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ARCADIS Design & Consultancy for natural and built assets

OTTERPOOL PARK

Transport

Incorporating

EC HARRIS BUILT ASSET CONSULTANCY

Hyder

Content

- Overview of development
- Transport Scoping
- Trip Generation & Distribution methods
- Highway capacity modelling

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Overview of Development

Development Proposals

- 8,500 homes, plus complementary land uses
- 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
- Local shopping and services
- On-site employment locations and infrastructure for home working
- A Travel Plan with a comprehensive range of measures will provide mitigation to traffic impacts
- Assumptions that a high level of trips will be internal and therefore more likely to use sustainable travel modes

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Sustainable Development

Bus Infrastructure & Services:

- Bus services connecting through the site between Ashford and Hythe
- 30 minute frequencies as a minimum from the outset – 10/15 minute frequencies for full development
- Real time information, high quality bus shelters with seating & lighting
- A bus stop within 400 metres of the majority of homes
- Bus routes providing a connection within the site to the schools, local centres, High Street and Westenhanger Station

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Sustainable Development

Rail Infrastructure & Services: Westenhanger station

- Bus interchange
- Enhanced parking facility with EV charging points
- Upgraded passenger waiting facilities and information
- Improved accessibility – lift access to platforms
- Aspiration of HS1 service from the station and increase in direct trains to London in less than one hour

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Sustainable Development

Cycle Infrastructure:

- Provision of segregated, direct cycle routes connecting residential areas to local centres, schools, the High Street and rail station
- Strategic/Primary streets – segregated cycleway on one side & footpaths
- Secondary streets – shared cycle/footway on one side & footpath on other
- Junctions designed to provide priority at crossings to cyclists (and pedestrians)
- Secure cycle storage hubs at local centres, rail station and schools

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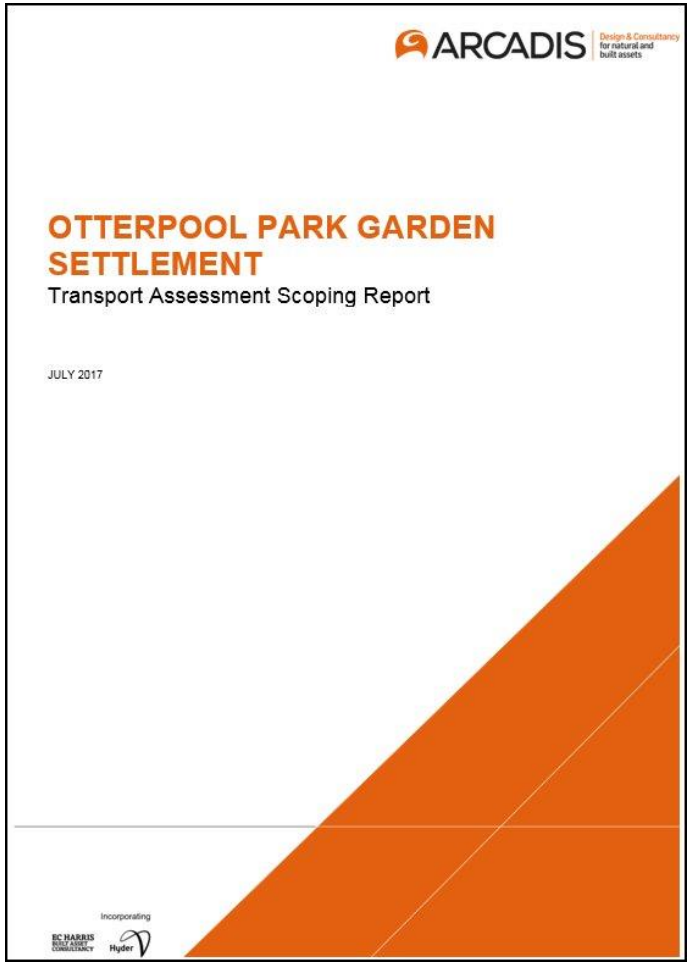
Transport Scoping

Transport Scoping

July 2017 –

- Scope of Transport Assessment
  - Study area
  - Data collection requirements
  - Assessment methods
  - Traffic forecasting
  - Assessment scenarios and time periods

- Supplementary Method reports covering:
  - Trip generation method: trip rates by land use
  - Method of travel: trip rates by mode
  - Trip distribution



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Assessment Scenarios

- Main Assessment: 8,500 homes
  - Application Year, 2018
  - End of Local Plan period, 2037
  - Year of full occupation, 2044
- Sensitivity Assessment: 10,000 homes
  - Year of full occupation, 2046
- Peak Period assessments:
  - AM peak 8 – 9am
  - PM Peak 5 – 6pm
  - Peak periods verified by local traffic counts

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Reference Case Forecasting

- Method agreed using TEMPro, which forecasts traffic growth based on growth in Household and Job numbers
- Household & Job forecasts obtained from Kent County Council
- Developments at Sellindge to be considered separately using information in the Transport Assessments

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Committed Highway Proposals

- New M20 Junction 10A, plus changes to surrounding road network
- New signalised site access junction on A20 Hythe Road for Willesborough Lees development
- Traffic calming & new site accesses through Sellindge Village
- Signalisation of Newingreen junction
- Cheriton Road / Cherry Garden Avenue junction & link proposals
- Military way parking suspension at Hythe gyratory

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Trip Generation & Distribution Methods

Trip Generation Method

- Scale of retail, leisure, health and education facilities provided to match on-site demand rather than attract large numbers of trips from off-site
- Residential and employment land uses therefore expected to be main drivers for trip generation
- Trip rates for residential and B1/B2 land uses derived from TRICS database
- Trip generation of other land uses derived by considering the on-site demand for each land use type

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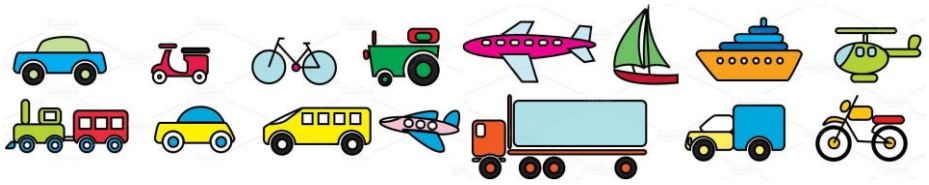
Travel Mode Splits

- Census travel to work travel mode splits used for all work trips. Use of Census reflects local travel behaviour

- Data from National Travel Survey defining mode of travel of other trip purposes used for non-work trips. Data refined using Census to reflect local travel behaviour

- Different mode splits derived for Internal and External trips:
  - Internal mode splits derived by considering Census mode of travel for short journeys (less than 2km)
  - External mode splits derived by considering Census mode of travel for journeys greater than 2km (up to 10km for education trips)



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Travel Mode Splits by Trip Purpose

Otterpool Park External Mode Splits

Mode	Commuting	Education	Shopping	Personal Business	Leisure	Education escort
Driver	80%	51%	62%	69%	54%	51%
Passenger	6%	16%	23%	25%	32%	16%
Taxi	0%	0%	0%	0%	0%	0%
Motorcycle	1%	1%	1%	0%	1%	1%
Train	3%	1%	0%	0%	1%	1%
Bus / Minibus / Coach	5%	10%	6%	2%	5%	10%
Light Rail	0%	0%	0%	0%	0%	0%
Bicycle	2%	3%	1%	0%	1%	3%
Walk	3%	18%	7%	3%	7%	18%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Otterpool Park Internal Mode Splits

Mode	Commuting	Education	Shopping	Personal Business	Leisure	Education escort
Driver	24%	5%	10%	21%	9%	5%
Passenger	3%	2%	7%	13%	9%	2%
Taxi	0%	0%	0%	0%	0%	0%
Motorcycle	1%	0%	0%	0%	0%	0%
Train	0%	0%	0%	0%	0%	0%
Bus / Minibus / Coach	5%	2%	3%	2%	3%	2%
Light Rail	0%	0%	0%	0%	0%	0%
Bicycle	11%	3%	3%	2%	5%	3%
Walk	56%	87%	76%	62%	75%	87%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

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Trip Distribution

- Distribution between origins & destinations using Gravity modelling
  - Identify off-site origin/destination of trips
  - Number of trips to/from origin/destination is a function of deterrence and attraction factors

- Four origin/destination zones identified for Ashford to enable more detailed distribution

- VISUM model used to distribute trips on the highway network

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Internal / External Trips

- Provision of range of on-site services reduces need to travel off-site
- Approx. 37% of all trips are internal

	EXTERNAL						INTERNAL					
	AM Peak			PM Peak			AM Peak			PM Peak		
	Arrive	Depart	A + D	Arrive	Depart	A + D	Arrive	Depart	A + D	Arrive	Depart	A + D
Driver	1744	1807	**3552**	1542	1658	**3200**	236	60	**296**	137	247	**384**
Passenger	237	339	**577**	416	387	**803**	80	30	**111**	84	106	**191**
Taxi	8	9	**17**	7	7	**14**	1	0	**1**	0	1	**1**
Motorcycle	32	34	**67**	26	28	**54**	8	2	**9**	2	5	**7**
Train	50	46	**96**	34	40	**74**	0	0	**0**	0	0	**0**
Bus / Minibus / Coach	138	167	**305**	107	112	**220**	71	22	**93**	28	50	**78**
Bicycle	48	54	**102**	35	38	**73**	111	27	**138**	29	77	**106**
On foot	156	222	**378**	113	111	**224**	1956	701	**2656**	726	1025	**1751**
Total	**2416**	**2680**	**5095**	**2281**	**2383**	**4665**	**2463**	**842**	**3304**	**1006**	**1512**	**2518**

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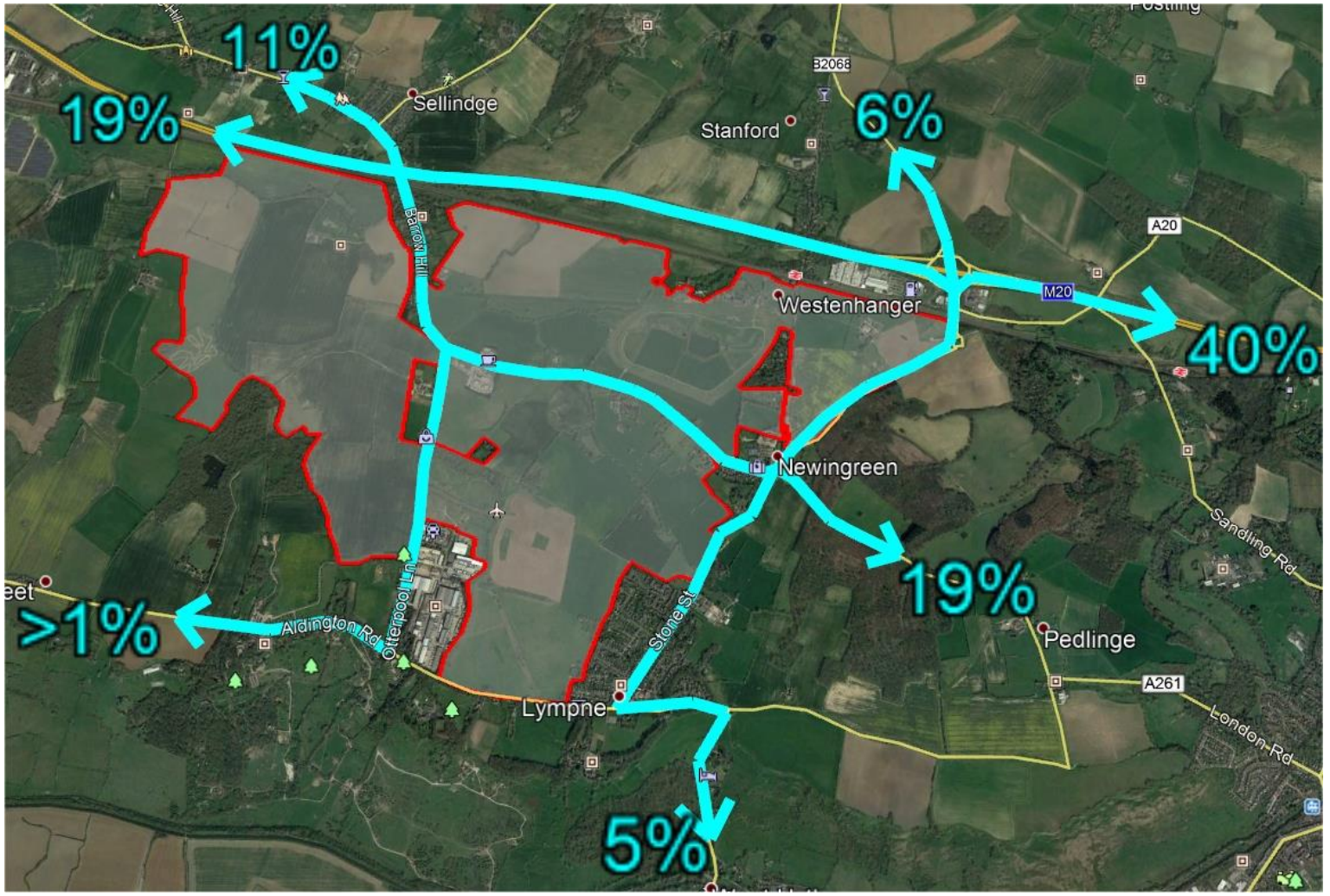
Highway Trip Distribution



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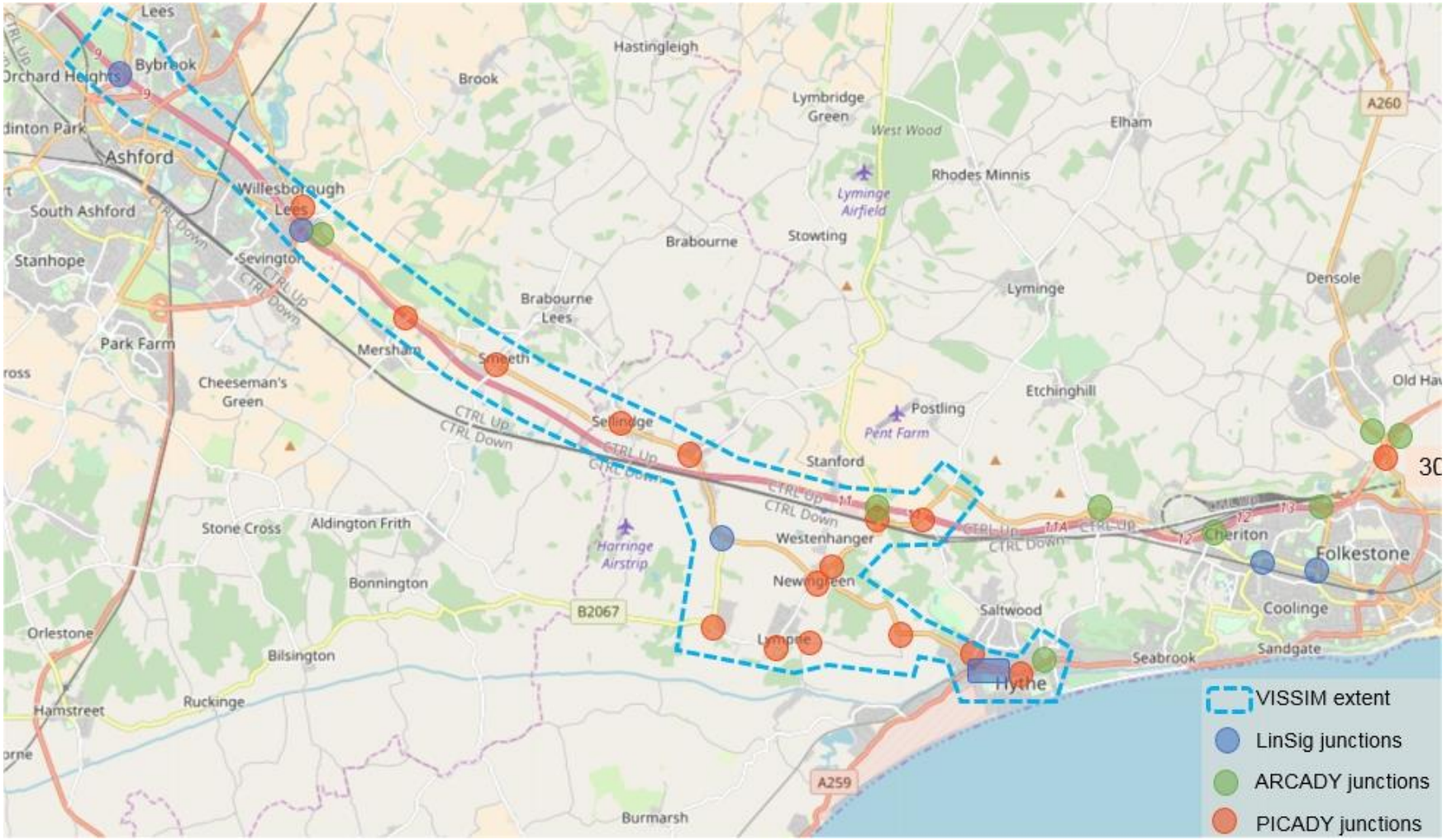
Highway Capacity Modelling

Highway Capacity Modelling: Study Area



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Validation & Calibration of Highway Capacity Models

- Model outputs compared against independent observed data to demonstrate that the model is an accurate representation of actual conditions (validation)
- Model calibration reports issued to KCC and Highways England
- Signalised/non-signalised models signed-off by KCC and Highways England
- VISSIM calibration signed off by KCC – still in discussions with Highways England

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Transport Mitigation: Highway Proposals

- Upgrade of A20 corridor between Newingreen and M20 providing dual 40mph carriageway and access to Business Park
  - Required to provide link capacity to accommodate additional traffic volume and a safer road alignment
- New A20 Link Road to the north of Newingreen
  - To relieve pressure on Newingreen junction
- Reduce speed along A20 between Sellindge and Newingreen to 30mph
  - Providing benefits to encourage walking & cycling
- New junctions along A20 and Otterpool Lane
  - Providing access into development plots

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Local Junction Modelling Results

Junction		2018		2037				2044			
		Baseline		Do-Minimum		Do-Something		Do-Minimum		Do-Something	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
J1	M20 J10										
J2	M20 J11										
J3	Ashford Road (A20) / Swan Lane										
J4	Ashford Road (A20) / Stone Hill										
J5	Hythe Road (A20) / Station Road / Church Road										
J6	Hythe Road (A20) / Mersham										
J7a	A2070 Kennington Road / The Street										
J7b	Hythe Road (A20) / The Street										
J8	A20 Ashford Road / B2067 Otterpool Lane										
J9	B2067 Otterpool Lane / Aldington Road										
J10	Aldington Road / Stone Street										
J11a	A20 Ashford Road / A261 Hythe Road / Stone Street										
J11b	A20 Ashford Road / A261 Hythe Road / Stone Street										
J12	Aldington Road / Lympne Hill										
J13	A261 Hythe Road / Aldington Road										
J14	A261 London Road / Barrack Hill										
J15	A259 / Dymchurch Road / Military Road										
J16	A259 Prospect Road / A259 East Road / Station Road / High Street										
J17	A20 Ashford Road / A20 J11 offslip										
J18	Ashford Road (A20) / Sandling Road										
J19	M20 J11A										
J20	M20 J12										
J21a	M20 J13										
J21b	M20 J13										
J22	A20 Ashford Road / Stone Street										
J23	M20 J9										
J24	B2064 Cheriton High Street / B2063 Risborough Lane										
J25	B2064 Cheriton High Street / A2034 Cherry Garden Avenue										
J26	A259 Prospect Road / Stade Street										
J27	Barrow Hill 1-way										
SH18	A260 Spitfire Way / White Horse Hill / A20 Slip Roads										
SH19	Alkham Valley Road / A20 slip roads										
SH16	A260 Canterbury Road / Alkham Valley Road										
J42	M20 J10A										
J43	A20 Ashford Rd small roundabout										
J44	Nackington Road / Old Dover Road / St Lawrence Rd / The Drive										

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Local Junction Modelling Results: Ashford

Junction		2018		2037				2044			
		Baseline		Do-Minimum		Do-Something		Do-Minimum		Do-Something	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
J1	M20 J10										
J5	Hythe Road (A20) / Station Road / Church Road										
J6	Hythe Road (A20) / Mersham										
J7a	A2070 Kennington Road / The Street										
J7b	Hythe Road (A20) / The Street										
J23	M20 J9										
J42	M20 J10A										

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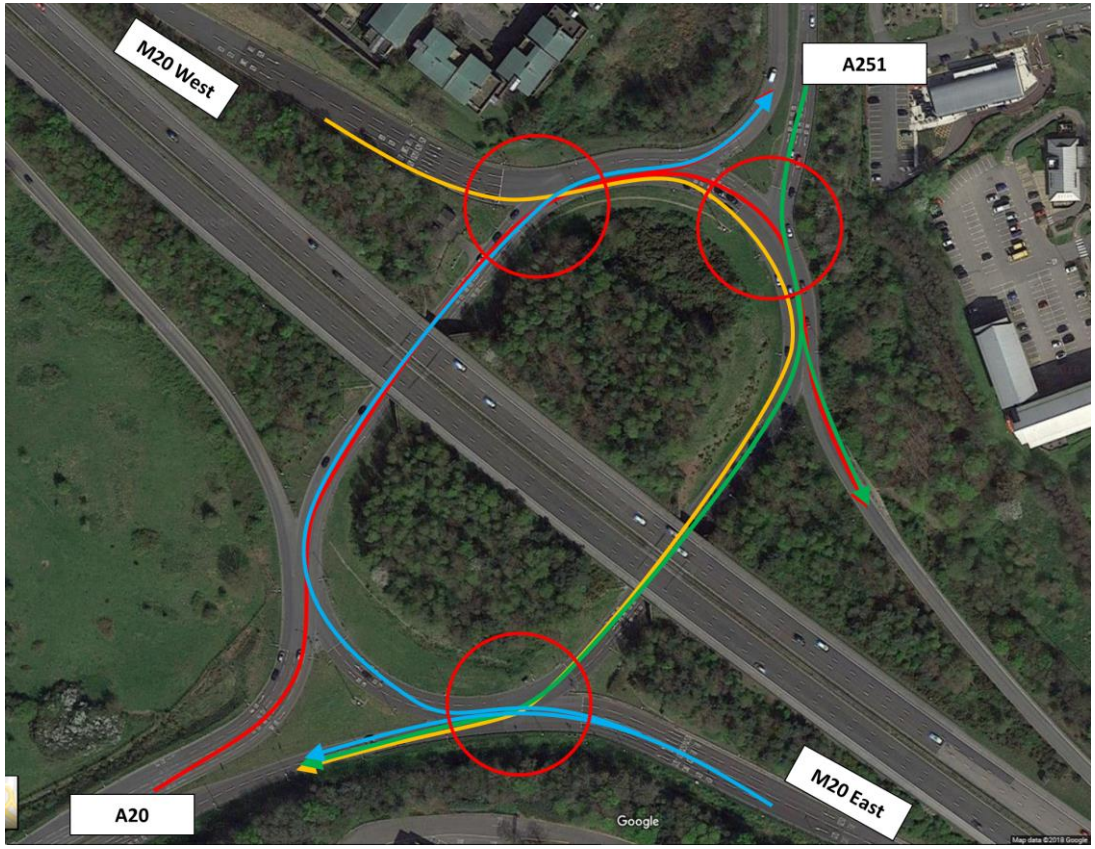
Local Junction Modelling Results: M20 J9

- Heavy demand to/from the A20 from all approaches.
- A20 is a two lane exit. This restricts the number of lanes that can be designated to the A20 on each approach despite it being the dominant movement.
- Circled in red is the key conflict points for the forecasted traffic demand at the junction



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