Comparison

2037 DS PPLP 6500 AM

2037 DS PPLP 6500 PM

2037 DS CSR 6500 AM

2037 DS CSR 6500 PM

Table 19 shows the traffic delay at the non-signalised South roundabout. The three approaches are unevenly saturated, with an overall degree of saturation suggesting the queueing could be re-balanced using traffic signals. Internal storage capacity might prove challenging.

Due to the arm configuration at the junction, free-flowing junction bypasses can also be envisaged.

Table 19 – Alkham Valley Rd-A20 Slip – 2037 Existing Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	DM 2037							
A20 Offslip	0	1.95	0.05	A	0.1	2.26	0.08	A
AlkamValley Rd (East)	1.6	5.05	0.62	A	0.4	2.81	0.3	A
AlkamValley Rd (South)	152.7	390	1.23	F	37.8	83.81	1.02	F
Arm	DS 2037							
A20 Offslip	0	1.92	0.05	A	0.1	2.15	0.07	A
AlkamValley Rd (East)	1.4	4.75	0.59	A	0.4	2.76	0.29	A
AlkamValley Rd (South)	186	488.43	1.28	F	120.4	240.9	1.14	F

Image 16 – Alkham Valley Rd-A20 Slip – 2037 Queue Length Comparison

2037 DS PPLP 6500 AM

2037 DS PPLP 6500 PM

2037 DS CSR 6500 AM

2037 DS CSR 6500 PM

Table 20 shows a completely saturated three-arm junction on the A260. The development of a large signalised junction, or a large roundabout is required at this location. The carriageway width restriction on the bridge North of the junction represents a major constraint limiting opportunities for junction improvements.

Signalising the existing junction only will not be sufficient to accommodate future traffic demand.

Table 20 – Canterbury Rd-A260 Alkham Valley Rd – 2037 Existing Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	DM 2037							
Stream B-C	215.7	2545.12	1E+10	F	163.8	2636.14	1E+10	F
Stream B-A	33.9	2622.47	1E+10	F	43.3	2718.02	1E+10	F
Stream C-B	49.6	1492.51	2	F	56.9	783.24	1.67	F
Arm	DS 2037							
Stream B-C	206.5	29190.2	1E+10	F	158.4	3416.15	1E+10	F
Stream B-A	32.2	33643.02	1E+10	F	41.7	3496.55	1E+10	F
Stream C-B	54	1965.07	2.33	F	78.8	2048.83	2.36	F

9.4 Conclusion

In conclusion, the merge / diverge arrangement would require upgrading using DMRB design standards, but from a congestion standpoint, it would not result in saturated traffic conditions. A safety assessment would, however, be required to ensure last-minute lane change manoeuvres are mitigated.

Regarding the three at-grade junctions of the A20 / Spitfire Way / Alkham Valley Road interchange the key elements are:

- Physical junction interventions will be required, combined with the signalisation of the junctions; and
- The Canterbury Road-A260 Alkham Valley Road junction is constrained by the bridge just North of it and might not be able to accommodate a sufficient junction upgrade.

In practice, several alternative routings exist in the immediate vicinity of the junction, and local road users are likely to bypass the overbridge.

The DS CSR 6,500 scenario, however, is having a very limited contribution to the above-described traffic conditions. Mitigating its own impact would be limited to the development of minor junction improvements and operational solutions.

Image 17 – Canterbury Rd-A260 Alkham Valley Rd – 2037 Queue Length Comparison

2037 DS PPLP 6500 AM

2037 DS PPLP 6500 PM

2037 DS CSR 6500 AM

2037 DS CSR 6500 PM

10 Overall Conclusion

In conclusion, the purpose of the study is to enable Folkestone and Hythe District Council to agree on a Statement of Common Ground regarding requirements for highway schemes to mitigate impact related to the Folkestone and Hythe Local Plan on the Highways England road network, or the further work required to identify those requirements.

The methodology in the AECOM Shepway Transport Model has been retained, and the model updated using the latest available information for the DS CSR 6,500 2037 scenario.

The study area has been confirmed to be limited to the Highways England road network within Folkestone and Hythe District Council following a review of traffic volumes and traffic conditions in the Ashford area.

Overall, the following junctions require physical upgrades by 2037:

- M20 Junction 11;
- M20 Junction 13; and
- A20 / Spitfire Way / Alkham Valley Road interchange.

M20 Junction 11 requires substantial junction upgrades, directly linked to background traffic growth and to the Otterpool Park development. The traffic impact from DS CSR 6,500 on the other two junctions, however, is limited. The traffic impact is mostly the result of these junction being already saturated in the future.

APPENDIX A

Available Input Data

1. AECOM, Briefing Note: Shepway Transport Model Update – Review & Findings, December 2017;
2. AECOM, Shepway Transport Model – Merge and Diverge Appraisal (with spreadsheet model), September 2018;
3. AECOM, Shepway Transport Model, Local Junction Modelling and outputs; November 2017;
4. Taylor Wimpey, Cheriton High Street Junction, committed scheme drawing, May 2018;
5. Email correspondence from Highways England to Folkestone & Hythe District Council dated October 2018 to confirm that no mitigation would be required for the 2031 Do Something scenario for the Places and Policies Local Plan (additional modelling scenarios);
6. Arcadis, Otterpool Park – Transport Assessment, February 2019 (with supporting information and traffic models);
7. Folkestone & Hythe District Council and Highways England, Statement of Common Ground, January 2020;
8. Highways England, Folkestone and Hythe District Core Strategy Review Examination Submission to the Examination by Highways England, July 2020; and
9. Folkestone & Hythe District Council, Core Strategy Review – Inspector's Matters, July 2020.

APPENDIX B

Ashford Traffic Analysis

1. Junction 10a scheme description;
2. WebTRIS data; and
3. Ashford junctions DMRB merge diverge analysis.

APPENDIX C

Traffic Demand Model

1. Baseline demand analysis;
2. Traffic demand models.

APPENDIX D

Traffic Analysis

1. M20 Junction 11 traffic analysis;
2. M20 Junction 11a traffic analysis;
3. M20 Junction 12 traffic analysis;
4. M20 Junction 13 traffic analysis; and
5. A20 / Spitfire Way / Alkham Valley Road traffic analysis.

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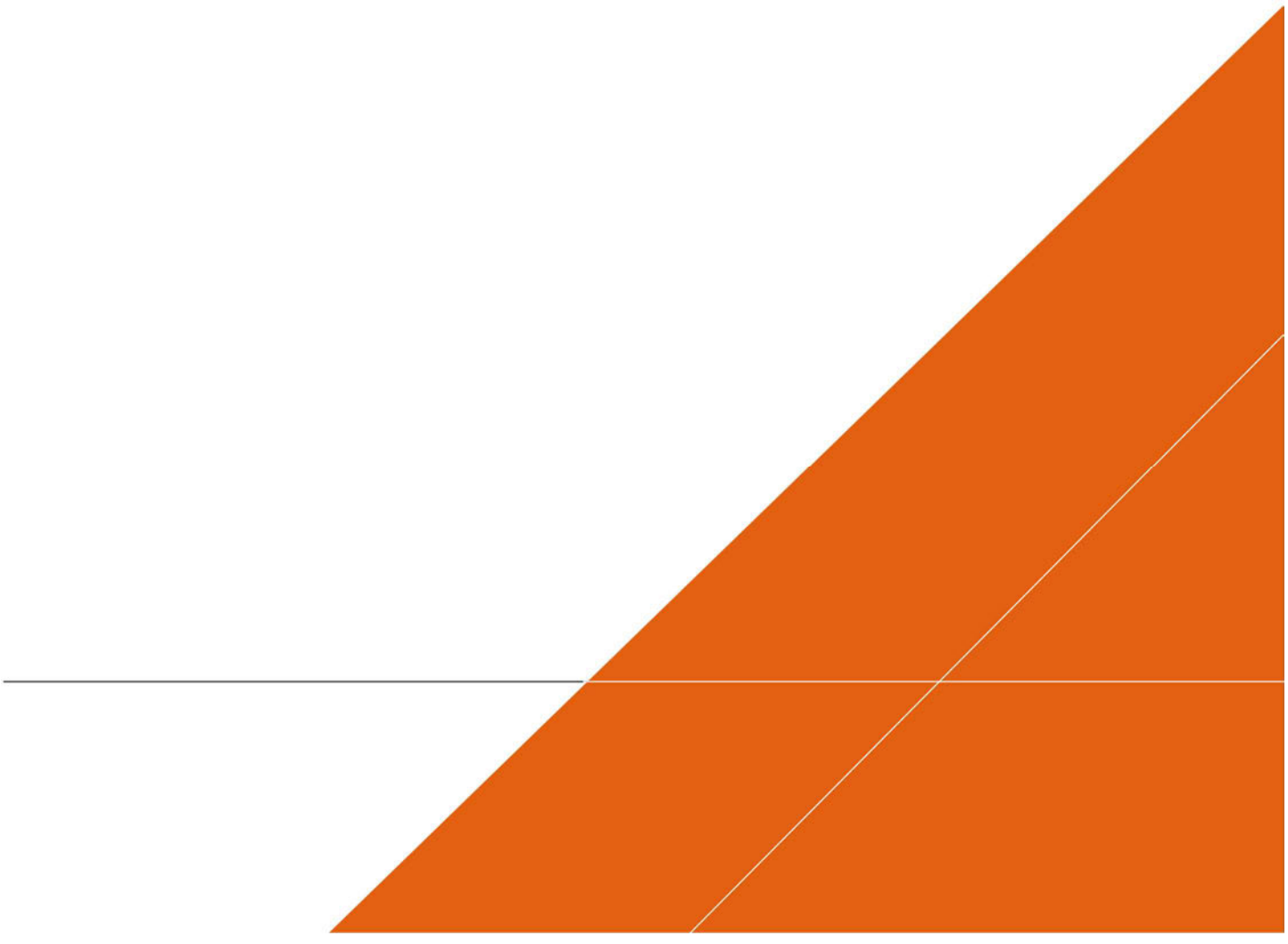
APPENDIX 8: TRAFFIC REPORT (SECOND DRAFT)

ARCADIS Design & Consultancy for natural and built assets

FOLKESTONE & HYTHE DISTRICT COUNCIL

Local Plan Traffic Analysis
Highways England Road Network

NOVEMBER 2020



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1 VERSION CONTROL

Version	Date	Author	Checker	Approver	Changes
1.0	03/10/2020	[redacted]			Initial Draft
2.0	30/11/2020				Second Draft

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1.3 Traffic Demand Model

APPENDIX D

1.4 Traffic Analysis

APPENDIX E

1.5 M20 Junction 11 Design

1 Introduction

1.1 Background

At the request of Folkestone and Hythe District Council, Arcadis Consulting (UK) Ltd (Arcadis) is providing support to the District Council for their Core Strategy Review. The support being provided as described in this note relates to the Statement of Common Ground between Folkestone and Hythe District Council and Highways England and, specifically, the submission made to the examination by Highways England in a letter dated 3rd July 2020.

Arcadis held a meeting with Folkestone and Hythe District Council and Highways England on Monday the 14th of September to discuss the scope of work required to work towards a Statement of Common Ground between Folkestone and Hythe District Council and Highways England. Highways England expressed the view that they require further information to be able to support the local plan at the initial hearing in mid-November 2020, which is now postponed until December 2020.

A second meeting took place on Friday 25th of September, between Arcadis, Folkestone and Hythe District Council and Highways England. This meeting clarified the requirement for traffic investigations to support Highways England to determine the impact of the Folkestone and Hythe Local Plan on its road network. Since then, further meetings have been held between all three parties on Thursday 1st, Wednesday 7th, Monday 12th and Friday 30th of October to discuss progress towards the agreement of the scope, data sources and assumptions required for the study.

1.2 Purpose

The purpose of the study is to enable Folkestone and Hythe District Council to agree on a Statement of Common Ground regarding requirements for highway schemes to mitigate impact related to the Folkestone and Hythe Local Plan on the Highways England road network, or the further work required to identify those requirements.

It is acknowledged that further supporting information will be provided after this study, including the scheme costing.

1.3 Report Structure

This document is composed of:

- Section 2, presenting a review of previous data;
- Section 3, detailing the process for the selection of the study area;
- Section 4, presenting the traffic demand preparation;
- Section 5, summarising the analysis for M20 Junction 11;
- Section 6, summarising the analysis for M20 Junction 11a;
- Section 7, summarising the analysis for M20 Junction 12;
- Section 8, summarising the analysis for M20 Junction 13;
- Section 9, summarising the analysis for A20 / Spitfire Way / Alkham Valley Road; and
- Section 10, presenting the Otterpool Park Transport Assessment; and
- Section 11, presenting the overall conclusion.

2 Previous Data Review

2.1 Available Data

The data sources readily available as input to this study are available in Appendix A and consist of:

- AECOM, *Briefing Note: Shepway Transport Model Update – Review & Findings*, December 2017;
- AECOM, *Shepway Transport Model – Merge and Diverge Appraisal (with spreadsheet model)*, September 2018;
- AECOM, *Shepway Transport Model, Local Junction Modelling and outputs*; November 2017;
- Taylor Wimpey, *Cheriton High Street Junction, committed scheme drawing*, May 2018;
- Email correspondence from Highways England to Folkestone & Hythe District Council dated October 2018 to confirm that no mitigation would be required for the 2031 Do Something scenario for the Places and Policies Local Plan (additional modelling scenarios);
- Arcadis, *Otterpool Park – Transport Assessment*, February 2019 (with supporting information and traffic models);
- Folkestone & Hythe District Council and Highways England, *Statement of Common Ground*, January 2020;
- Highways England, *Folkestone and Hythe District Core Strategy Review Examination Submission to the Examination by Highways England*, July 2020; and
- Folkestone & Hythe District Council, *Core Strategy Review – Inspector's Matters*, July 2020.

Further information can be found as required on the Folkestone and Hythe District Council Local Plan website (https://folkestone-hythe.gov.uk/planning/planning-policy/local-map/examination-news-and-updates).

2.2 Traffic Demand Consistency with the Previous Stage

Two previous traffic models were available at the inception of this study. These were:

- The AECOM Shepway transport model, and
- The VISUM cordon model prepared as part of the Otterpool Park transport assessment.

For consistency with the existing Statement of Common Ground between Folkestone & Hythe District Council and Highways England (2020), it was decided to update the key assumptions of the 2017 AECOM Shepway transport model, rather than using the information available in the Otterpool Park transport assessment.

The Otterpool Park transport assessment information was, however, used for the traffic assessment within Ashford, as it is outside the Shepway model.

Following a detailed review of the AECOM Shepway transport model, the following information was identified as requiring an update:

- The Local Plan development housing and employment projections;
- The TEMPro factors, to account for the latest version of the database;
- The M20 motorway growth factor, to be superseded by an independent factor, accounting for through traffic values;
- The merge/diverge calculation methods to account for the 2020 DMRB; and
- The introduction of the junction upgrades immediately South of M20 Junction 12 (U-turning movement removal in the interchange).

No updates were undertaken of the Shepway transport model traffic assignment on the road network or individual development description and trip generation ratios.

3 Study Area Selection

3.1 Identifying Highways England Road Network

Folkestone and Hythe District Council Location

As shown in Image 1, Folkestone and Hythe District Council is located on the coast of the English Channel and includes the port town of Folkestone and the coastal market town of Hythe. Both towns are located within the northern half of the district. To the West is the town of Ashford, and to the East is the port of Dover.

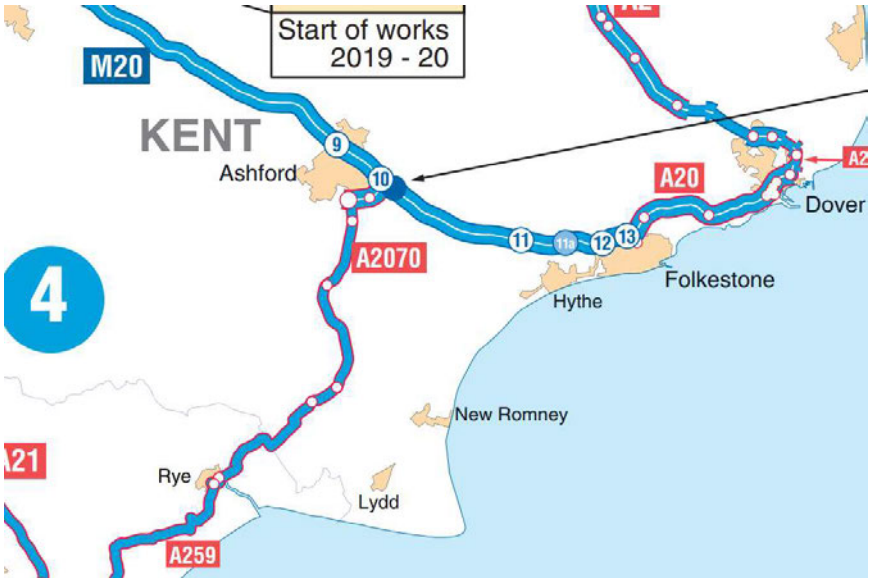
Image 1 – Folkestone and Hythe District Council Location

Highways England Road Network within the Area

Image 2 shows the Highways England road network in the area. It consists of:

- The M20, passing through Ashford, linking it to Folkestone;
- The A20, prolonging the M20 from Folkestone to Dover; and
- The A2070, linking Ashford to Rye.

Image 2 – Highways England Road Network



3.2 Channel Crossing

The M20 and A20 correspond to a key road transport corridor giving access to both:

- Dover port ferry terminal; and
- The Eurotunnel terminal.

Both facilities generate a significant volume of HGVs on the Highways England road network. Beyond the large volume of HGVs, traffic disruptions are anticipated concerning new customs rules expected to be implemented in late 2020.

3.3 Local Plan Description

2037 Local Plan in Numbers

Table 1 shows the Local Plan proposed development description for 2037 per housing and employment, based on the latest information available. This table also presents the projection used by AECOM in 2017. The comparison of the two datasets shows an increase in overall housing. Employment projections, on the other hand, remain stable.

Table 1 – 2037 Local Plan Housing and Employment Projections

From	To	2017 Data		2020 Data	
		Housing	Jobs	Housing	Jobs
2016	2016	49843	51458	51164	48200
2016	2017	50423	51760	52311	48530
2016	2018	51002	52062	52800	48860
2016	2019	51582	52363	53232	49190
2016	2020	52161	52665	53832	49520
2016	2021	52741	52967	54433	49850
2016	2022	53127	53125	55078	50180
2016	2023	53513	53283	55779	50510
2016	2024	53898	53441	56584	50840
2016	2025	54284	53599	57615	51170
2016	2026	54670	53757	58577	51500
2016	2027	55170	53889	59496	51830
2016	2028	55670	54021	60405	52160
2016	2029	56170	54153	61162	52490
2016	2030	56670	54285	61929	52820
2016	2031	57170	54417	62652	53150
2016	2032	57614	54583	63404	53480
2016	2033	58058	54749	64097	53810
2016	2034	58502	54914	64787	54140
2016	2035	58946	55080	65515	54470
2016	2036	59390	55246	66271	54800
2016	2037	59812	55412	66949	55130

Key Development Locations

Image 3 identifies the location of all the key developments considered explicitly in the AECOM Shepway transport model. With the updated Local Plan projections, these developments represent 72% of the growth in housing and 83% of the employment growth. They are located in the vicinity of existing urban areas of Folkestone and Hythe, North of the district.

Image 3 also shows, in dark blue, the junctions considered impacted by the Local Plan in the January 2020 statement of common ground between Folkestone and Hythe and Highways England. Visible in light blue are other junctions considered for inclusion within the study area of this updated assessment.

Table 2, on the next page, lists the names of the 13 developments explicitly included in the local plan.

Image 3 – Key 2037 Local Plan Developments

2031 Do Something Scenario - Places and Policies Local Plan (PPLP)

The 2031 Do Something scenario of the Places and Policies Local Plan includes developments 1 to 12 in Table 3. Highways England confirmed the absence of impact requiring mitigation of these developments (see Appendix A.5).

Site 13 is the only major development in the Local Plan not included in the PPLP.

2037 Growth Complement

The housing and employment growth in the Local Plan for 2037 not accounted for by the 13 developments is calculated using a TEMPro factor adjustment and applied to the base traffic volumes of the local road network.

The traffic growth from these developments is therefore distributed equally across the road network, except for the motorway mainline that has its own TEMPro growth factor taken directly from the TEMPro database.

Table 2 – Key Development Descriptions

Site Number	Scenario Inclusion	Site Name
1	2031 PPLP & 2037 Local Plan	Former Rotunda Amusement Park, Marine Parade, Folkestone, Kent
2	2031 PPLP & 2037 Local Plan	Shorncliffe Garrison, Folkestone
3	2031 PPLP & 2037 Local Plan	Street Record, Hurricane Way, Hawkinge, Kent, CT18 7SU
4	2031 PPLP & 2037 Local Plan	Philbeach House, Tanners Hill, Hythe, Kent CT21 5UQ
5	2031 PPLP & 2037 Local Plan	Land Adjoining Enterprise Way Enterprise Way Link Park Lympne Kent
6	2031 PPLP & 2037 Local Plan	Land Adjoining The Link Park Lympne Industrial Estate Lympne Kent
7	2031 PPLP & 2037 Local Plan	Land Read Rhodes House Main Road Sellindge Kent
8	2031 PPLP & 2037 Local Plan	Remainder of land at Aerodrome, Hawkinge
9	2031 PPLP & 2037 Local Plan	Nickolls Quarry Dymchurch Road Hythe Kent CT21 4NF
10	2031 PPLP & 2037 Local Plan	Land Adjacent The Surgery, Main Road, Sellindge, Kent
11	2031 PPLP & 2037 Local Plan	Land at Hurricane Way, Hawkinge, Kent CT18 7SU
12	2031 PPLP & 2037 Local Plan	Plot 1, Hurricane Way, Hawkinge, Kent CT18 7SU
13	2037 Local Plan	Otterpool Park

3.4 Ashford M20 Junctions

Key Interchanges

West of Folkestone and Hythe District Council is the town of Ashford. Three M20 interchanges are present:

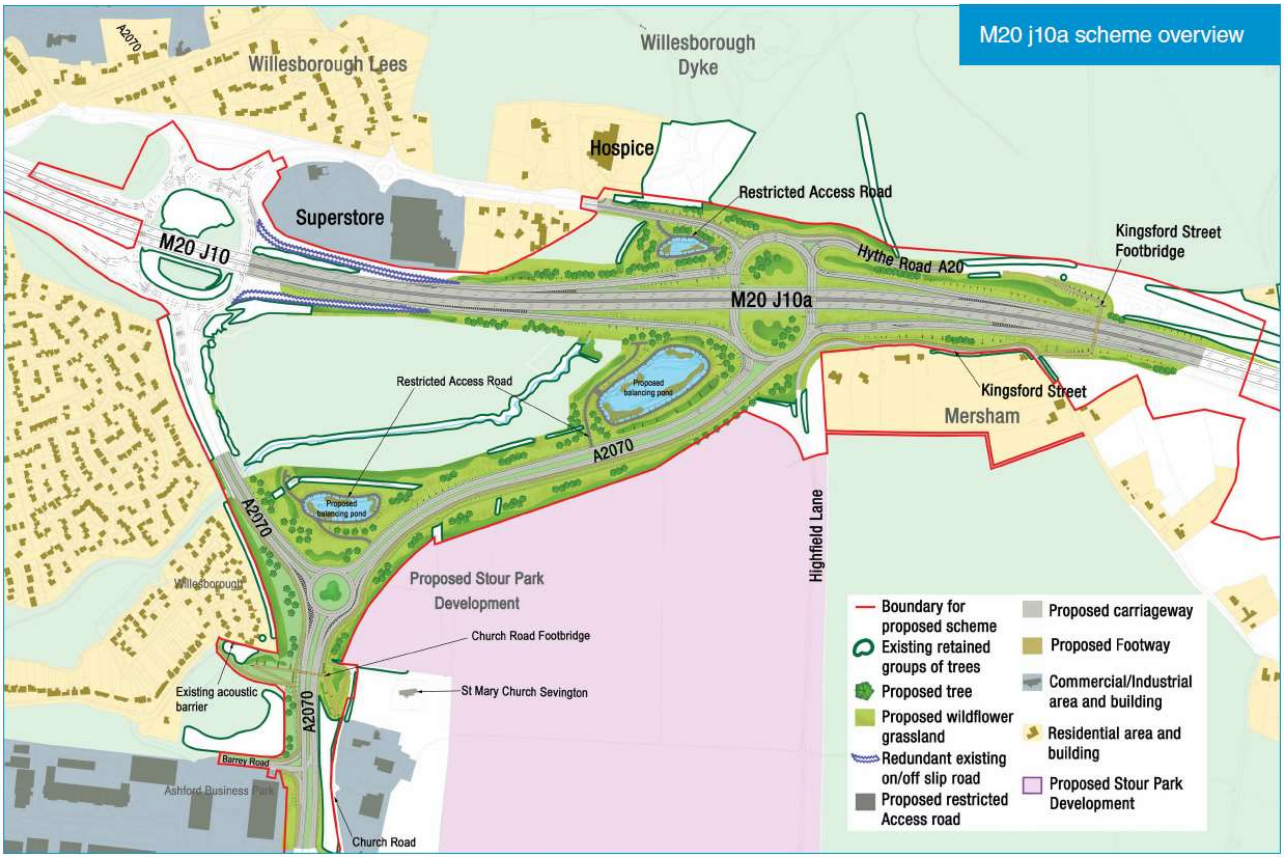
- M20 Junction 9;
- M20 Junction 10; and
- M20 Junction 10a.

M20 Junction 10a improvement scheme is recent. According to Highways England scheme presentation leaflet, works started in January 2018 and were completed in the summer of 2020. Image 4 presents a scheme that includes:

- The construction of a new interchange junction (Junction 10a);
- The closure of East facing ramps at Junction 10.

The fact that Junction 10a has recently been constructed as well as the COVID19 situation does not permit the reliable collection of traffic counts to assess the split of traffic for West facing splits.

Image 4 – M20 Junction 10a Scheme



Total Traffic from Folkestone and Hythe Local Plan

Using the updated transport model, the assessment of the 2037 traffic volumes from the Local Plan travelling to and from district council towards the West (the number within parenthesis as volumes from Otterpool Park), using the M20 are:

- AM Peak: Westbound 929(450) veh, - Eastbound 550(252) veh;
- PM Peak: Westbound 671(316) veh, - Eastbound 950(468) veh

Merge / Diverge Assessment

A merge and diverge assessment using the latest DMRB guidelines has been undertaken using the most recent WebTRIS counts available. Traffic demand on the West facing ramps of Junction 10 and 10a have been split equally as road users now have two ramps to choose from.

The key findings from this assessment are:

- The mainline through traffic volumes are low;
- Junction 9 traffic volumes on the ramp already exceed the design limit with DMRB, but there are no signs of congestion, likely as a result of very low mainline traffic; and
- The traffic volume from the Folkestone and Hythe Local Plan is not expected to be sufficient to require an upgrade of the merge / diverge segments.

Due to the very low mainline traffic volume, any upgrade of the merge / diverge segment would likely correspond to a lane gain, lane drop solution, with the hatching of lane 1 within the interchange.

Interchange Roundabout Assessment

Table 3 shows the 2037 junction traffic analysis within the 2019 Otterpool Park transport assessment, in which the Do-Minimum scenario is equal to Local Plan growth without Otterpool Park and the Do-Something scenario is Local Plan growth including Otterpool Park. This assessment shows the limited impact of the Folkestone and Hythe Local Plan, and the fact that it would not trigger the need for mitigation measures.

Table 3 – Junction 10, 10A and 9 2037 Degree of Saturation

Junction ID / Name		Maximum Degree of Saturation / Ratio of Flow to Capacity					
		2018		2037			
		Baseline		Do-Minimum		Do-Something	
		AM	PM	AM	PM	AM	PM
J1	M20 J10	84.5%	83.2%	70.7%	78.4%	75.0%	77.6%
J42	M20 J10A			41.0%	45.0%	68.3%	75.0%
J23	M20 J9	75.3%	92%	83.9%	95.1%	83.9%	93.3%

Conclusion

In conclusion, it is not anticipated that the Folkestone and Hythe Local Plan would lead to required mitigation measures within the Highways England network in Ashford. M20 Junctions 9, 10 and 10a have therefore been excluded from the assessment.

3.5 Selected Study Area

For this study, the road network of interest was defined as:

- Highways England road network (SRN) directly impacted by the increase in traffic from Folkestone and Hythe District Council Local Plan, to the extent that it would trigger the need for network upgrades; and
- The local junctions at risk of blocking back into the SRN as a result of traffic increase generated by the Local Plan.

The proposed study area is presented in Image 5. It corresponds, West to East, to interchanges:

- M20 Junction 11;
- M20 Junction 11a;
- M20 Junction 12;
- M20 Junction 13; and
- A20, A20 / Spitfire Way / Alkham Valley Road.

Image 5 – Proposed Study Area

4 Traffic Demand

4.1 2018 Baseline

The 2017 baseline data used in the AECOM Shepway Transport Model and the Arcadis Otterpool transport assessment were compared. The data is available in Appendix C.1 and is presented in Table 4. The key findings are:

- Except for Junction 12 in the AECOM model, all data sources are from 2016/2017 and consistent;
- AECOM applied a seasonality factor to the October traffic. The peak traffic is in August, likely related to the Dover port activities;
- AECOM traffic volumes are always higher than the non-factored counts.

The AECOM traffic volumes being a worst-case scenario, the original baseline traffic in the AECOM Shepway Transport Model has been retained. The increase in baseline traffic for M20 Junction 11 and the A20 junction, however, is significant.

Table 4 – 2017 Data Review

Junction	Date of survey		AM (8-9)			PM (17-18)		
	Arcadis model	AECOM model	Arcadis model	AECOM model	Difference	Arcadis model	AECOM model	Difference
M20 J11	13 October 2016	13 October 2016	2,361	2,672	+13%	2,356	2,690	+14%
M20 J11a	13 October 2016	13 October 2016	508	539	+6%	548	582	+6%
M20 J12	29 June 2017	22 October 2013*	2,931	3,074	+5%	3,045	3,070	+1%
M20 J13 Southern rdb	29 June 2017	13 October 2016	3,306	3,768	+14%	3,301	3,659	+11%
A20 Spitfire rdb	13 October 2016	13 October 2016	2,452	2,721	+11%	2,803	3,115	+11%
A20 Alkham rdb	13 October 2016	13 October 2016	1,903	2,112	+11%	1,523	1,693	+11%

Factored up to 2016 baseline

4.2 2037 Traffic Demand Model

The travel demand models are contained in Appendix C.2.

Local Plan Horizon

The local plan horizon is 2037 and this is the core assessment year.

Local Plan Scenario Description

Within the Shepway Transport Model, the core scenarios selected are:

- 2037 DS, corresponding to the Local Plan projection, also labelled Core Strategy Review (CSR 6,500); and
- 2037 DM, corresponding to the Places and Policies Local Plan (PPLP).

The description of individual development has evolved, but by consistency with the previous stage, developments descriptions have been retained as per the AECOM model version.

Local Plan Housing and Employment Projections

The housing and employment project are:

- As per the Local Plan in the 2037 DS;
- Discounted by Otterpool Park development in the 2037 DM.

The reason for the application of the discount is to ensure the transport model does not re-allocate the Otterpool Park traffic via the TEMPro Factor.

Motorway Growth Rate

For the motorway mainline traffic, an independent TEMPro factor has been included in the model. This change enables the assessment to reflect the increase of through traffic, which was not included in the original model developed in 2017 by AECOM.

Junction 12 U-Turning Traffic Removal

The Taylor Wimpey Cheriton High Street Junction, committed scheme drawing, clearly shows the ability to perform the right turning movement from the side road. Thus, the traffic from the South using Junction 12 to U-turn in the AECOM model has been removed.

TEMPro 7b

All TEMPro rates in the model have been superseded using the latest available version of the rates. The version is indicated as 7b.

5 M20 Junction 11

5.1 Assessment Overview

General Description

M20 Junction 11 is a major motorway interchange with the following characteristics:

- The M20 at this location is composed of 3 lanes in each direction (no lane drop/lane gain);
- To the West of the interchange, an overbridge is located that will constrain future road widening at this location;
- Ramps are wide, but are marked as one lane;
- The at-grade junction is a two-lane, non-signalised, roundabout, widened to three lanes at some locations;
- The at-grade junction has 5 arms (including 2 motorway arms). To the South, a further left-in left-out junction gives access to a depot; and
- Another roundabout further South enable U-turning movements.

Initial Mitigation Requirements Identification

The traffic analysis mitigation requirements at M20 Junction 11 based on the 2037 DS CSR 6,500 has been summarised in Image 6 on the next page. The key requirements are:

- Merge and diverge type upgrade at three locations;
- The widening to two lanes of three ramps;
- The upgrade of the main roundabout.

5.2 Merge / Diverge Assessment

The merge and diverge assessment are presented in Table 5 and 6. The key findings are:

- The motorway mainline never requires more than two lanes; and
- Three ramps require widening to two lanes.

Image 6 – M20 Junction 11 High-Level Mitigation Requirements

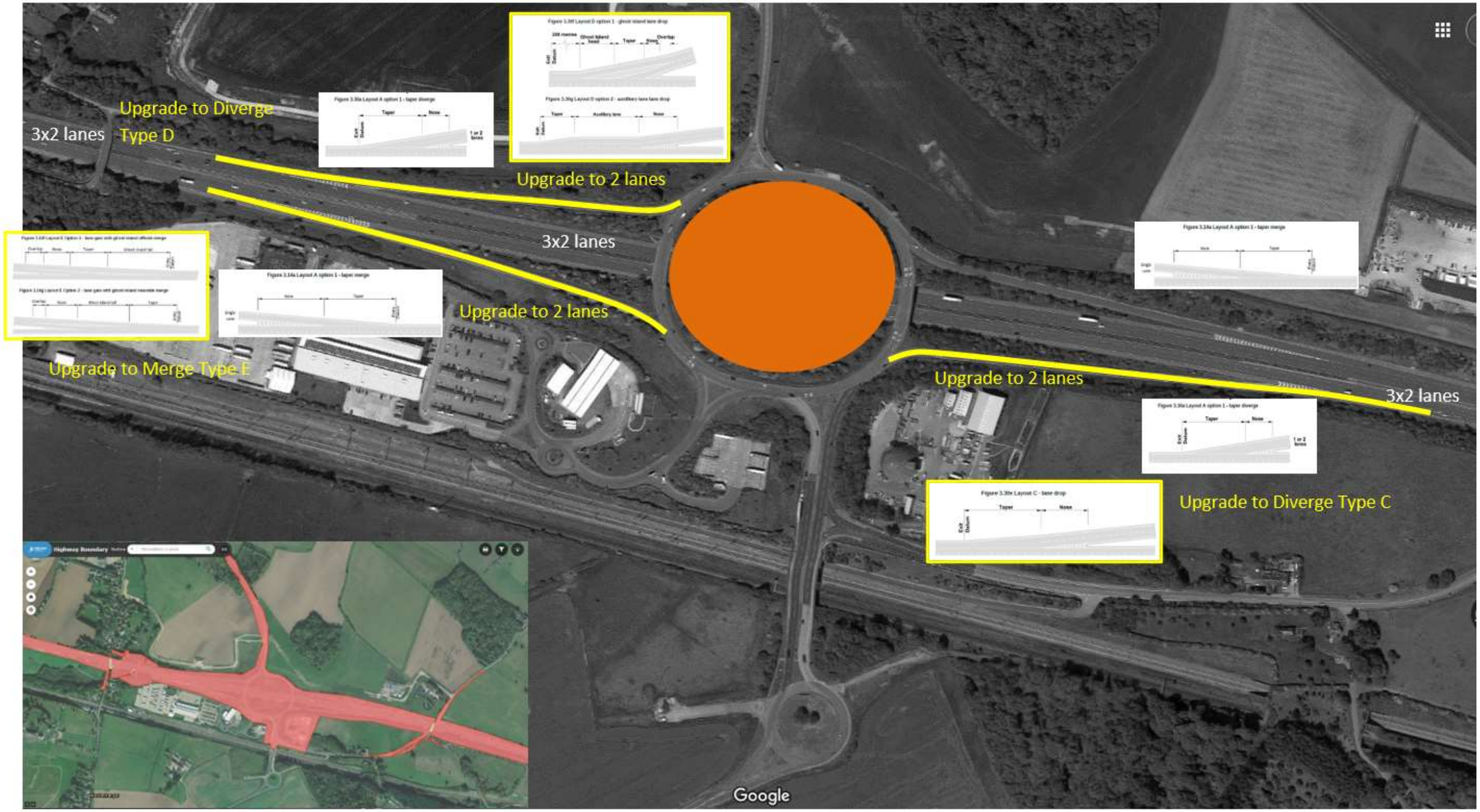
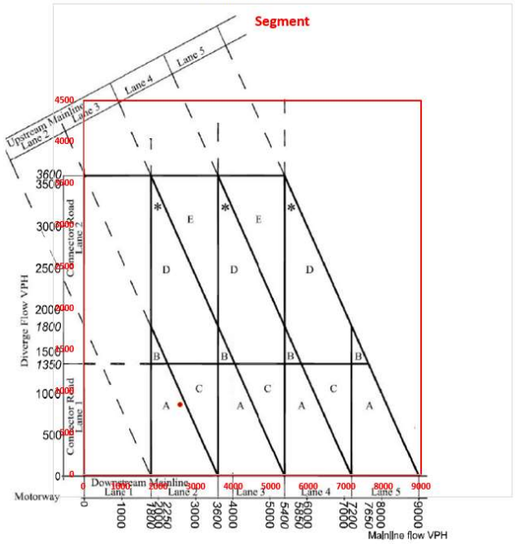


Table 5 – M20 Junction 11 – 2037 AM Merge/Diverge Assessment

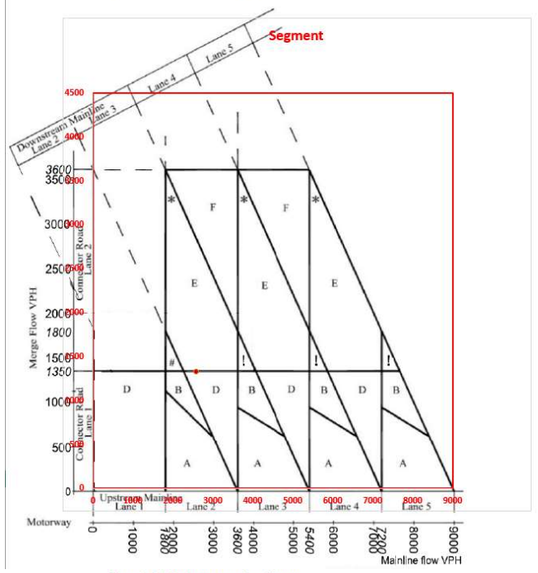
Figure 3.26b Motorway diverging diagram



M20 J11 EB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2580	844

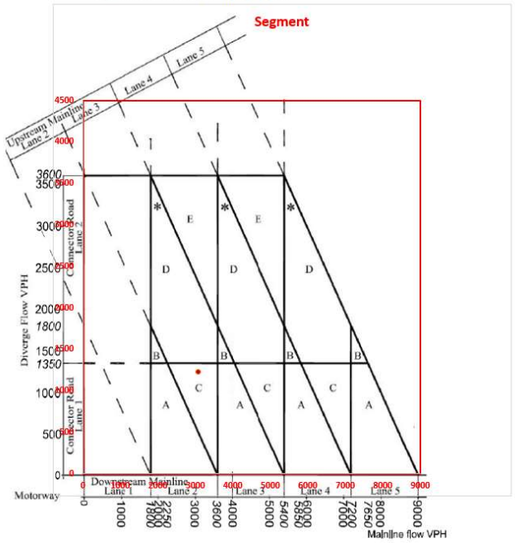
Figure 3.12b Motorway merging diagram



M20 J11 EB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2580	1335

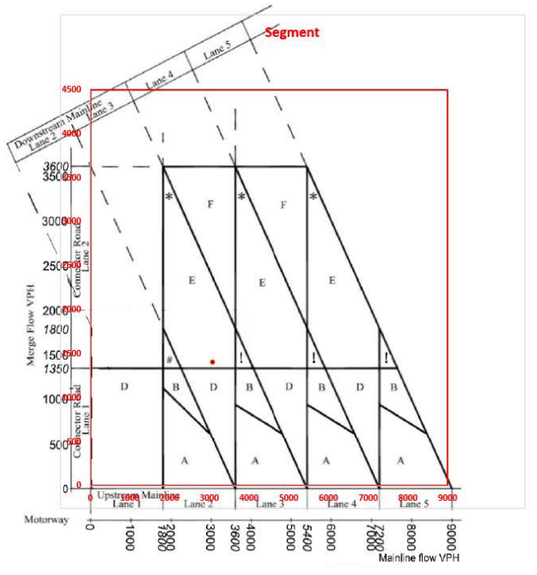
Figure 3.26b Motorway diverging diagram



M20 J11 WB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
3073	1232

Figure 3.12b Motorway merging diagram



M20 J11 WB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
3073	1405

Table 6 – M20 Junction 11 – 2037 PM Merge/Diverge Assessment

Figure 3.26b Motorway diverging diagram

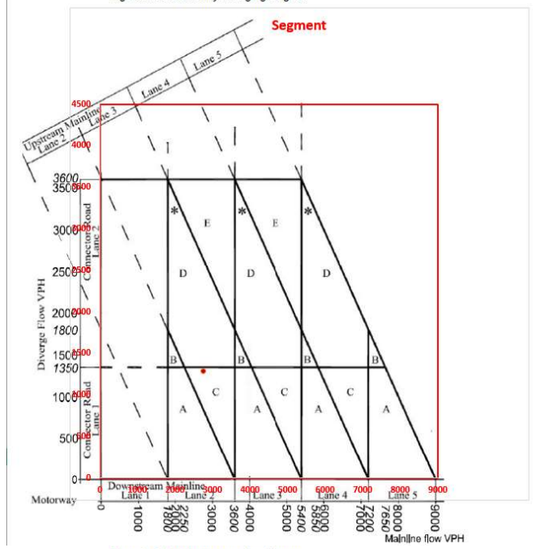
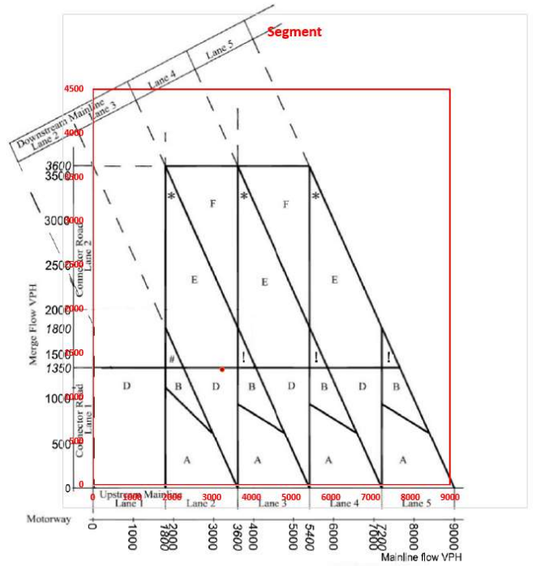


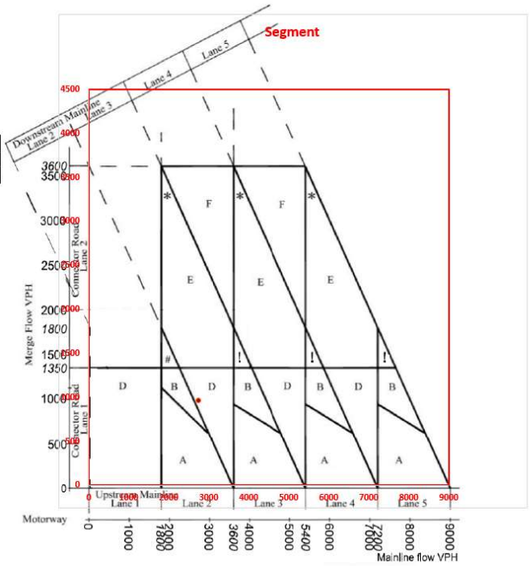
Figure 3.12b Motorway merging diagram



M20 J11 WB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2747	1291

Figure 3.12b Motorway merging diagram



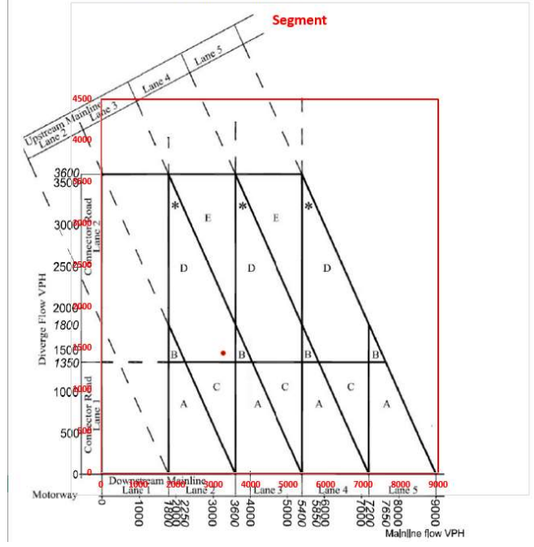
M20 J11 WB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2747	962

M20 J11 EB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
3263	1305

Figure 3.26b Motorway diverging diagram



M20 J11 EB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
3263	1441

5.3 Traffic Demand Impact

Overall Changes in Traffic Volumes (in Veh.)

For M20 Junction 11, the comparison of total traffic at an at-grade junction in 2037 between the DM scenario (DS PPLP) and the DS scenario (DS CSR 6,500) is as follows:

- AM Peak – DM (3708) / DS (5327), or an increase of 1619 (30%)
- PM Peak – DM (3807) / DS (5573), or an increase of 1766 (32%)

Based on the figures described above, the increase in traffic at the junction is very important between the 2037 DM and DS scenarios. Such a traffic increase is expected and is related mostly to Otterpool Park development.

5.4 Existing Layout at Grade Traffic Assessment

Table 7 presents the traffic analysis of the existing junction layout in both 2037 DM and DS scenarios.

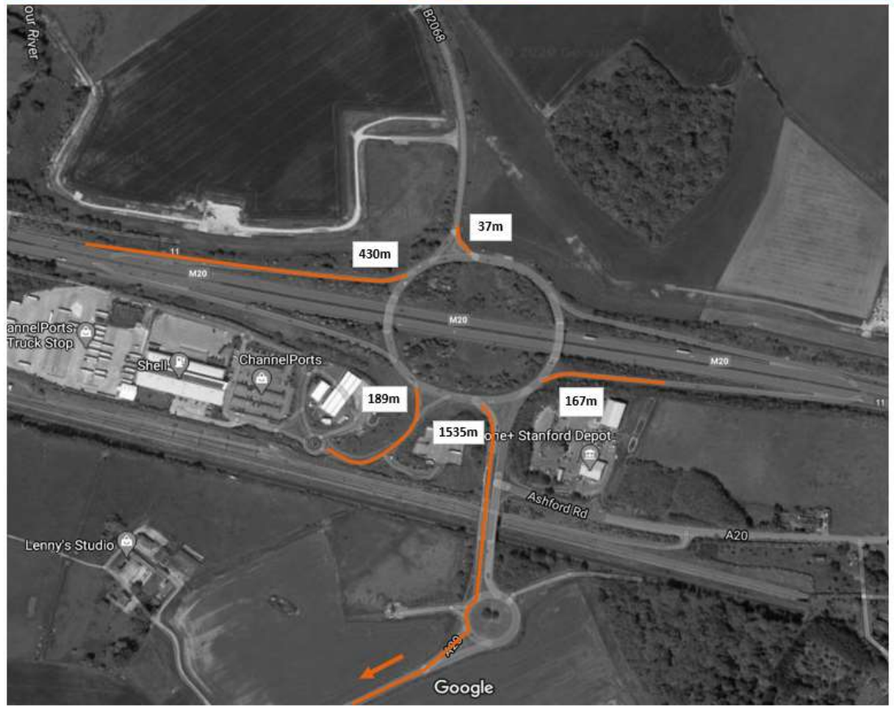
The key findings are:

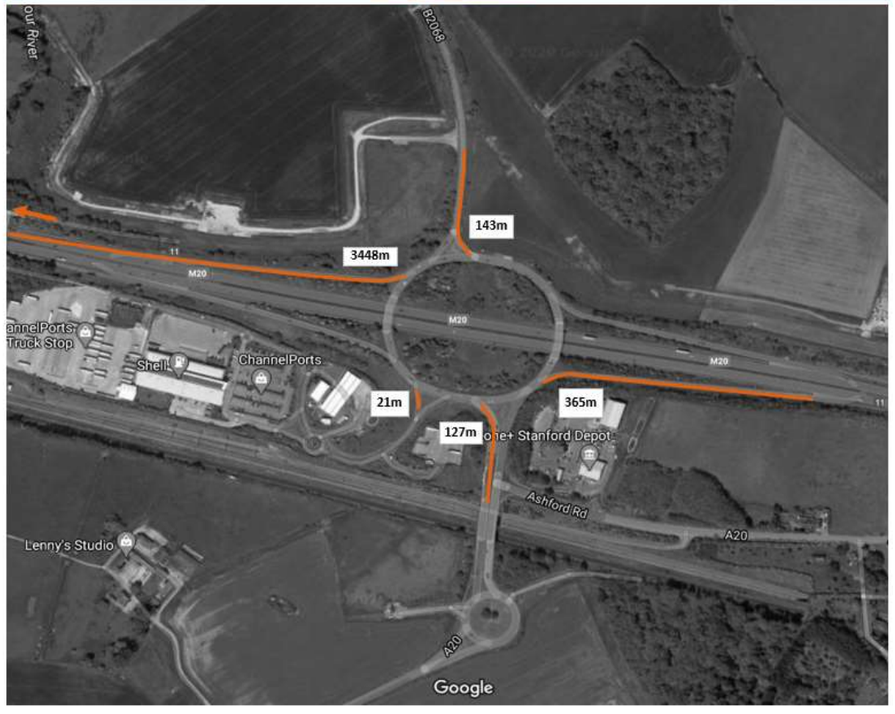
- In the DM PM peak scenario, one approach reaches capacity, but the impact is minor, with no risk of blocking back queue onto the M20;
- In the DS AM and PM peak scenarios, most approaches have reached oversaturation, indicating the need for a widening of the junction layout.

Table 7 – M20 Junction 11 – 2037 Existing Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	DM 2037							
M20 OffSlip Westbound	1.9	6.7	0.66	A	2.5	11.7	0.72	B
A20 Ashford Road	2.3	5.11	0.7	A	1.9	4.47	0.66	A
Services	0.4	8.29	0.31	A	0.3	6.31	0.25	A
M20 OffSlip Eastbound	1.3	6.82	0.56	A	16.3	55.15	0.97	F
B2068	0.8	5.76	0.45	A	4	27.89	0.82	D
Arm	DS 2037							
M20 OffSlip Westbound	29	74.95	1.01	F	63.5	202.61	1.07	F
A20 Ashford Road	267	383.77	1.21	F	22	34.23	0.97	D
Services	32.8	1004.84	1.35	F	3.6	74.68	0.83	F
M20 OffSlip Eastbound	74.8	331.4	1.17	F	599.7	2036.32	2.22	F
B2068	6.5	50.38	0.89	F	24.8	167.51	1.05	F

Image 7 – M20 Junction 11 – 2037 Queue Length Comparison





5.5 Proposed Mitigations

Proposed Mitigation Constraints

The proposed concept development was focussed on respecting the following constraints:

- Ensuring free-flowing and safe traffic conditions;
- Avoiding any impact on existing structures as much as possible, for cost reasons; and
- Maintaining the same level of accessibility as in the present situation.

When developing proposed mitigations, the introduction at the junction to the South of a signalised South to East right turning movement was necessary to avoid the need to widen the bridge structures across the M20.

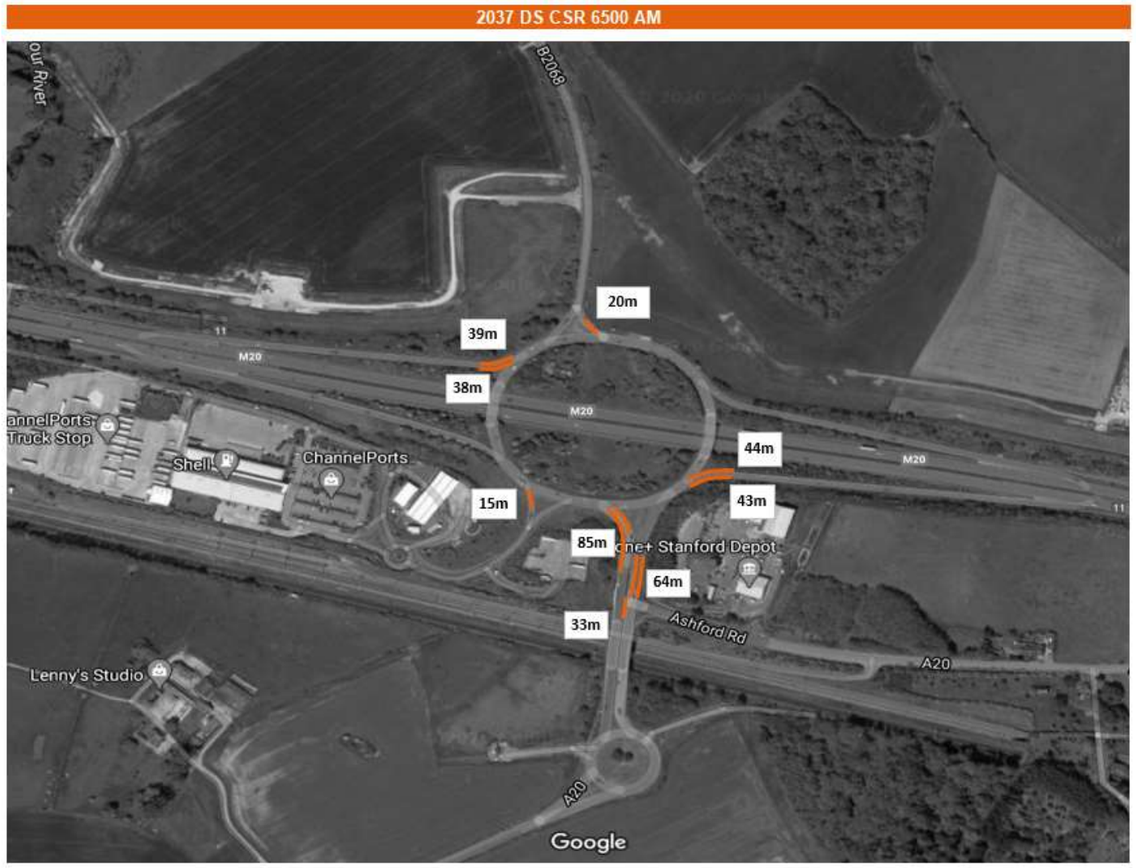
Table 8 presents the traffic analysis of the proposed junction layout for 2037 DS scenario. Image 8 presents the queue length with mitigations. The key findings are:

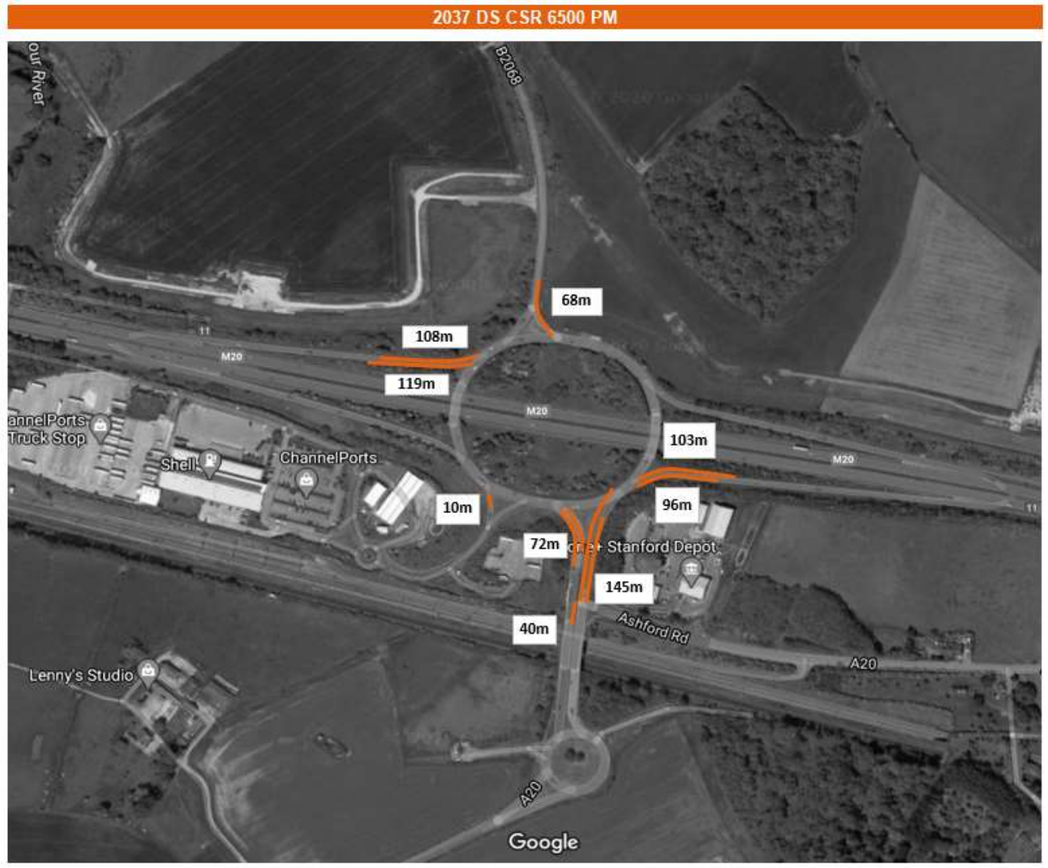
- The two junctions at the interchange can be upgraded to free-flowing traffic conditions, without impacting the key structures; and
- Further significant increase in right-turning traffic at the junction to the South, giving access to the depot would potentially require further upgrading.

Table 8 – M20 Junction 11 – 2037 Proposed Layout Assessment

2037 DS with Mitigation M20 Junction 11 Roundabout							
Approach	Lane	AM			PM		
		Queue (PCU)	Delay	DoS	Queue (PCU)	Delay	DoS
M20 OffSlip Westbound	1	7.5	19.1	71.8%	16.7	41.6	71.8%
	2 & 3	7.6	18.7	65.50%	17.9	42.4	65.50%
A20 Ashford Road	1	14.8	12.2	79.9%	12.6	11.4	79.9%
	2 & 3	6.8	7.4	73.40%	9.3	10	73.40%
Services	1	2.6	12	34.6%	1.8	5.9	34.6%
M20 OffSlip Eastbound	1 & 2	6.8	28.8	75.2%	18.7	34.2	75.2%
		6.6	29.3	71.30%	20.7	38.9	71.30%
B2068	1	1.5	7.4	58.3%	9.4	28.0	58.3%
	2	1.9	13.9	47.0%	2.4	29.3	47.0%
2037 DS with Mitigation M20 Junction 11 T-Junction							
Approach	Lane	AM			PM		
		Queue (PCU)	Delay	DoS	Queue (PCU)	Delay	DoS
A20 Ashford Road Southbound	1 & 2	10.5	9.6	71.9%	21.9	12.6	87.7%
	3	11.2	9.9	70.20%	25.3	13.7	87.70%
A20 Ashford Road Northbound Right Turn	1	5.7	31.7	81.3%	6.9	45.2	79.5%

Image 8 – M20 Junction 11 Initial Mitigation 2037 Queue Length





5.6 Eurotunnel Incident Operations

Typical Incident Description

The Eurotunnel facility has been developed at a location constrained physically, and the processing gates have a limited ability to:

- Accommodate queuing traffic beyond normal operations; and
- Generate spare capacity during processing time.

As a consequence operational incidents at the Eurotunnel terminal result in blocking back queue on the M20. As seen on Image 8 lorries are using the hard shoulder as a temporary parking facility. Such an incident can typically last ½ day or longer.

The change in custom regime towards the end of 2020 will likely require additional custom checks compared to the requirements from previous years. As part of this project, details of the future terminal operations is not known, but additional facilities in the vicinity of the M20 motorway are being developed.

Image 9 – November 2020 Eurotunnel Traffic Queues

M20 Junction 11 Design Usage

A number of alternative proposed arrangements from the Option A have been developed to account for the following:

- Retaining the ability for lorries to use the hard shoulder as an emergency car park; and
- Retaining the ability for lorries to use land 1 (nearside lane) as an emergency car park.

The proposed alternatives have for purpose to explore alternative designs that retain the existing cross-section. Intelligent transport systems have been excluded from this assessment as the objective was to retain existing operations.

Alternatives are only required for the eastbound direction, leading to the Eurotunnel terminal.

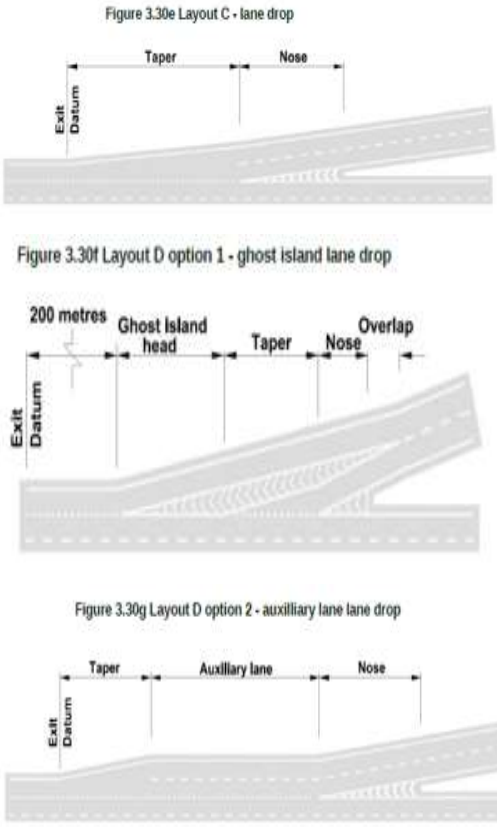
Design Options

Option A corresponds to a type D option 1 (Ghost Island with lane drop). Based on the merge diverge assessment, the DMRB requirements are:

- In the AM peak, the assessment is bordering a type A and a type C, and
- In the PM peak, the assessment is bordering a type C and a type D.

For reference, diverge types C and D are presented on Image 9 below. Both diverge types correspond to a lane drop arrangement.

Image 10 – DMRB Diverge Types C and D



Three proposed alternatives have been considered. Drawings for all options (A to D) are saved in Appendix E. The option descriptions are:

- **Option B: Maintain 3 lanes cross-section & diverge within available space**
  - The three lanes cross-section has been maintained continuously;
  - The largest diverge segment that can be developed between the bridge to the West and the interchange to the East is a type A.
- **Option C: Lane drop with a mainline taper from 2 to 3 lanes**
  - The lane drop leads to a widening back to three lanes following the diverge segment.
- **Option D: Maintain 3 lanes cross-section & larger diverge**
  - The three lanes cross-section has been maintained continuously;
  - The largest diverge segment that can be developed without the lane drop is a type B (Option 2); and
  - This option requires the demolition of the bridge

Conclusion and Recommendation

Overall, the DMRB calculation recommends a lane drop. A widening to four lanes of the road segment between Junction 10a and Junction 11 has not been considered as it is seen as a significant overdesign.

From a design point of view, even if not providing the lane drop might more likely to accommodate extreme queuing from the terminal:

- Not implementing the lane drop would require a departure from standards, which might be difficult to secure based an occasional incident;
- Access for lorries to use the hard shoulders for queueing is always possible; and
- The demolition of the bridge does not provide the opportunity of an adequate diverge type, unless the segment between Junction 10a and Junction 11 is widened to 4 lanes (which is not considered suitable).

In conclusion, the layout with the lane drop, either Option A or Option C is recommended. Image 10 to 12 below show the various options.

5.7 Timeline Analysis – Junction Upgrade Requirements

To remain free-flowing, the M20 Junction 11 will require upgrades as Otterpool Park develops. Key stages in the junction development have been identified based on traffic volumes at the junction.

- **No Intervention - Existing (2018) situation up until no intervention required**
  - From the existing situation
    - AM Peak Junction Total: 2600 (veh./hr)
    - PM Peak Junction Total: 2600 (veh./hr)
  - Until the following traffic volumes are reached
    - AM Peak Junction Total: 3600 (veh./hr)
    - PM Peak Junction Total: 3650 (veh./hr)
- **Intervention 1 – M20 Eastbound Off-slip requires to upgrade**
  - M20 Eastbound Off-slip requires upgrade (2037 with 0% Otterpool Park 6,500 or earlier time with Otterpool Park)
    - AM Peak Junction Total: 3600 (veh./hr)
    - PM Peak Junction Total: 3650 (veh./hr)
- **Intervention 2 – M20 Westbound Off-slip requires upgrade**
  - M20 Westbound Off-slip reaching capacity (2037 and approximately 45% of Otterpool Park 6,500)
    - AM Peak Junction Total: 4550 (veh./hr)
    - PM Peak Junction Total: 4715 (veh./hr)

    The widening of the ramp approaches is the first element of junction upgrade required, the roundabout upgrade would be recommended to take place in one construction stage.
- **Intervention 3 – South Circulatory and A20 South approach requires upgrade**
  - South circulating carriageway reaching capacity (2037 and approximately 70% of Otterpool Park 6,500)
    - AM Peak Junction Total: 4850 (veh./hr)
    - PM Peak Junction Total: 5100 (veh./hr)
- **Intervention 4 – Main roundabout at capacity to south junction upgrade (A20 Ashford Road Junction)**
  - Junction to the south of M20 Junction 11 required to remove U-turn movements (2037 and approximately 92% of Otterpool Park 6,500)
    - AM Peak Junction Total: 5200 (veh./hr)
    - PM Peak Junction Total: 5450 (veh./hr)

The percentage of development is considered the worst-case because of the seasonality factor applied to the background traffic, as well as the lack of intra-zonal trips being considered at the development.

5.8 Conclusion

In conclusion, M20 Junction 11 is significantly impacted by the Local Plan. A proposed mitigation has been developed and requires further highway design investigation.

It is recommended the junction upgrade is not considered as one development stage, as the South junction might not be required as part of DS CSR 6,500.

It is recommended that any mitigation scheme is subject to a monitor and manage approach to implementation. Traffic volumes should be monitored throughout the Local Plan period to inform when or if the mitigation is required.

Image 11 – M20 Junction 11 – Option A

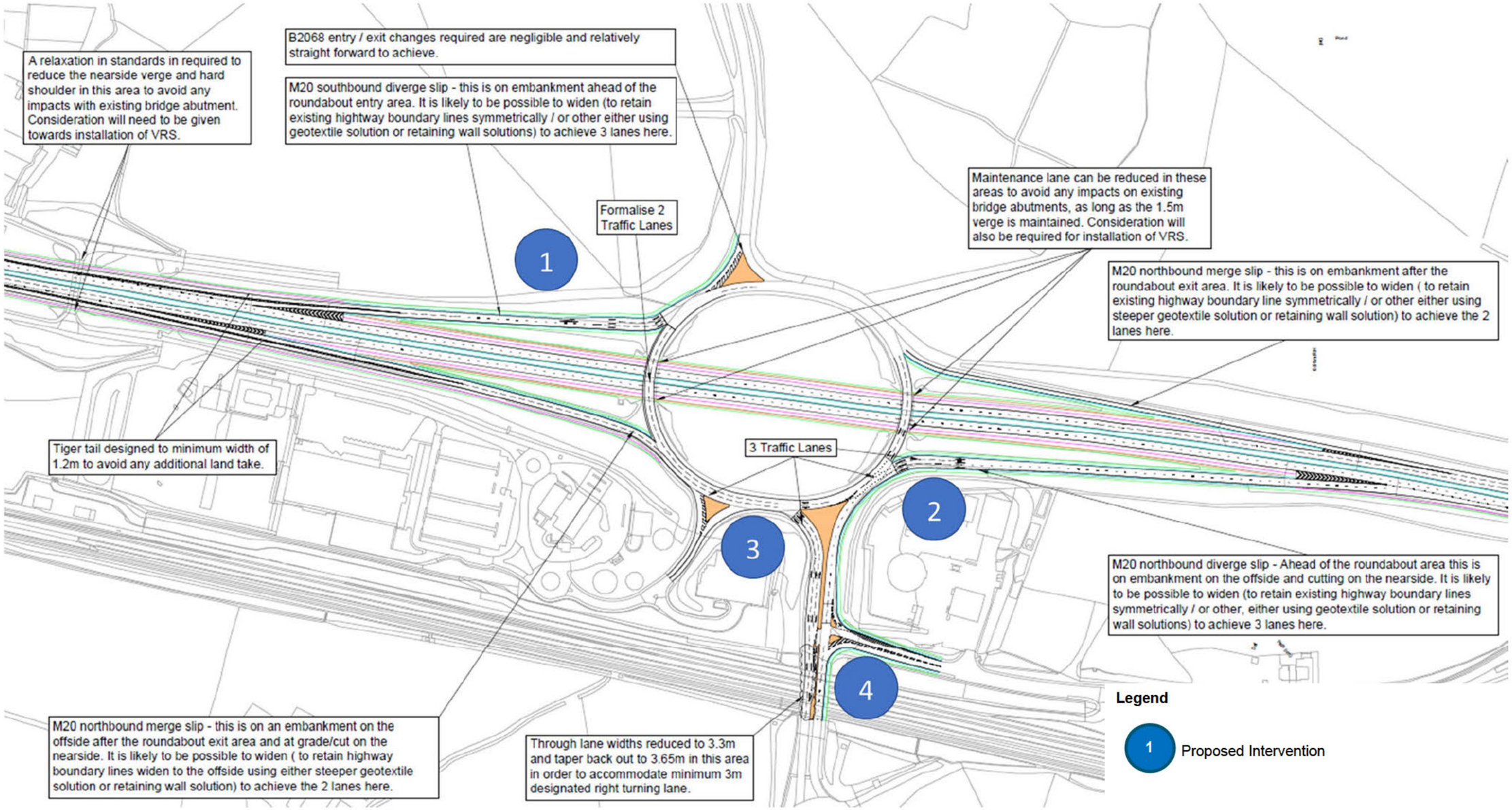


Image 12 – M20 Junction 11 – Option B

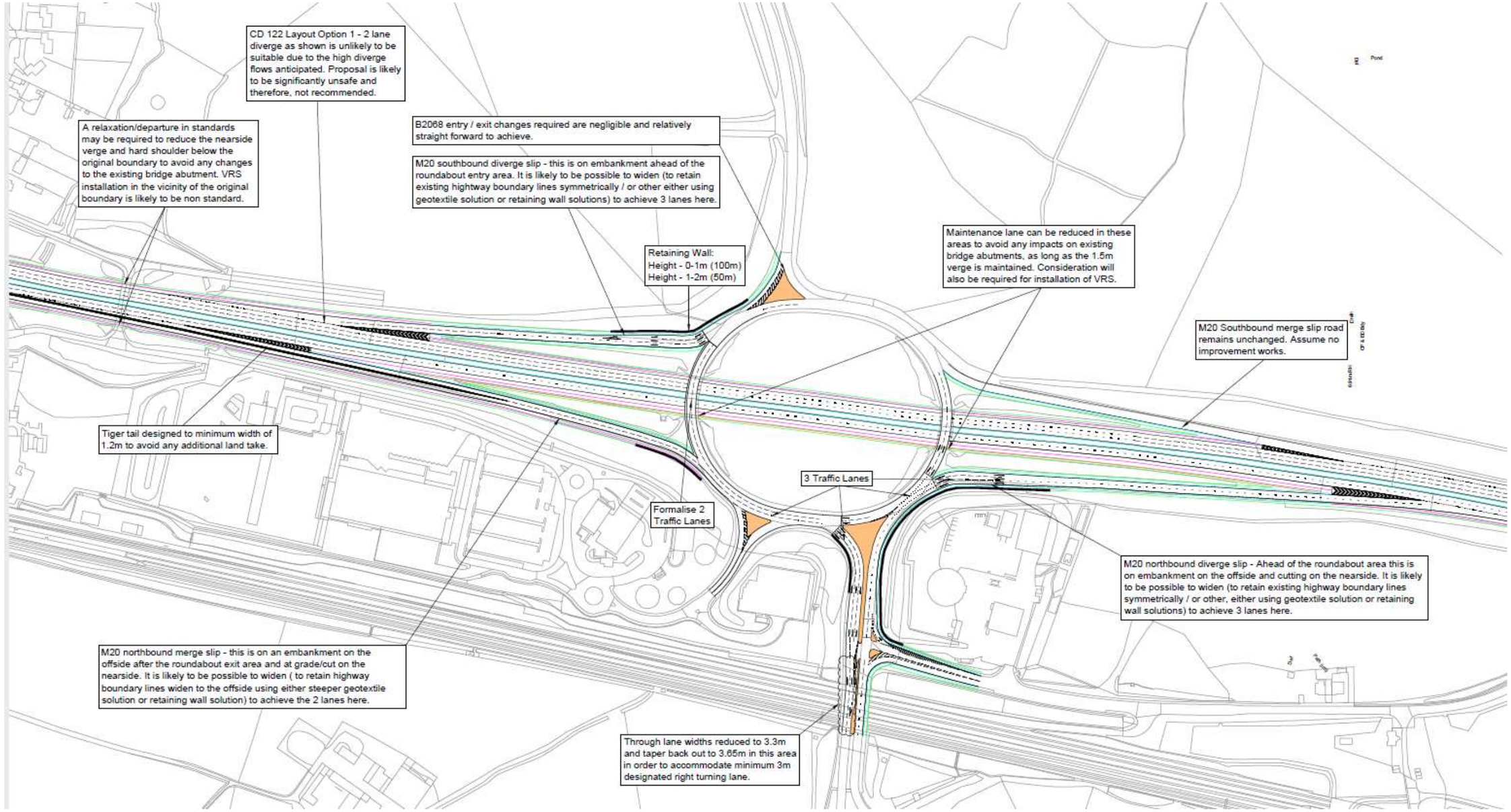


Image 13 – M20 Junction 11 – Option C

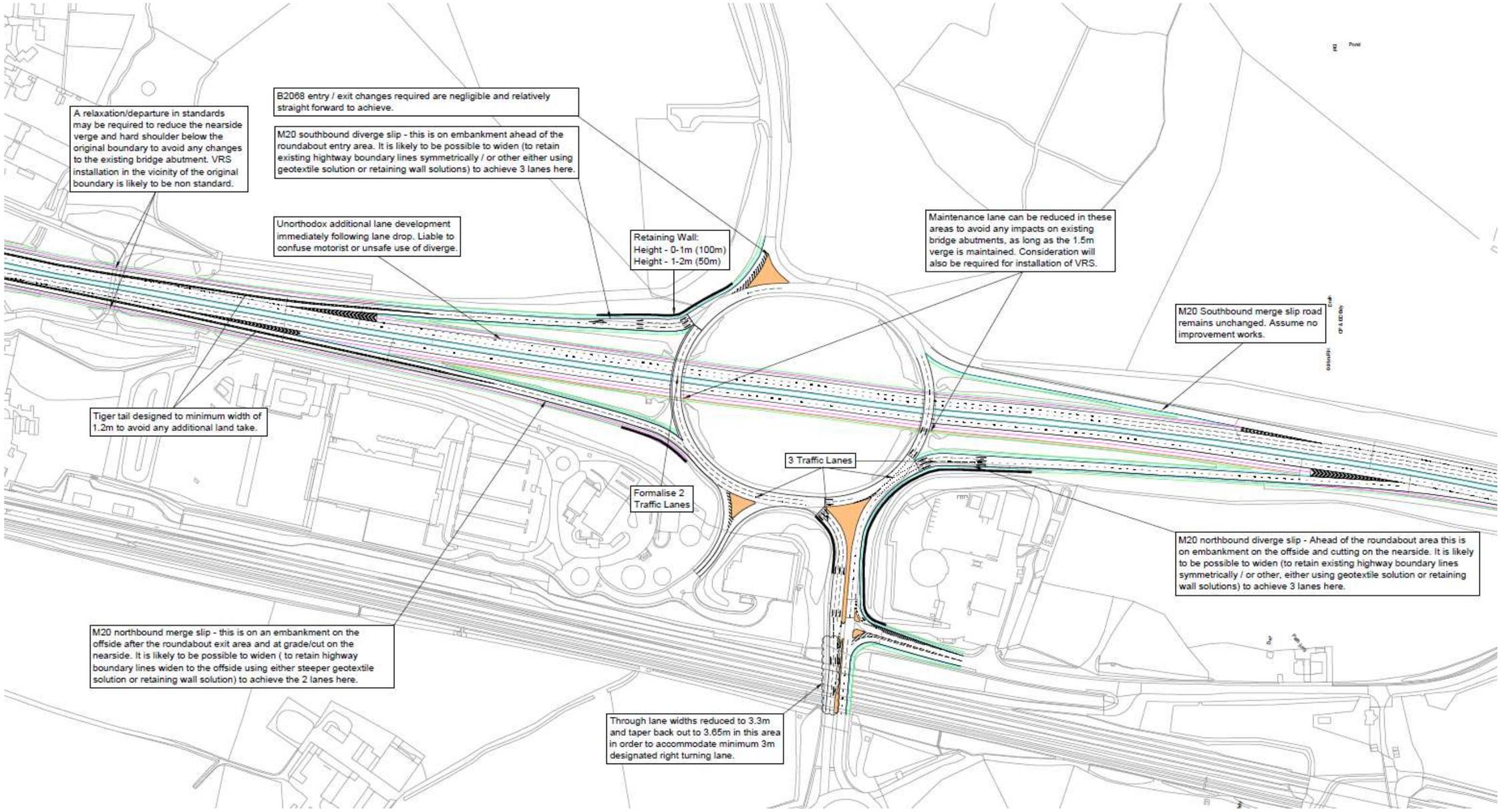
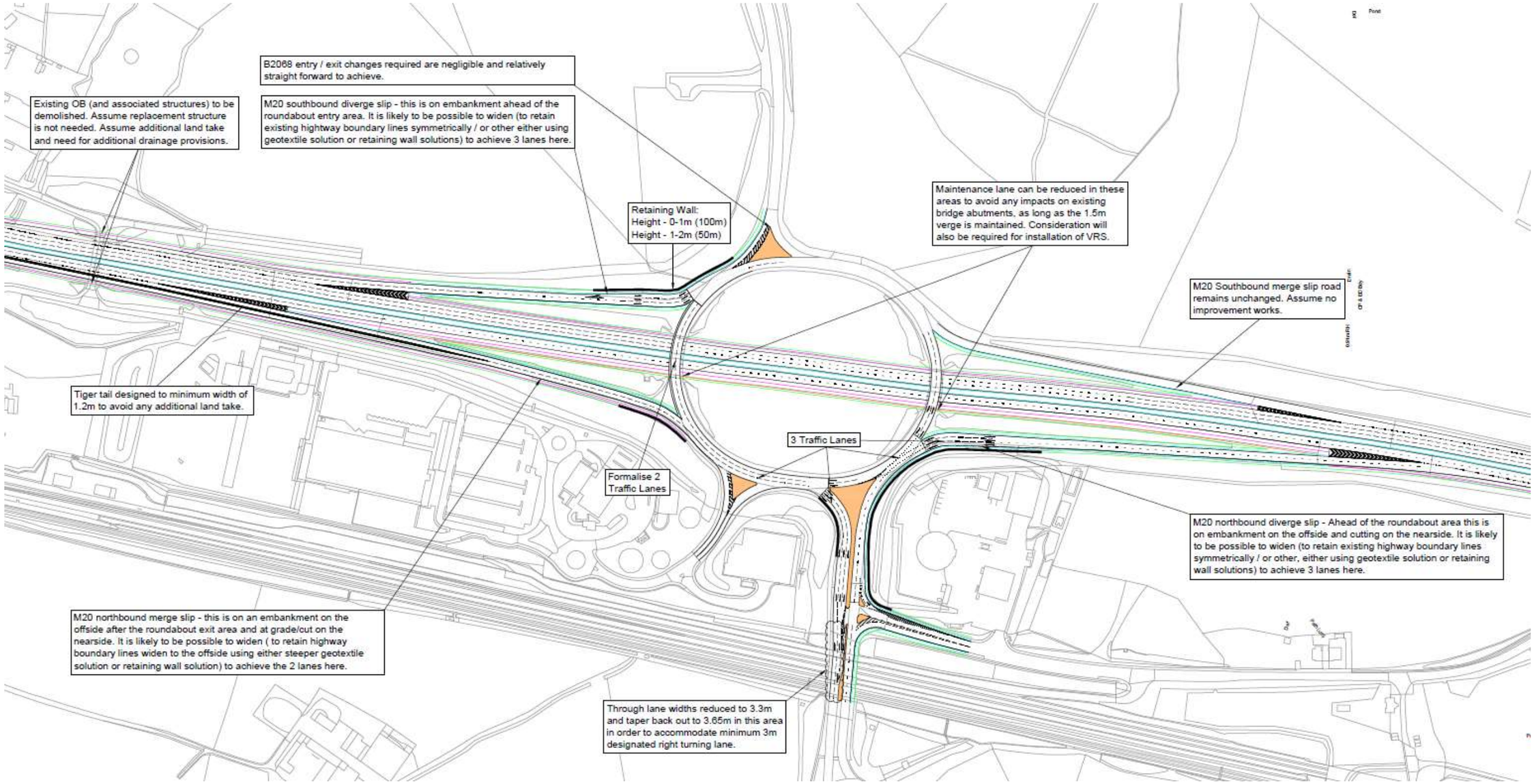


Image 14 – M20 Junction 11 – Option D



6 M20 Junction 11a

6.1 Assessment Overview

General Description

M20 Junction 11a corresponds to the access and egress to the Eurotunnel terminal. The interchange is composed of:

- West facing ramps only;
- No nearby at-grade junctions on the local network; and
- The tunnel control gate when entering the facility.

It is our understanding that the entrance control gate has only been designed to process vehicles for custom controls in an EU environment. It is possible that more extensive custom control will result in the control gate creating blocking back queues on the M20.

Mitigation Requirements Identification

There are no mitigation requirements identified at Junction 11a, related to the impact of the Folkestone and Hythe Local Plan.

The merge and diverge calculations, however, highlight the fact that the traffic volume to and from the Eurotunnel terminal is low. A three-lane cross-section East of the interchange should be maintained in the 2037 scenario.

6.2 Merge / Diverge Assessment

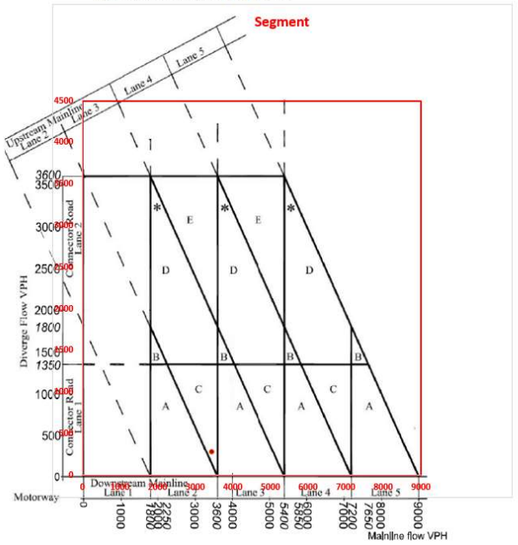
The merge and diverge analysis of M20 Junction 11a is presented in Table 9 on the next page.

6.3 Conclusion

In conclusion, M20 Junction 11a does not require mitigation from Folkestone and Hythe Local Plan DS CSR 6,500 scenario.

Table 9 – M20 Junction 11a – 2037 AM & PM Merge/Diverge Assessment

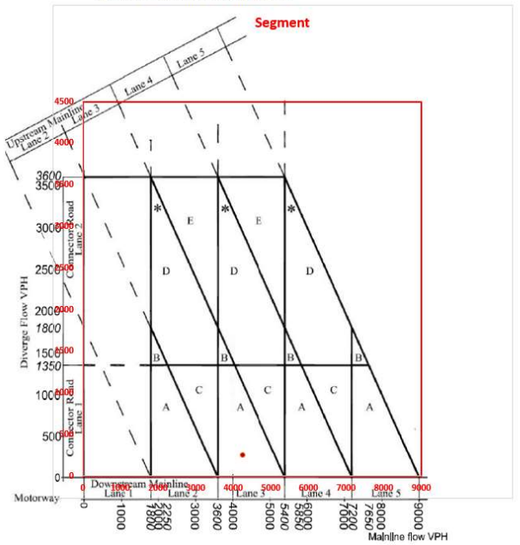
Figure 3.26b Motorway diverging diagram



M20 J11A EB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
3445	283

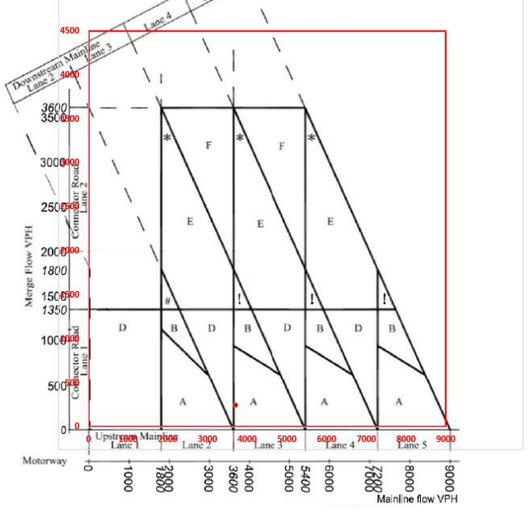
Figure 3.26b Motorway diverging diagram



M20 J11A EB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
4248	258

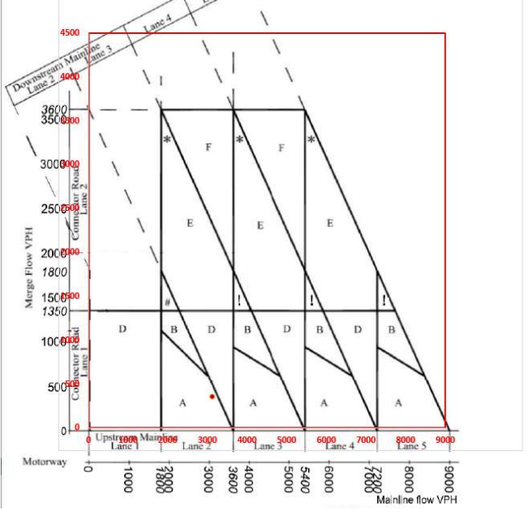
Figure 3.12b Motorway merging diagram



M20 J11A WB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
3711	246

Figure 3.12b Motorway merging diagram



M20 J11A WB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
3125	352

7 M20 Junction 12

7.1 Assessment Overview

General Description

M20 Junction 12 is a major motorway interchange with the following characteristics:

- West of Junction 12 the M20 is composed of 3 lanes in each direction, a lane drop/lane gain arrangement results in the motorway being two lanes in each direction to the east of the junction;
- The at-grade junction is a two-lane, non-signalised, roundabout;
- The junction immediately to the South of the roundabout interchange is being upgraded to include a right-turning movement from the Cheriton High Street (the West side road); and
- Highways England road network only extends to the motorway ramps.

Mitigation Requirements Identification

There are no mitigation requirements identified at Junction 12, traffic volumes are not changing significantly between the DM and the DS scenario. Traffic conditions remain free-flowing, except for the M20 westbound off-ramp approach at the roundabout that has reached capacity. Image 15 presents the location of the approach reaching capacity, and Image 16 the queue length diagrams.

7.2 Merge / Diverge Assessment

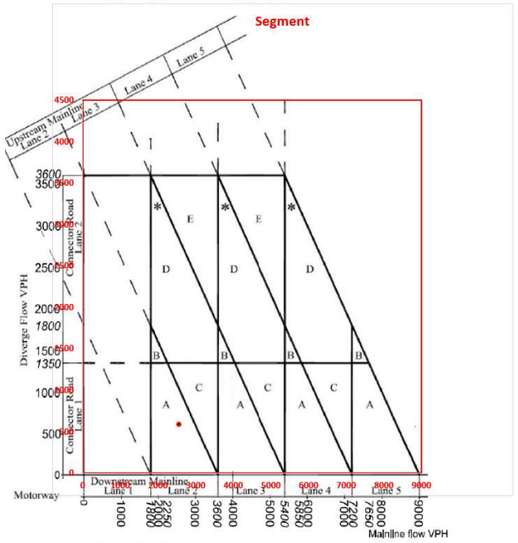
The merge and diverge assessment is presented in Table 10 and 11. The key finding is:

- The motorway mainline East of Junction 12 should be 3 lanes and not 2 as in the existing situation.

Image 15 – M20 Junction 12 High-Level Mitigation Requirements

Table 10 – M20 Junction 12 – 2037 AM Merge/Diverge Assessment

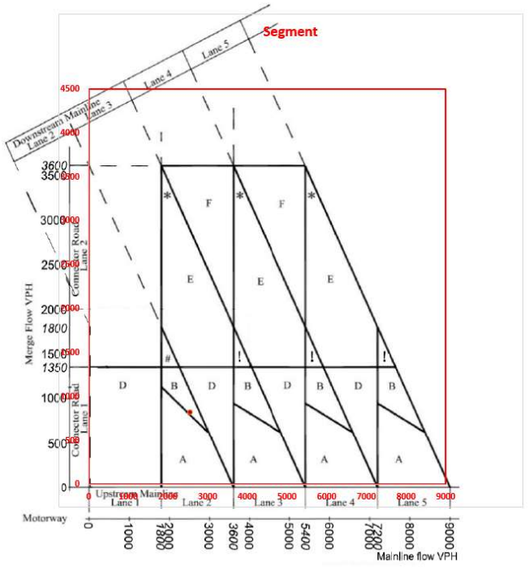
Figure 3.26b Motorway diverging diagram



M20 J12 EB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2562	587

Figure 3.12b Motorway merging diagram



M20 J12 EB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2562	812

Figure 3.12b Motorway merging diagram

M20 J12 WB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
3194	741

Figure 3.26b Motorway diverging diagram

M20 J12 WB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
3194	1153

Table 11 – M20 Junction 12 – 2037 PM Merge/Diverge Assessment

Figure 3.26b Motorway diverging diagram

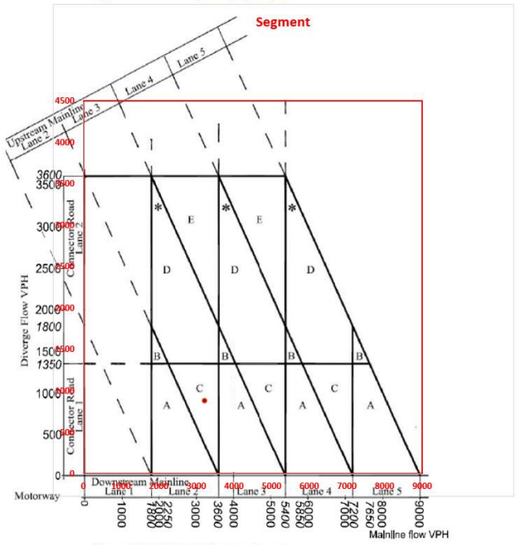
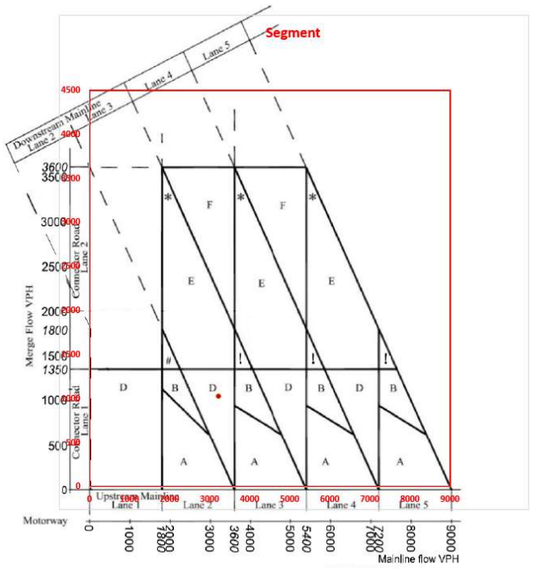


Figure 3.12b Motorway merging diagram

M20 J12 EB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
3228	882

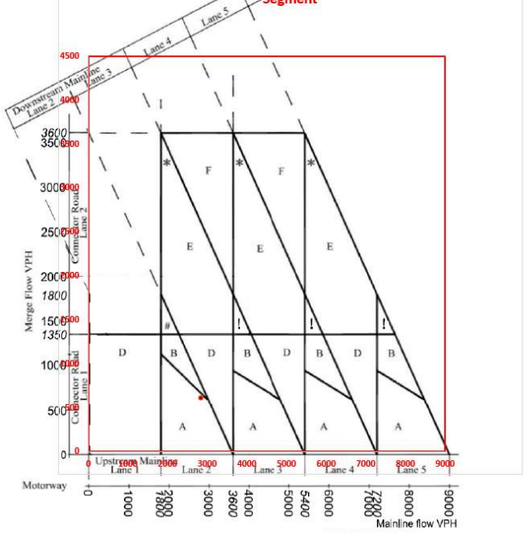
Figure 3.12b Motorway merging diagram



M20 J12 EB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
3228	1031

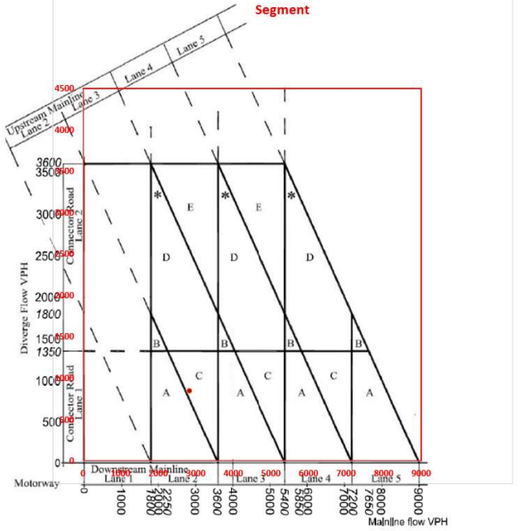
Figure 3.26b Motorway diverging diagram



M20 J12 WB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2838	607

Figure 3.26b Motorway diverging diagram



M20 J12 WB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2838	850

7.3 Traffic Demand Impact

Overall Changes in Traffic Volumes

The M20 Junction 20 comparison of total traffic at an at-grade junction in 2037 between the DM scenario (DS PPLP) and the DS scenario (DS CSR 6,500) is as follows (traffic flows in vehicles):

- AM Peak – DM (3869) / DS (3825), or a decrease of -44 (-1%)
- PM Peak – DM (3898) / DS (3858), or a decrease of -40 (-1%)

The overall change in traffic is negligible.

7.4 Existing Layout at Grade Traffic Assessment

Table 12 presents the traffic analysis of the existing junction layout in both 2037 DM and DS scenarios.

The key findings are:

- Traffic conditions remain similar between the two scenarios; and
- The junction is free-flowing, except for the M20 westbound approach that has reached capacity.

Table 12 – M20 Junction 12 – 2037 Existing Layout Assessment

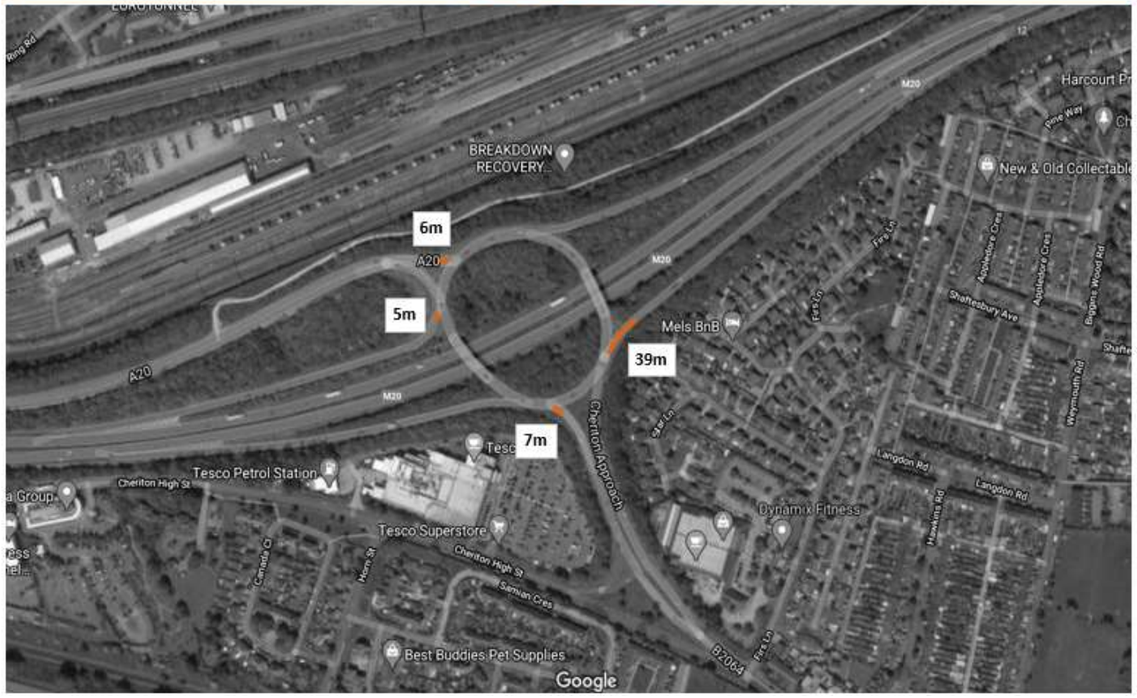
Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	DM 2037							
M20 Westbound	7.7	22.15	0.9	C	4.7	18.06	0.83	C
B2064 Cheriton	1.3	3.14	0.56	A	1.2	2.9	0.54	A
M20 Eastbound	0.9	5.11	0.46	A	3.3	12.57	0.77	B
A20 Ashford Road	1.1	4.55	0.53	A	3	12.56	0.76	B
Arm	DS 2037							
M20 Westbound	6.7	20.07	0.88	C	3.9	15.59	0.8	C
B2064 Cheriton	1.2	3.05	0.55	A	1.2	2.88	0.54	A
M20 Eastbound	0.9	5.12	0.48	A	3	11.28	0.75	B
A20 Ashford Road	1.1	4.54	0.52	A	2.6	11.02	0.73	B

7.5 Conclusion

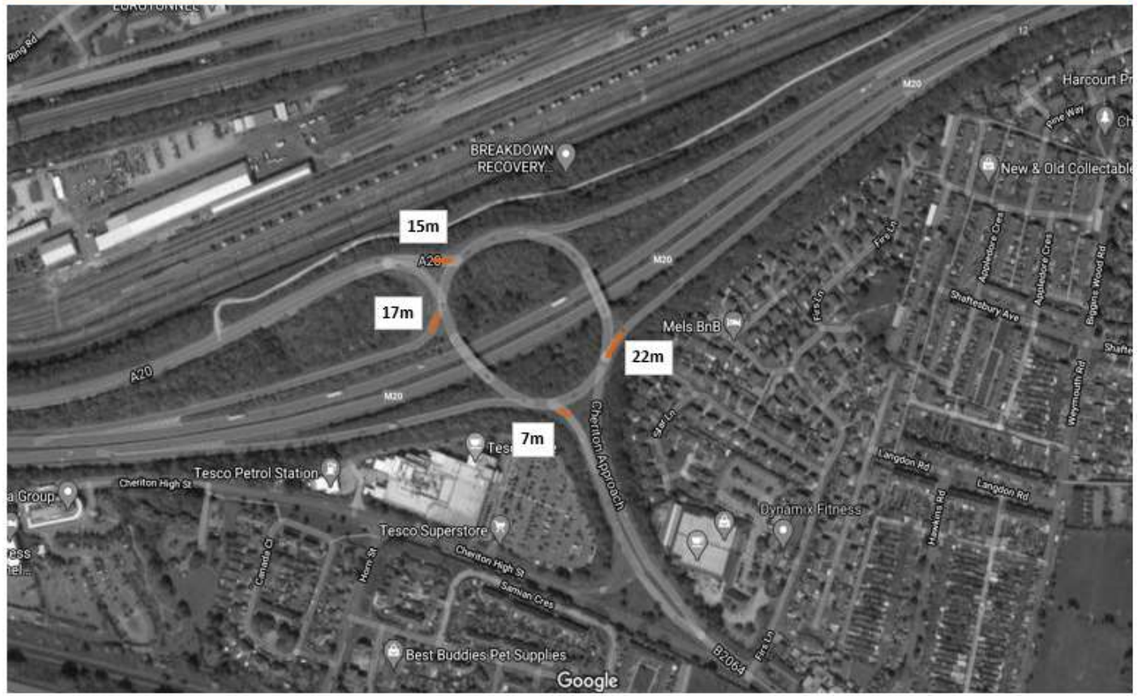
In conclusion, M20 Junction 12 does not require mitigation from Folkestone and Hythe Local Plan DS CSR 6,500 scenario.

Image 16 – M20 Junction 12 – 2037 Queue Length Comparison

2037 DS CSR 6500 AM



2037 DS CSR 6500 PM



8 M20 Junction 13

8.1 Assessment Overview

General Description

M20 Junction 13 is a major motorway interchange with the following characteristics:

- The M20 at this location is composed of 2 lanes in each direction;
- The at-grade junction is a dumbbell with two non-signalised roundabouts;
- The South roundabout includes several free-flow bypasses as part of the existing road layout; and
- Highways England road network includes the full interchange.

Mitigation Requirements Identification

To accommodate 2037 traffic requirement at M20 Junction 13 would include:

- The widening of the M20 to 3 lanes in each direction, West of M20 Junction 13;
- The widening of West facing ramps to 2 lanes, with an upgrade of the corresponding merge / diverge segments; and
- The upgrade of the South roundabout in the dumbbell interchange.

The above upgrades, however, are not required because of the Local Plan CSR 6,500 development, but because of background growth. Although the CSR 6,500 growth increases traffic demand at the roundabout to the South the actual traffic increase is marginal, but as this junction is already saturated, traffic congestion worsens disproportionately.

A traffic increase of 1% to 2% can be mitigated using minor operational improvements. It would typically require geometric improvements.

8.2 M20 Mainline Segment Between Junction 12 and 13

The M20 mainline segment between Junction 12 and Junction 13 has high traffic projections in 2037. The volumes of traffic for each scenario are:

- Eastbound
  - DM 2037 (PPLP): AM 2914 Veh / PM 3939 Veh
  - DS 2037 (CSR): AM 3374 Veh / PM 4259 Veh
- Westbound
  - DM 2037 (PPLP): 4136 Veh / PM 3516 Veh
  - DS 2037 (CSR): 4477 Veh / PM 4076 Veh

The DMRB design standard requires 1,800 vehicles per lane for a motorway to ensure drivers can respect the inter-vehicular safety distance as per the highway code. Depending on the percentage of HGVs, the traffic capacity in section would be comprised between 2,000 and 2,300 vehicles per hour.

The distance between M20 Junction 12 and Junction 13, however, is a weaving segment approximately 850 meters long. The link capacity is therefore further impacted by vehicle lane change behaviour.

The DM2037 (PPLP) analysis, therefore, shows that a three-lane cross-section would be required to achieve free-flowing conditions at peak hour. The DS 2037 (CSR) does increase traffic volumes but does not generate a change to the 2037 required motorway mainline cross-section.

8.3 Merge / Diverge Assessment

The merge and diverge assessment is presented in Tables 13 and 14. The key finding is:

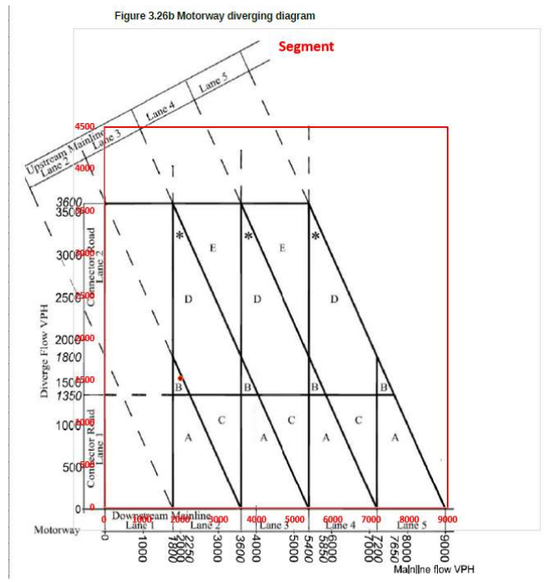
- The PM peak is the busiest;
- The DMRB maximum motorway design value is 1,800 vehicles per lane, but the capacity could, in some circumstances allow up to 2,000 vehicles per lanes depending on the percentage of HGVs. The traffic forecast on the M20 presents values higher than 2,000 vehicles per lane, suggesting an overestimation of the traffic forecast. The widening of the M20 to 3 lanes in each direction, West of M20 Junction 13 is the outcome suggested by the DMRB calculation as well as the road capacity; and
- The widening of West facing ramps to 2 lanes, with an upgrade of the corresponding merge / diverge segments.

Image 17 presents high-level mitigation requirements.

Image 17– M20 Junction 13 High-Level Mitigation Requirements

Table 13 – M20 Junction 13 – 2037 AM Merge/Diverge Assessment

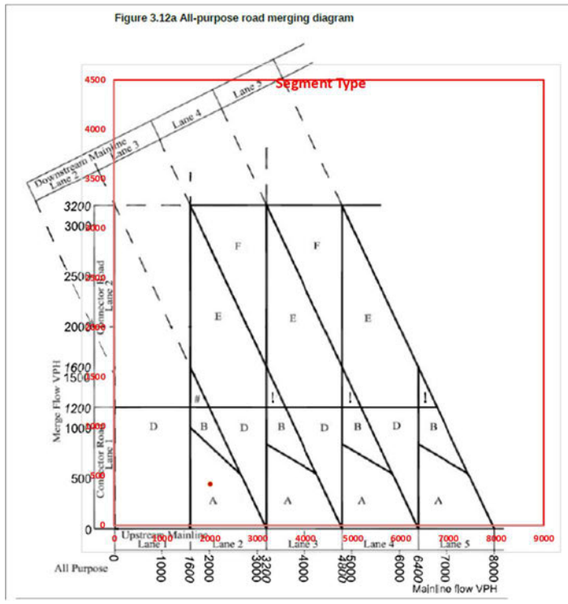
Figure 3.26b Motorway diverging diagram



M20 J13 EB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2015	1525

Figure 3.12a All-purpose road merging diagram



M20 J13 EB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2015	413

Figure 3.12b Motorway merging diagram

M20 J13 WB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2432	2045

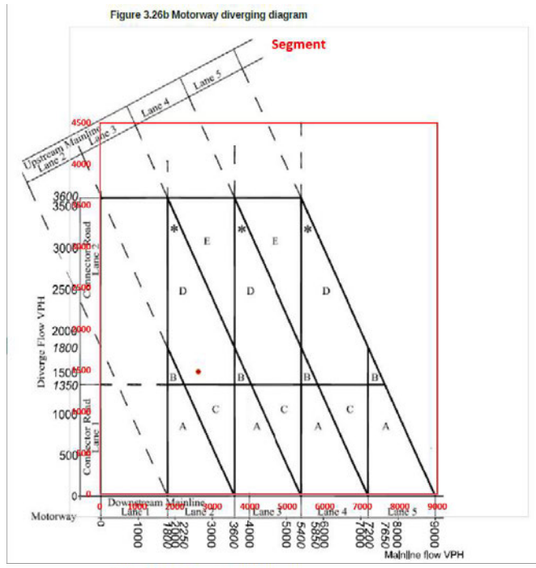
Figure 3.26a All-purpose road diverging diagram

M20 J13 WB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2432	739

Table 14 – M20 Junction 13 – 2037 PM Merge/Diverge Assessment

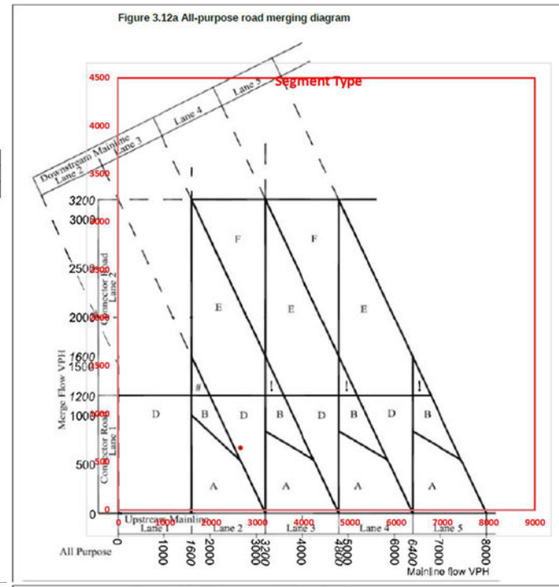
Figure 3.26b Motorway diverging diagram



M20 J13 EB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2643	1484

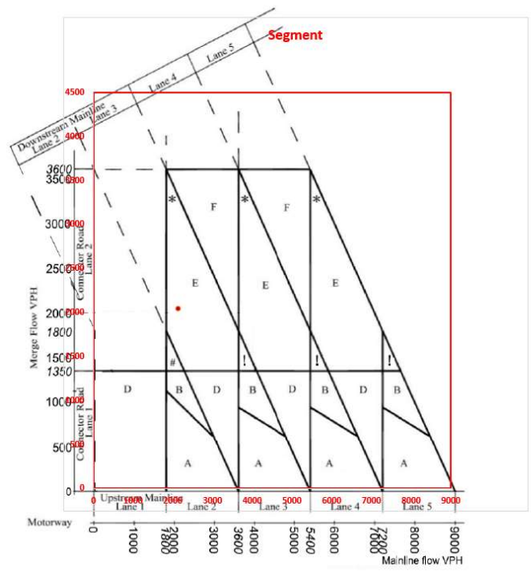
Figure 3.12a All-purpose road merging diagram



M20 J13 EB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2643	637

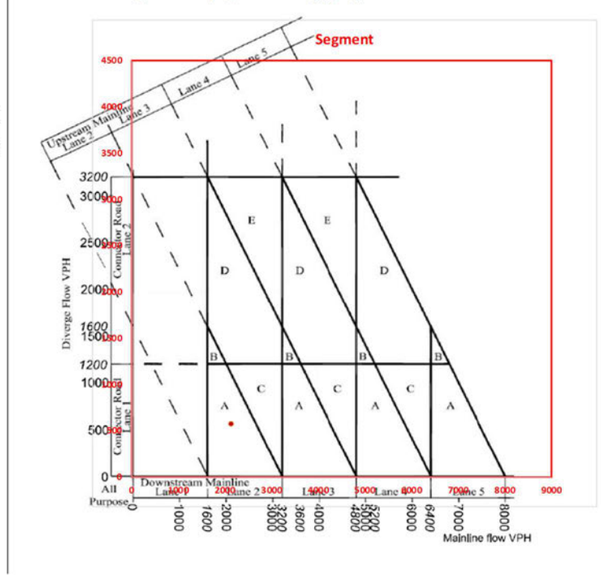
Figure 3.12b Motorway merging diagram



M20 J13 WB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
2141	2037

Figure 3.26a All-purpose road diverging diagram



M20 J13 WB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
2141	567

8.4 Traffic Demand Impact

Overall Changes in Traffic Volumes

M20 Junction 13 South roundabout comparison of total traffic at an at-grade junction in 2037 between the DM scenario (DS PPLP) and the DS scenario (DS CSR 6,500) is as follows (traffic flows in vehicles):

- AM Peak – DM (5504) / DS (5581), or an increase of 77 (1%)
- PM Peak – DM (5531) / DS (5636), or an increase of 105 (2%)

The above analysis demonstrates that a very small level of traffic volume from the DS CSR 6,500 is being routed via Junction 13 interchange.

8.5 Existing Layout at Grade Traffic Assessment

Table 15 shows the traffic delay at the non-signalised South roundabout. Three out of four approaches are saturated in both the AM and PM peak. Such a degree of saturation is not surprising considering the very high volume of traffic at the junction.

A physical junction improvement will be required at the junction to accommodate 2037 traffic demand. Moreover, traffic delays are very imbalanced. A signalised option at the junction should be considered to help to balance delays at the junction, but it is not a substitute for physical junction improvements.

Table 15 – M20 Junction 13 Castle Hill Interchange South – 2037 Existing Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	DM 2037							
M20 Westbound Entry On	2.5	10.88	0.72	B	1.2	6.86	0.55	A
Churchill Avenue	97.6	195.66	1.13	F	12.9	32.16	0.94	D
Cherry Garden Avenue	2.3	8.63	0.7	A	4.8	15.53	0.84	C
A20 Castle Hill Bridge	45.4	98.59	1.04	F	48.6	103.76	1.04	F
Arm	DS 2037							
M20 Westbound Entry On	2.2	10.02	0.69	B	1.1	6.57	0.53	A
Churchill Avenue	115	249.97	1.16	F	20.7	49.66	0.98	E
Cherry Garden Avenue	2.3	9	0.7	A	5.1	17.07	0.85	C
A20 Castle Hill Bridge	100.9	193.64	1.12	F	77.5	152.47	1.09	F

8.6 Proposed Mitigations

Proposed Mitigation Considerations

The proposed concept development was focussed on respecting the following constraints:

- Mitigating the impact of the DS 2037 CSR scenario back to DM 2037 conditions only;
- Avoiding any impact on existing structures as much as possible, for cost reasons; and
- Maintaining the same level of accessibility as in the present situation.

Image 18 presents the proposed mitigation measures. Table 16 presents the traffic analysis of the proposed junction layout for 2037 DS scenario. The key improvements are as follows:

- Extending the two-lane section on the Churchill Avenue approach by taping the exit lane to a 3.65m; and
- Localised widening on the A20 Castle Hill Bridge approach to provide minimum lane widths of 3.6m for the final approach to the junction.

Image 18 – M20 Junction 13 South – 2037 Proposed Layout

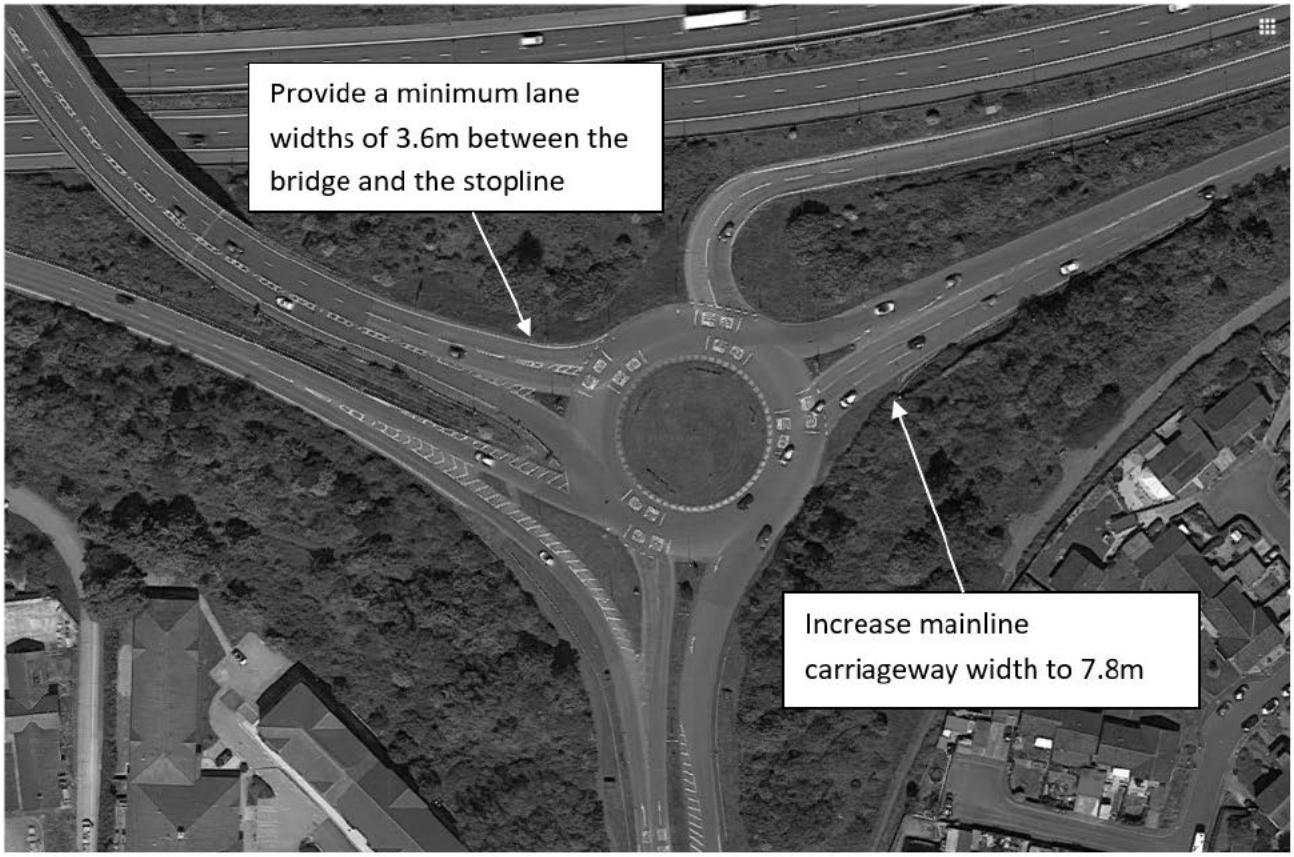


Table 16 – M20 Junction 13 South – 2037 Proposed Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
Arm	DS 2037							
M20 Westbound Entry Only	3.2	14.56	0.77	B	1.3	7.86	0.58	A
Churchill Avenue	61.4	124.12	1.07	F	7.9	19.41	0.9	C
Cherry Garden Avenue	2.6	10.31	0.73	B	5.4	18.26	0.85	C
A20 Castle Hill Bridge	23.4	51.22	0.99	F	15.4	35.95	0.96	E

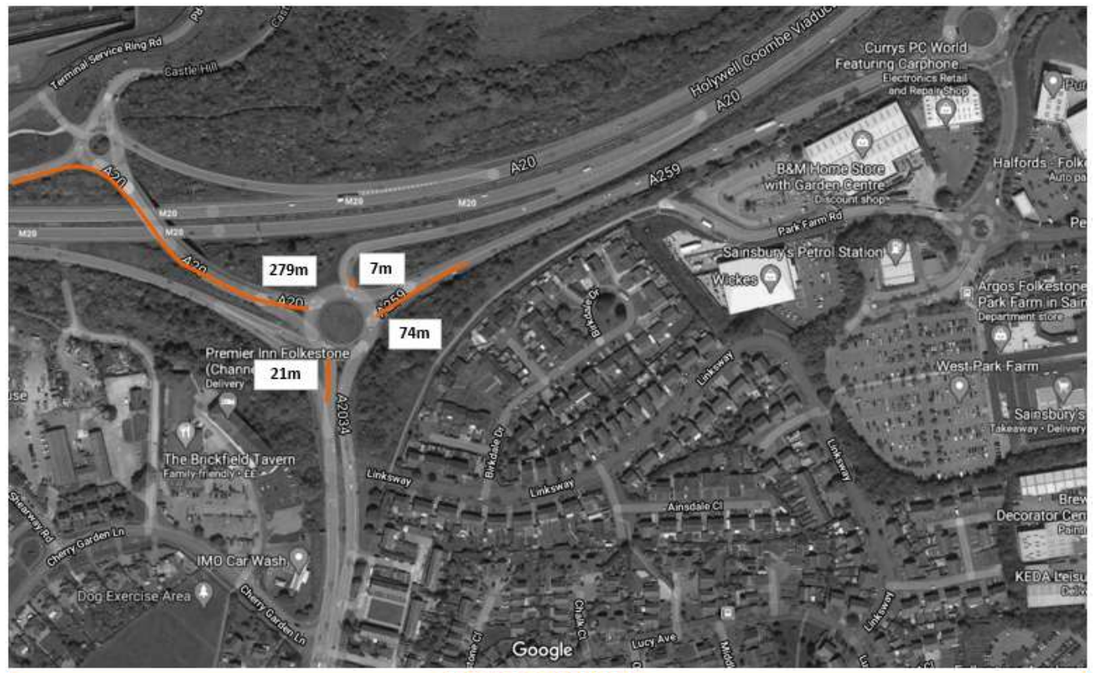
8.7 Conclusion

Significant highway improvements will be required at M20 Junction 13. These improvements, however, should be attributed to background traffic growth and not to the DS CSR 6500 scenario. The Local Plan additional 1% to 2% traffic increase can be mitigated using minor operational improvements shown in Section 8.6.

Image 19 – M20 Junction 13 – 2037 Queue Length Comparison

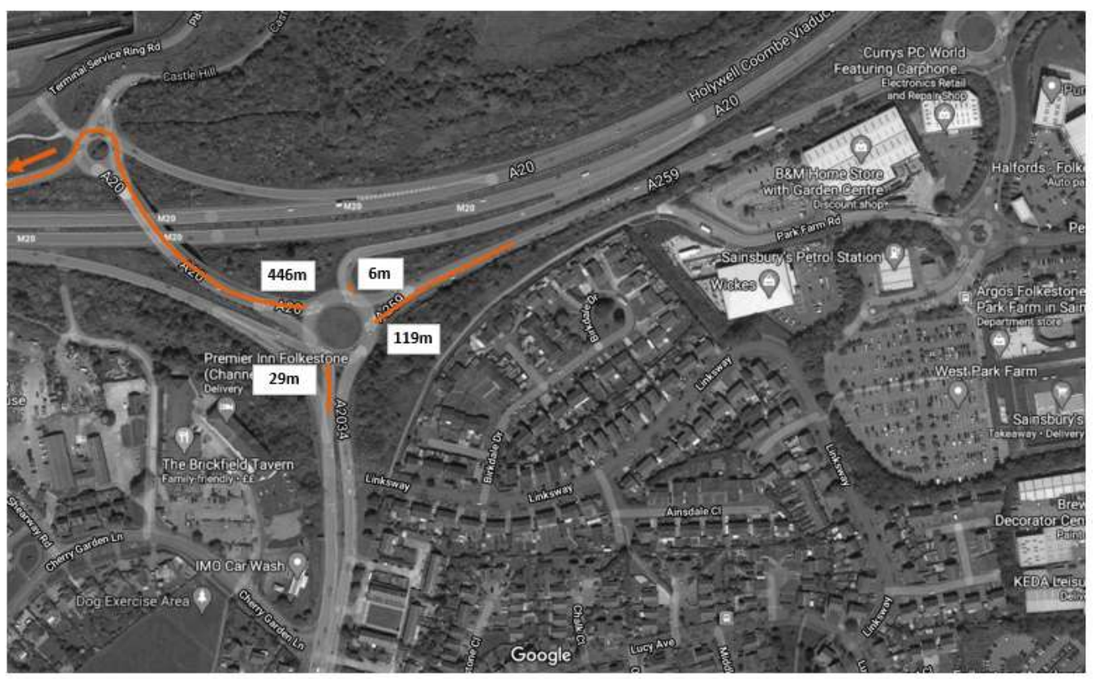
2037 DS PPLP 6500 AM

2037 DS PPLP 6500 PM



2037 DS CSR 6500 AM

2037 DS CSR 6500 PM



9 A20 / Spitfire Way / Alkham Valley Road

General Description

A20 / Spitfire Way / Alkham Valley Road junction is a major motorway interchange with the following characteristics:

- The M20 at this location is composed of 2 lanes in each direction;
- A number of physical constraints severely restrict geometric alterations at this interchange, including:
  - The presence of a tunnel West of the interchange, impacting the ability to extend merge / diverge segments;
  - The presence of a substation, requiring access to the South of the carriageway;
  - The presence of bridge structures;
  - The topography of the site, with significant elevations on the ramps; and
  - The overbridge width can only accommodate one lane in each direction.
- Highways England road network includes most of the interchange, except for Canterbury Road/Alkham Valley.

Mitigation Requirements Identification

To accommodate 2037 traffic requirement at A20 / Spitfire Way / Alkham Valley Road junction would include:

- A set of geometric upgrades at the junctions, in particular for the A-Road ramp approaches; and
- Probably an improved signage and road safety scheme to limit the risk of blocking back queues and incidents on the A20, that would potentially result from lane change manoeuvres on the A20 mainline.

Image 20 presents the mitigation requirements.

Further upgrades could be considered, however, the presence of only two lanes on the A20, local site constraints as well as the balanced traffic volume on the corridor might suggest them to be not necessary, despite DMRB standard requirements.

Moreover, the DS CSR 6,500 would only account for up to 6% to 7% traffic increase at local junctions. Such traffic increase could typically be mitigated using limited geometric improvements and operational measures.

9.1 Merge / Diverge Assessment

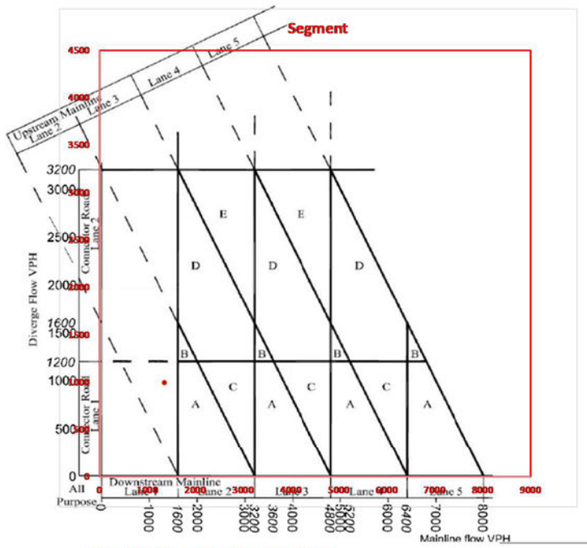
The merge and diverge assessment is presented in Tables 17 and 18. The key finding is:

- The dominant traffic seems tidal, from the local area towards the West in the morning, and back in the afternoon;
- The traffic staying on the motorway mainline never requires more than one lane, and overall, the traffic density on the A20 at this location is low;
- There are no lane restrictions for HGVs in the tunnel;
- The projected traffic volume on the ramps can be high and would require two lanes, however, a single lane would have sufficient capacity, and a two-lane ramp on a 2 lane mainline would require extended merge diverge segments.

Image 20 – A20 / Spitfire Way / Alkham Valley Road High-Level Mitigation Requirements

Table 17 – A20 / Spitfire Way / Alkham Valley Road– 2037 AM Merge/Diverge Assessment

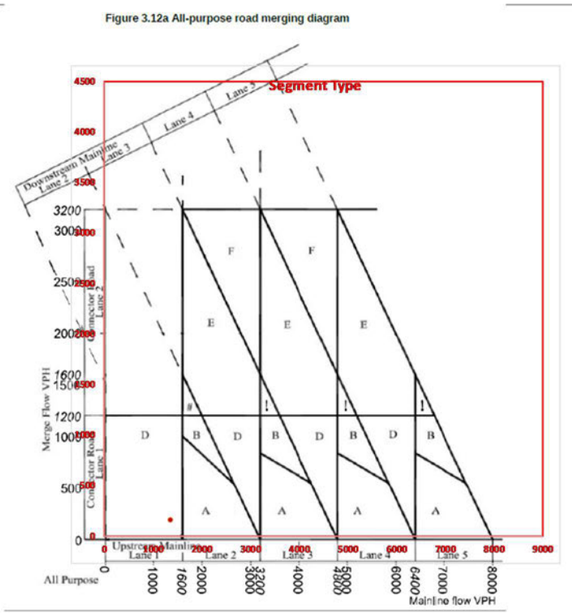
Figure 3.26a All-purpose road diverging diagram



A20 Spitfire EB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
1356	990

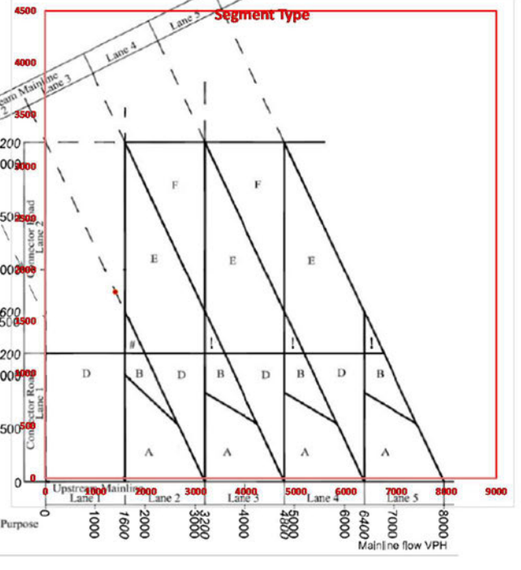
Figure 3.12a All-purpose road merging diagram



A20 Spitfire EB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
1356	154

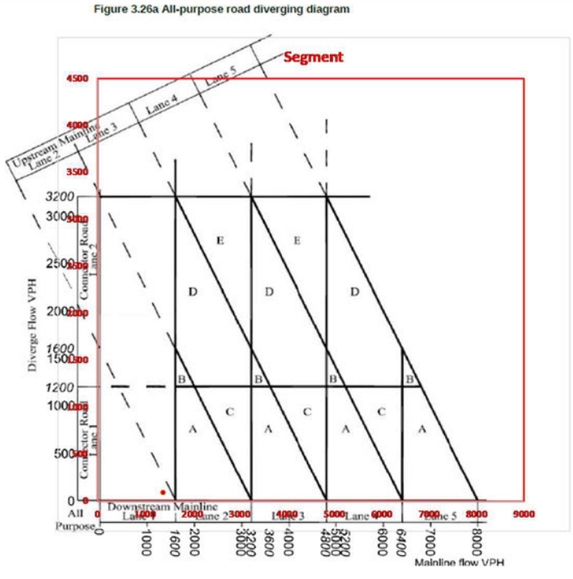
Figure 3.12a All-purpose road merging diagram



A20 Alkham WB On-Slip___AM

Mainline flow	Merge flow
Veh/hr	Veh/hr
1392	1785

Figure 3.26a All-purpose road diverging diagram

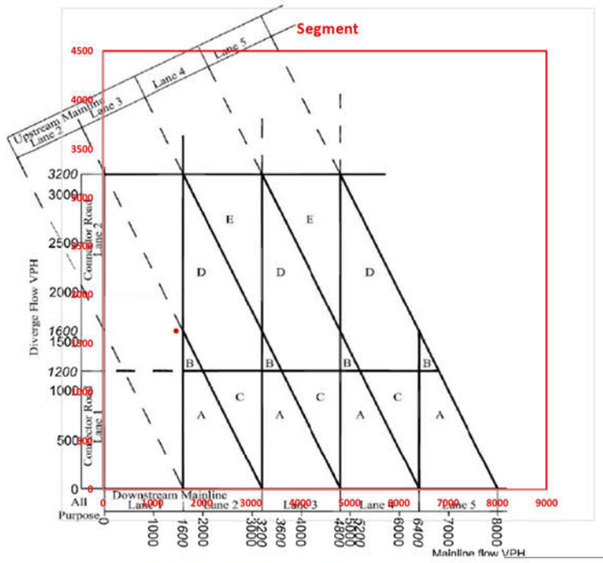


A20 Alkham WB Off-Slip___AM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
1392	89

Table 18 – A20 / Spitfire Way / Alkham Valley Road– 2037 PM Merge/Diverge Assessment

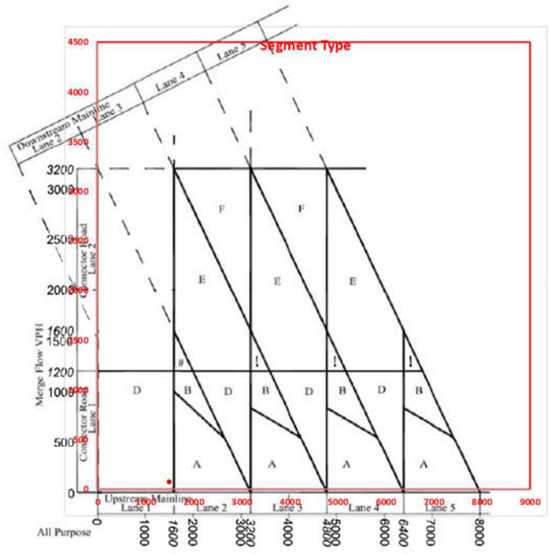
Figure 3.26a All-purpose road diverging diagram



A20 Spitfire EB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
1497	1619

Figure 3.12a All-purpose road merging diagram



A20 Spitfire EB On-Slip___PM

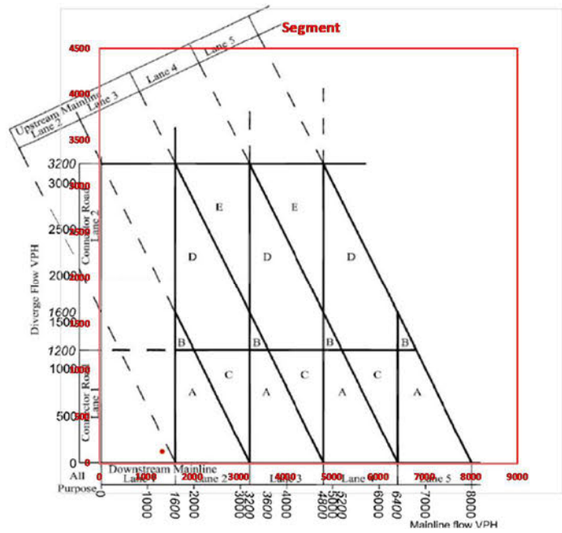
Mainline flow	Merge flow
Veh/hr	Veh/hr
1497	67

Figure 3.12a All-purpose road merging diagram

A20 Alkham WB On-Slip___PM

Mainline flow	Merge flow
Veh/hr	Veh/hr
1361	1177

Figure 3.26a All-purpose road diverging diagram



A20 Alkham WB Off-Slip___PM

Mainline flow	Diverge flow
Veh/hr	Veh/hr
1361	122

9.2 Traffic Demand Impact

The A20 / Spitfire Way / Alkham Valley Road interchange is composed of three junctions. As indicated below, the Spitfire Way junction to the North is more impacted than others. This is logical as most of the development is taking place North of the A20.

Overall Changes in Traffic Volumes (in Veh.) – Spitfire Way

The comparison of total traffic at an at-grade junction in 2037 between the DM scenario (DS PPLP) and the DS scenario (DS CSR 6,500) is as follows:

- AM Peak – DM (3363) / DS (3585), or an increase of 222 (6%)
- PM Peak – DM (3829) / DS (4069), or an increase of 240 (6%)

Overall Changes in Traffic Volumes (in Veh.) – Alkham Valley

The comparison of total traffic at an at-grade junction in 2037 between the DM scenario (DS PPLP) and the DS scenario (DS CSR 6,500) is as follows:

- AM Peak – DM (2491) / DS (2523), or an increase of 32 (1%)
- PM Peak – DM (2032) / DS (2184), or an increase of 152 (7%)

Overall Changes in Traffic Volumes (in Veh.) – Canterbury Road/Alkham Valley

The comparison of total traffic at an at-grade junction in 2037 between the DM scenario (DS PPLP) and the DS scenario (DS CSR 6,500) is as follows:

- AM Peak – DM (3231) / DS (3238), or an increase of 7 (0%)
- PM Peak – DM (3279) / DS (3385), or an increase of 106 (3%)

9.3 Existing Layout at Grade Traffic Assessment

Table 19 shows the traffic delay at the non-signalised North roundabout. The four approaches are unevenly saturated, however, typically two or more approaches have reached capacity at the junction at each peak hour. Image 21 presents the queue lengths for the same scenarios.

Road geometric improvements will be required at the junction, which will have to be combined with a signalised (or part-signalised) solution to ensure the absence of blocking back queues on the A20.

Table 19 – Spitfire Way-White Horse Hill-A260 – 2037 Existing Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	DM 2037							
White House Hill	2.1	14.93	0.68	B	0.7	6.29	0.4	A
A20 Slip Roads	20.1	82.1	1	F	289.4	742.35	1.45	F
Canterbury Rd	1.2	5.57	0.54	A	3.6	12.69	0.79	B
Spitfire Way	91.5	191.54	1.12	F	3.8	12.97	0.8	B
Arm	DS 2037							
White House Hill	2.1	15.16	0.68	C	0.9	8.04	0.47	A
A20 Slip Roads	116.8	447.95	1.25	F	503.7	1350.49	1.75	F
Canterbury Rd	1.2	5.74	0.54	A	2.8	10.01	0.74	B
Spitfire Way	119.7	277.65	1.15	F	9.3	28	0.92	D

Image 21 – Spitfire Way-White Horse Hill-A260 – 2037 Queue Length Comparison

2037 DS PPLP 6500 AM

2037 DS PPLP 6500 PM

2037 DS CSR 6500 AM

2037 DS CSR 6500 PM

Table 20 shows the traffic delay at the non-signalised South roundabout. The three approaches are unevenly saturated, with an overall degree of saturation suggesting the queueing could be re-balanced using traffic signals. Internal storage capacity might prove challenging. Image 22 shows the queue lengths on the highway layout.

Due to the arm configuration at the junction, free-flowing junction bypasses can also be envisaged.

Table 20 – Alkham Valley Rd-A20 Slip – 2037 Existing Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	DM 2037							
A20 Offslip	0	1.95	0.05	A	0.1	2.26	0.08	A
AlkamValley Rd (East)	1.6	5.05	0.62	A	0.4	2.81	0.3	A
AlkamValley Rd (South)	152.7	390	1.23	F	37.8	83.81	1.02	F
Arm	DS 2037							
A20 Offslip	0	1.92	0.05	A	0.1	2.15	0.07	A
AlkamValley Rd (East)	1.4	4.75	0.59	A	0.4	2.76	0.29	A
AlkamValley Rd (South)	186	488.43	1.28	F	120.4	240.9	1.14	F

Image 22 – Alkham Valley Rd-A20 Slip – 2037 Queue Length Comparison

Table 21 shows a completely saturated three-arm junction on the A260. The development of a large signalised junction or a large roundabout is required at this location. The carriageway width restriction on the bridge North of the junction represents a major constraint limiting opportunities for junction improvements.

Signalising the existing junction only will not be sufficient to accommodate future traffic demand.

Table 21 – Canterbury Rd-A260 Alkham Valley Rd – 2037 Existing Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	DM 2037							
Alkham Valley Left Turn	215.7	2545.12	1E+10	F	163.8	2636.14	1E+10	F
Alkham Valley Right Turn	33.9	2622.47	1E+10	F	43.3	2718.02	1E+10	F
Canterbury Road Right Turn	49.6	1492.51	2	F	56.9	783.24	1.67	F
Arm	DS 2037							
Alkham Valley Left Turn	206.5	29190.2	1E+10	F	158.4	3416.15	1E+10	F
Alkham Valley Right Turn	32.2	33643.02	1E+10	F	41.7	3496.55	1E+10	F
Canterbury Road Right Turn	54	1965.07	2.33	F	78.8	2048.83	2.36	F

Image 23 – Canterbury Rd-A260 Alkham Valley Rd – 2037 Queue Length Comparison

2037 DS PPLP 6500 AM

2037 DS PPLP 6500 PM

2037 DS CSR 6500 AM

2037 DS CSR 6500 PM

9.4 Proposed Mitigations

Proposed Mitigation Considerations

The proposed concept development was focussed on respecting the following constraints:

- Mitigating the impact of the DS 2037 CSR scenario back to DM 2037 conditions only;
- Avoiding any impact on existing structures as much as possible, for cost and feasibility reasons; and
- Maintaining the same level of accessibility as in the present situation.

The followings section present the traffic analysis of the proposed junction layout for 2037 DS scenario with mitigation for the three A20 Alkham Valley junctions.

Spitfire Way-White Horse Hill-A260 (see image 24)

- Increasing the effective flare length on the A20 Slip approach by 7m;
- Increasing the entry width by 0.4m and the effective flare length by 11m on the Spitfireway approach; and
- Left turn free-flow slip from the A20 slip to the A260 South.

Image 24 – Spitfire Way-White Horse Hill-A260 – 2037 Proposed Layout

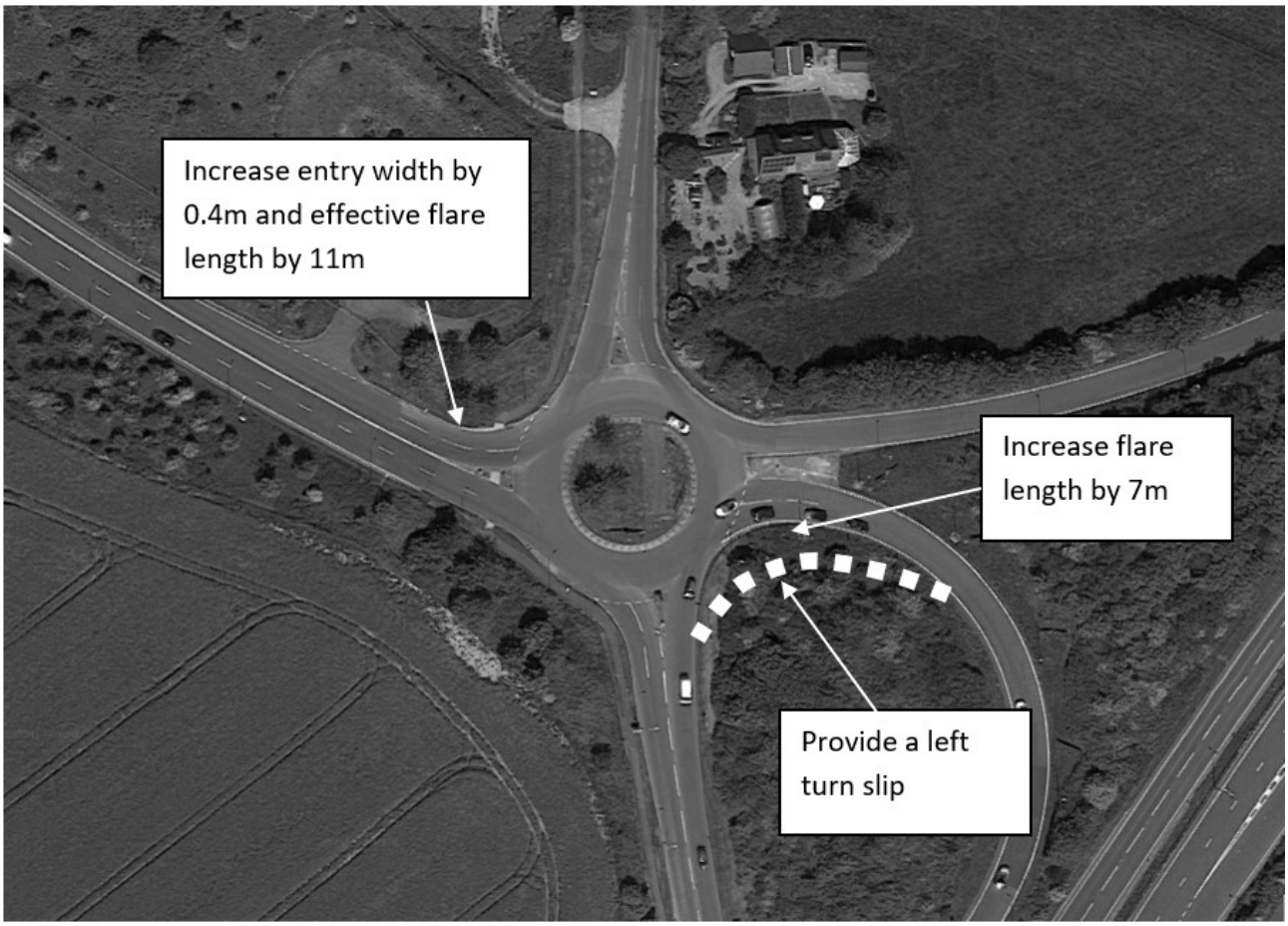


Table 22 – Spitfire Way-White Horse Hill-A260 – 2037 Proposed Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
Arm	DS 2037							
White House Hill	3.8	28.58	0.81	D	0.9	8.08	0.47	A
A20 Slip Roads	48.5	185.05	1.12	F	122.3	322.69	1.23	F
Canterbury Rd	1.1	5.23	0.52	A	3.7	13.32	0.79	B
Spitfire Way	26.4	59.36	1	F	4	11.69	0.81	B

Table 22 shows that most arms have improved performance in the proposed 2037 situation compared to the DM 2037 situation. Queues in the AM peak, however, have moved from Spitfire Way to the A20 Slip Road. This queue of 185 meters, however, does not block back onto the motorway.

In the AM peak, weighted average junction delay per vehicle are:

- DM 2037 – 50 seconds per vehicle
- DS 2037 with mitigations – 41 seconds per vehicle

In the PM peak, weighted average junction delay per vehicle are:

- DM 2037 – 117 seconds per vehicle
- DS 2037 with mitigations – 59 seconds per vehicle

Overall, the junction delays are mitigated and operational consequences for traffic queues remain the same,

Alkham Valley Rd-A20 Slip (see Image 25)

- Increasing the entry width by 0.54m and the effective flare length by 8.8m on the Alkham Valley South approach.

Image 25 – Alkham Valley Rd-A20 Slip – 2037 Proposed Layout

Table 23 shows the modelling results after the implementation of mitigation measures.

Table 23 – Alkham Valley Rd-A20 Slip – 2037 Proposed Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
Arm	DS 2037							
A20 Offslip	0	1.95	0.05	A	0.1	2.21	0.07	A
AlkamValley Rd (East)	1.4	4.75	0.59	A	0.4	2.76	0.29	A
AlkamValley Rd (South)	119.7	249.97	1.16	F	56.9	107.33	1.05	F

The proposed measures fully mitigate the traffic increase impact at Alkham Valley.

Canterbury Rd-A260 Alkham Valley Rd (See image 26)

- Increasing the mainline carriageway width at the junction to 7.8m

Image 26 – Canterbury Rd-A260 Alkham Valley Rd – 2037 Proposed Layout

Table 24 shows the modelling results with the mitigation measures implemented.

Table 24 – Canterbury Rd-A260 Alkham Valley Rd – 2037 Proposed Layout Assessment

Arm	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
Arm	DS 2037							
Alkham Valley Left Turn	93.5	2057.18	2.98	F	115.8	1776.78	1E+10	F
Alkham Valley Right Turn	15	2310.38	2.85	F	30.1	1982.94	1E+10	F
Canterbury Road Right Turn	30.4	562.93	1.44	F	54.4	770.98	1.66	F

The proposed measures fully mitigate the traffic increase impact at Canterbury Rd-A260 Alkham Valley Rd.

9.5 Conclusion

In conclusion, the merge / diverge arrangement would require upgrading using DMRB design standards, but from a congestion standpoint, it would not result in saturated traffic conditions. A safety assessment would, however, be required to ensure last-minute lane change manoeuvres are mitigated.

Regarding the three at-grade junctions of the A20 / Spitfire Way / Alkham Valley Road interchange, to re-instate free-flowing traffic conditions:

- Physical junction interventions will be required, combined with the signalisation of the junctions; and
- The Canterbury Road-A260 Alkham Valley Road junction is constrained by the bridge just North of it and might not be able to accommodate a sufficient junction upgrade.

The DS CSR 6,500 scenario, however, is having a very limited contribution to the above-described traffic conditions. Mitigating its own impact would be limited to the development of minor junction improvements. This section demonstrates that limited highways geometric interventions are sufficient to mitigate the increase in traffic volumes generated by the Local Plan.

10 Otterpool Park Transport Assessment

10.1 Submitted Transport Assessment

Initial Work and Submission

In February 2019, an outline planning application for the Otterpool Park development was submitted to Folkestone & Hythe District Council. A Transport Assessment was submitted with the application, the scope of which was discussed and agreed with Kent County Council, Folkestone & Hythe District Council and Highways England between April 2017 and March 2018. As part of the scoping exercise, technical reports were produced setting out the methods by which the assessment was to be undertaken and preliminary assessment work was carried out to inform discussions. A series of meetings were held and correspondence was exchanged with the key stakeholders throughout the year-long scoping period, which culminated in a set of technical notes and scoping documents that set out the agreed scope and method for the assessment. With regard to the scope of the highway impact assessment, the study area included all the junctions assessed in this Traffic Report.

Revised Submission in Preparation for 2021

Following comments received on the 2019 application, further scoping discussions have been held with all three parties in 2020. The discussions have led to variations in the scope and method of assessment, which will be reflected in the Transport Assessment to be produced for the revised application due for submission in 2021.

10.2 Garden Town with Sustainable Transport

High Provision of Local Services

The aim for the Otterpool Park settlement is to strike the right balance between ensuring the Garden Town is a great place to live and work with all the amenities its population needs, while also providing strong connections to and from neighbouring communities via sustainable transport modes. There will be a high proportion of local trips made within Otterpool Park as the development incorporates a range of schools, healthcare, community and sports facilities to meet as many of the needs of residents as possible and minimise travel to other locations. There will be local shopping and services and on-site employment locations together with the infrastructure for home working.

Comprehensive Network to Support Active Travel

The Otterpool Park development and associated access and travel strategy will provide residents, employees and visitors with an attractive and comprehensive network of sustainable travel opportunities to provide viable alternatives to travel by private car. This will be balanced with the need to ensure that the highway access arrangements are robust enough to sustain additional traffic movements, provide connectivity to existing routes and allow the existing network to function without causing significant issues for Otterpool Park and existing local residents.

The infrastructure of the Masterplan will be complemented by bespoke green travel measures, which will build on the opportunities offered by the existing and proposed walking, cycling, equestrian and public transport infrastructure, and promote and develop sustainable travel opportunities as well as support low emissions vehicles and innovative transport solutions.

Agreed Trip Generation Rates

All elements of the trip generation were agreed with Highways England, Kent County Council and Folkestone & Hythe District Council during the scoping process. The detail in which the trip generation of the Otterpool Park site has been considered for the Otterpool Park Transport Assessment is far greater than is the case for

the Shepway Transport Model on which this assessment of the Folkestone & Hythe Local Plan has been based. The Otterpool Park Transport Assessment considers the number of trips generated by and attracted to the site for 14 separate trip purposes and recognises the varying methods of travel people are likely to use for the different purposes. Most importantly, it considers the level of trip internalisation that can be expected due to the range of services offered on-site for residents and visitors. The agreed method of trip generation and distribution identifies that up to one-third of all trips generated by the site is likely to be internalised and therefore would not impact on the highway network outside of the development boundary. In addition, up to 20% of trips attracted to the site are expected to take the form of linked trips (i.e. a commuter working on-site may also drop their child at an on-site school or/and visit one fo the local shops).

Lower Traffic Level on Highways England Road Network

Based on the above efforts made by Otterpool Park, the anticipated external trip generation of the Otterpool Park development, and therefore the traffic that will impact on local roads and the Highways England network, is expected to be lower than the trip generation of the Otterpool Park site in the Shepway Transport Model, which uses trip rates from the TRICS database that are derived from stand-alone residential and commercial developments that do not take any account of trip internalisation.

10.3 Monitor and Manage Approach

Shepway Transport Model – Worst-Case Using Typical Ratios

The Otterpool Park trip generation in the Shepway Transport Model is therefore expected to represent an overestimation of the actual trip generation of a Garden Town. Since the Otterpool Park development trips represent the majority of the Local Plan trips assessed in this Traffic Report, it follows that the assessment presented here represents an overestimation of the likely impact on the Highways England network, particularly at the M20 Junction 11.

Monitor and Manage Approach

It should be acknowledged that forecasting travel behaviour 20+ years in the future is a very difficult task. In a relatively short period of time, new innovations can influence where, when and how people travel. For example, over the period in which Otterpool Park would be built, it is accepted that there are likely to be many new influences on travel behaviour that may increase or decrease people's propensity to travel by sustainable modes. For this reason, it is recommended that any highway mitigation measures identified within this Report should be subject to a 'monitor and manage' approach to implementation to prevent the unnecessary introduction of significant infrastructure changes if they are not required.

11 Overall Conclusion

In conclusion, the purpose of the study is to enable Folkestone and Hythe District Council to agree on a Statement of Common Ground regarding requirements for highway schemes to mitigate impact related to the Folkestone and Hythe Local Plan on the Highways England road network, or the further work required to identify those requirements.

The methodology in the AECOM Shepway Transport Model has been retained, and the model updated using the latest available information for the DS CSR 6,500 2037 scenario.

The study area has been confirmed to be limited to the Highways England road network within Folkestone and Hythe District Council following a review of traffic volumes and traffic conditions in the Ashford area.

Overall, the following junctions require physical upgrades by 2037:

- M20 Junction 11;
- M20 Junction 13; and
- A20 / Spitfire Way / Alkham Valley Road interchange.

M20 Junction 11 requires substantial junction upgrades, directly linked to background traffic growth and to Otterpool Park development. The traffic impact from DS CSR 6,500 on the other two junctions, however, is limited. The traffic impact is mostly the result of these junction being already saturated in the future.

Otterpool Park Transport Assessment modelling assumptions take into account the garden village and active travel measures of the site. In the view of the potential positive impact of such measures, a “monitor and manage” approach to infrastructure development is recommended.

APPENDIX A

1.1 Available Input Data

1. AECOM, Briefing Note: Shepway Transport Model Update – Review & Findings, December 2017;
2. AECOM, Shepway Transport Model – Merge and Diverge Appraisal (with spreadsheet model), September 2018;
3. AECOM, Shepway Transport Model, Local Junction Modelling and outputs; November 2017;
4. Taylor Wimpey, Cheriton High Street Junction, committed scheme drawing, May 2018;
5. Email correspondence from Highways England to Folkestone & Hythe District Council dated October 2018 to confirm that no mitigation would be required for the 2031 Do Something scenario for the Places and Policies Local Plan (additional modelling scenarios);
6. Arcadis, Otterpool Park – Transport Assessment, February 2019 (with supporting information and traffic models);
7. Folkestone & Hythe District Council and Highways England, Statement of Common Ground, January 2020;
8. Highways England, Folkestone and Hythe District Core Strategy Review Examination Submission to the Examination by Highways England, July 2020; and
9. Folkestone & Hythe District Council, Core Strategy Review – Inspector's Matters, July 2020.

APPENDIX B

1.2 Ashford Traffic Analysis

1. Junction 10a scheme description;
2. WebTRIS data; and
3. Ashford junctions DMRB merge diverge analysis.

APPENDIX C

1.3 Traffic Demand Model

1. Baseline demand analysis;
2. Traffic demand models.

APPENDIX D

1.4 Traffic Analysis

1. M20 Junction 11 traffic analysis;
2. M20 Junction 11a traffic analysis;
3. M20 Junction 12 traffic analysis;
4. M20 Junction 13 traffic analysis; and
5. A20 / Spitfire Way / Alkham Valley Road traffic analysis.

APPENDIX E

1.5 M20 Junction 11 Design

1. Option A drawing;
2. Option B drawing;
3. Option C drawing; and
4. Option D drawing.

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