

## **List of Appendices**

### **Transport**

#### **East Hemel Hempstead**

- Appendix 1: Transport Extract of East Hemel Hempstead Landowner/Developer Engagement Stage 2 Presentations and follow up report (PPC Nov 2015)
- Appendix 2: Maylands Growth Corridor Study: Progress Meeting Slides 4-7
- Appendix 3: Maylands Growth Corridor Study: Stage 2 Scheme Concepts 1 & 2 Model Sensitivity Testing Report April 2016
- Appendix 4: East Hemel Hempstead Transport Assessment (to follow)

#### **North West Harpenden**

- Appendix 5: Transport Extract of North West Harpenden Landowner/Developer Engagement Stage 2 Presentations and follow up report (PPC Nov 2015)
- Appendix 6: Commercial Estates Group Regulation 19 Response January 2016
- Appendix 7: Legal and General NW Harpenden Transport Assessment Scoping Report February 2016
- Appendix 8: Brookbanks NW Harpenden Local Plan Transportation Study June 2016

#### **East St Albans**

- Appendix 9: Transport Extract of East St Albans Landowner/Developer Engagement Stage 2 Presentations and follow up report (PPC Nov 2015)
- Appendix 10: AECOM St Albans East Emerging Transport Strategy Jan 2016
- Appendix 11: AECOM St Albans East Initial Assessment of Highway Impacts March 2016

#### **Hertfordshire County Council**

- Appendix 12: Hertfordshire County Council COMET progress Slides April 2016
- Appendix 13: Hertfordshire County Council COMET Report (to follow)

### **Water Infrastructure**

- Appendix 14: Water Study Project for Hertfordshire Project Brief
- Appendix 15: Hertfordshire Planning Group Committee 25 May 2016- Water Study Project Update Extract
- Appendix 16: Water Study Project for Hertfordshire Interim Report (to follow)
- Appendix 17: Water Study Project for Hertfordshire Final Report (when available)

## **Education**

- Appendix 18: Education Facilities Extract of East Hemel Hempstead  
Landowner/Developer Engagement Stage 2 Presentations and follow up  
report (PPC Nov 2015)
- Appendix 19: Education Facilities Extract of North West Harpenden  
Landowner/Developer Engagement Stage 2 Presentations and follow up  
report (PPC Nov 2015)
- Appendix 20: Education Facilities Extract of East St Albans Landowner/Developer  
Engagement Stage 2 Presentations and follow up report (PPC Nov 2015)
- Appendix 21: HCC Education Response Regulation 19 Consultation February 2016  
Appendix B
- Appendix 22: HCC Meeting the Rising Demand for School Places: Primary Schools Mid-  
Year 2015/16
- Appendix 23: HCC Meeting the Rising Demand for School Places: Secondary Schools  
Mid-Year 2015/16

## **Community Infrastructure**

- Appendix 24: Community Infrastructure Extract of East Hemel Hempstead  
Landowner/Developer Engagement Stage 2 Presentations and follow up  
report (PPC Nov 2015)
- Appendix 25: Community Infrastructure Extract of North West Harpenden  
Landowner/Developer Engagement Stage 2 Presentations and follow up  
report (PPC Nov 2015)
- Appendix 26: Community Infrastructure Extract of East St Albans Landowner/Developer  
Engagement Stage 2 Presentations and follow up report (PPC Nov 2015)

## **Green Infrastructure**

- Appendix 27: Green Infrastructure Extract of East Hemel Hempstead  
Landowner/Developer Engagement Stage 2 Presentations and follow up  
report (PPC Nov 2015)
- Appendix 28: Green Infrastructure Extract of North West Harpenden  
Landowner/Developer Engagement Stage 2 Presentations and follow up  
report (PPC Nov 2015)
- Appendix 29: Green Infrastructure Extract of East St Albans Landowner/Developer  
Engagement Stage 2 Presentations and follow up report (PPC Nov 2015)

## **Transport**

### **East Hemel Hempstead**

Appendix 1: Transport Extract of East Hemel Hempstead Landowner/Developer Engagement Stage 2 Presentations and follow up report (PPC Nov 2015)





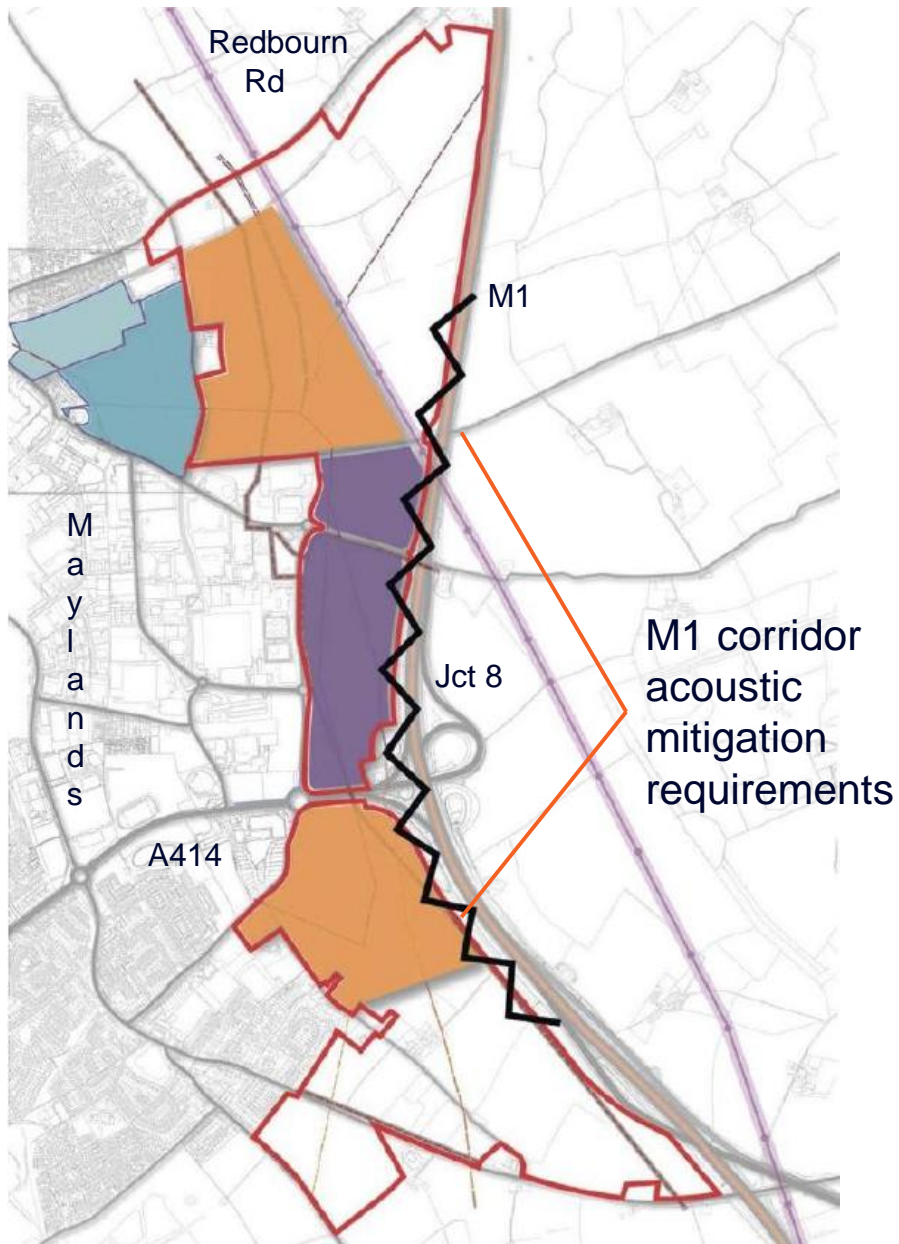
## Your Objective:

*“To provide a major urban extension of Hemel Hempstead to meet the needs of the St Albans housing market area and sub regional economic development objectives for growth in the M1 corridor.”*

## Draft SLP Policy 13

The objective

East Hemel

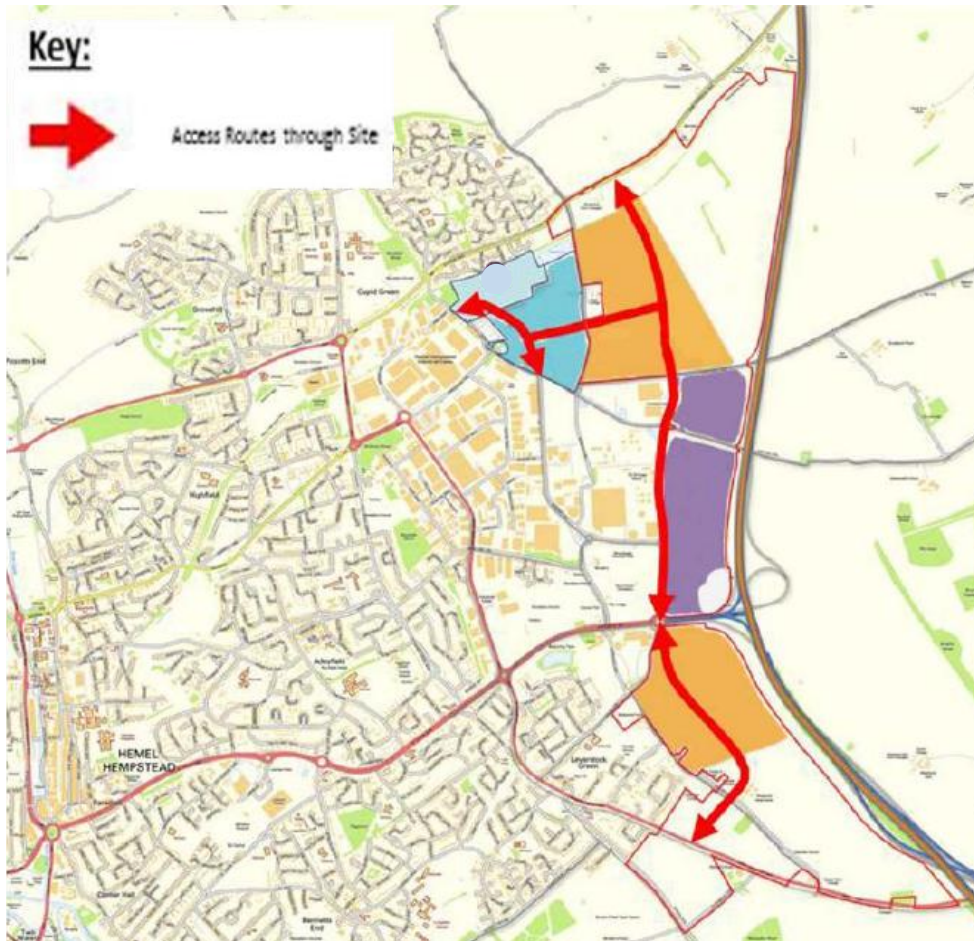


## Main influences

### M1 Motorway

- M1 noise and air quality issues recognised and addressed
- Mix of bunding, fencing and buildings
- Operations under review
- Mitigation forms part of landscape concept
- There are no showstoppers

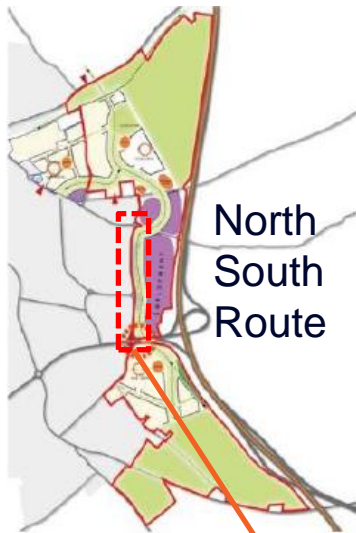
East Hemel



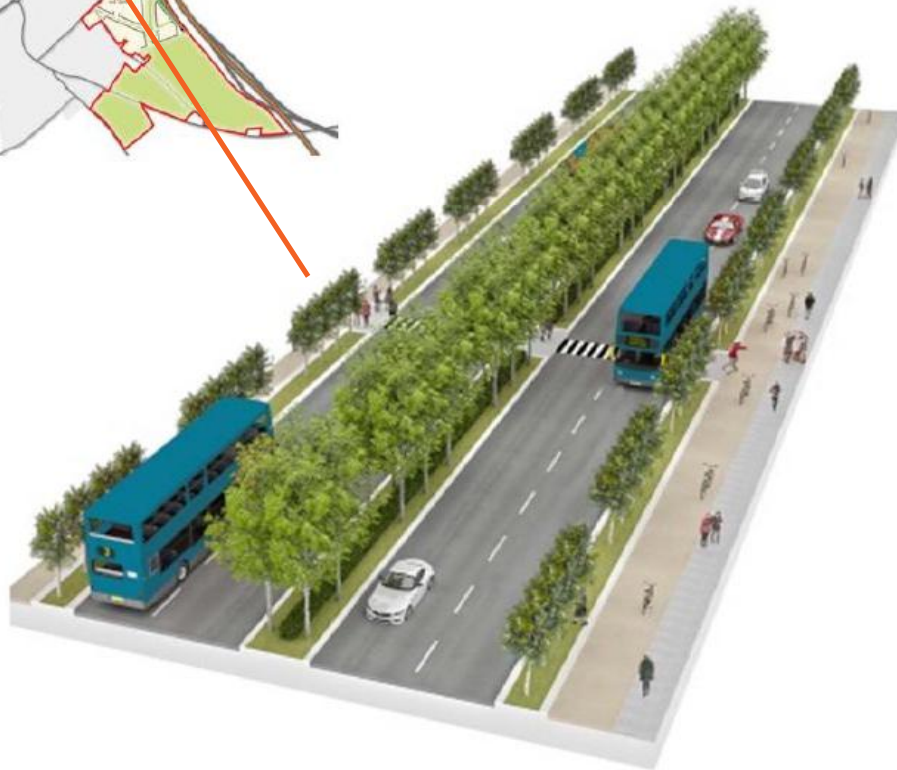
- Good highway links
- A414 - links to Hemel Hempstead & St Albans
- North / South spine road with Maylands links
- Significant employment locally means people can live & work in the area, reducing impact on M1
- East Hemel's transport proposals will benefit St Albans & Hemel Hempstead residents
- No Show Stoppers

Local highway network

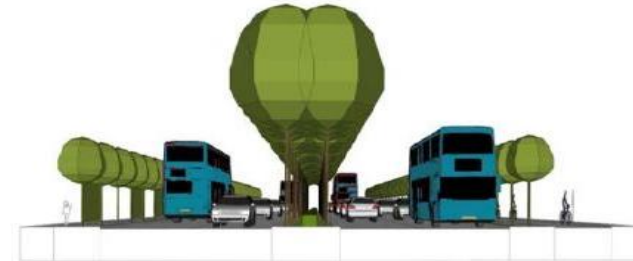
East Hemel



North  
South  
Route



- An enhanced road link will improve connections between A414, Maylands & new residential areas
- A new high quality front door to the proposed commercial plots
- A greatly improved connection to the new homes
- Green link for safe cycle & pedestrian connectivity

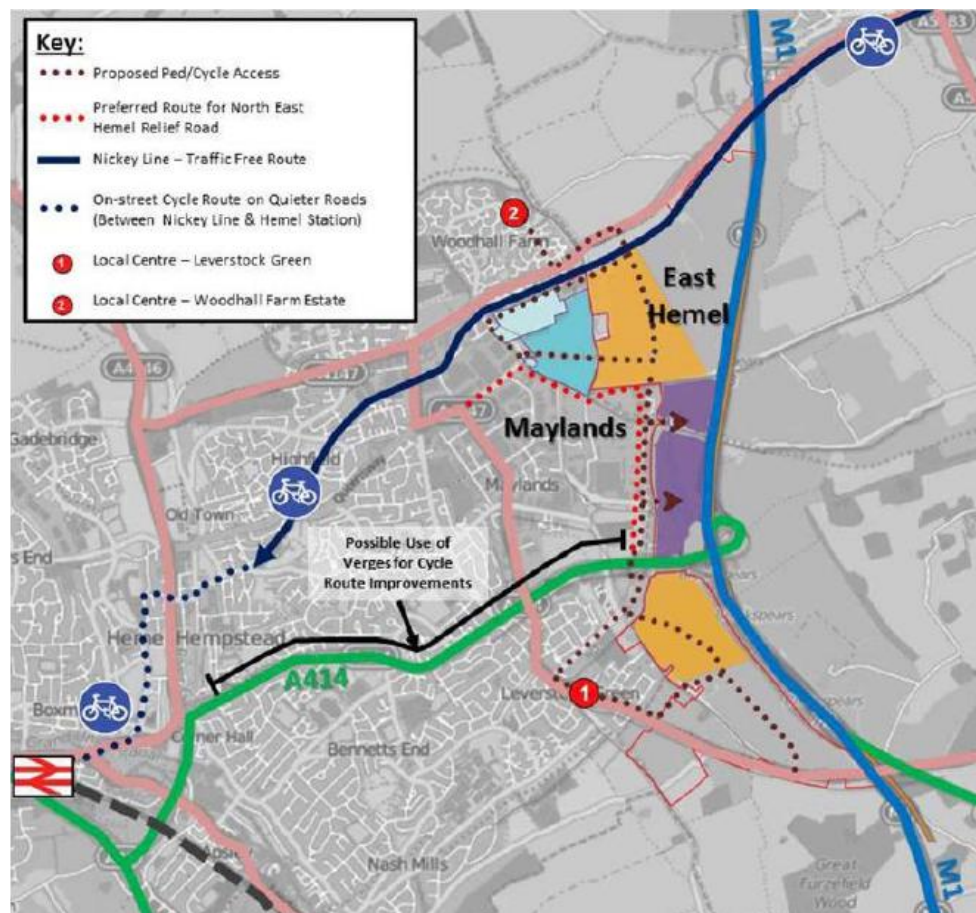


The north / south route

East Hemel



## New Walking and Cycling Links

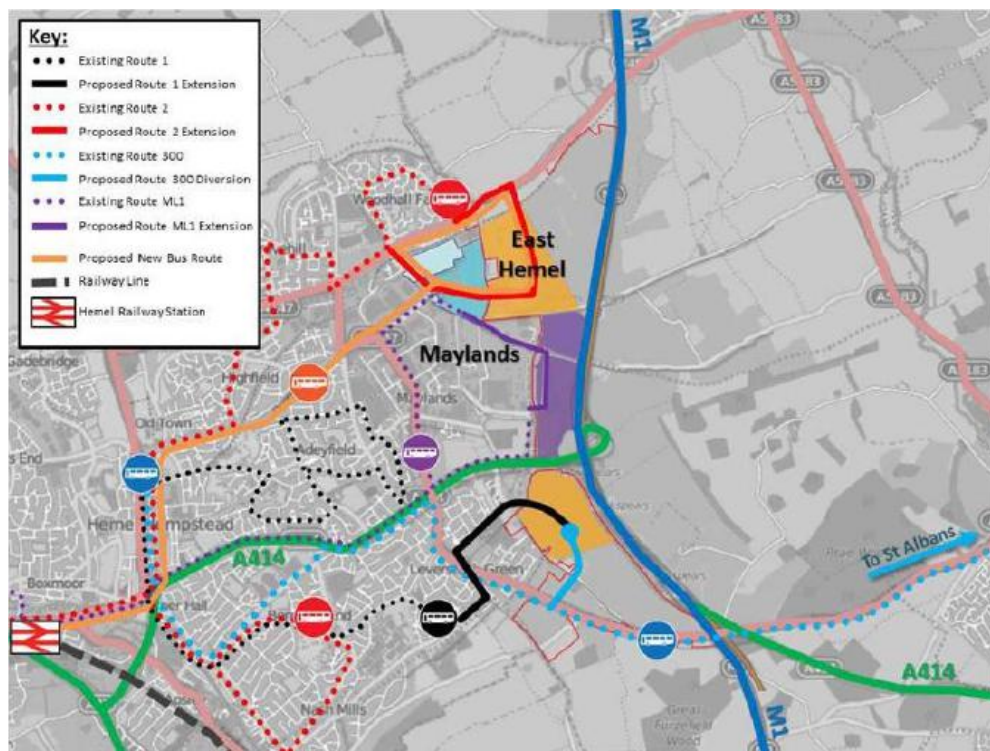


- Creation of key desire lines for pedestrians and cyclists
- Enables linkages to the Nickey Line through to the railway station & town Centre
- Creates a hierarchy of routes through the site
- Potential cycle route within grass verges along the A414

Sustainable transport strategy

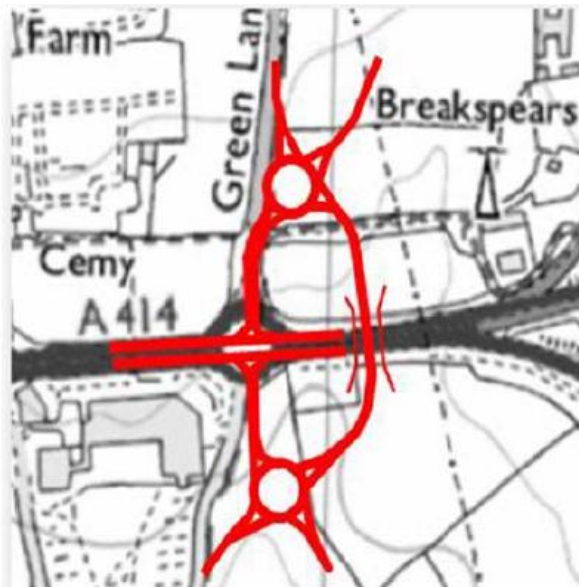
East Hemel

## New Public Transport Links



- Creates a wide range of bus routes serving the site:
  - New routes
  - Diverted existing routes
  - Improved frequency
- Creates enhanced links to Hemel Hempstead train station and to St Albans
- Improved bus services are also a benefit to the existing community

Breakspear  
roundabout  
improvement  
options



- TCE are working with both the Hertfordshire LEP and HCC to examine transport improvements in the Maylands area
- AECOM (for the LEP) options as part of the Maylands Growth Corridor Study
- The options require further testing and discussion with stakeholders
- The proposed improvements will address existing congestion issues thus providing community benefit.

Potential highways  
improvements

East Hemel

- Preliminary Ecological Appraisal Report  
(May 2015) Wardell Armstrong
- Archaeological and Cultural Heritage Appraisal  
(May 2015) Wardell Armstrong
- Preliminary Ground Conditions Assessment  
(May 2015) Wardell Armstrong
- Soil and Agricultural Land Classification  
(May 2015) Wardell Armstrong
- Noise Feasibility Report [draft]  
(August 2014) Wardell Armstrong
- Consultation Distance Report [re. HSE] Update  
(November 2014) RPS Group
- Baseline Utilities Report  
(May 2015) M-EC
- Economic Benefits Reports [draft]  
(September 2013) Nathaniel Lichfield & Partners


## Technical reports

East Hemel




 – Master planners

 – Highways & Transport

 – Noise, Air quality, Ecology,  
Ground conditions, Services &  
Infrastructure

 – PR

 – Landscape

 – Sustainability

 – Community Management  
Advisor



Client

 – Planning

 – Project management &  
Commercial Advice

 – Legals

## East Hemel Team

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## East Hemel

based on the Ordnance Survey Map with the permission of the Controller of  
This information has been prepared for presentation on 12 October 2015

29 October 2015

Ref: RMS/CRO/GOR/15008

C Briggs  
St Albans City and District Council  
Civic Centre  
St Peters Street  
St Albans  
Hertfordshire AL1 3JE

## Email

Dear Mr Briggs

### **SLP : Stage 2 Presentation : East Hemel Hempstead**

Thank you for the opportunity to present to your Members on the 12<sup>th</sup> October 2015. At the end of the meeting we were invited to review some of the points raised. This letter summarises the response of The Crown Estate (TCE).

TCE is happy to reconfirm all of its commitments contained in its Stage 2 presentation. In addition, this letter sets out how the package of proposals has been further enhanced to reflect Member concerns. The aim of this letter is to provide your Members with complete confidence that, if East Hemel Hempstead is allocated, the wider planning benefits will be delivered.

### **The Unique Selling Points of East Hemel**

Whilst this was covered in our Stage 2 presentation, these are

- the scale of East Hemel (a total of 1,325 ha west of the M1)
- the benefits of the involvement of TCE, as sole landowner.

Looking at each of these in turn,

### **Scale**

- allows the provision of a wide mix of land uses. This helps build a sustainable and walkable community that can minimise external vehicle trips
- creates 'financial muscle' to fund and deliver the social and physical infrastructure
- delivers a planning package which provides benefits to both the new and existing communities.

### **The Crown Estate (TCE)**

- Ethos of long term management and social responsibility
- All profits returned to the Treasury
- A commitment to high quality and innovation in design and technology
- Control over all the land necessary to deliver the scheme
- The creation of a Community Management Organisation (CMO) as a common thread which binds the new community together and gives the community long term control over the quality and maintenance of their environment.

### **Wider Community Benefits**

We take the provision of 40% affordable housing (in a variety of tenures), a mix of housing tailored to meet the local needs set out in the SHLAA and the prospect of creating up to 8,000 jobs as pre requisites of the development of East Hemel. In view of this, the remainder of this letter focusses on other parts of the planning package which should be reflected in the adopted Policies 13 (a) and (b).

The main elements of The East Hemel package delivered by The Crown Estate are set out below.

#### **Education**

- Providing the site and funding the buildings to accommodate an 8FE Secondary School. TCE would like to work with St Albans and HCC to link the new school with the Green Triangle initiative.
- Providing the sites and funding the buildings to accommodate one 2FE and one 3FE Primary School. It is suggested that the site for the 2FE school is large enough to be expanded to 3FE, to provide long term flexibility.

#### **Community**

- Providing mixed use local centres in both East Hemel North and South. TCE would like to investigate with you the creation of multi use buildings capable of providing education, community hall space and health (doctors, dentists and associated health professionals). The nature of these facilities will be such that they can benefit a wider area than just EHH. There would also be a local level of 'A' class floorspace and small office provision in the local centres.

#### **Employment**

- Providing a hub building in the employment area providing retail and business support for the employment area. This could be linked to the CMO controlled incubator space (see below) and provides a focus for the new business community.

- TCE will speculatively construct some starter units / incubator space as part of the first phase of the employment area. This will form part of the CMO 'dowry' and will be managed by the CMO.

### **Open Space/Community Food Park**

- A range of open spaces from local areas of play to playing fields and parkland which will also serve existing residents.
- The creation of a community food zone (including orchards, vegetable growing areas, informal recreation and education / interpretation) in the Green Belt north of East Hemel. This would be owned and managed by the CMO.

### **Affordable Housing**

- In conjunction with St Albans Council, investigate the potential for some of the 1,000 affordable homes to be rural exception housing (or its equivalent) and for some affordable housing to be vested in the CMO.
- The provision of 600 rented affordable homes. Of these, 200 would be provided to the Council (or Registered Provider) at a nil land cost. This will maximise the opportunity for these properties to be offered for social rent rather than affordable rent.
- As an illustration, if it was assumed that the value of each completed affordable home was £150,000, the value of the 1,000 affordable homes would be £150m.

### **Transportation**

- New footpath and cycle links into both Hemel Hempstead and east into St Albans, including improvements to the Nickey Line.
- Improvements to the A414 and a new north / south vehicular route through the whole of East Hemel. This will both provide for the development proposals and improve access for existing residents and businesses in St Albans, Hemel Hempstead and Redbourn.
- New / extended bus routes and increased frequencies which will both serve the development and existing communities.

### **Gypsy and Travellers**

- Two, fifteen pitch Gypsy and Traveller sites which will make a significant contribution to meeting identified G&T needs in the plan period to 2031.



### **Dacorum Uses**

- Actively investigate the inclusion of uses sought by Dacorum Core Strategy, and supported by St Albans Council, such as a 'Green Energy Park' and a community sports facility.

### **Other Uses**

Other elements such as the TCE commitment to high quality design and innovative low carbon / renewable energy solutions were set out in the Stage 2 presentation. In combination, these should deliver lower running costs for the occupiers of both market and affordable homes at East Hemel.

### **Community Management Organisation**

It will be apparent from the above that the CMO is a central focus of TCE's concept for East Hemel. The role and constitution of the CMO was set out in the Stage 2 slides. However, it may be of assistance to spell out in more detail the scope of the organisation. It would

- manage all open space
- manage and own all community buildings
- part of its funding will come from a service charge on businesses and homes
- the CMO will receive a dowry of assets from TCE. This is likely to focus on commercial assets in the employment area that will generate a long term and stable income. Part of this will include the first phase starter units / incubator space in the employment area
- the CMO will be responsible for liaison with businesses to foster an East Hemel Apprenticeship scheme
- CMO staff to act as 'community initiators' in the early years of the development
- whilst the legislative and policy basis for the provision of "affordable" housing is evolving at present, TCE is willing to investigate the potential for the CMO to be vested with some affordable housing which it could manage on behalf of the community.

Although it is not yet possible to put a value on the total TCE package for East Hemel, it will include

- Secondary School (estimated cost £35m)
- Two Primary Schools (estimated cost £15m)
- Affordable housing (£150m based on the assumption that the completed value of the average affordable home is £150,000).

Even without costing the remainder of the package, this has a value which approaches £200m.

In realising these benefits, both your Council and TCE is constrained by the CIL Regulations. This means that any S106 obligation must meet the three legal tests for it to be lawful and be given any weight in a planning determination. Obligations which do not meet the tests risk being challenged in the Courts.

Having said this, TCE is sympathetic to the objectives of your Members which is to ensure that any strategic allocations also generate benefits for the wider community. Having carefully considered how this can be achieved within the constraints imposed by the CIL tests, we consider that the best way forward would be to specify your Council's full requirements in Policy 13(a) and (b). Once the SLP is adopted, any planning application would need to comply with the terms of the statutory policies applying to the site. Such an approach would ensure that wider community benefits are achieved within a lawful statutory policy framework.

We consider that your current Policy 13(a) and 13(b) wording, as amended by the suggestions set out above, will ensure that the East Hemel proposal is CIL compliant.

Please do not hesitate to contact me if you have any queries on the above.

Yours sincerely

A handwritten signature in black ink, appearing to read 'R M Sellwood', with a long horizontal flourish underneath.

**R M Sellwood**  
Sellwood Planning Ltd

Appendix 2: Maylands Growth Corridor Study: Progress Meeting Slides 4-7

**East Hemel Hempstead Note:**

At the 31 January 2014 Planning Policy Committee, it was resolved that:

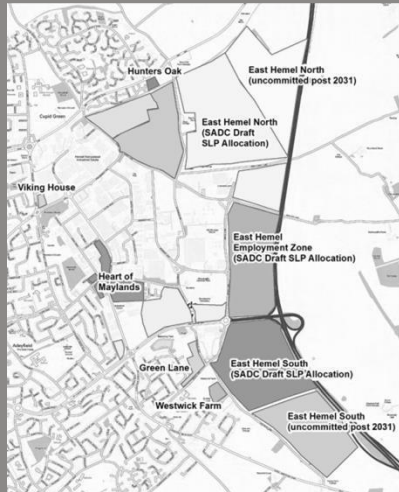
*That the Council should initiate discussions with Dacorum Borough Council, the Hertfordshire Infrastructure and Planning Partnership (HIPP) and the Hertfordshire Local Enterprise Partnership (LEP) about co-operation and infrastructure funding/project support for potential major cross boundary housing and employment development at East Hemel Hempstead.*

The following sections represent the main components of this collaborative transport work to date for the East Hemel Hempstead area.

It should be noted that the Maylands Progress Meeting Slides represent the progression of on-going work and the information contained does not always represent the agreed position by all parties.



# Maylands Growth Corridor Study Progress Meeting 4



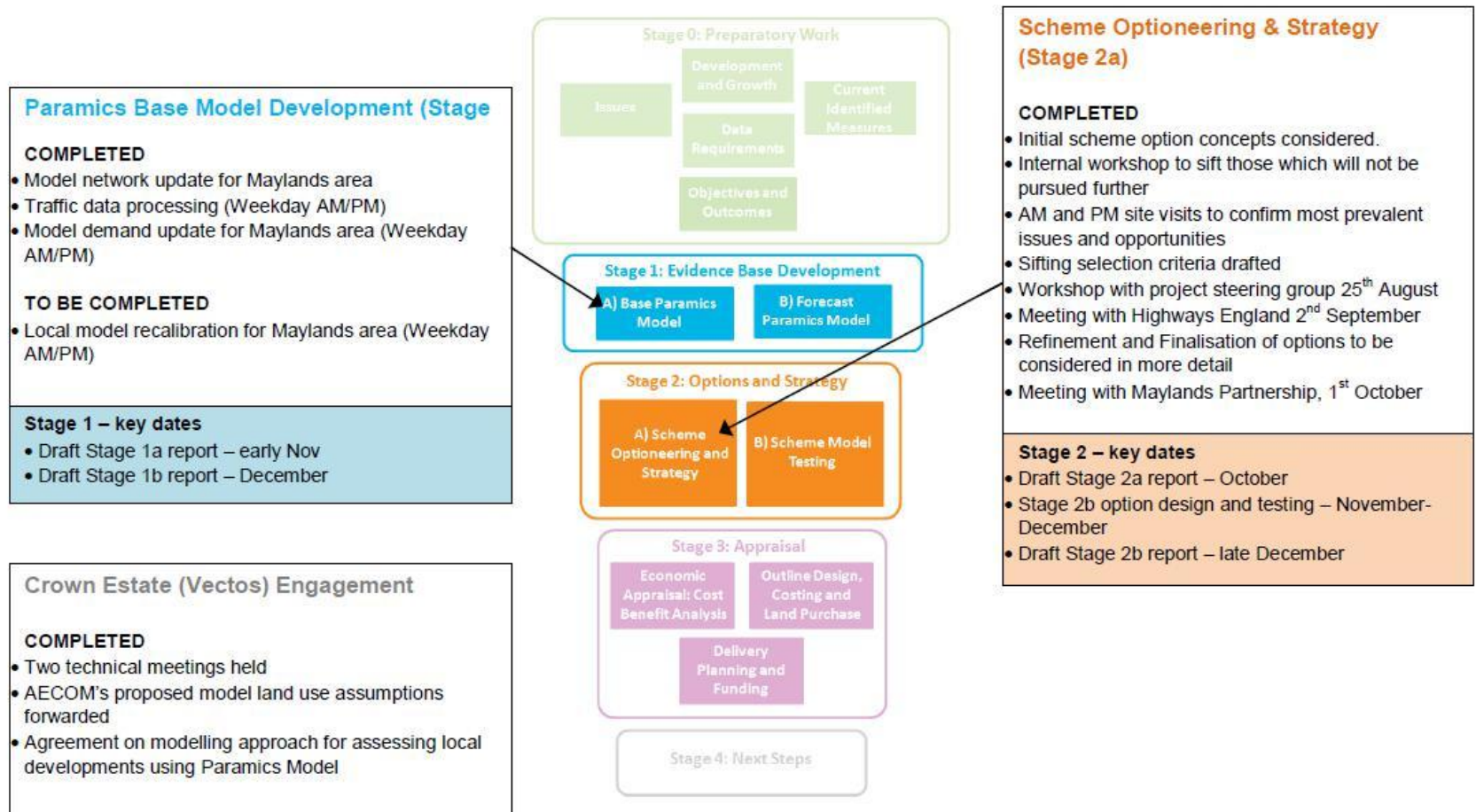
November 3, 2015

**AECOM**

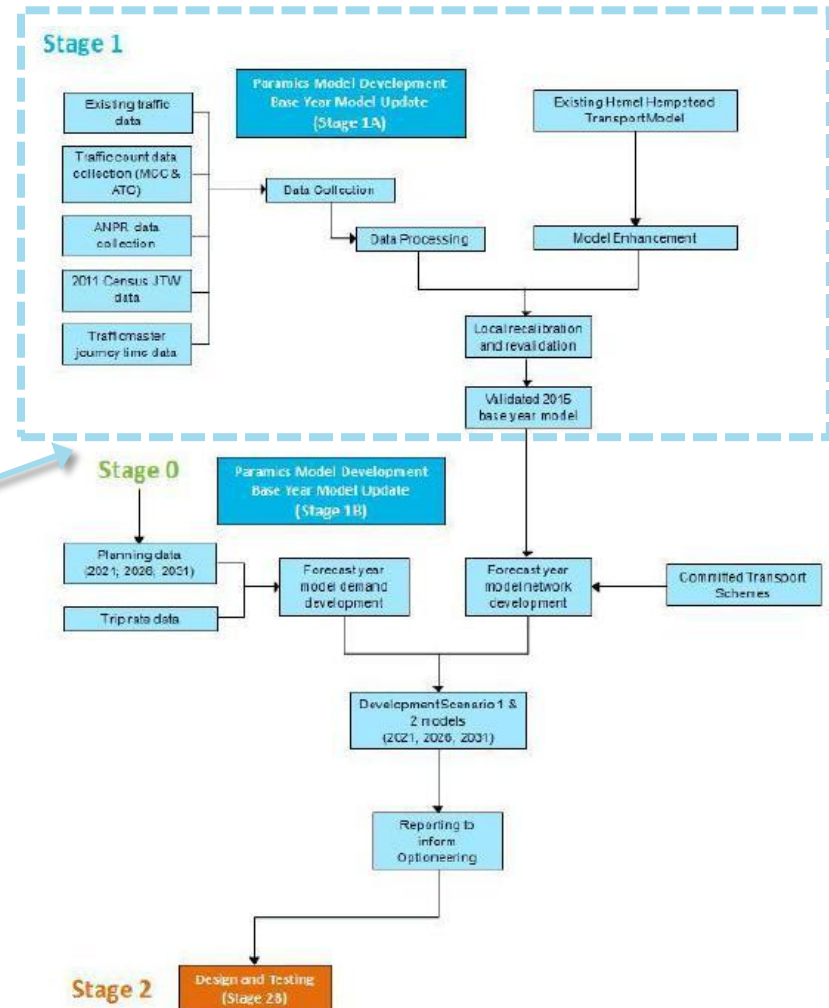
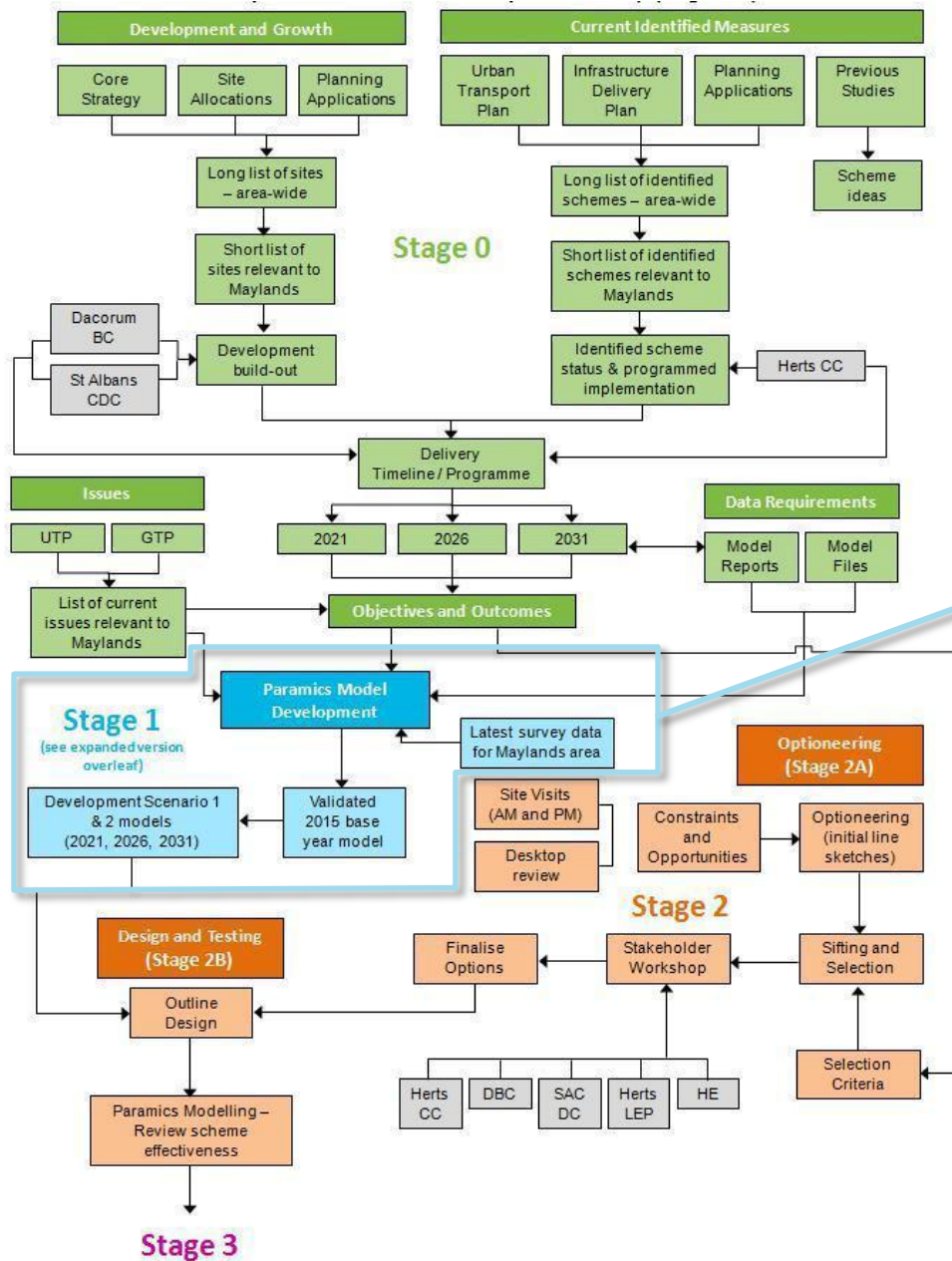
# Agenda

- Overview of the commission, timescales and progress against deliverables
- Stage 1a Paramics Modelling – base year modelling and proposed approach for forecast year testing (reference case and scenarios)
- Development modelling – Crown Estate/Vectos
- Next Steps

# Progress



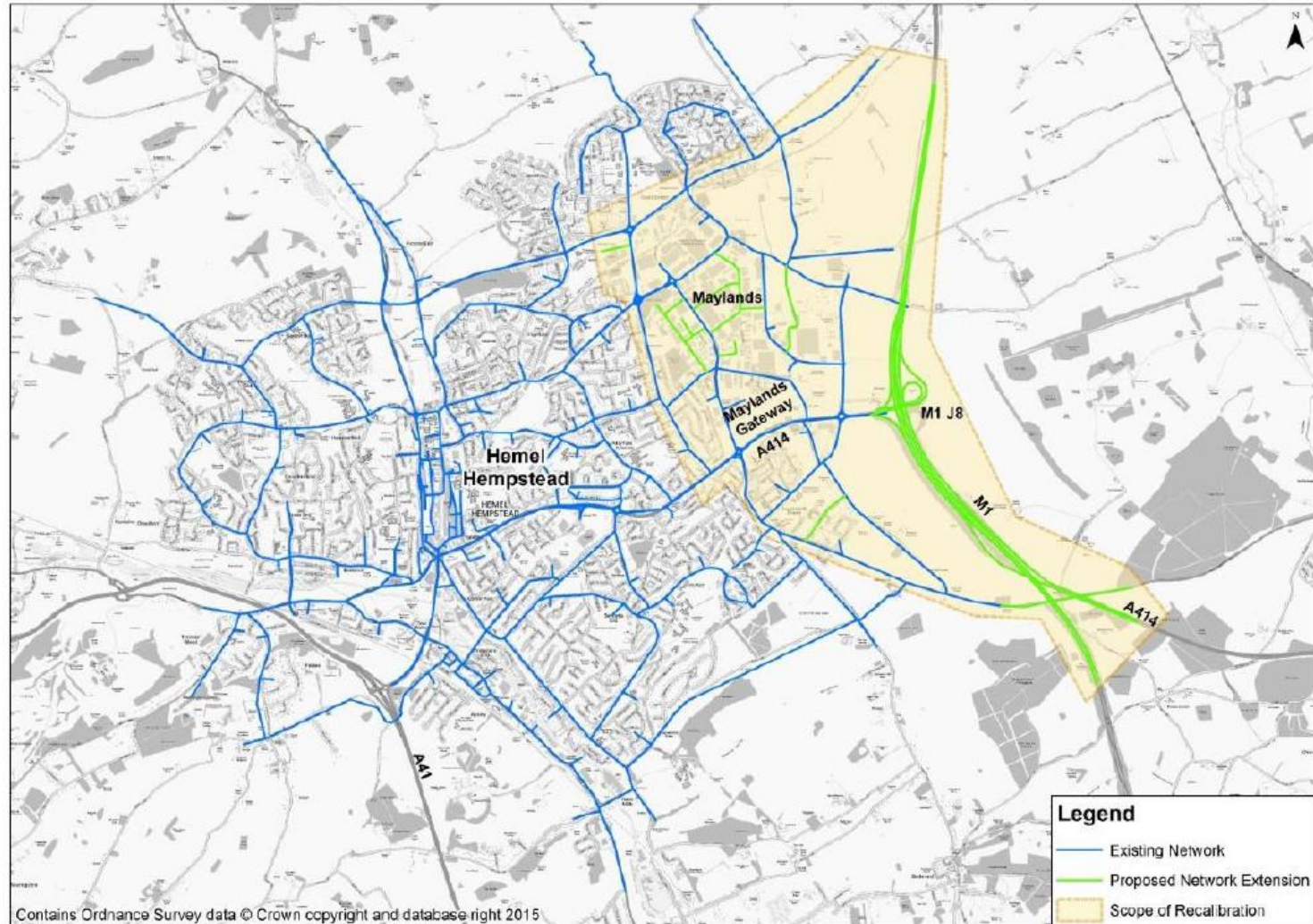
# Process Map





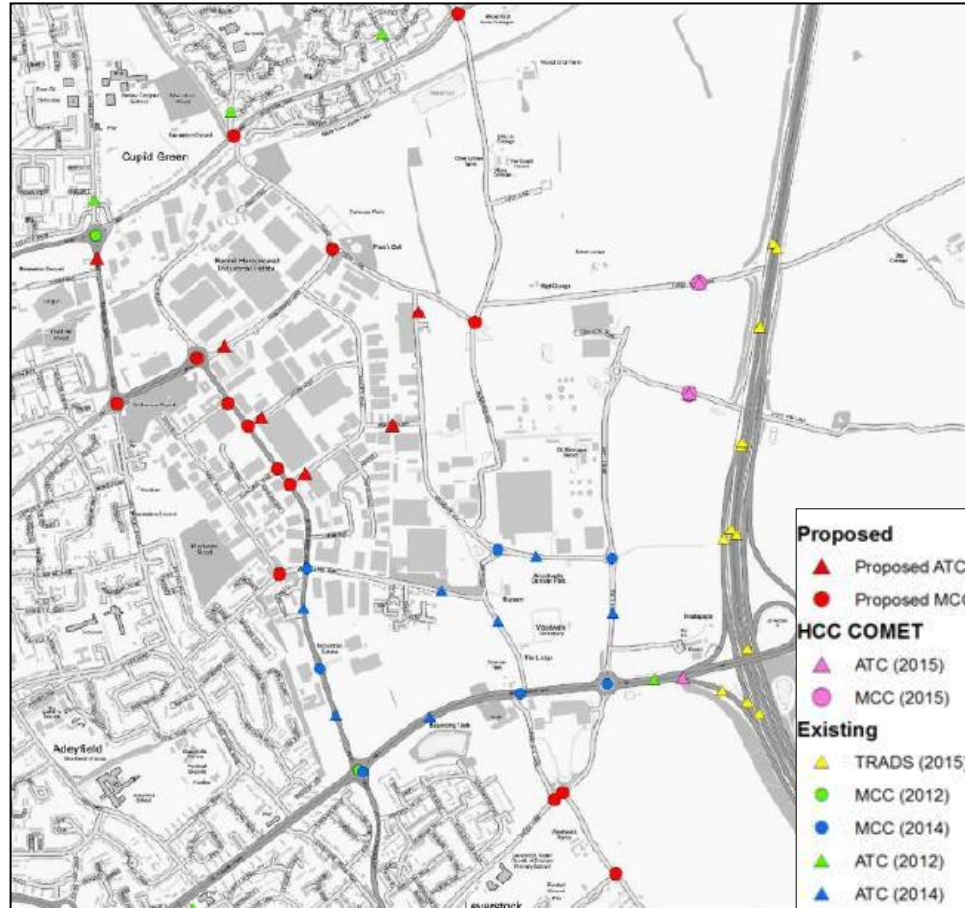
# Modelling Overview

## Area of Recalibration



# Modelling Overview

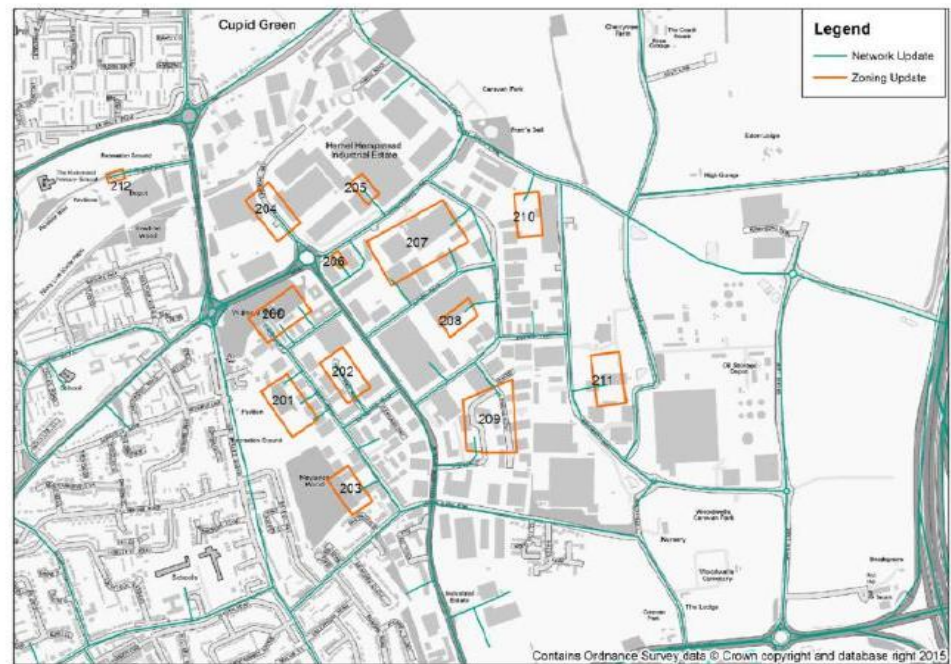
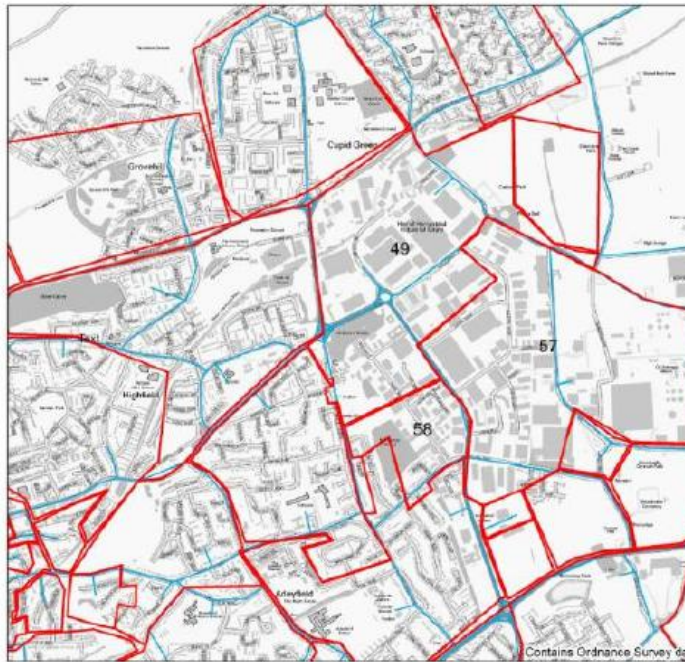
## Area of Recalibration





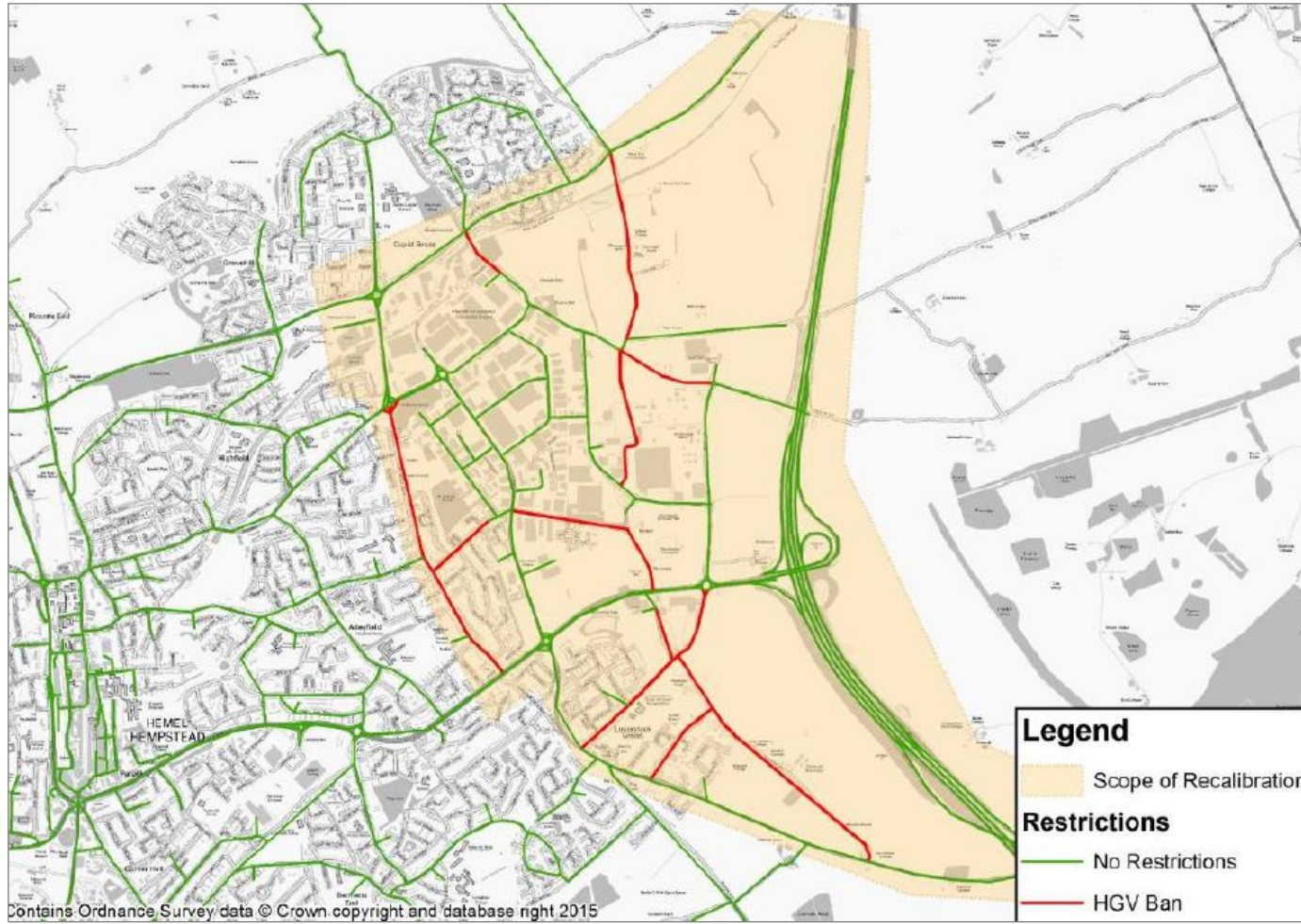
# Modelling Overview

## Area of Recalibration



# Modelling Overview

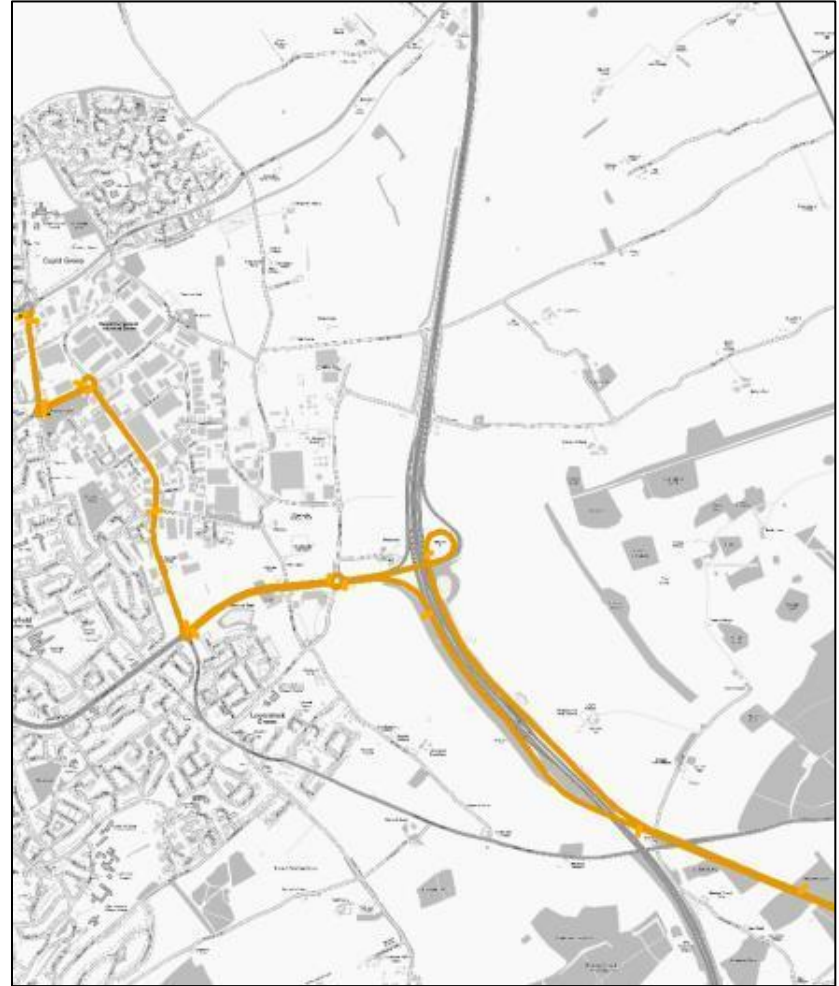
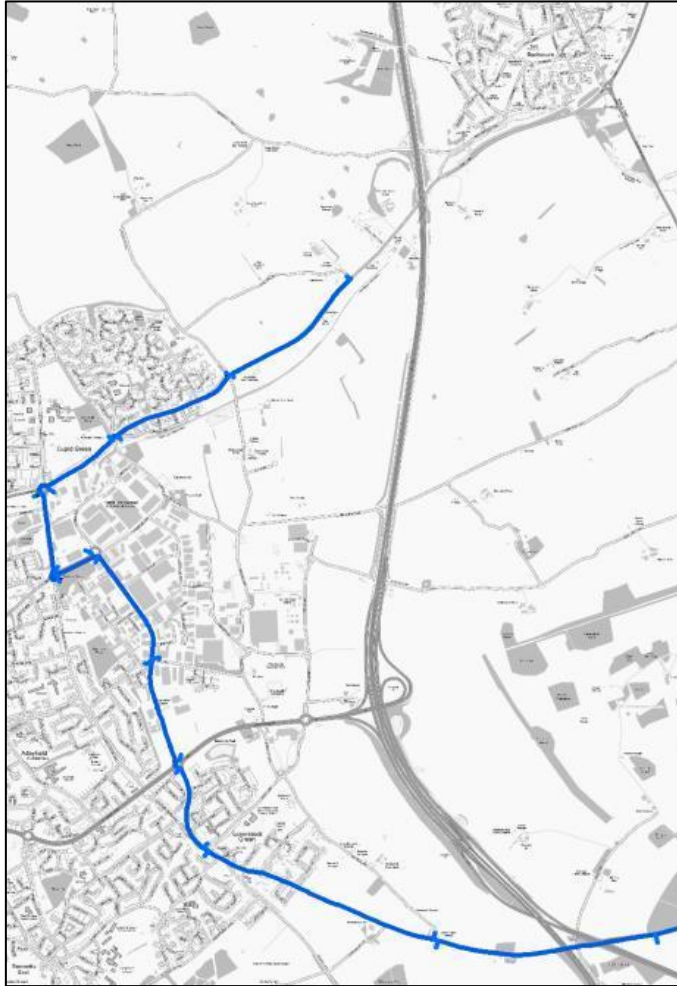
## Area of Recalibration





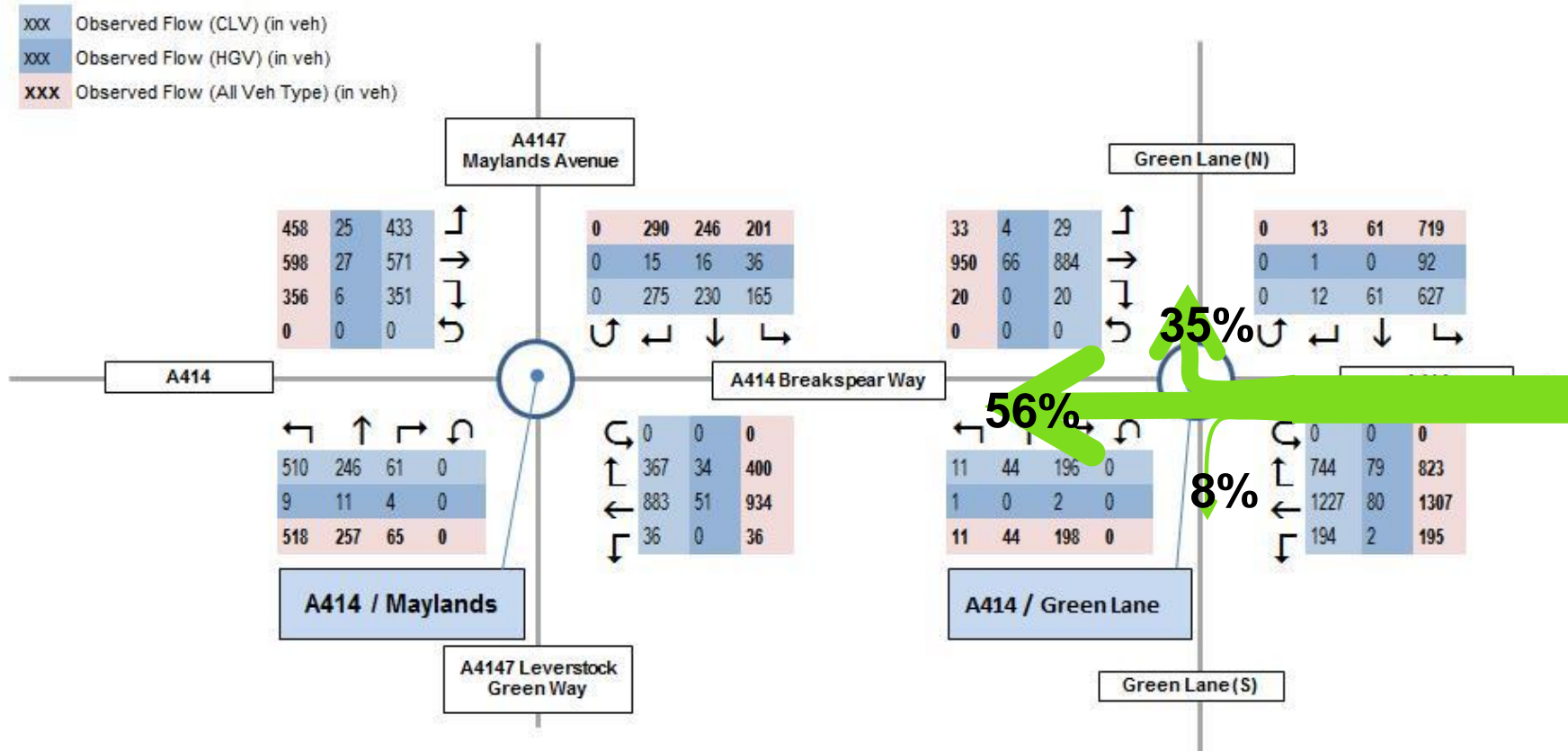
# Modelling Overview

## Journey Time Validation



# A414 Breakspear Way (Observed Turning Movements)

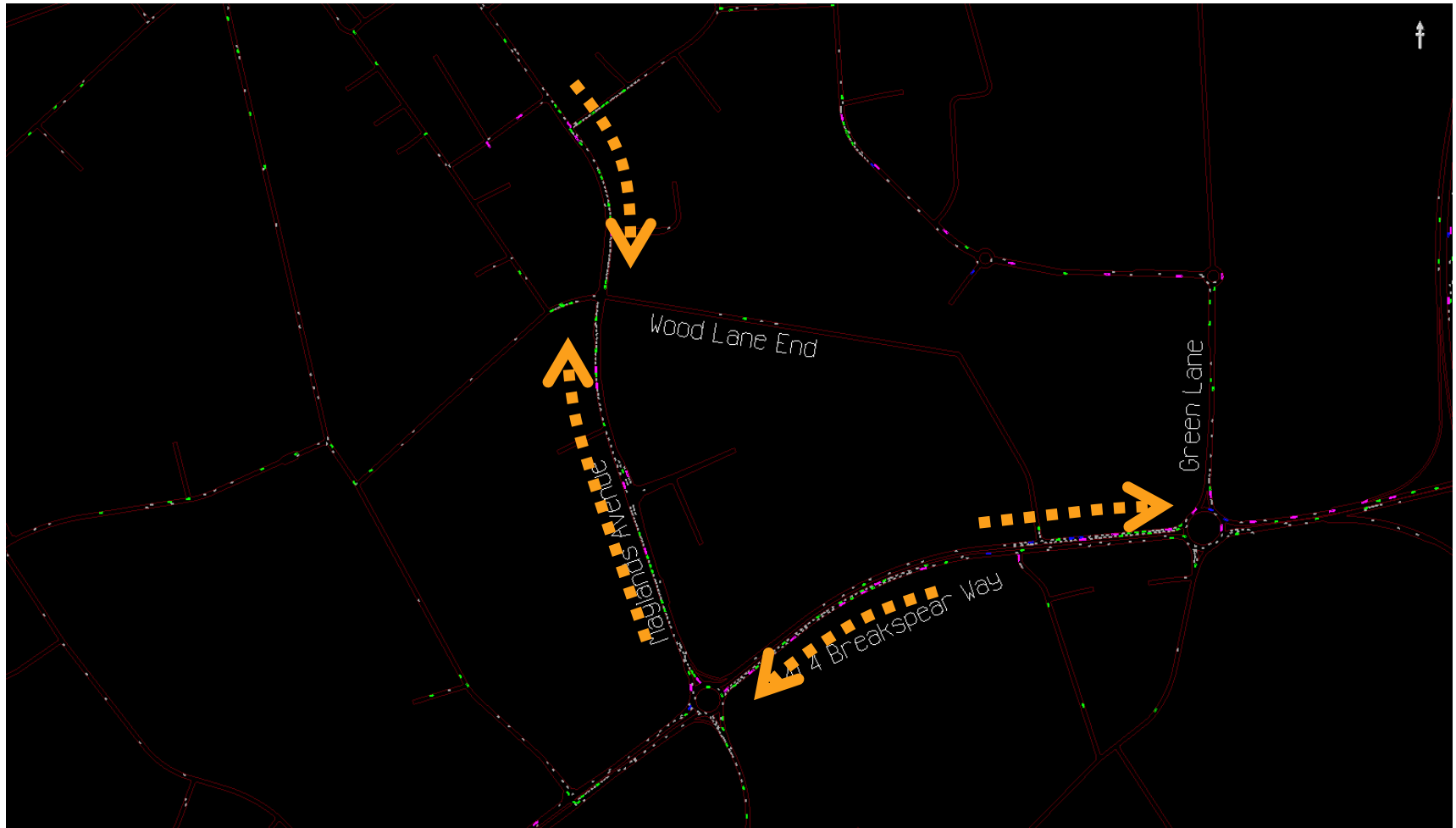
Morning Peak Hour





# 2015 Base Year Model

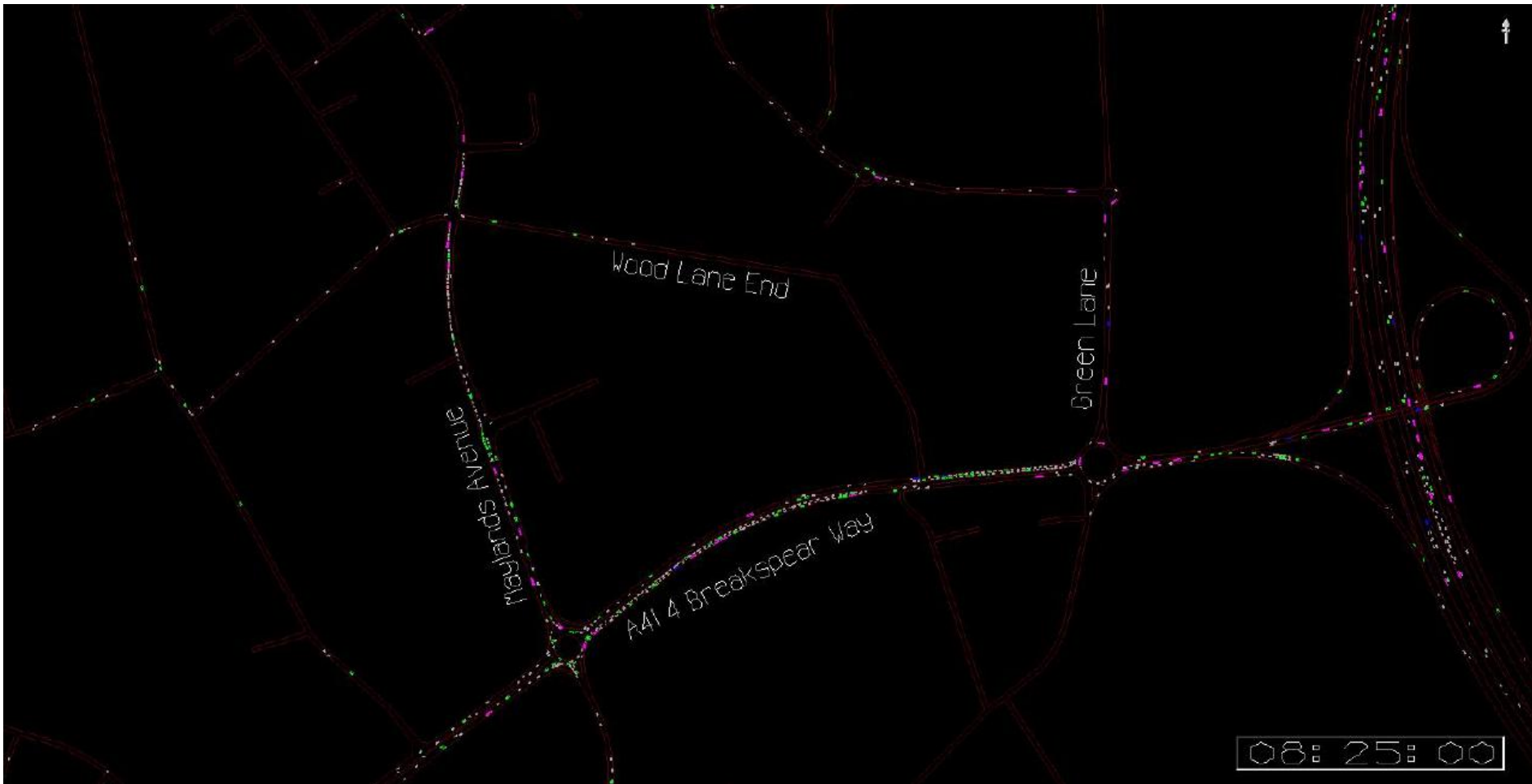
Morning Peak Hour





# 2015 Base Year Model

Morning Peak Hour



# 2015 Base Year Model

Evening Peak Hour

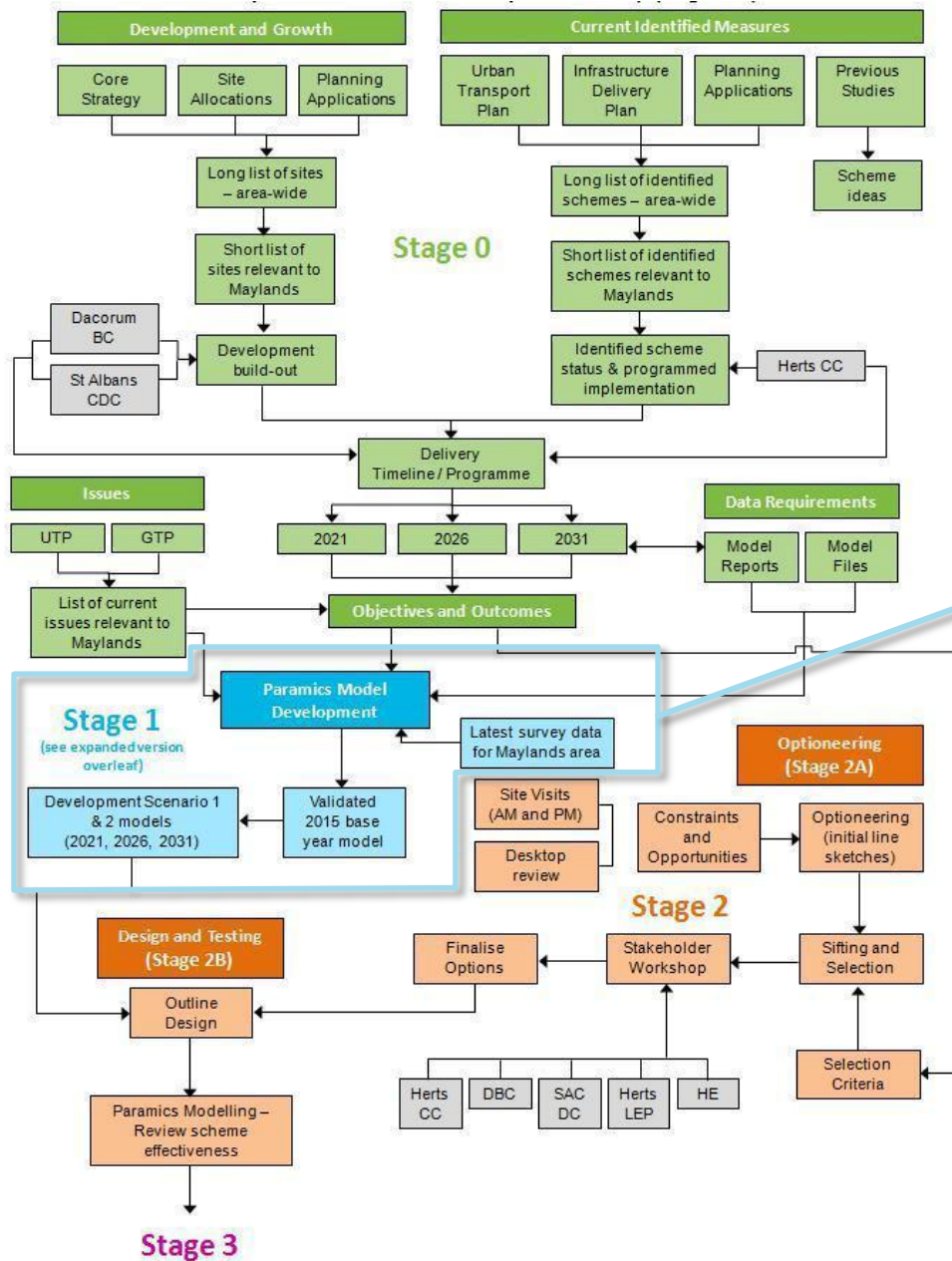


# 2015 Base Year Model

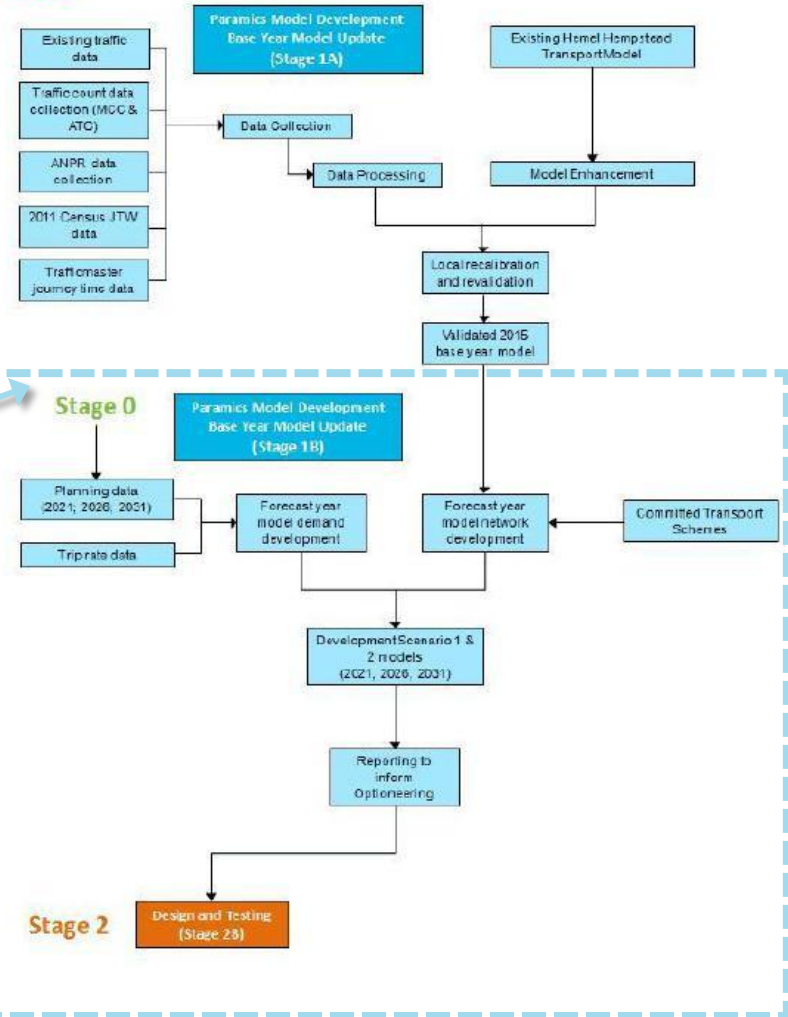
Evening Peak Hour



# Process Map



## Stage 1

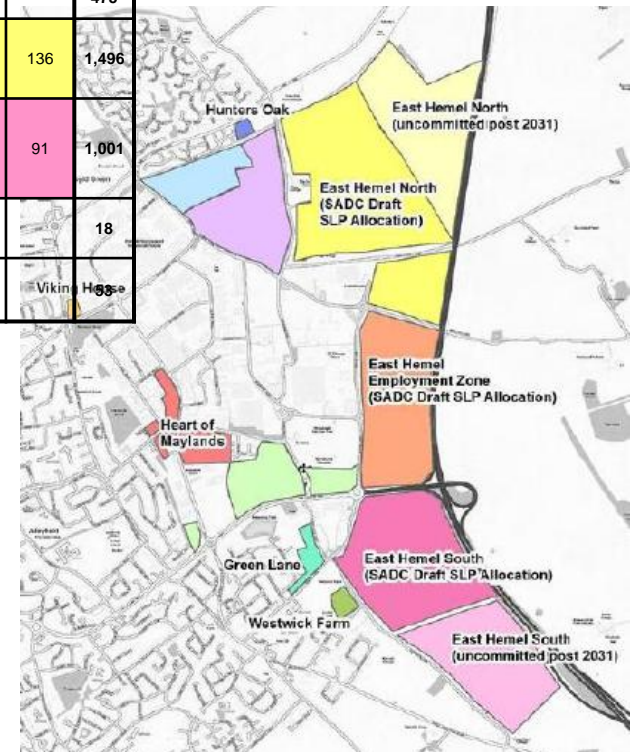


# Future Growth

## Stage 1b – Forecast Year Reference Case – Development and Growth

Development Site	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	Total
Buncefield Lane / Green Lane / & St Margrets Way / Datchworth Turn		45			16	16											77
Land at NE Hemel Hempstead, Three Cherry Trees Lane (Spencers Park) – Phase 1	57	100	100	100													357
Spencers Park Phase 2+						100	100	100	100	137							537
Viking House, Swalldale Lane	32	32															64
Within Heart of Maylands		65	65	195		50						50	50				475
East of Hemel Hempstead North (draft SLP allocation)						136	136	136	136	136	136	136	136	136	136	136	1,496
East of Hemel Hempstead South (draft SLP allocation)						91	91	91	91	91	91	91	91	91	91	91	1,001
Land adj. Hunters Oak, Redbourn Road					18												18
H/3 Land at Westwick Farm, Pancake Lane	13	13	13	14													53

- Key developments sites and their build-out identified



# Model Testing

## Stage 1b – Forecast Year Reference Case – Model Scenarios

### – Forecast Year

- 2021, 2026, 2031

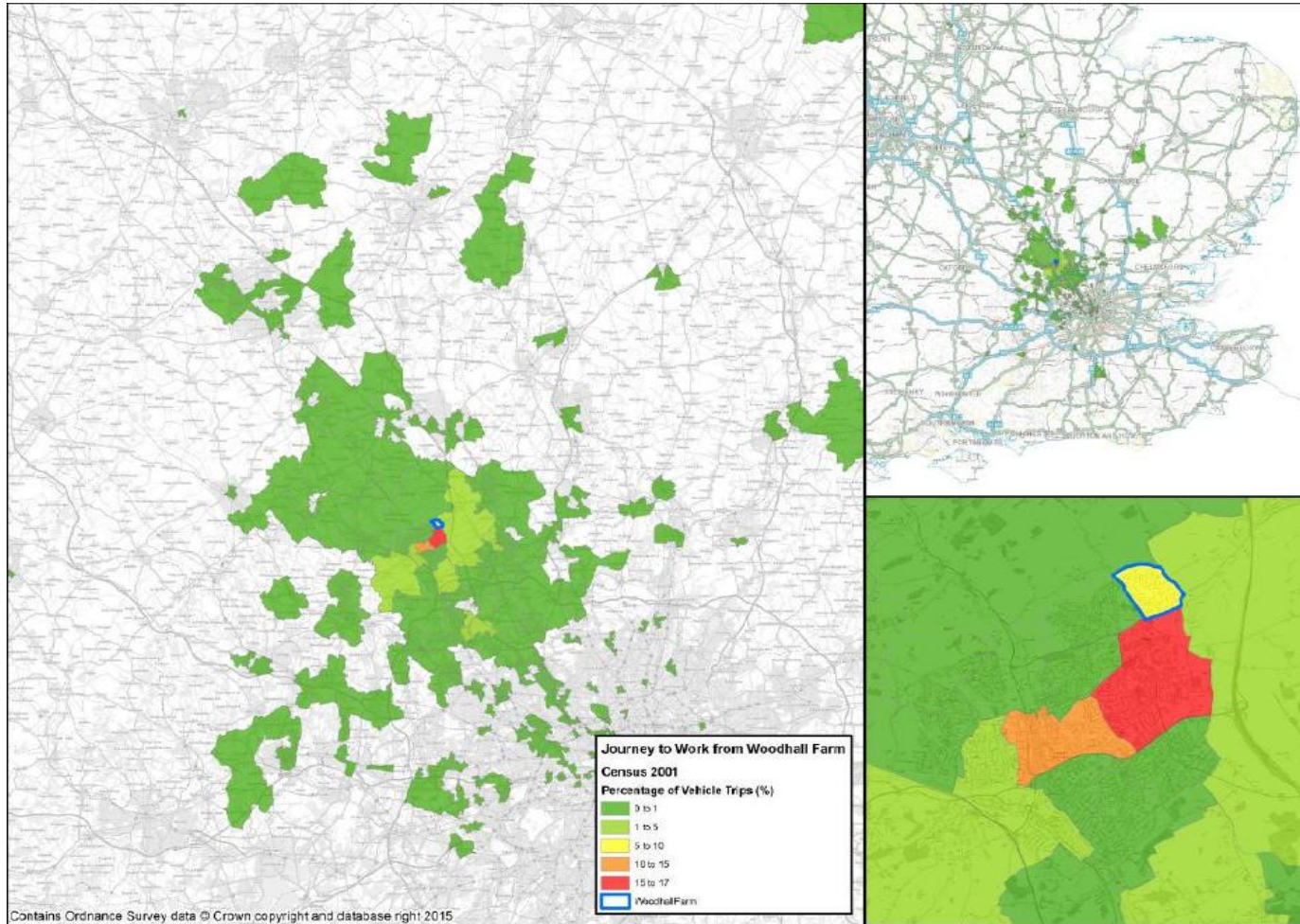
### – Demand Scenarios

- **Scenario 1** – B/G growth + Spencers Park, Maylands Gateway, Heart of Maylands etc.
- **Scenario 2** – Scenario 1 + East Hemel Development (2,500 dwellings)
- **Scenario 2+ (2031 Sen Test)** – Scenario 2 + Further East Hemel Dev (2,500 dwellings)



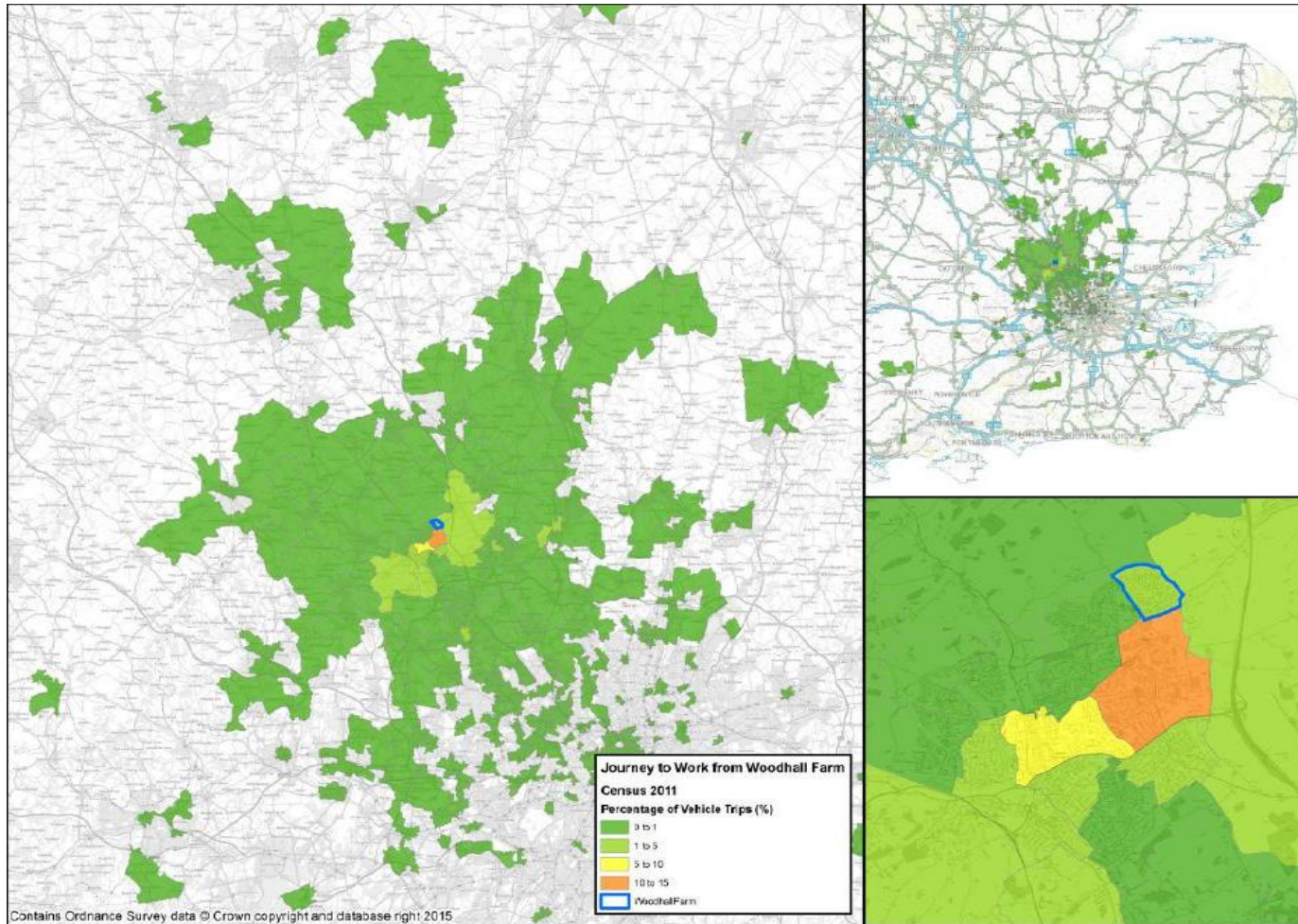
# Model Testing

## Stage 1b – Forecast Year Reference Case – JtW Census Data Analysis (2001)



# Model Testing

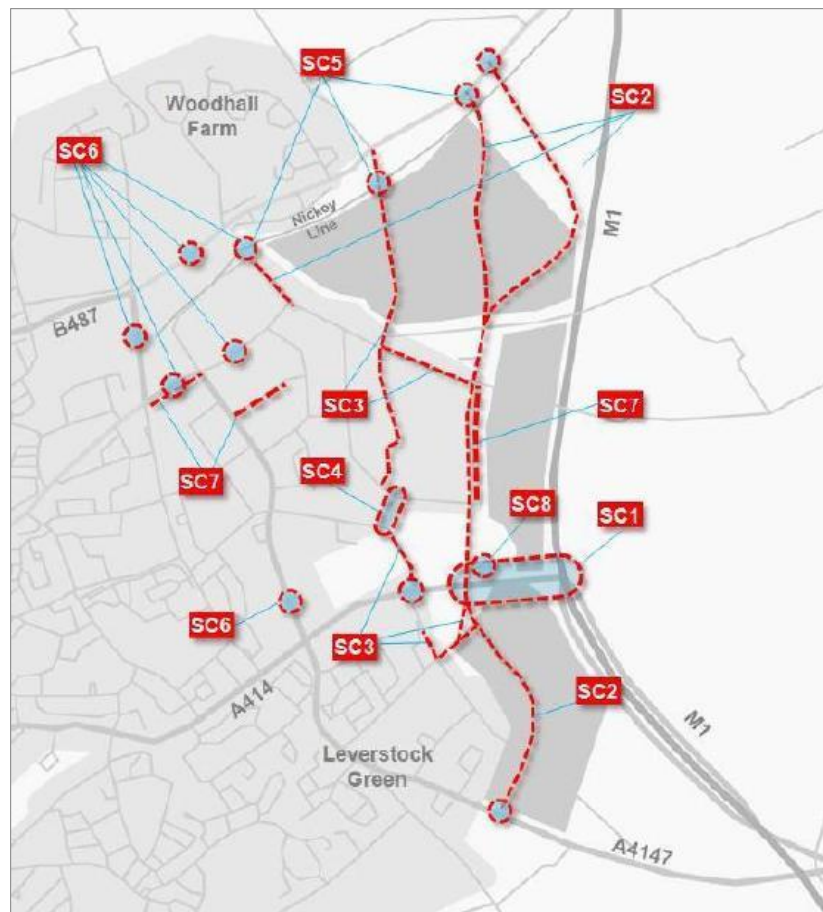
## Stage 1b – Forecast Year Reference Case – JtW Census Data Analysis (2011)





# Schemes

## Stage 2b – Scheme Concept Options



### **SC1 - A414 Breakspear Way/Green Lane Junction Improvement**

**SC1a:** Enlarged signalised roundabout with a 'hamburger' roundabout.

**SC1b:** Compact grade-separated junction

**SC1c:** Reconfigured M1 J8 with new Maylands eastern gateway access to the north

**SC1d:** Reconfigured M1 J8 with new Maylands western gateway access to the north

**SC1e:** Full signalisation of the existing roundabout plus widening on Green Lane (north & south), Breakspear Way eastern arm and the circulatory.

### **SC2 - East Hemel Hempstead North-South Spine Road**

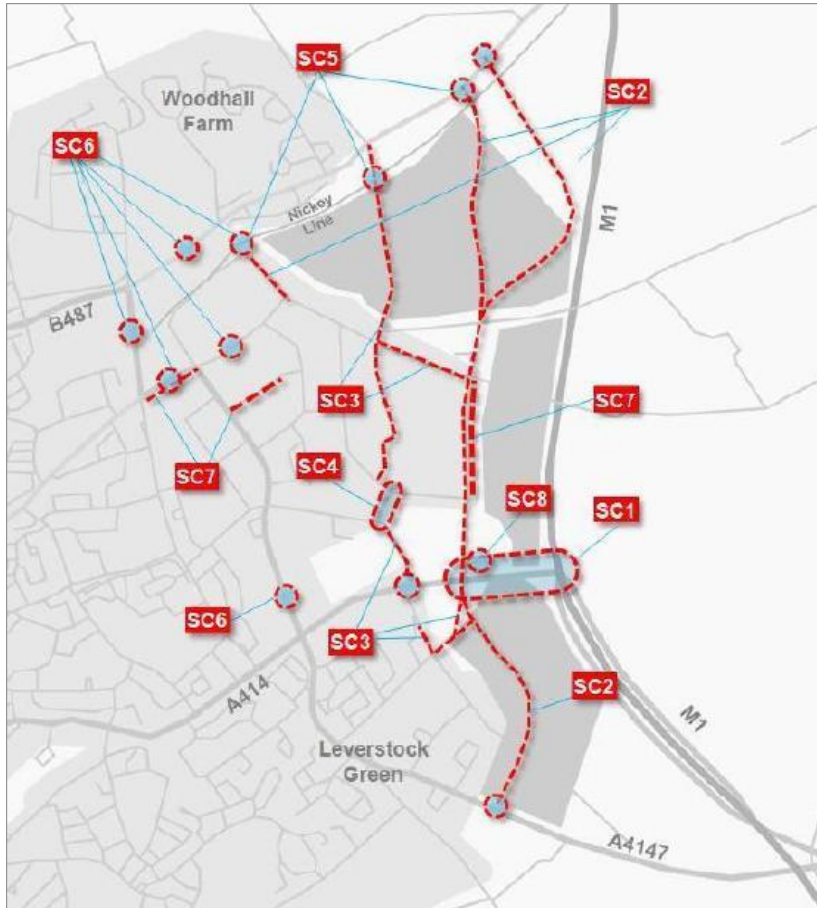
**SC2a:** Spine road connecting all parts of the proposed development, with links onto the A4147 Leverstock Green Road, A414 Breakspear Way and B487 Hemel Hempstead Road.

**SC2b:** Alignment runs closer to the M1.

**SC2c:** Follows upgraded Three Cherry Trees Lane.

# Schemes

## Stage 2b – Scheme Concept Options



**SC3:** Cherry Trees Lane, Buncefield Lane and Green Lane (South) Quietways

**SC4:** Wood End Lane-Boundary Way Link

**SC5:** Nickey Line Access Improvements and 'branch line' to East Hemel Hempstead

**SC6:** Pedestrian/Cyclist Crossings

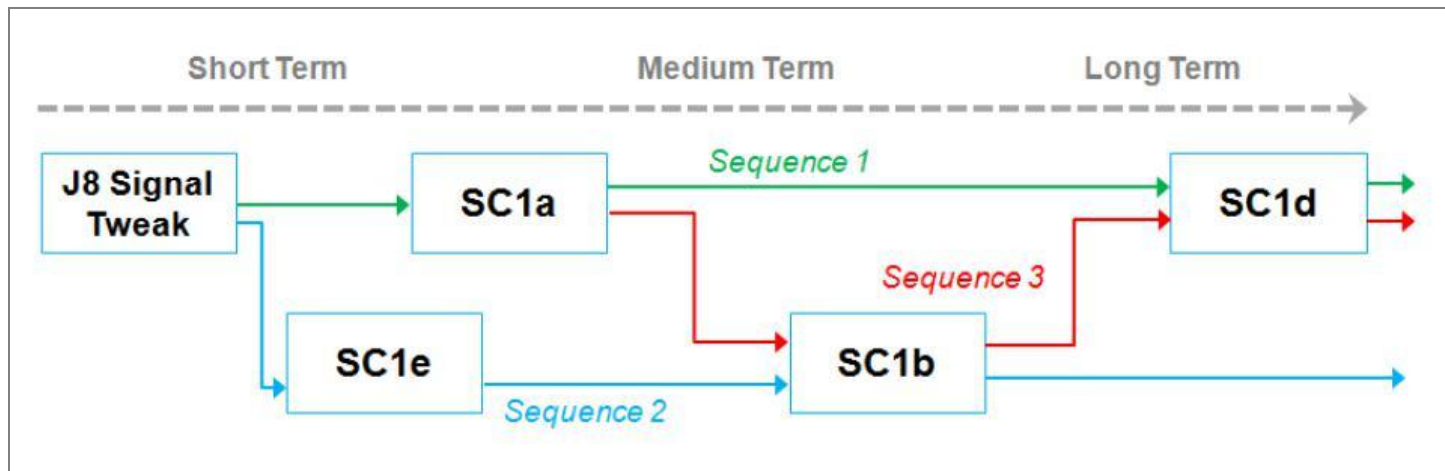
**SC7:** Lorry Parking

**SC8:** Circular Bus Service and N-S-E-W bus interchange adjacent to A414

# Next Stages

## Stage 2b – Defining model scenarios

- For modelling purposes, the proposal is to generate model scenarios based on groups of schemes packaged around the various SC1 options
- It is envisaged that not all of the SC1 options will deliver long term capacity - a sequence of delivery could be explored...



# Next Stages

## Stage 2b – Defining network scenarios

SC1	Existing	incl. HCC improvement	SC1a	SC1b	SC1c	SC1d	SC1e
		Amendment to M1 J8 signals	Hamburger	Compact grade separation		Enlarged J8	Localised widening
2015	✓	✓	✓	✗	✗	✗	✓
2021	✓	✓	✓	✗	✗	✗	✓
2026	✓	✓	✓	✓	✗	✗	✗
2031	✓	✓	✗	✓	✗	✓	✗
2031 Sensitivity	✓	✓	✗	✓	✗	✓	✗

SC2	SC2a	SC2b	SC2c
	Central alignment (with HGV ban)	Alignment closer to M1 (open to HGVs)	Improved Three Cherry Trees Lane (with new Nickey Line bridge)
2015	✗	✗	✗
2021	✓	✓	✓
2026	✓	✓	✓
2031	✓	✓	✓
2031 Sensitivity	✓	✓	✓



# Next Stages

## Stage 2b – Possible Model Scenarios

Study Stage	Scenario ID (YYY-NetwerkScenario-DemandScenario)	Network				Demand					Purpose of Scenario		Variants	Scenario Tests AM	Scenario Tests PM
		Do Nothing	N1 + Committed Highway Schemes	N2 + Maylands Concepts	N3 + Development Infrastructure (i.e. Spine Road)	Do Nothing	D1 + Background Growth	+ Development Scenario 1 (without East RH)	D2 + Development Scenario 2 (with East RH)	D2+ + Development Scenario 2+ (with East RH Sensitivity Test)					
1a	2015-1	✓	✗	✗	✗	✓	✗	✗	✗	✗	Base Year Model (existing traffic conditions)	REQUIRED	Single variant	1	1
2b	2015-2	✓	✓	✓	✗	✓	✗	✗	✗	✗	Test the performance of short term Maylands Concepts under existing traffic conditions	REQUIRED	2 variants	2	2
1b	2021-N1-D1	✓	✓	✗	✗	✓	✓	✓	✗	✗	Test the performance of the existing network under forecasting mode, with no proposed scheme options. This scenario will be used as benchmark to which the performance of proposed scheme options will be compared against.	REQUIRED	Single variant	1	1
2b	2021-N2-D1	✓	✓	✓	✗	✓	✓	✓	✗	✗	Test the performance of Maylands Concepts.	REQUIRED	2 variants	2	2
2b	2021-N3-D1	✓	✓	✓	✓	✓	✓	✓	✗	✗	Not required - no major development infrastructure is expected in 2021 (?)	NOT REQUIRED	N/A	0	0
2b	2021-N1-D2	✓	✓	✗	✗	✓	✓	✓	✓	✗	Not required - as according phasing assumption, there are no development on East RH in 2021 (?)	REQUIRED	Single variant	2	2
2b	2021-N2-D2	✓	✓	✓	✗	✓	✓	✓	✓	✗	Not required - as according phasing assumption, there are no development on East RH in 2021 (?)	REQUIRED	2 variants	2	2
2b	2021-N3-D2	✓	✓	✓	✓	✓	✓	✓	✓	✗	Not required - as according phasing assumption, there are no development on East RH in 2021 (?)	NOT REQUIRED	N/A	0	0
1b	2026-N1-D1	✓	✓	✗	✗	✓	✓	✓	✗	✗	Test the performance of the existing network under forecasting mode, with no proposed scheme options. This scenario will be used as benchmark to which the performance of proposed scheme options will be compared against.	REQUIRED	Single variant	1	1
2b	2026-N2-D1	✓	✓	✓	✗	✓	✓	✓	✗	✗	Test the performance of Maylands Concepts.	REQUIRED	2 variants	2	2
2b	2026-N3-D1	✓	✓	✓	✓	✓	✓	✓	✗	✗	Demonstrate the impact of potential development infrastructure. Can't have N3 with D1.	NOT REQUIRED	N/A	0	0
2b	2026-N1-D2	✓	✓	✗	✗	✓	✓	✓	✓	✗	Demonstrate the impact of East RH development.	REQUIRED	Single variant	1	1
2b	2026-N2-D2	✓	✓	✓	✗	✓	✓	✓	✓	✗	Test the performance of Maylands Concepts, and impact of East RH development	REQUIRED	2 variants	2	2
2b	2026-N3-D2	✓	✓	✓	✓	✓	✓	✓	✓	✗	Demonstrate the impact of potential development infrastructure, and impact of East RH development	REQUIRED	6 variants	6	6
1b	2031-N1-D1	✓	✓	✗	✗	✓	✓	✓	✗	✗	Test the performance of the existing network under forecasting mode, with no proposed scheme options. This scenario will be used as benchmark to which the performance of proposed scheme options will be compared against.	REQUIRED	Single variant	1	1
2b	2031-N2-D1	✓	✓	✓	✗	✓	✓	✓	✗	✗	Test the performance of Maylands Concepts. Let's assume full 2031 E Hemel development is not feasible without the spine road	NOT REQUIRED	N/A	0	0
2b	2031-N3-D1	✓	✓	✓	✓	✓	✓	✓	✗	✗	Demonstrate the impact of potential development infrastructure.	REQUIRED	6 variants	6	6
1b	2031-N1-D2	✓	✓	✗	✗	✓	✓	✓	✓	✗	Demonstrate the impact of East RH development.	REQUIRED	Single variant	1	1
2b	2031-N2-D2	✓	✓	✓	✗	✓	✓	✓	✓	✗	Test the performance of Maylands Concepts, and impact of East RH development	REQUIRED	2 variants	2	2
2b	2031-N3-D2	✓	✓	✓	✓	✓	✓	✓	✓	✗	Demonstrate the impact of potential development infrastructure, and impact of East RH development	REQUIRED	6 variants	6	6
1b	2031-N1-D2+	✓	✓	✗	✗	✓	✓	✓	✓	✓	Demonstrate the impact of further East RH development. Let's assume further development won't happen unless all the proposed infrastructure is in place	NOT REQUIRED	N/A	0	0
2b	2031-N2-D2+	✓	✓	✓	✗	✓	✓	✓	✓	✓	Demonstrate the impact of further East RH development. Let's assume further development won't happen unless all the proposed infrastructure is in place	NOT REQUIRED	N/A	0	0
2b	2031-N3-D2+	✓	✓	✓	✓	✓	✓	✓	✓	✓	Demonstrate the impact of further East RH development.	REQUIRED	3 variants	3	3

# Next Stages

## Timescale

- Stage 1b forecast year reference case modelling – November/December
- Stage 2b forecast year scheme scenario modelling – November-January
  - Initial testing of options in 2015 or 2021 to determine scheme potential
- Stage 2b scheme design of finalised options – November-January



# Thank You

November 3, 2015

# Maylands Growth Corridor Study Progress Meeting 5



January 29, 2016

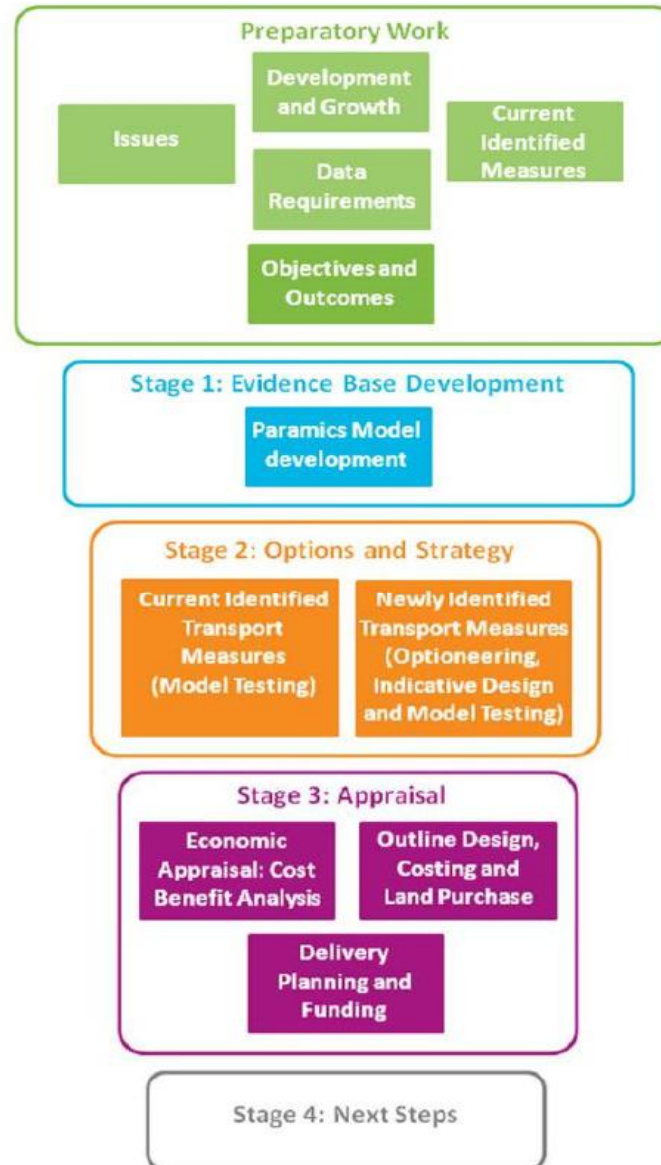
**AECOM**

# Presentation Agenda

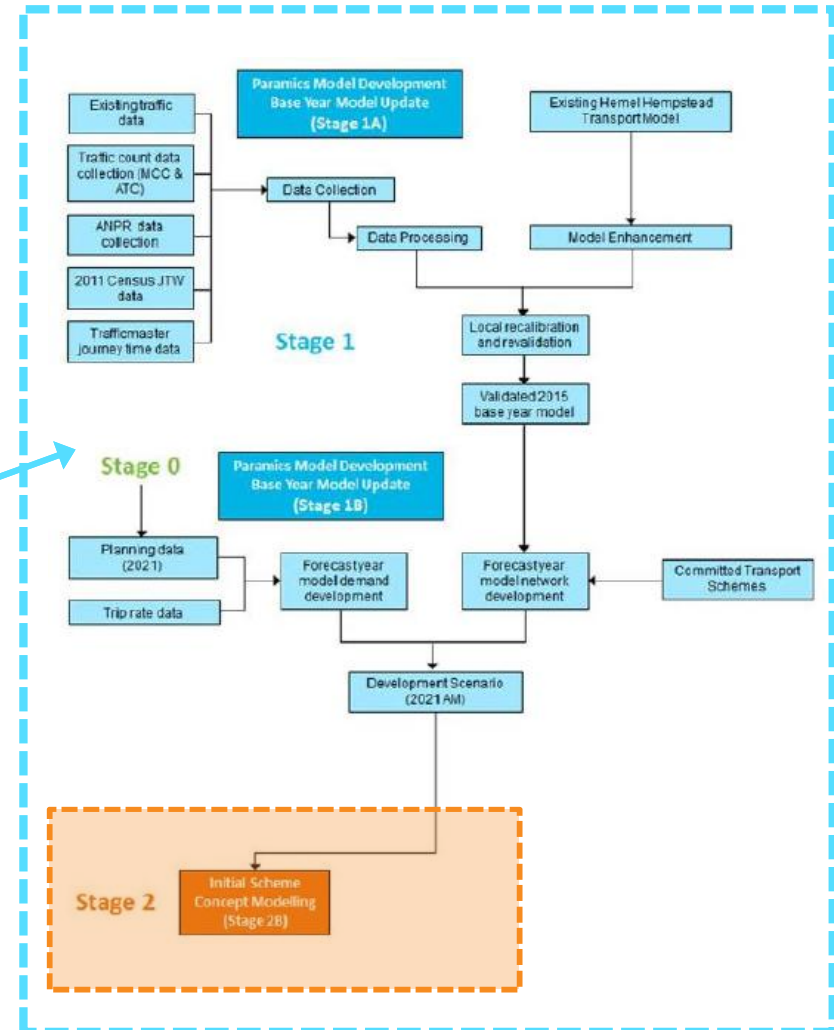
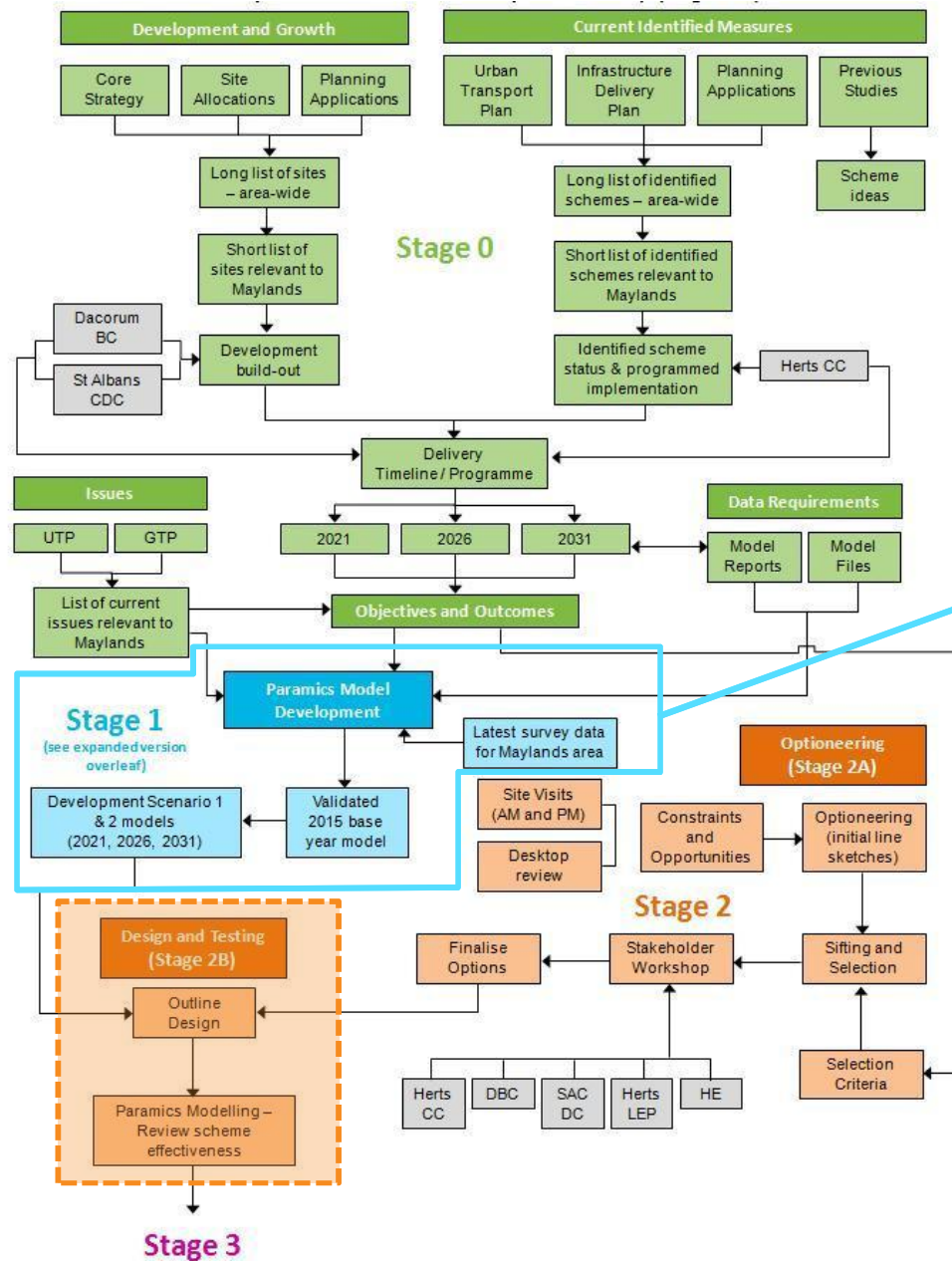
1. Introductions
2. Enterprise Zone status
3. Overview of the study commission
4. Paramics Modelling evidence – sensitivity testing of large-scale interventions
5. Next steps



# Key stages



# Process Map

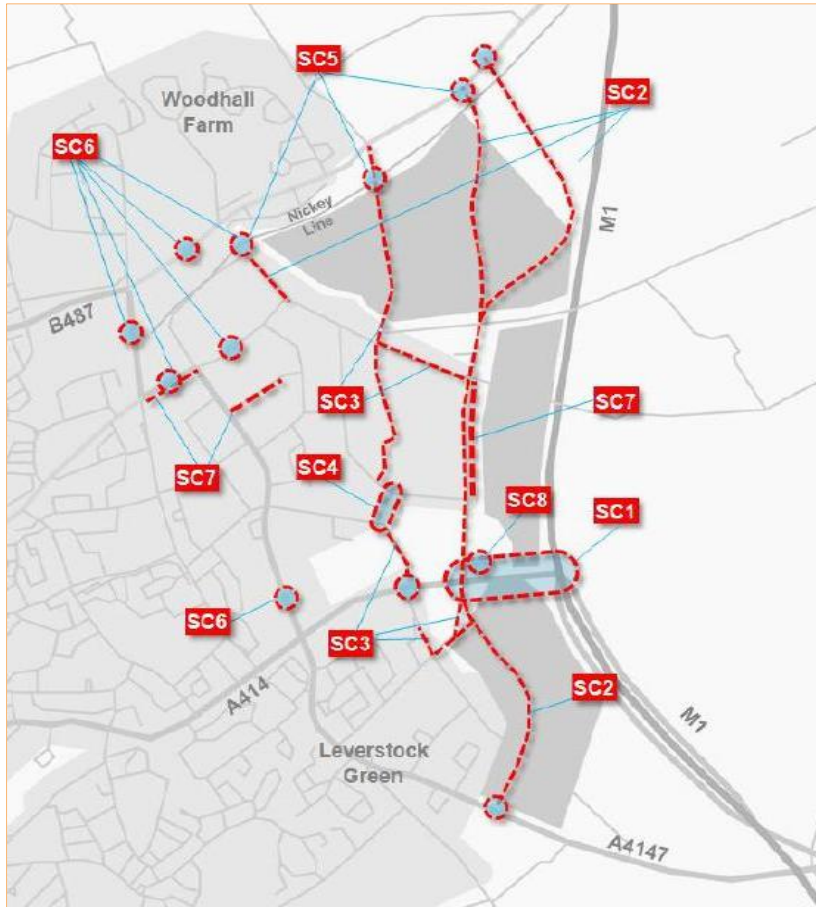


# Timeline of work

		Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16
<b>Stage 0</b>	<b>Preparation</b>																					
<b>Stage 1a</b>	<b>Base year modelling</b>																					
<b>Stage 1b</b>	<b>Forecast year 'Do Minimum' modelling</b>																					
<b>Stage 2a</b>	<b>A - strategy</b>																					
<b>Stage 2b</b>	<b>B - option development and 'Do Something' Sensitivity Testing</b>																					
<b>Non-Study</b>	<b>Model enhancement to support Vectos planning applications</b>																					
<b>Stage 2c</b>	<b>C - 'Do Something' Option Modelling using enhanced model</b>																					
<b>Stage 3</b>	<b>Scheme Appraisal and Business Case</b>																					
<b>Stage 4</b>	<b>Final Reporting / Consultation</b>																					

# Schemes

## Stage 2b – Scheme Concept Options



### **SC1 - A414 Breakspear Way/Green Lane Junction Improvement**

**SC1a:** Enlarged signalised roundabout with a 'hamburger' roundabout.

**SC1b:** Compact grade-separated junction

**SC1c:** Reconfigured M1 J8 with new Maylands eastern gateway access to the north

**SC1d:** Reconfigured M1 J8 with new Maylands western gateway access to the north

**SC1e:** Full signalisation of the existing roundabout plus widening on Green Lane (north & south), Breakspear Way eastern arm and the circulatory.

### **SC2 - East Hemel Hempstead North-South Spine Road**

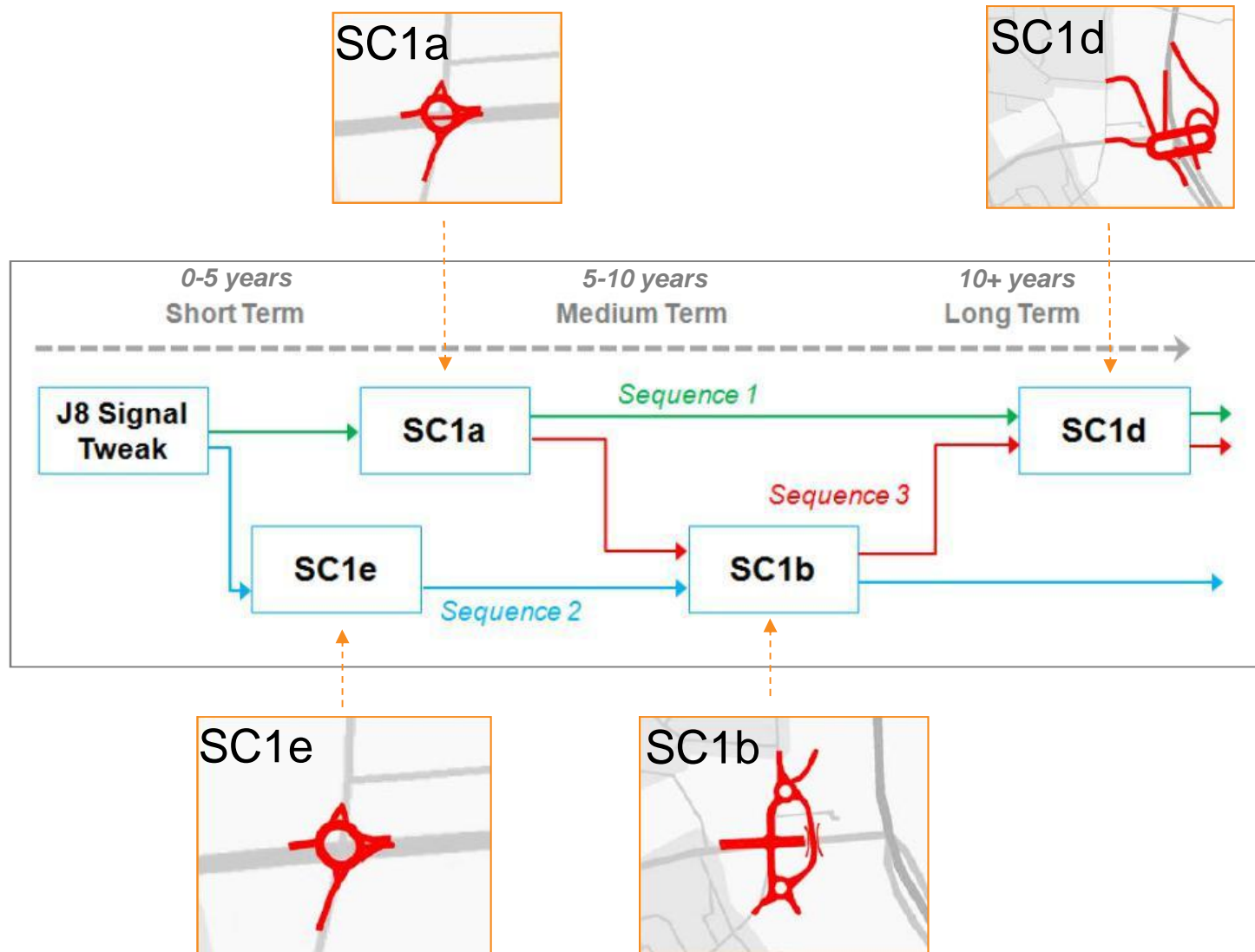
**SC2a:** Spine road connecting all parts of the proposed development, with links onto the A4147 Leverstock Green Road, A414 Breakspear Way and B487 Hemel Hempstead Road.

**SC2b:** Alignment runs closer to the M1.

**SC2c:** Follows upgraded Three Cherry Trees Lane.

**...plus 'small-scale' schemes – SC3-SC8**

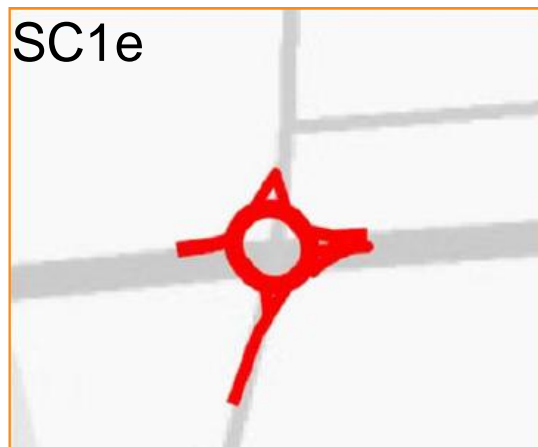
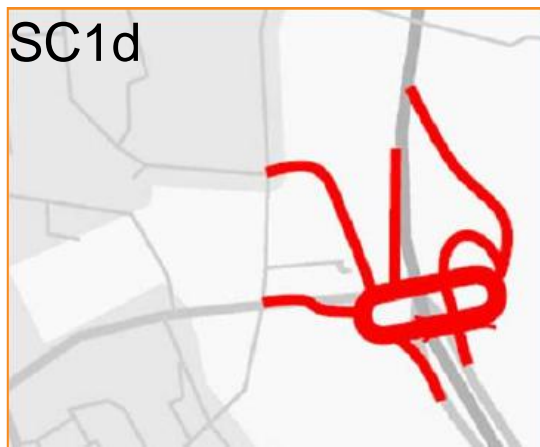
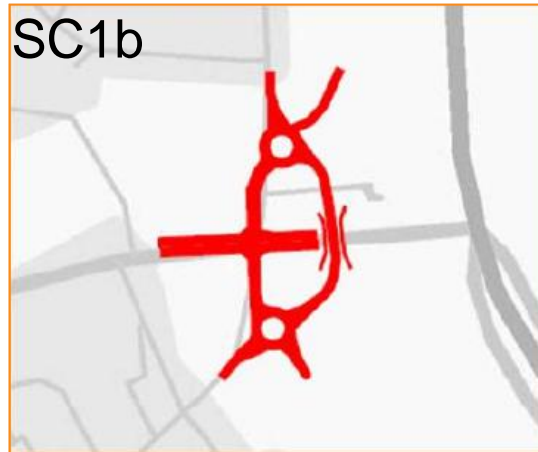
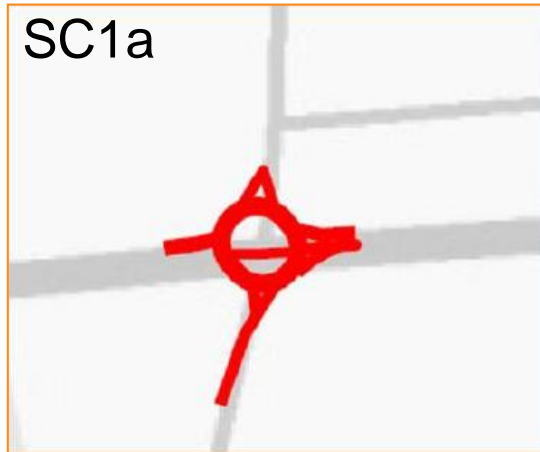
# Large-scale interventions – potential sequence of delivery





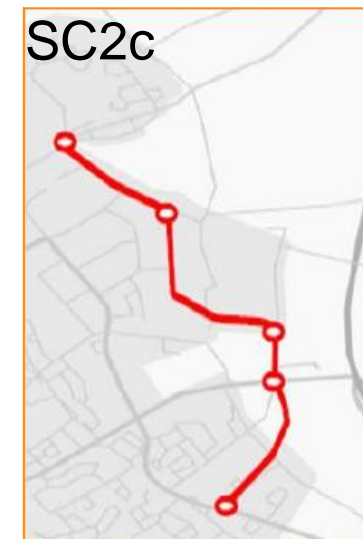
# Model Scenarios

## Stage 2b – 2021 Network Scenarios



### Network Scenarios

- SC1a + SC2c
- SC1b + SC2c
- SC1d + SC2c
- SC1e + SC2c



# Model Scenarios

## Stage 2b – 2015 to 2021 Development and Growth

### Hemel Hempstead

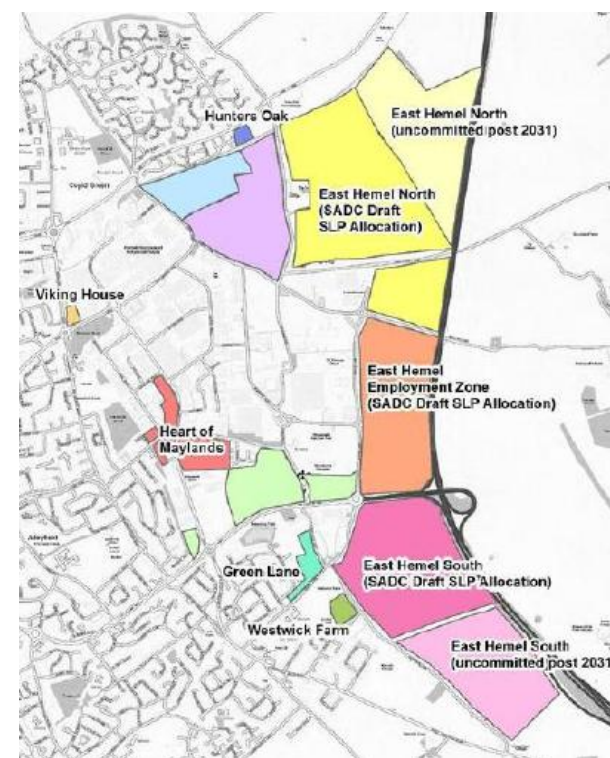
No. of dwellings	2015 to 2021
Paramics Modelling	3,130
NTEM v6.2	1,380

### Key developments within Maylands

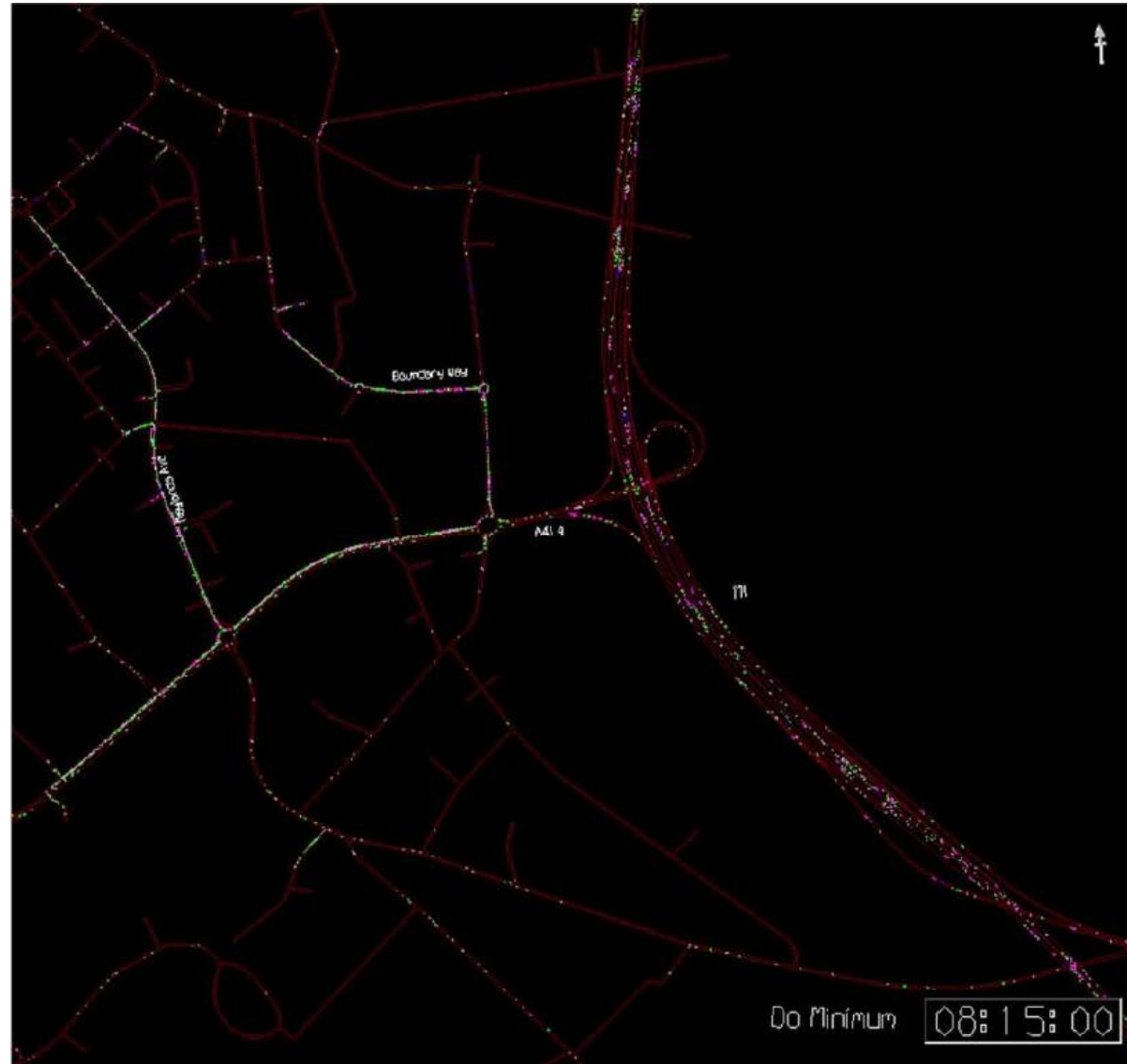
No. of dwellings	2015 to 2021
Spencers Park Phase 1	357
Spencers Park Phase 2	121
Within Heart of Maylands	375
East Hemel	227

### Model Demand Matrix Totals (AM)

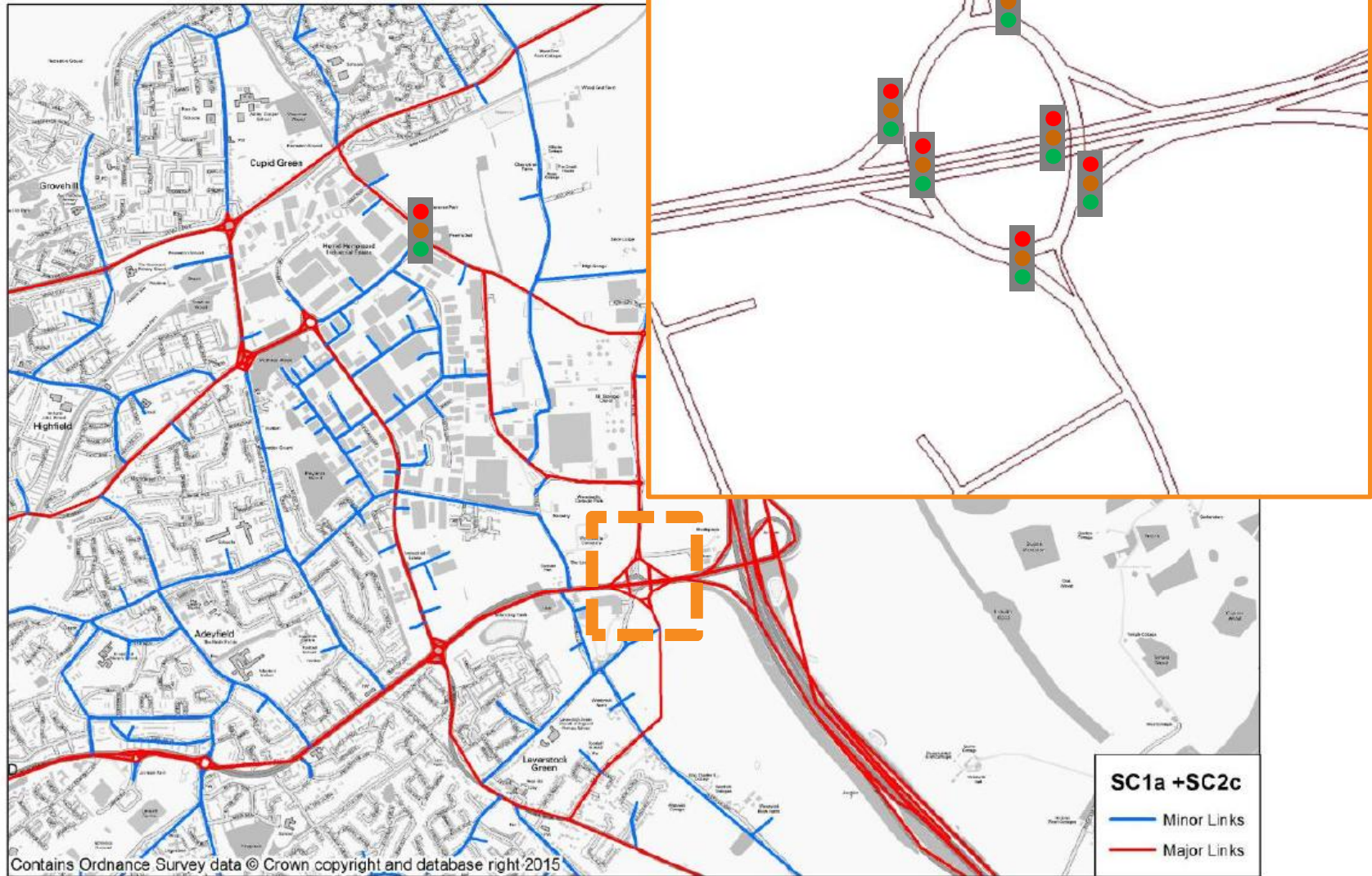
2015	95,840
2021	105,580
2015 to 2021 Growth	+10.2% (+1.63% p.a.)



# 2021 Do Minimum Morning Peak



# 2021 SC1a + SC2c Network





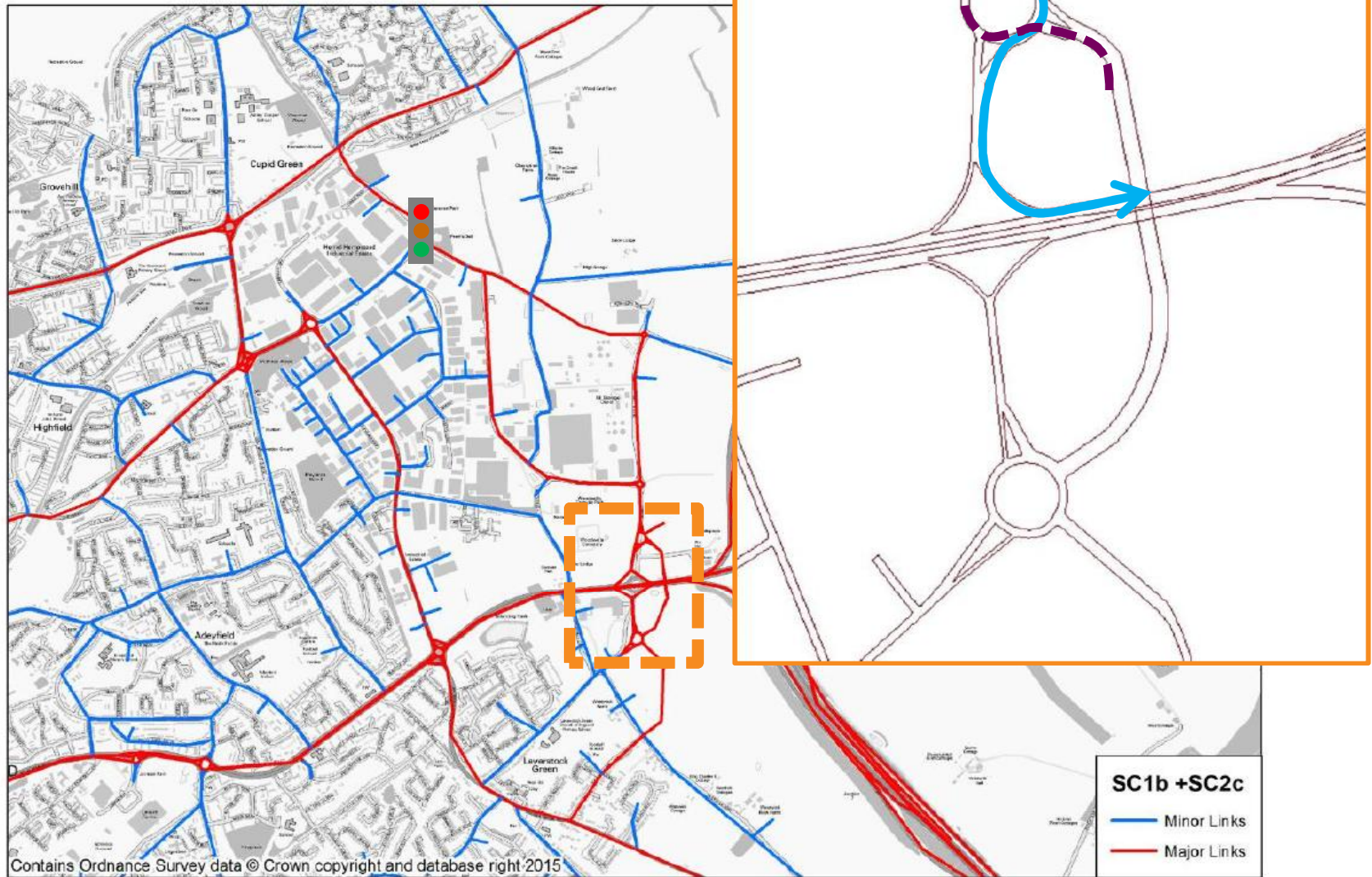
# 2021 SC1a + SC2c

## Morning Peak





# 2021 SC1b + SC2c Network



# 2021 SC1b + SC2c

## Morning Peak



# 2021 SC1b + SC2c

## Network - Variation

- Southbound traffic
  - Very little opposing traffic in 2021 based on current network and demand assumptions
- Northbound traffic
  - Has difficulties finding gaps to join roundabout circulatory due to continuous stream of southbound traffic
- Network Variation
  - Southbound approach arm – pre-signal to increase gaps for northbound traffic



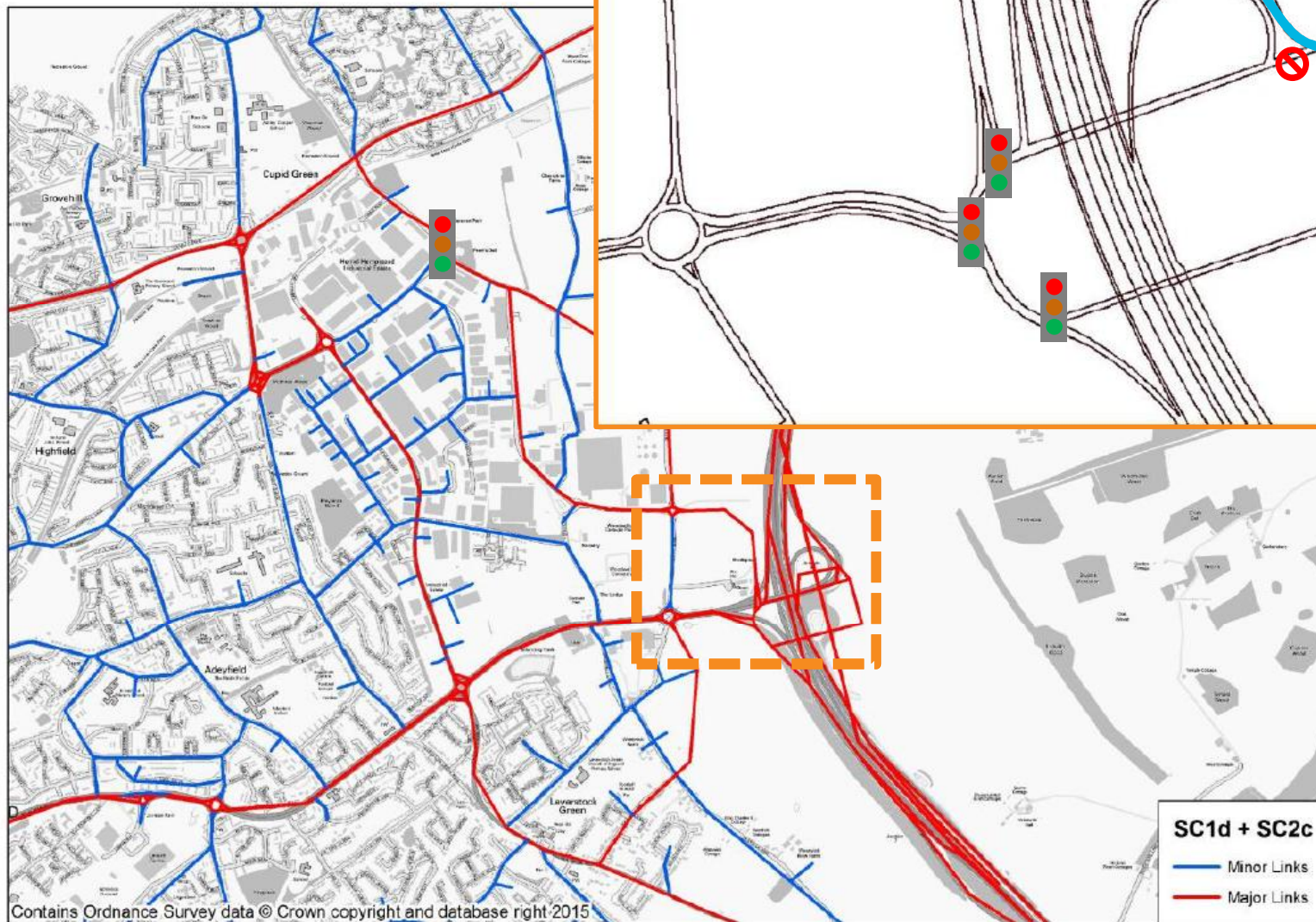
# 2021 SC1b + SC2c

## Morning Peak





# 2021 SC1d + SC2c Network



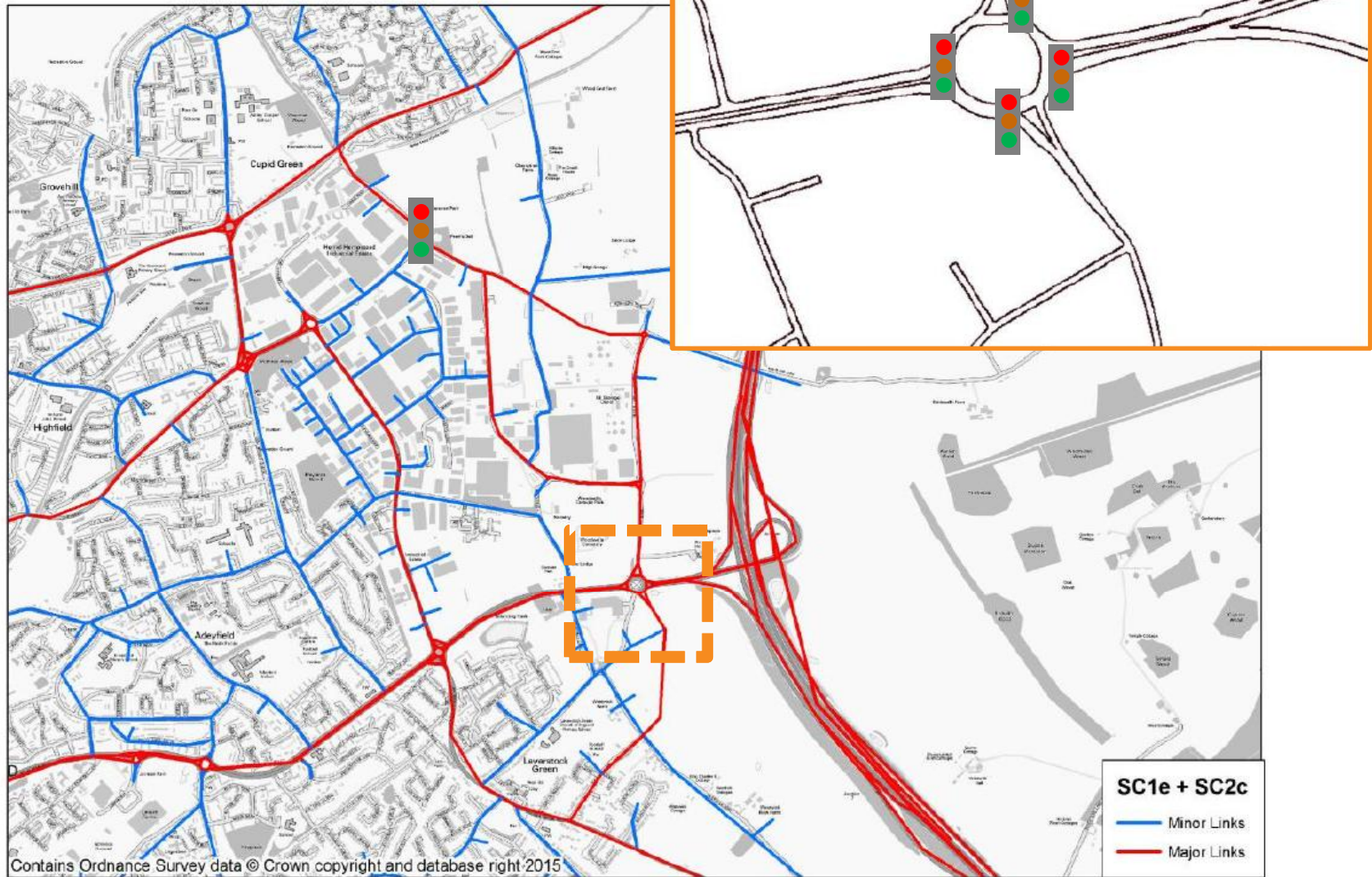


# 2021 SC1d + SC2c

## Morning Peak



# 2021 SC1e + SC2c Network



# 2021 SC1e + SC2c

## Morning Peak

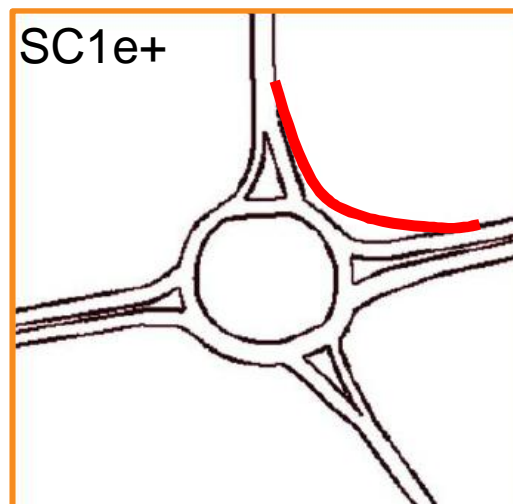


# Next Steps

## – Paramics Modelling

- Analysis on changes in traffic flow volume within Maylands (e.g. Boundary Way)
- Sensitivity Tests – test variations of scheme concepts and potential new concepts

*For example...*



- Hemel Hempstead model enhancement

# Next Steps

- Scheme Design – completion of small-scale scheme design including lorry parking and bus service proposals (March 2016)
- Consideration of alternative modes to provide additional capacity (including links to Vision schemes)
- Modelling to support development planning applications (April-July 2016)
- Model testing in enhanced model (July 2016>)



# Thank You

January 29, 2016

**AECOM**

# Maylands Growth Corridor Study Progress Meeting 6



February 25, 2016

**AECOM**

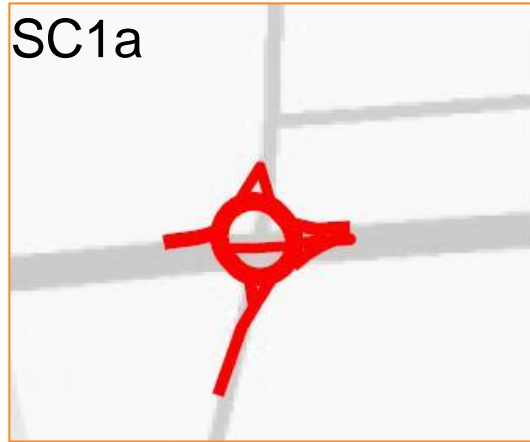
# Presentation Agenda

1. Introductions
2. Proposed Paramics Model Enhancement
3. Paramics Modelling evidence – small-scale interventions
4. Paramics Modelling evidence – sensitivity testing of large-scale interventions
5. Stage 2b progress update
6. Next steps

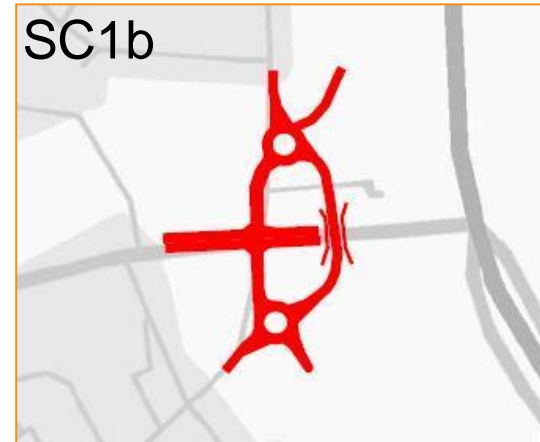
# Proposed Paramics Model Enhancement

- Scope
- Timescales
- Implications on the Study

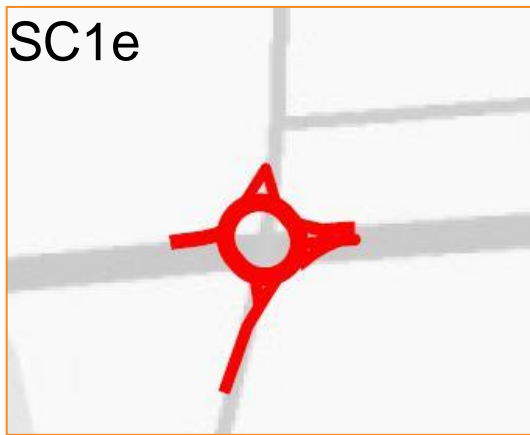
# Large-scale interventions – potential sequence of delivery



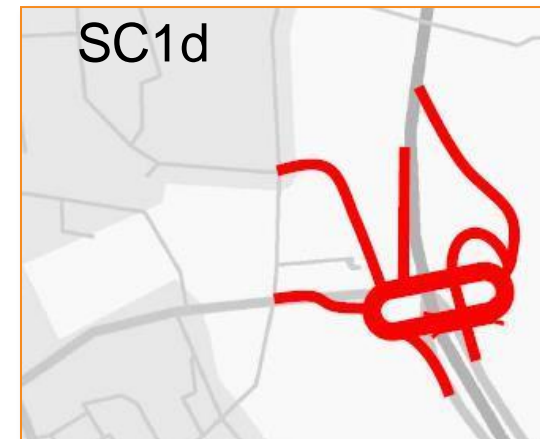
Enlarged signalised  
'Hamburger' roundabout



Compact grade-separated  
interchange



Enlarged signalised  
roundabout

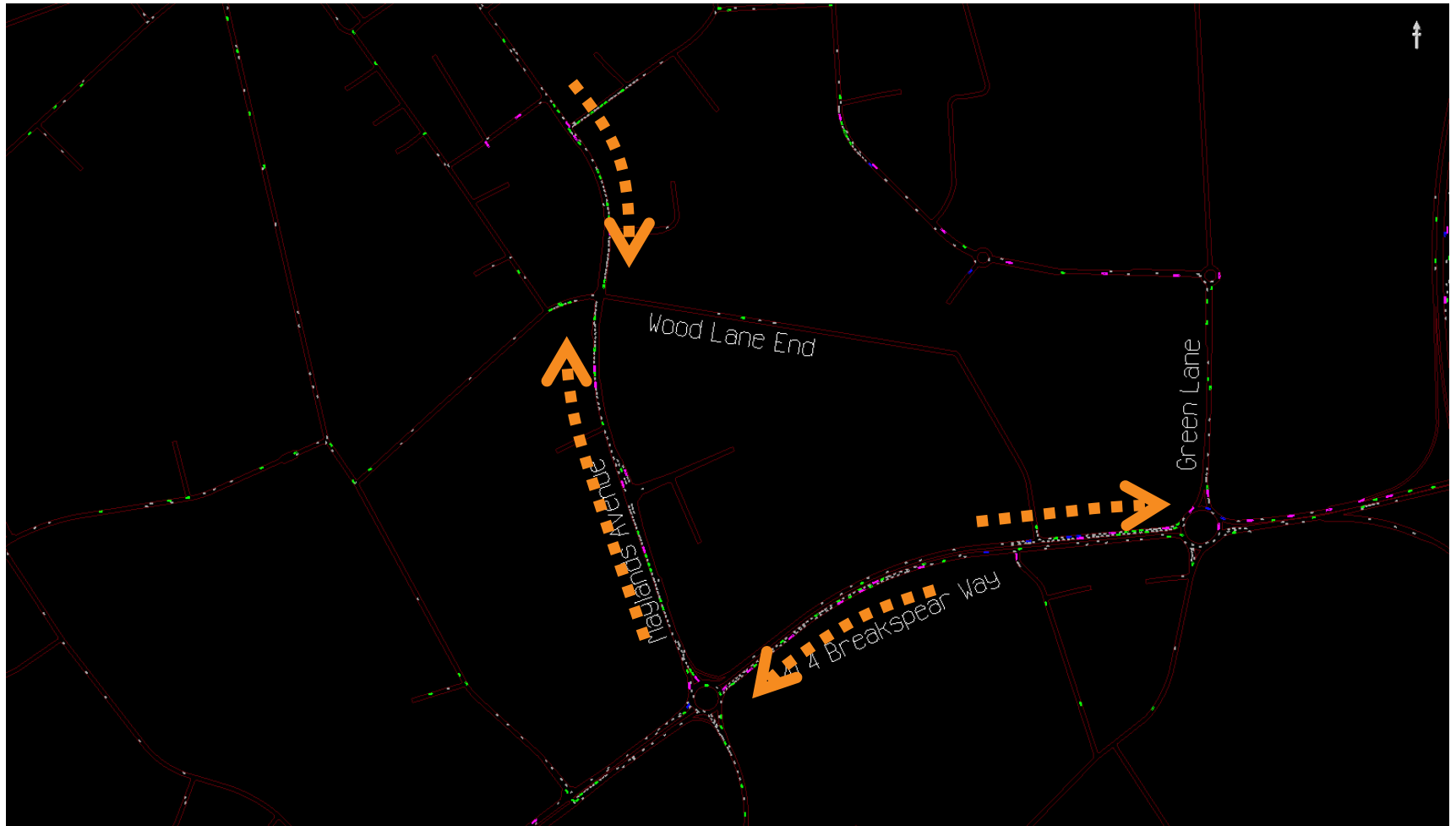


Enlarged J8 + dedicated  
Maylands access



# 2015 Base Year Model

## Morning Peak Hour



# 2015 (with M1 J8 signal adjustments)

## Morning Peak Hour



# 2015 Base Year Model

## Evening Peak Hour

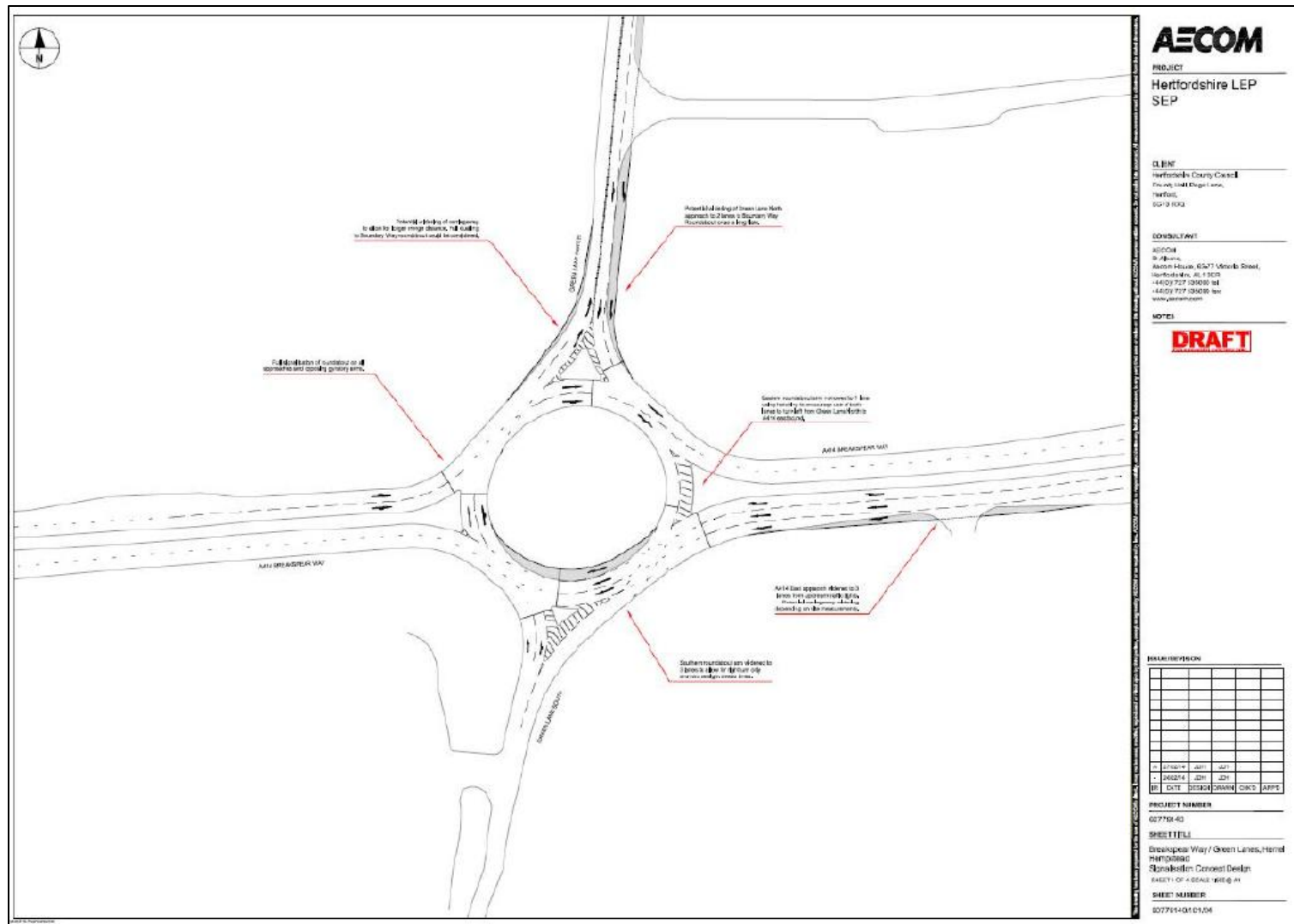


# 2015 (with M1 J8 signal adjustments) Evening Peak



## Short Term Scheme Concept

### A414 Breakspear Way roundabout





# 2021 (with short term scheme concept)

Morning Peak



# 2021 (with short term scheme concept)

## Evening Peak

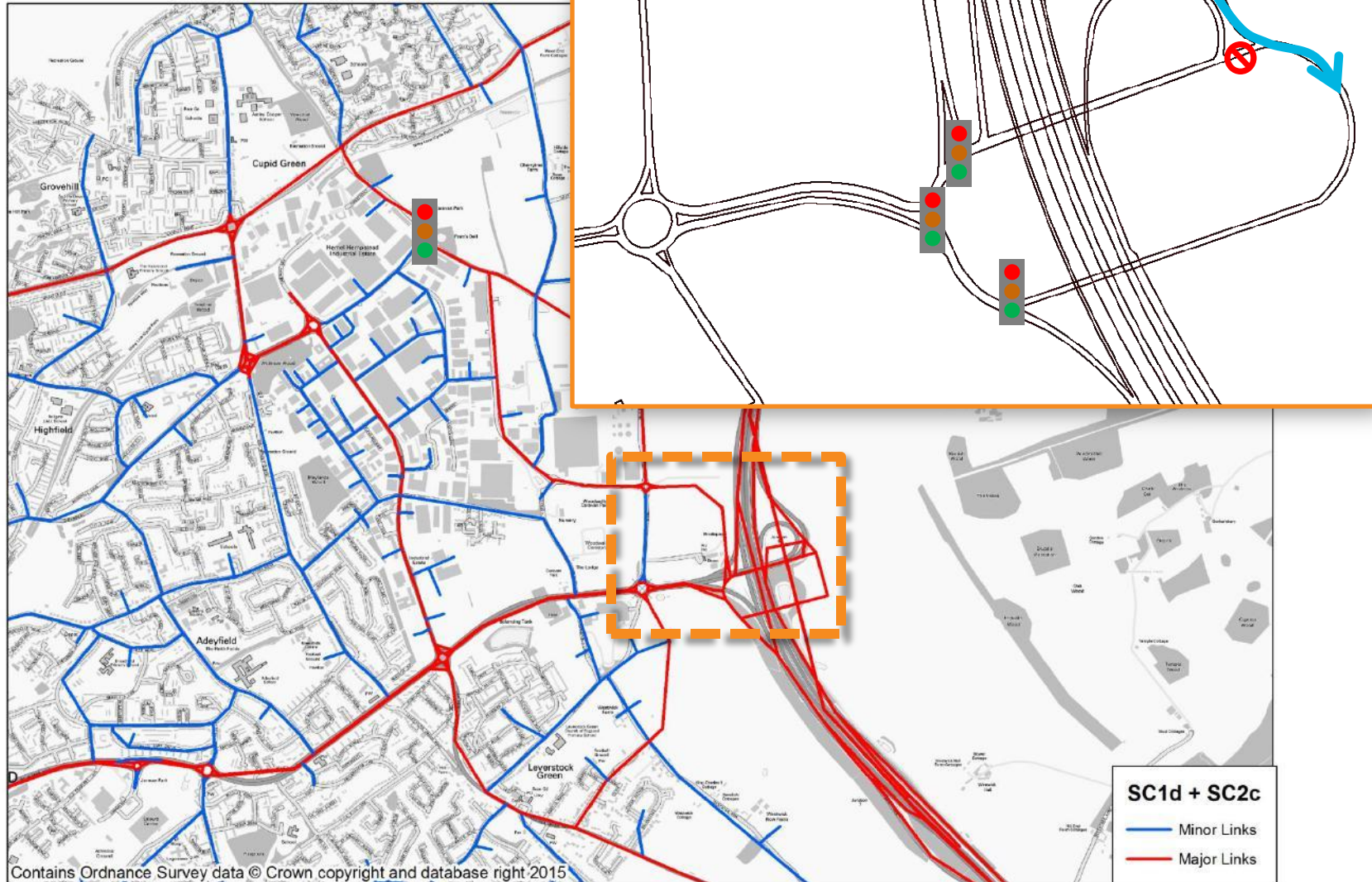


# Model Scenarios

## Stage 2b – Demand Growth Overview

Hemel Hempstead			
	No. of dwellings	Traffic demand growth	
		Morning Peak Hour	Evening Peak Hour
2015 to 2021	3,130	+10% (+1.6% p.a.)	+11% (+1.8% p.a.)
2015 to 2031	12,410	+29% (+1.6% p.a.)	+33% (+1.8% p.a.)

# 2021 SC1d + SC2c Network



# 2021 SC1d + SC2c

## Morning Peak Hour





# 2021 SC1d + SC2c

## Evening Peak Hour



# 2031 SC1d + SC2c

## Morning Peak



# 2031 SC1d + SC2c

## Evening Peak



# Other potential options

## Compact grade-separated junction with skewed overbridge



- Would remove the conflicting flows
- Would require land to NW
- Skewed bridge expensive

## Large lozenge signalised junction with access links north and south



- Wouldn't remove the conflicting flows but accommodate them at a higher capacity junction
- Land take from existing depot

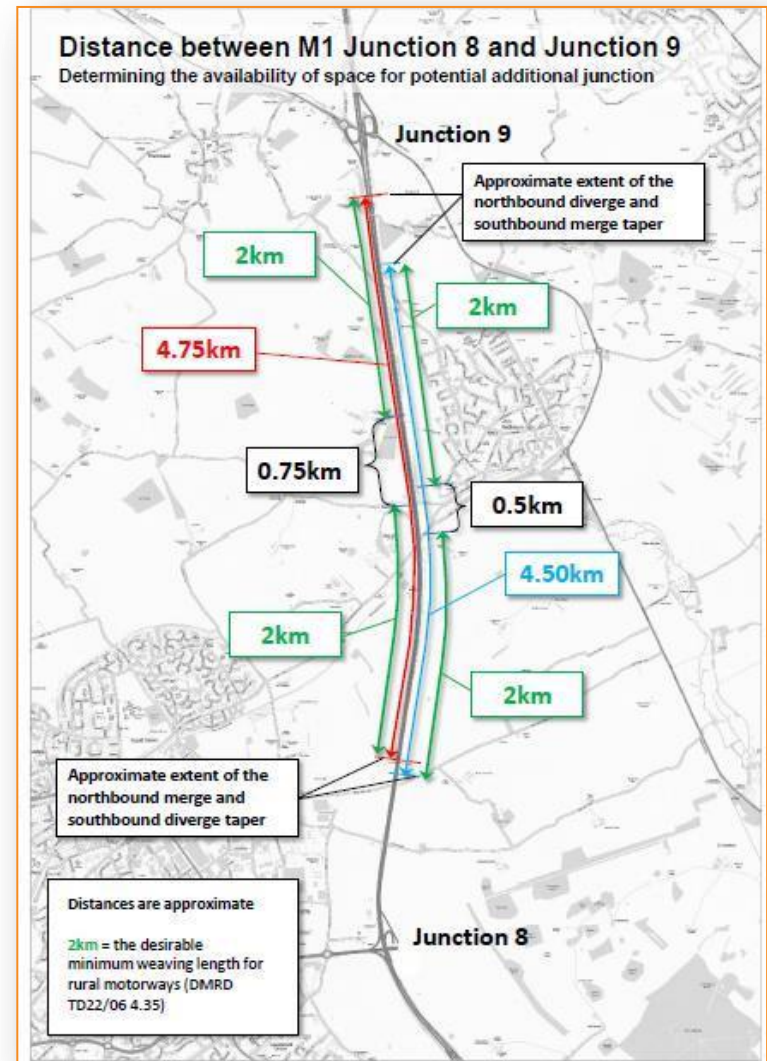


# Other potential options

## Large roundabout and Green Lane flyover



- Removes existing conflicting flows
- Could create new conflicting flows
- Would require land to NW
- Land take from depot



‘J8a’ with north-facing slips only may be feasible. However, very expensive and may not derive sufficient benefits at J8. Could generate junction-hopping between J9 and J8a



# Stage 2b progress update – development of small-scale scheme options

## SC3-SC6

- Site visits undertaken;
- Locations for new pedestrian crossings identified
- Design work to continue. Completion expected in late **March**.

## SC7: Lorry Parking and Access:

- Undertaken a site visit;
- Developed a policy context for HGV parking in the area;
- Identified issues associated with truck parking at Maylands;
- Considered the potential factors driving truck parking;
- Drawn up recommendations aimed at addressing the issues described;
- Technical Report to be circulated during **March**

## SC8: Bus Movements and Interchange

- TRACC data analysis compiled for Growth and Transport Plan Evidence Pack to be used to identify potential bus service reconfiguration.
- Technical Report to be circulated during **April**.

# Next Steps

- Scheme Design – completion of small-scale scheme design including lorry parking and bus service proposals (April 2016)
- Consideration of alternative modes to provide additional capacity (including links to Vision schemes)
- Modelling to support development planning applications (April-Aug 2016)
- Model testing of Study scheme options in enhanced model (August 2016>)
- Input to indicative business cases (September 2016)
- Completion of Study (September/October 2016)

# Thank You

February 25, 2016

**AECOM**

# Maylands Growth Corridor Study

Progress Meeting 7: 5<sup>th</sup> May 2016

# Agenda

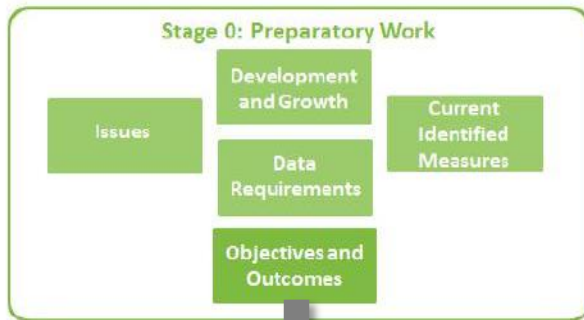
- 1/ Introductions & progress meeting #6 actions
- 2/ Commission Overview – timescales and progress
- 3/ East Hemel Hempstead masterplanning & model enhancement – update
- 4/ Enterprise Zone – update
- 5/ SC1&2 Model sensitivity testing
- 6/ SC3-6 option development
- 7/ A4147-A414 cycle link – update
- 8/ Next Steps



# 2/ Commission Overview

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# Commission Overview

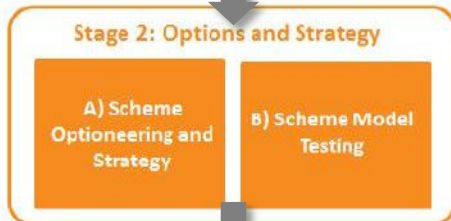


**April '15-July '15**



**a) Aug '15 – Nov '15**

**b) Dec '15 – Jan '16\***



**a) Sept '15-Nov '15**

**b) Jan '16 - Sept '16**

**S-Paramics Model Enhancement  
(TCE / LEP commission)**

**April '16 – Aug '16**



**Autumn 2016**

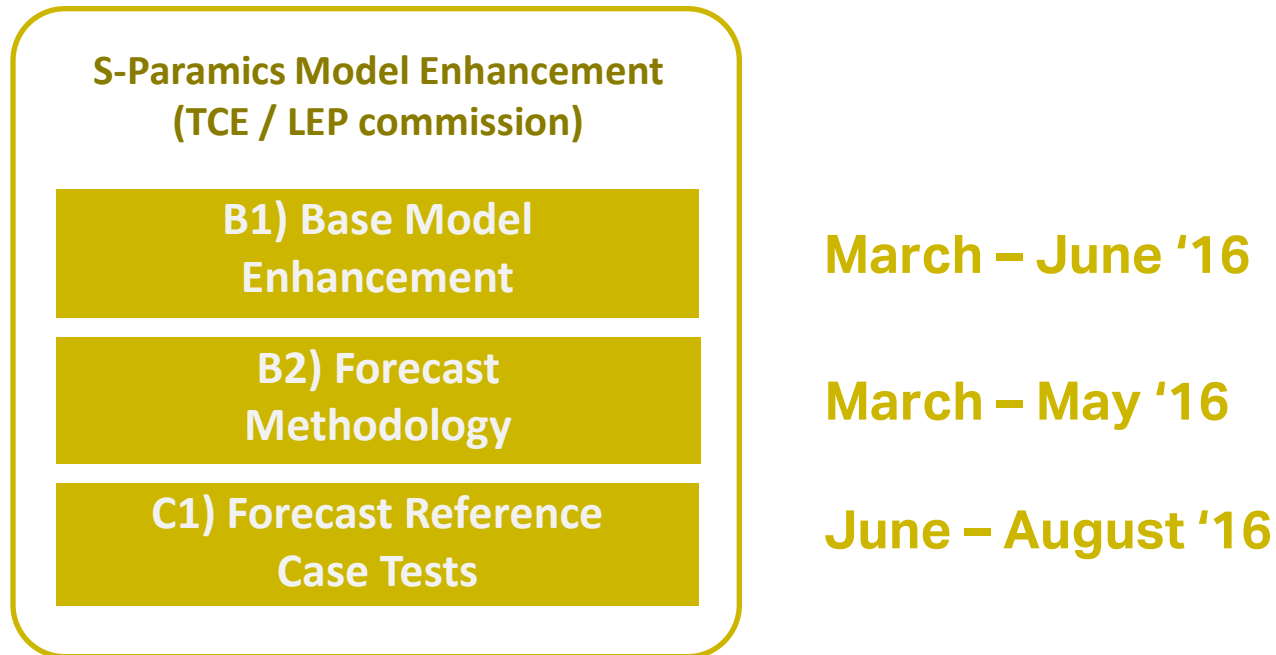


**tbc**

The background of the slide features several thin, dark gray lines that intersect to form various geometric shapes, including triangles and polygons. These lines are positioned primarily on the right side of the slide, creating a modern, architectural feel.

# **3/ East Hemel masterplanning & model enhancement**

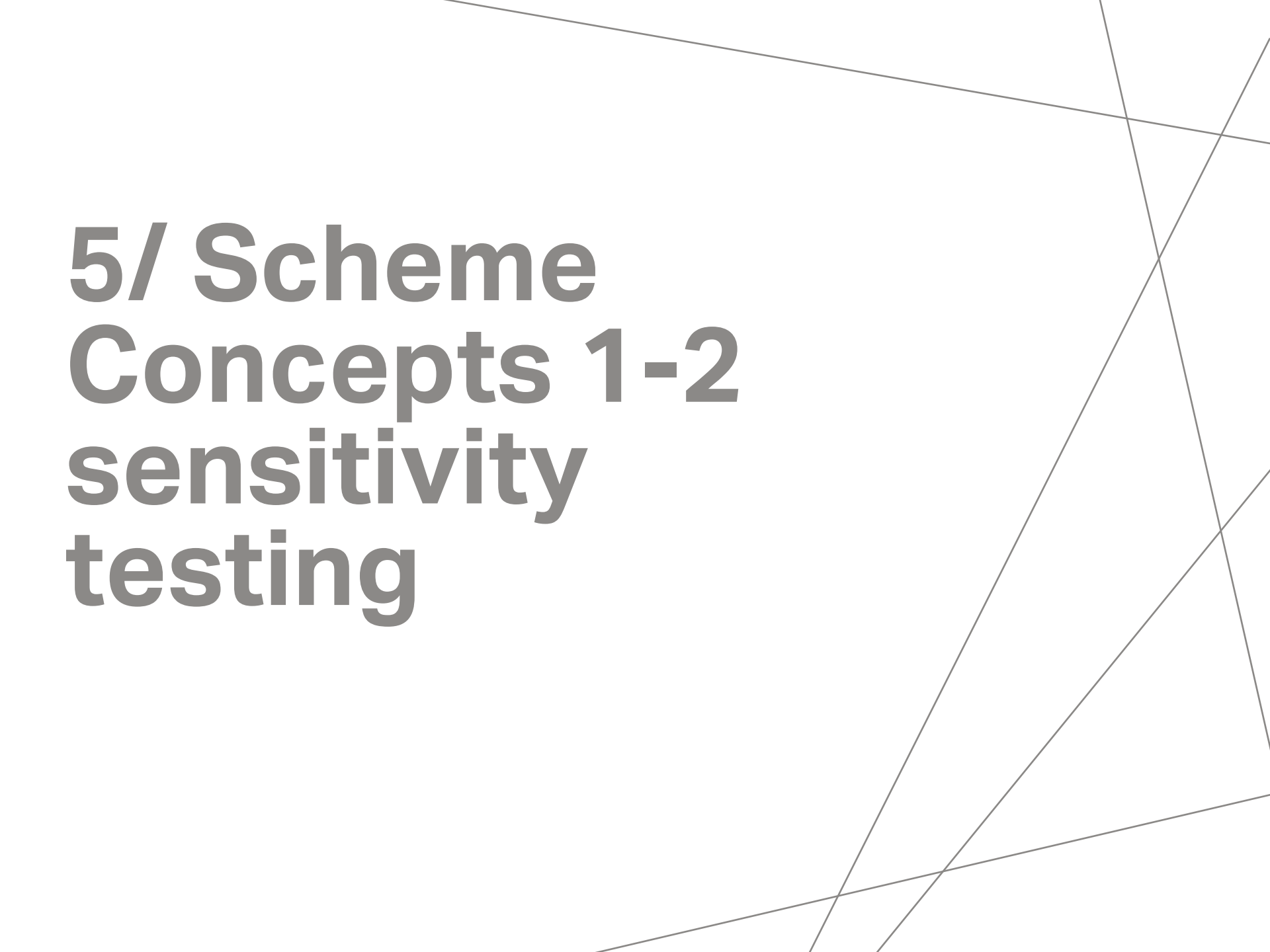
# Hemel Hempstead Model Enhancement



# 4/ Enterprise Zone

The background of the slide features several thin, dark gray lines that intersect to form various geometric shapes, including triangles and polygons. These lines are positioned primarily on the right side of the slide, creating a modern, architectural feel.



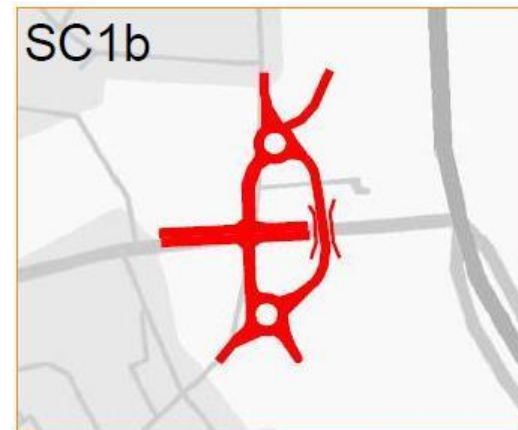
The background of the slide features several thin, dark gray lines that intersect to form various geometric shapes, including triangles and quadrilaterals. These lines are positioned primarily on the right side of the slide, creating a modern, architectural feel.

# **5/ Scheme Concepts 1-2 sensitivity testing**

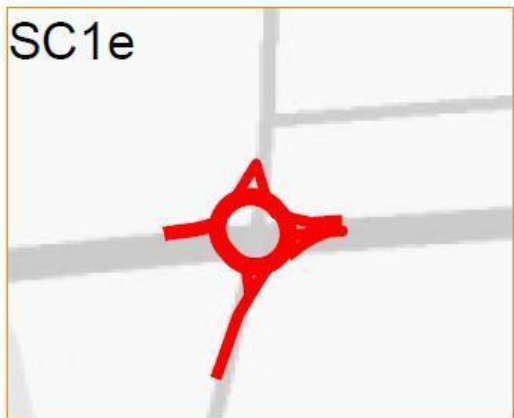
# Scheme Concept 1 & 2 Options



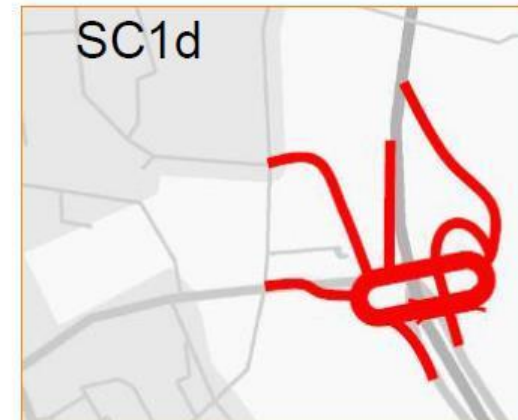
Enlarged signalised  
'Hamburger' roundabout



Compact grade-separated  
interchange



Enlarged signalised  
roundabout



Enlarged J8 + dedicated  
Maylands access

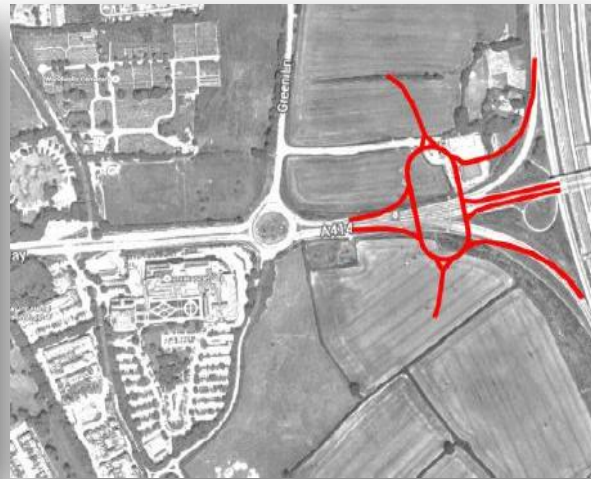
# Other Potential Options

## Compact grade-separated junction with skewed overbridge



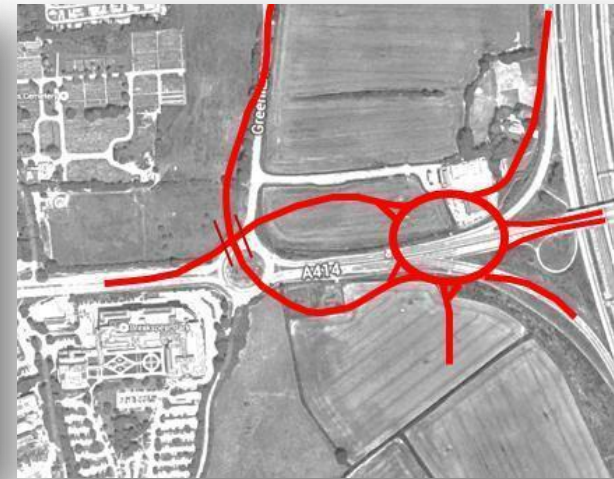
- Would remove the conflicting flows
- Would require land to NW
- Skewed bridge expensive

## Large lozenge signalised junction with access links north and south



- Wouldn't remove the conflicting flows but accommodate them at a higher capacity junction
- Land take from existing depot

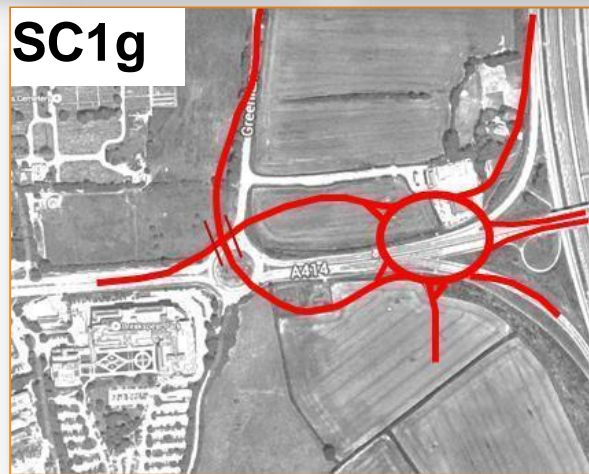
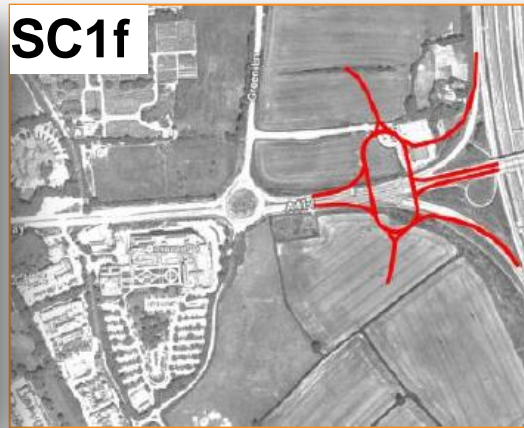
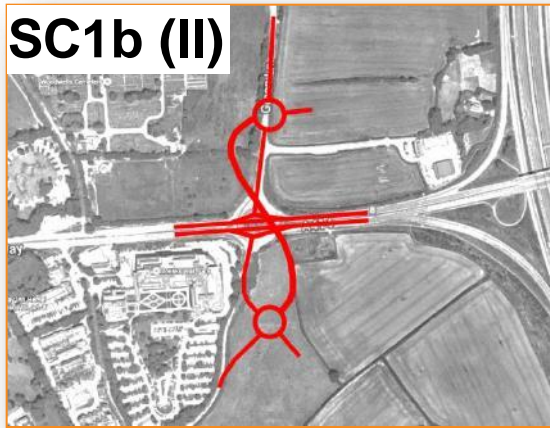
## Large roundabout and Green Lane flyover



- Removes existing conflicting flows
- Could create new conflicting flows
- Would require land to NW
- Land take from depot

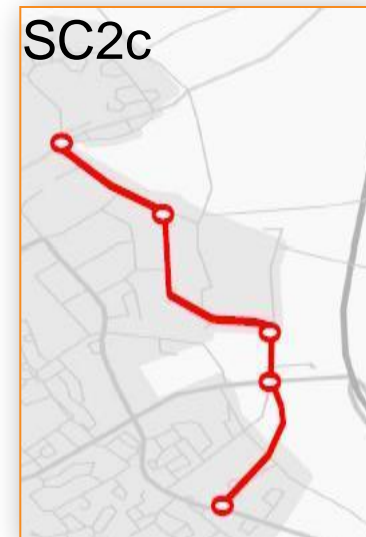
# Model Scenarios

## Other Potential Options



### Network Scenarios

- SC1b (II) + SC2c
- SC1f + SC2c
- SC1g + SC2c



# Model Scenarios

## Stage 2b – 2015 to 2021/2031 Demand Growth Overview

Hemel Hempstead			
	No. of dwellings	Traffic demand growth	
		Morning Peak Hour	Evening Peak Hour
2015 to 2021	3,130	+10% (+1.6% p.a.)	+11% (+1.8% p.a.)
2015 to 2031	12,410	+29% (+1.6% p.a.)	+33% (+1.8% p.a.)



# 2021 Demand

May 5, 2016

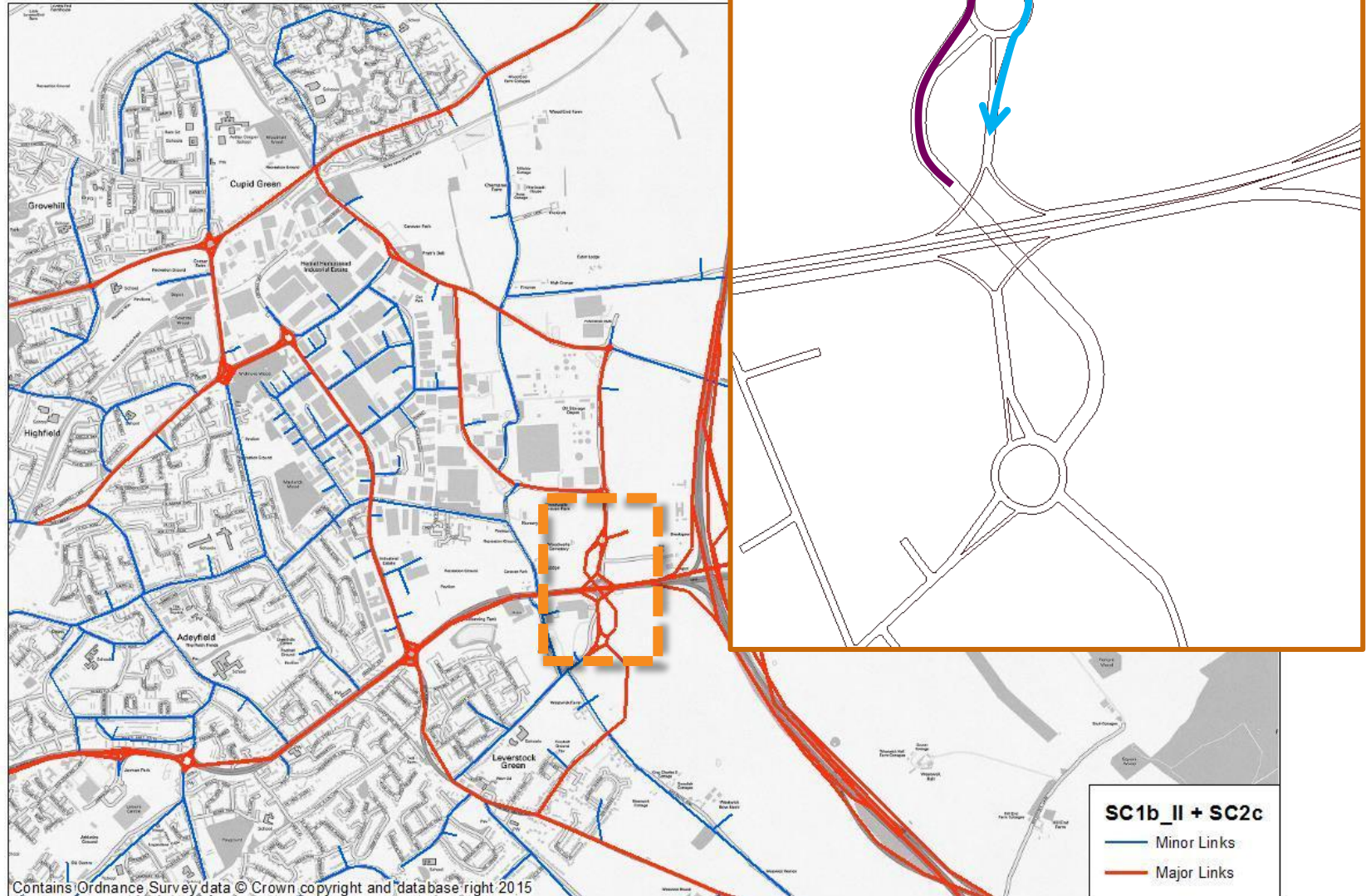
**AECOM**

# 2021 Do Minimum

## Morning Peak Hour



# SC1b (II) + SC2c Network



# 2021 SC1b (II) + SC2c

## Morning Peak Hour



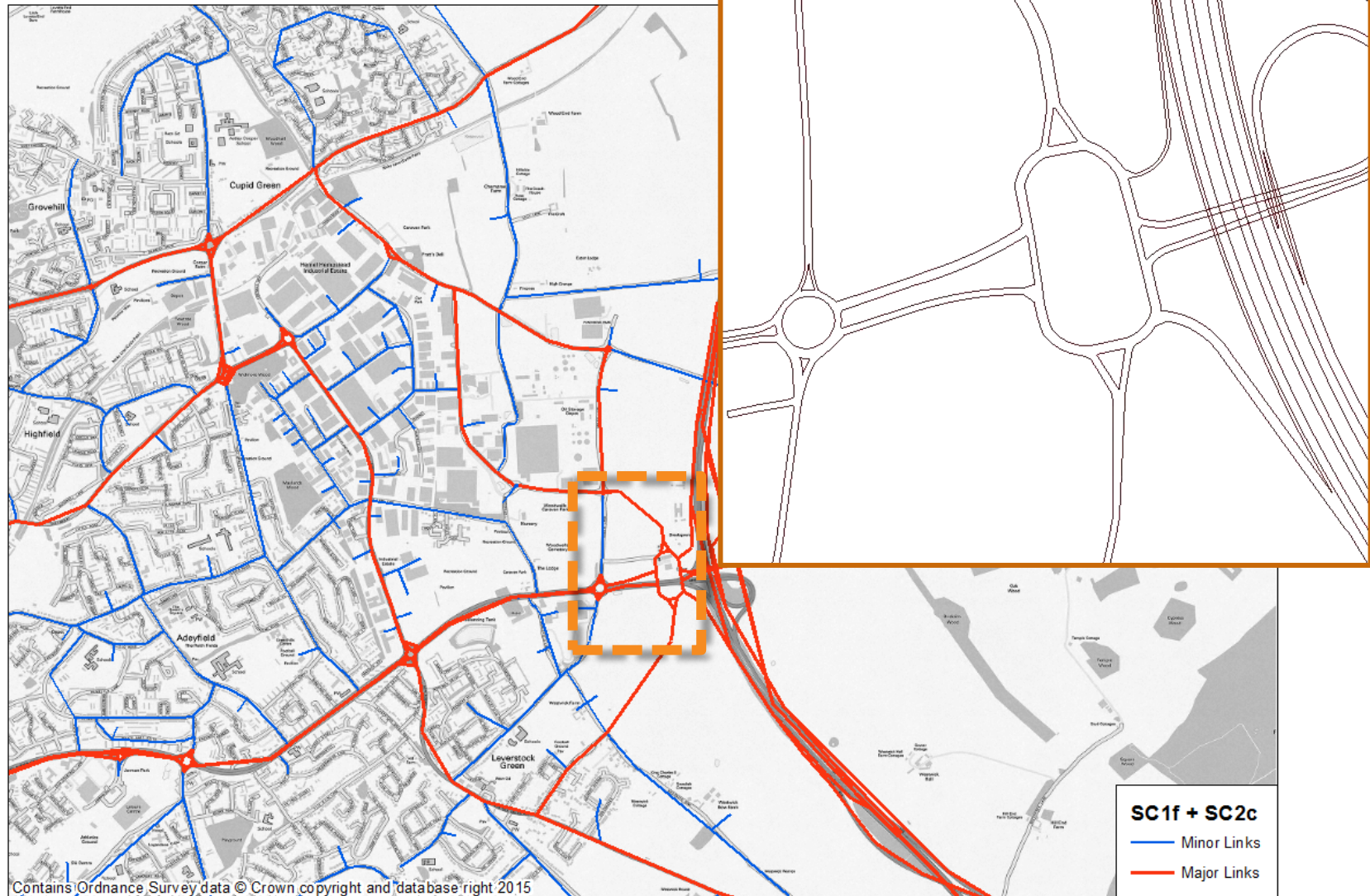
# 2021 SC1b (II) + SC2c

## Evening Peak Hour





# SC1f + SC2c Network



# 2021 SC1f + SC2c

## Morning Peak Hour



# 2021 SC1f + SC2c

## Evening Peak Hour





# SC1g + SC2c Network



# 2021 SC1g + SC2c

## Morning Peak Hour





# 2021 SC1g + SC2c

## Evening Peak Hour



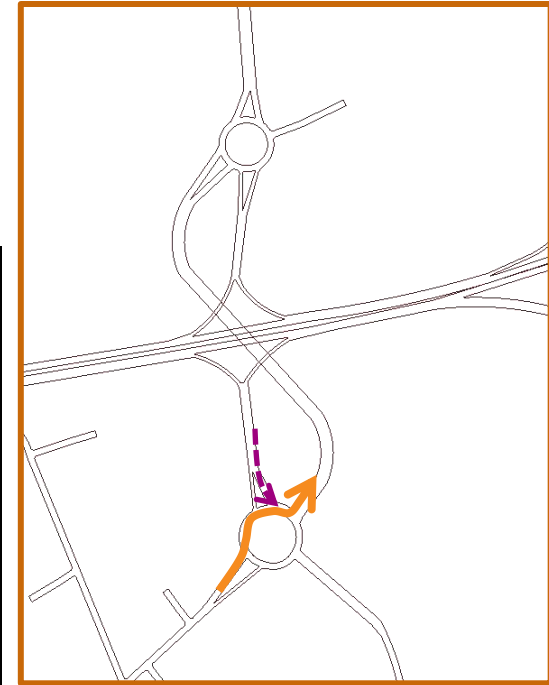
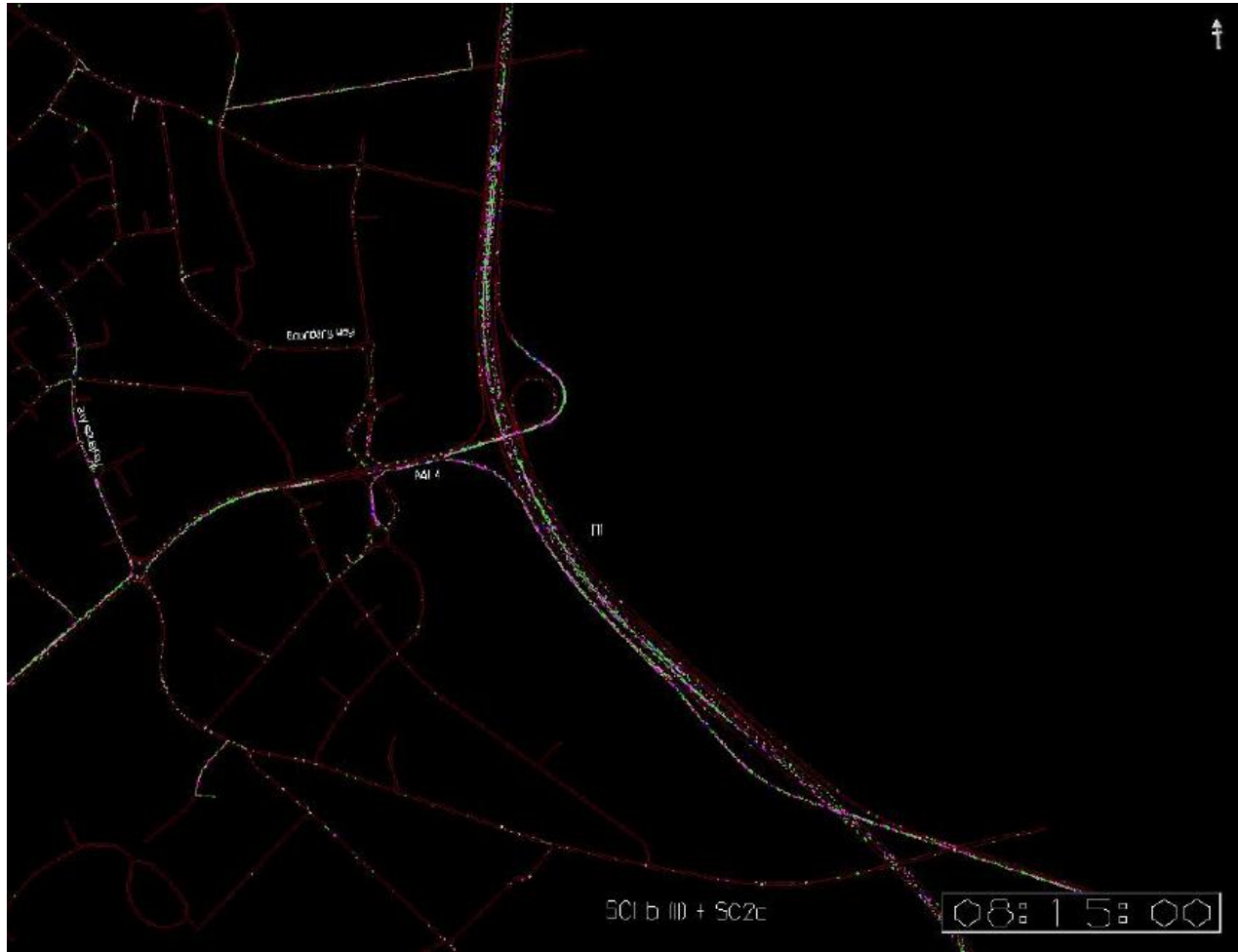
# 2031 Demand

May 5, 2016

**AECOM**

# 2031 SC1b (II) + SC2c

## Morning Peak Hour



# 2031 SC1b (II) + SC2c

## Evening Peak Hour



# 2031 SC1f + SC2c

## Morning Peak Hour





# 2031 SC1f + SC2c

## Evening Peak Hour



# Summary of Model Sensitivity Testing

May 5, 2016

**AECOM**

# Summary of Model Sensitivity Testing

	Solves problem & accommodates future traffic growth		Comment	Recommendation
	2021	2031		
<b>SC1a</b>	Yes	No	Option could provide short-medium term relief but unlikely to provide sufficient long term capacity. Performance is dependent upon junction size.	Should be assessed further (as interim scheme only)
<b>SC1b</b>	Yes	No	May be more feasible than SC1b(ii) (fewer uncertainties) but design is compromised in terms of long term capacity.	Should not be assessed further
<b>SC1b(ii)</b>	Yes	Yes	Subject to engineering feasibility and land-take, this option shows potential to address future traffic growth.	Should be assessed further
<b>SC1d</b>	Yes	Yes	Subject to engineering feasibility and land-take, this option shows potential to address future traffic growth.	Should be assessed further
<b>SC1e</b>	No	No	Option does not address the problem or provide sufficient capacity in 2021.	Should not be assessed further
<b>SC1f</b>	Yes	Yes	Subject to engineering feasibility and land-take, this option shows potential to address future traffic growth.	Should be assessed further
<b>SC1g</b>	No	No	Option does not address the problem or provide sufficient capacity even in 2021.	Should not be assessed further

# **6/ Scheme Concepts 3-6**



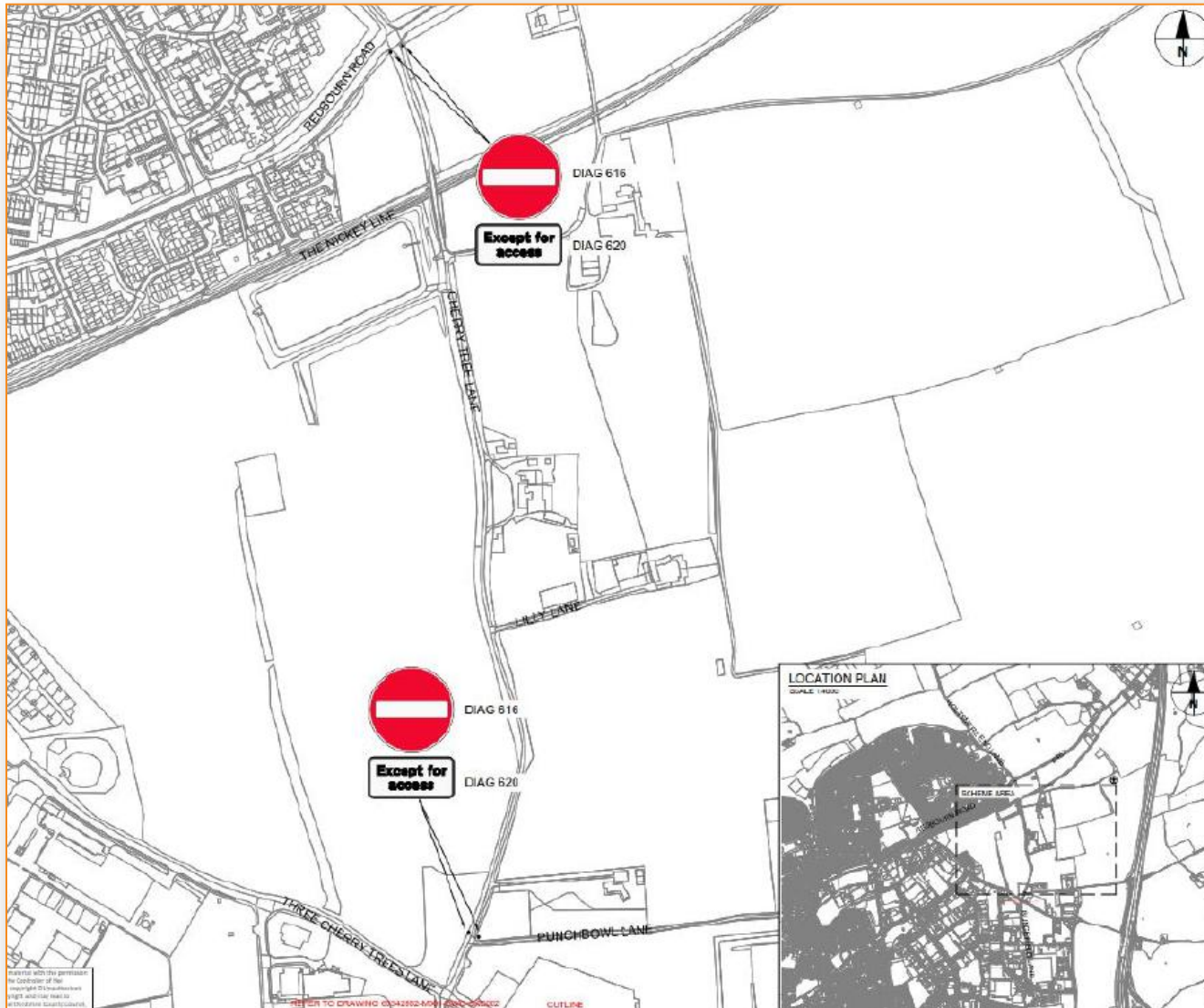
# Scheme Concepts 3-6



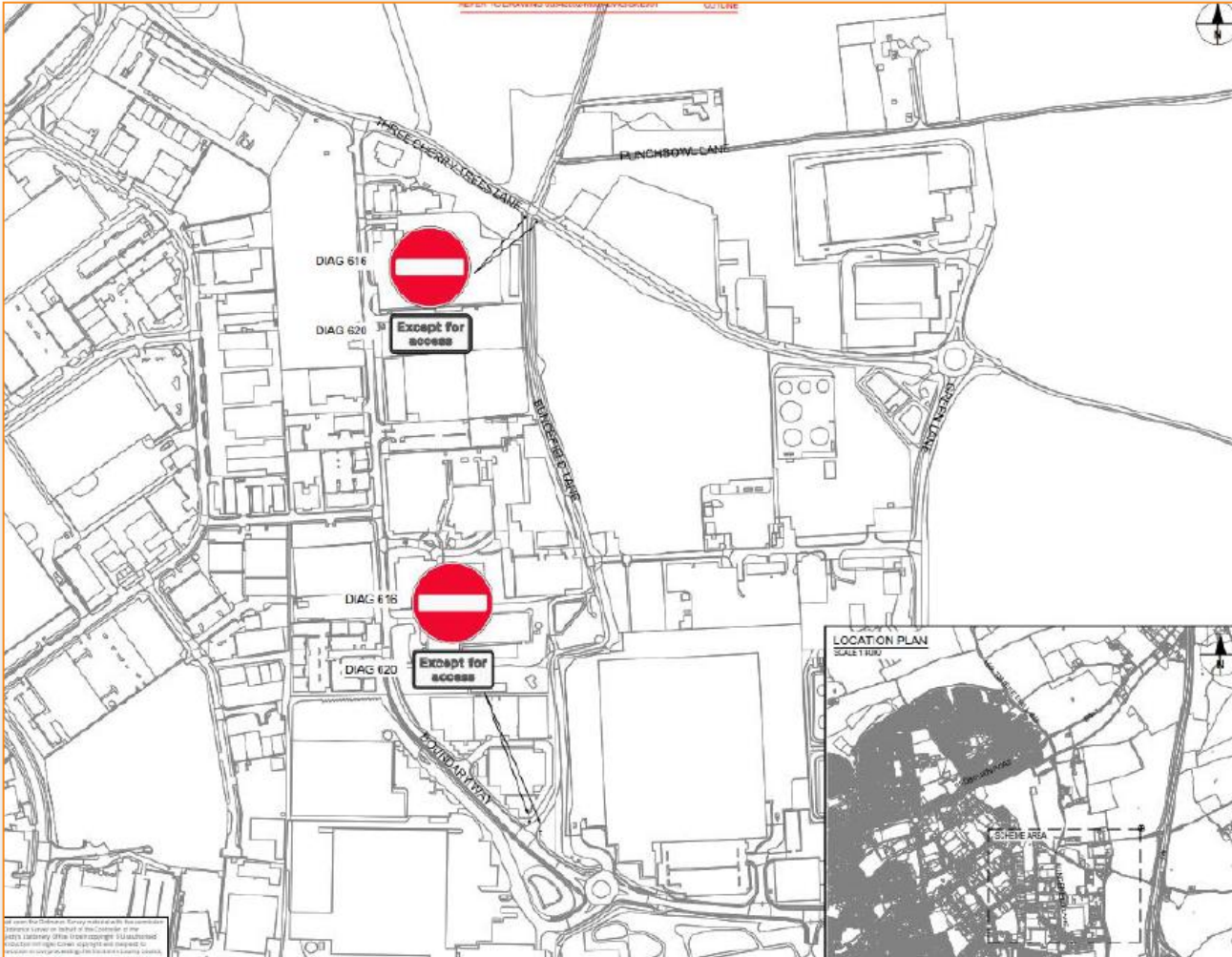


# Scheme Concept 3

Cherry Tree Lane  
'quietway'

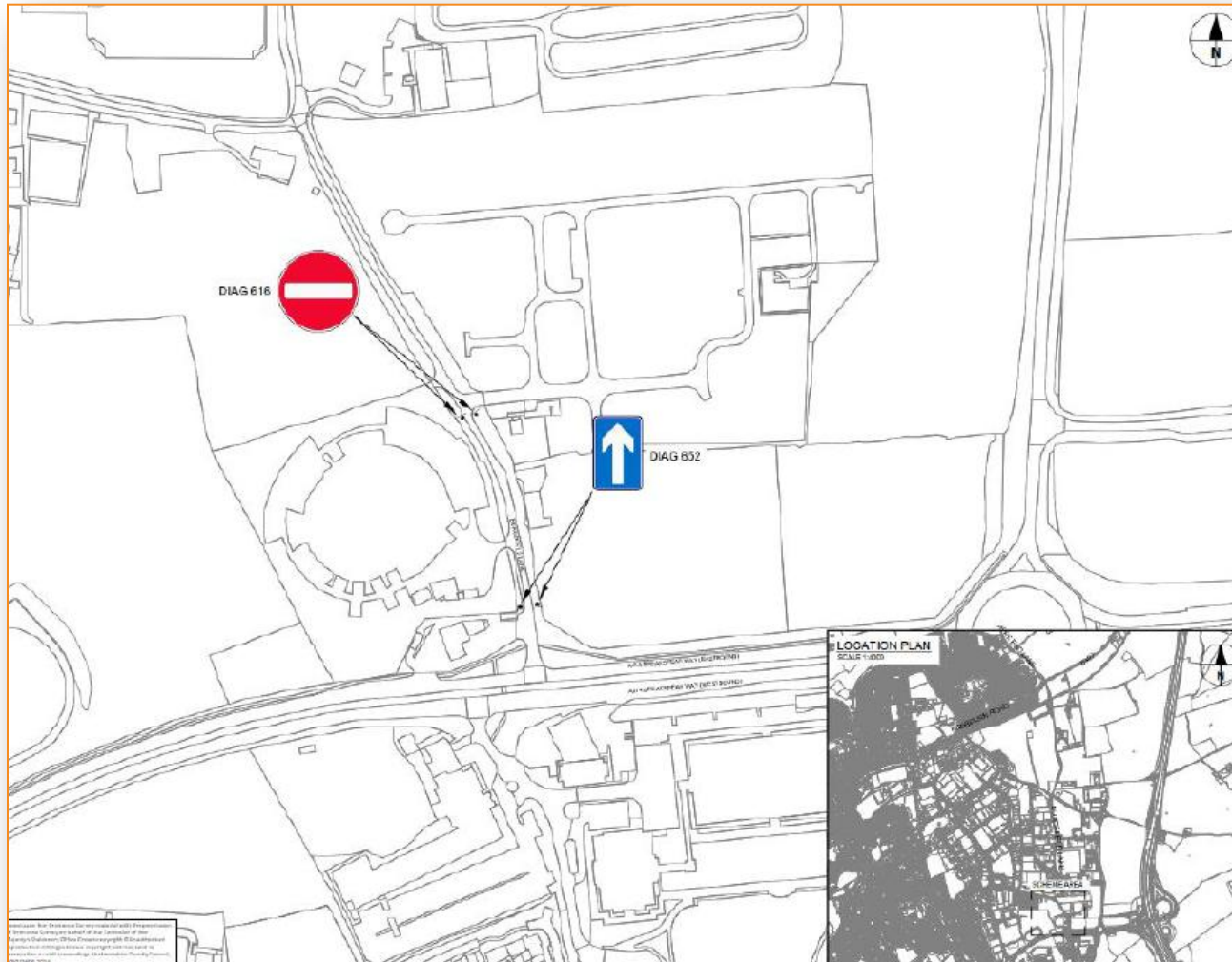


## Scheme Concept 3



# Buncefield Lane (northern section) 'quietway'

# Scheme Concept 3



Buncefield Lane  
(central section)  
'quietway'

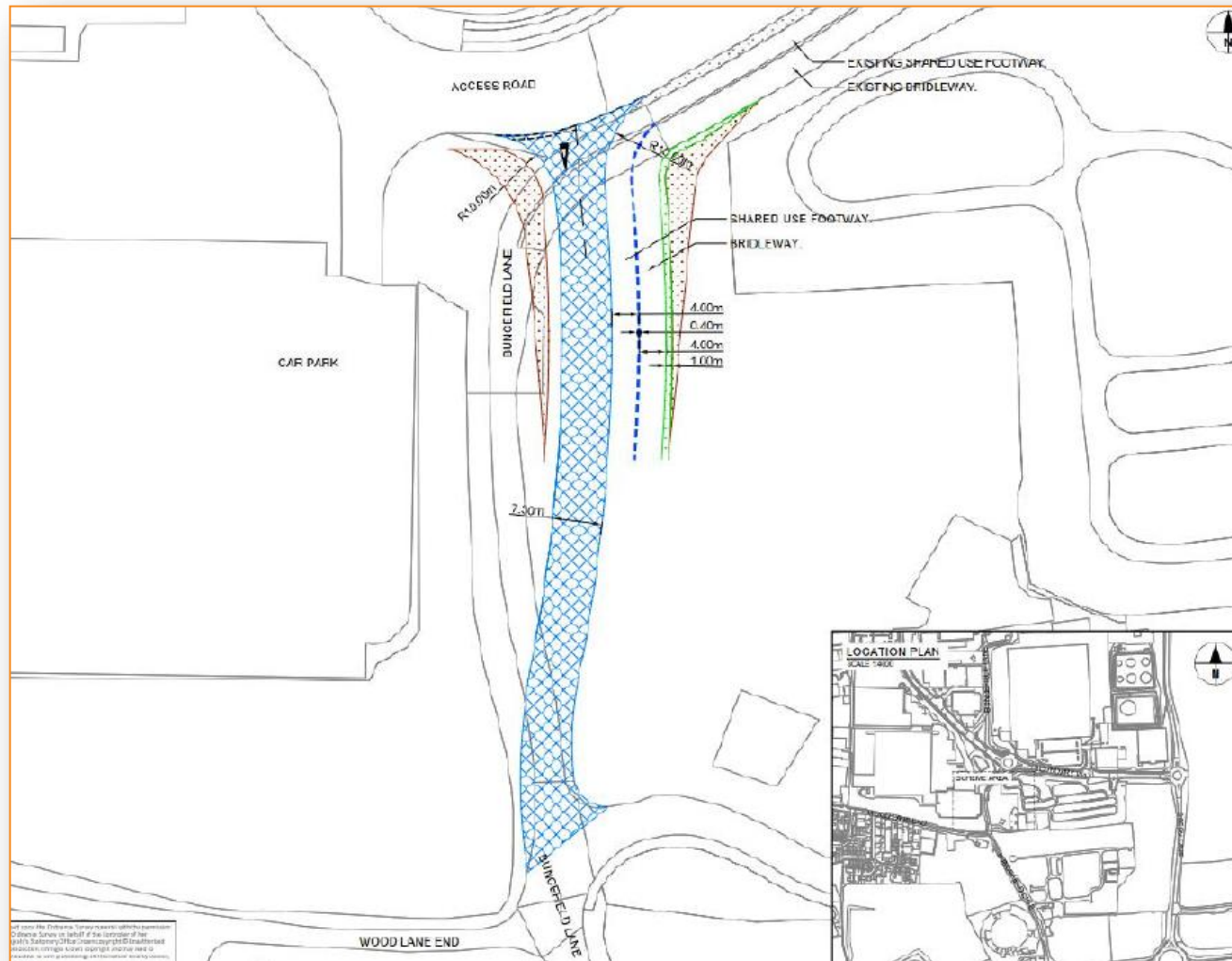


# Scheme Concept 3



Buncefield Lane  
(southern section)  
'quietway'

# Scheme Concept 4



Wood End Lane-  
Buncefield Lane-  
Boundary Way  
Link – option A

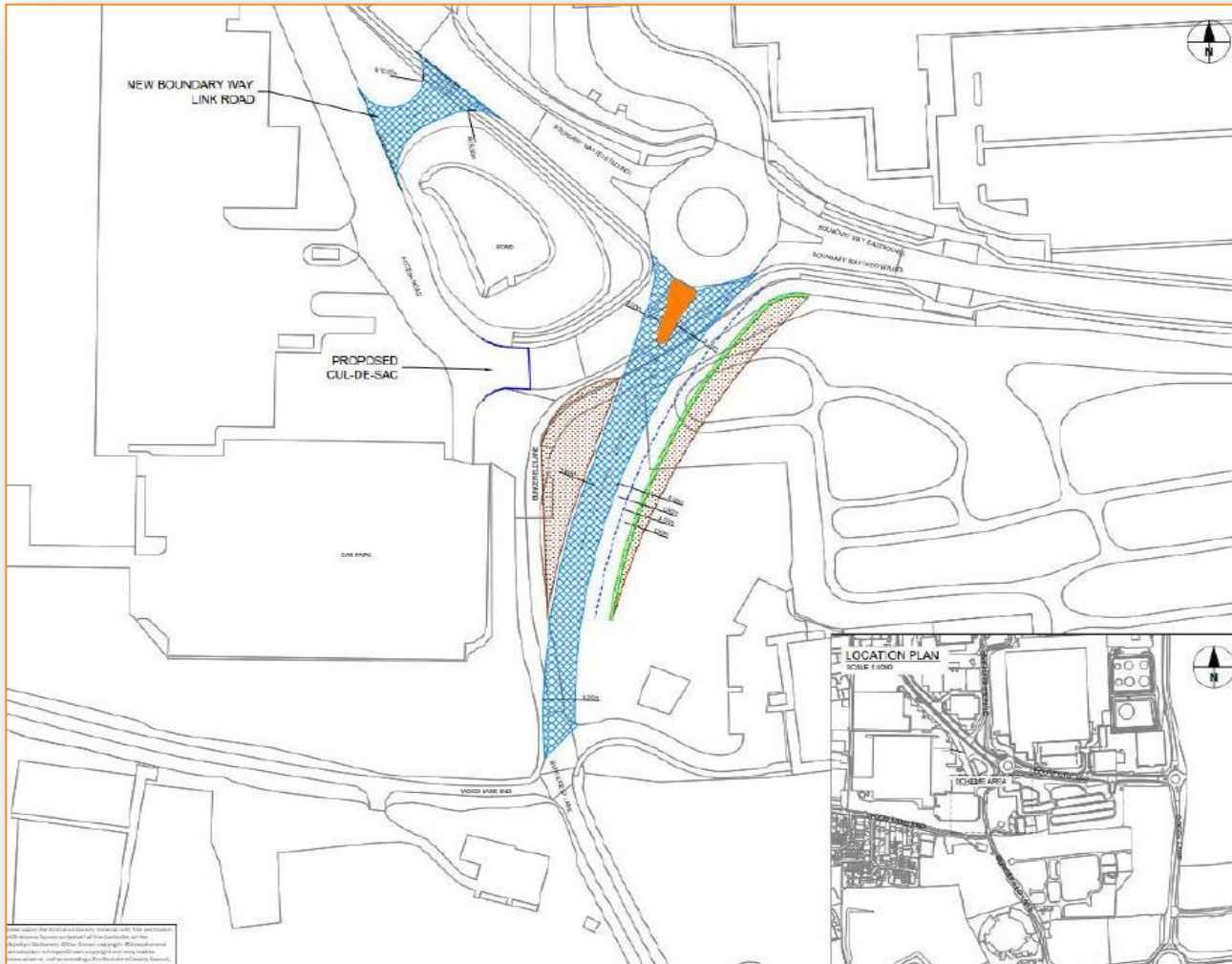


# Scheme Concept 4



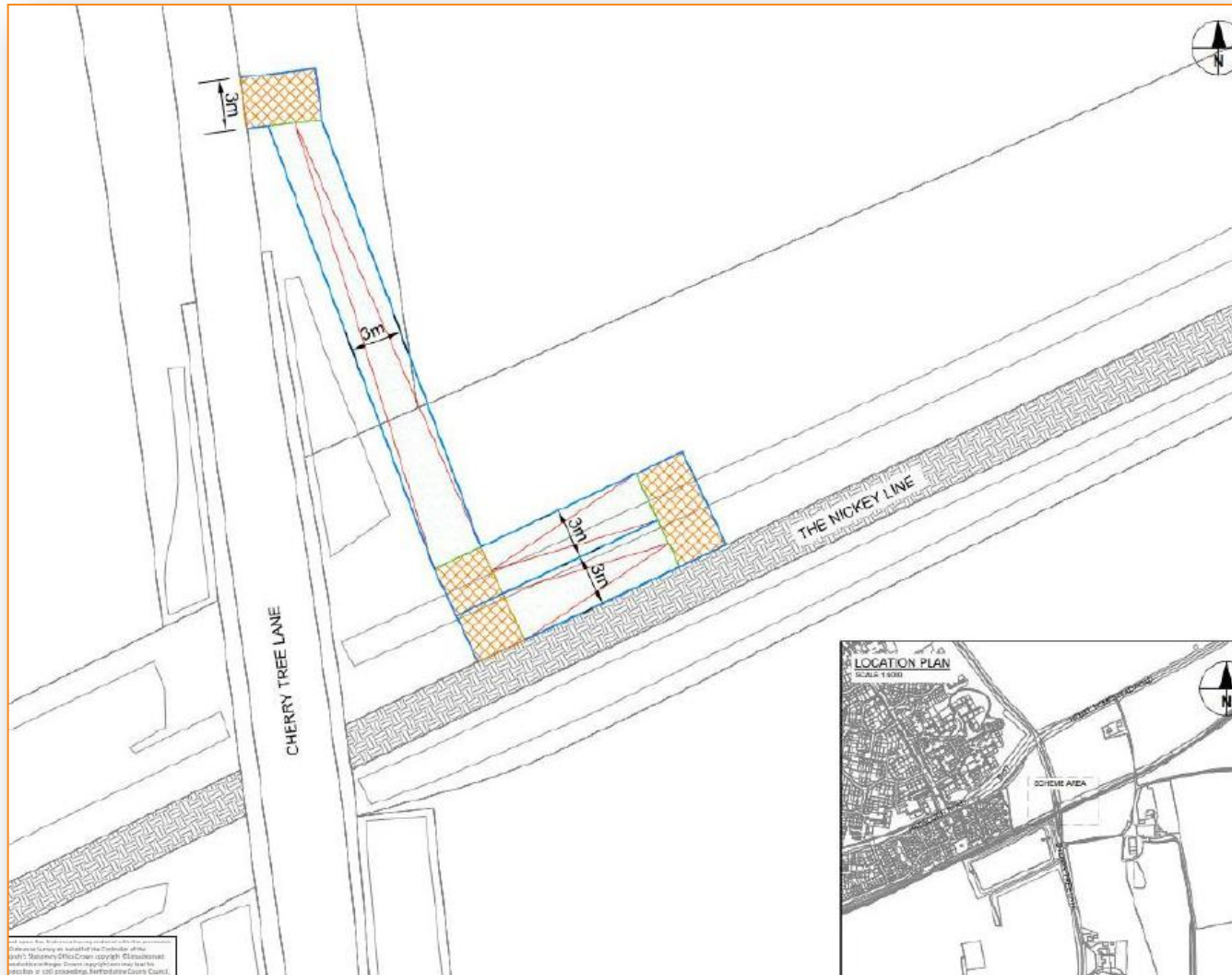
Wood End Lane-  
Buncefield Lane-  
Boundary Way  
Link – option B

# Scheme Concept 4



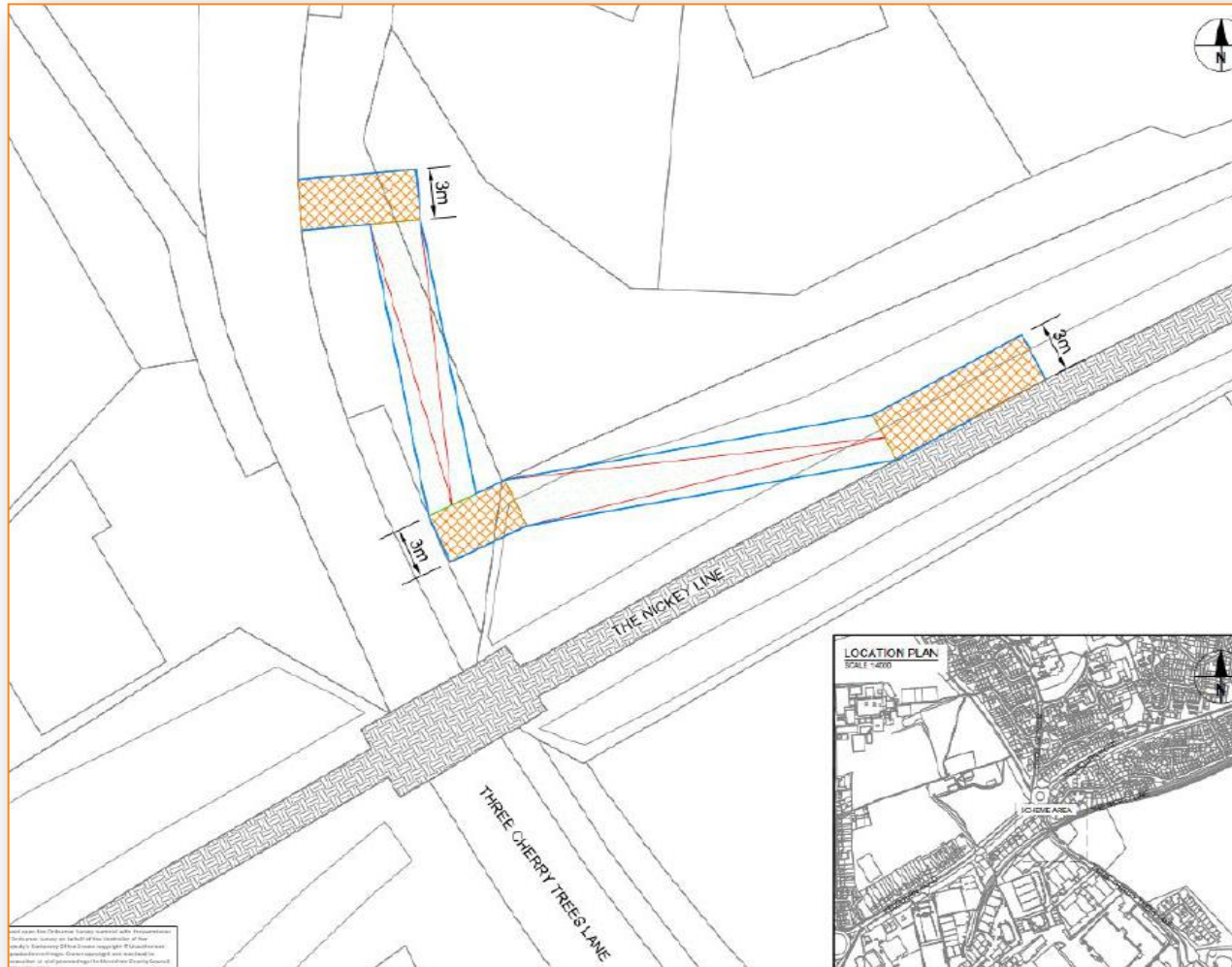
Wood End Lane-  
Buncefield Lane-  
Boundary Way  
Link – option C

# Scheme Concept 5



Nickey Line-  
Cherry Tree Lane  
ramp access

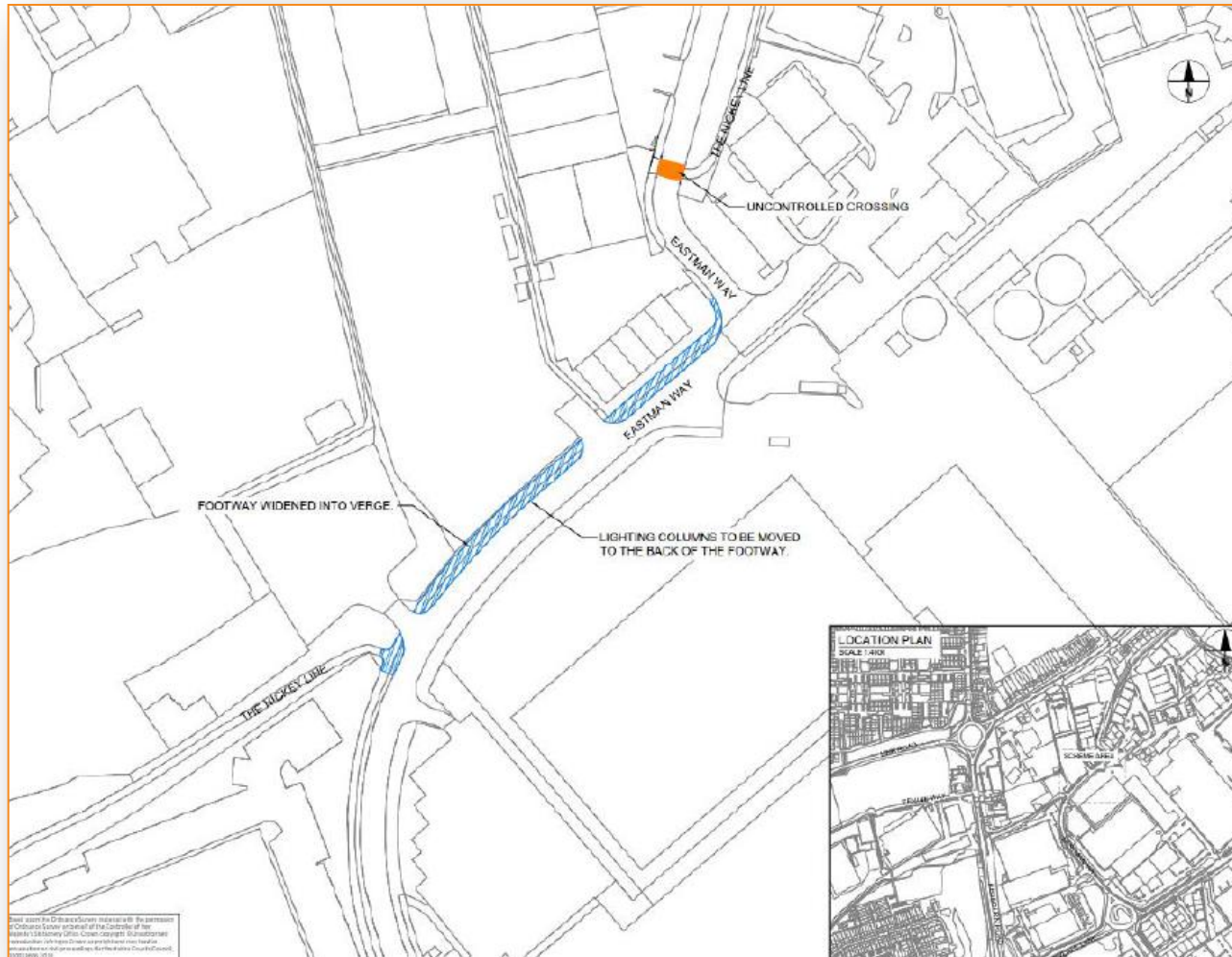
# Scheme Concept 5



Nickey Line-Three  
Cherry Trees Lane  
ramp access



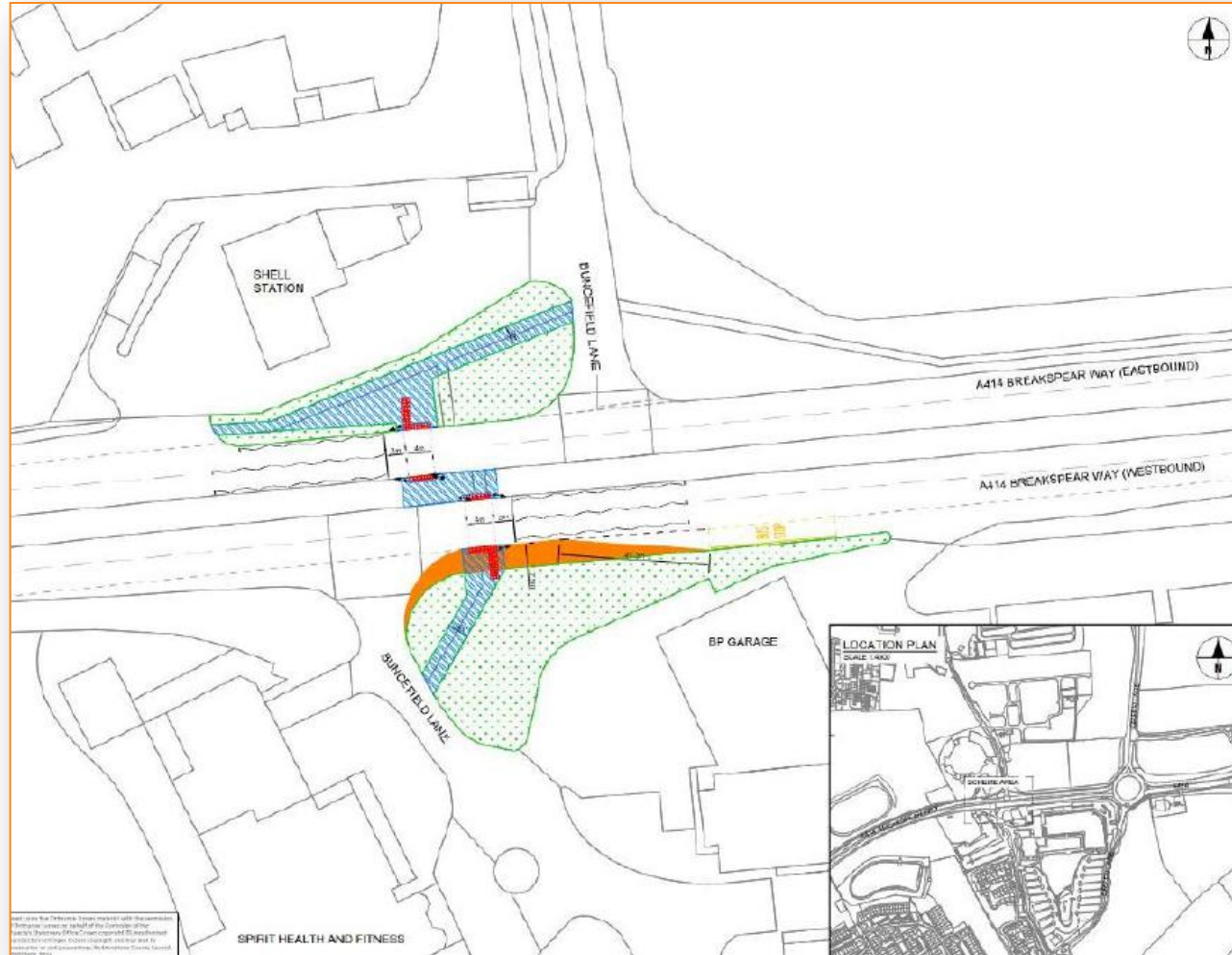
# Scheme Concept 5



Nickey Line –  
Eastman Way  
linkage

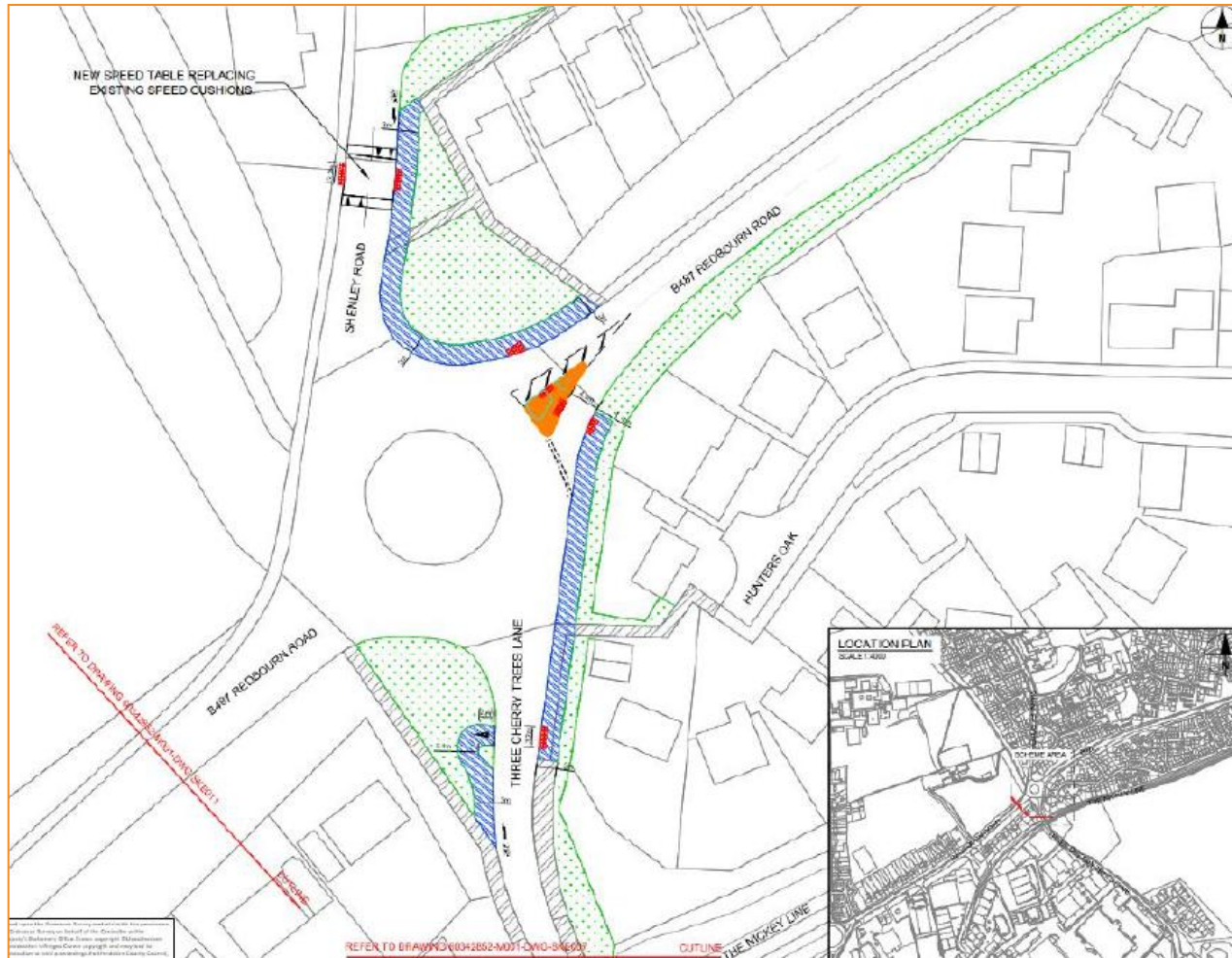


# Scheme Concept 6



A414 Breakspear  
Way at-grade  
crossing

## Scheme Concept 6



Redbourn Road-  
Shenley Road-  
Three Cherry  
Trees Lane  
Roundabout  
footway crossing  
improvements

# Scheme Concept 6



B487 Redbourn  
Road crossing and  
bus stop access



# Scheme Concept 6



B487 Redbourn  
Road-A4147 Link  
Road-St Agnells  
Lane roundabout  
footway crossing  
improvements

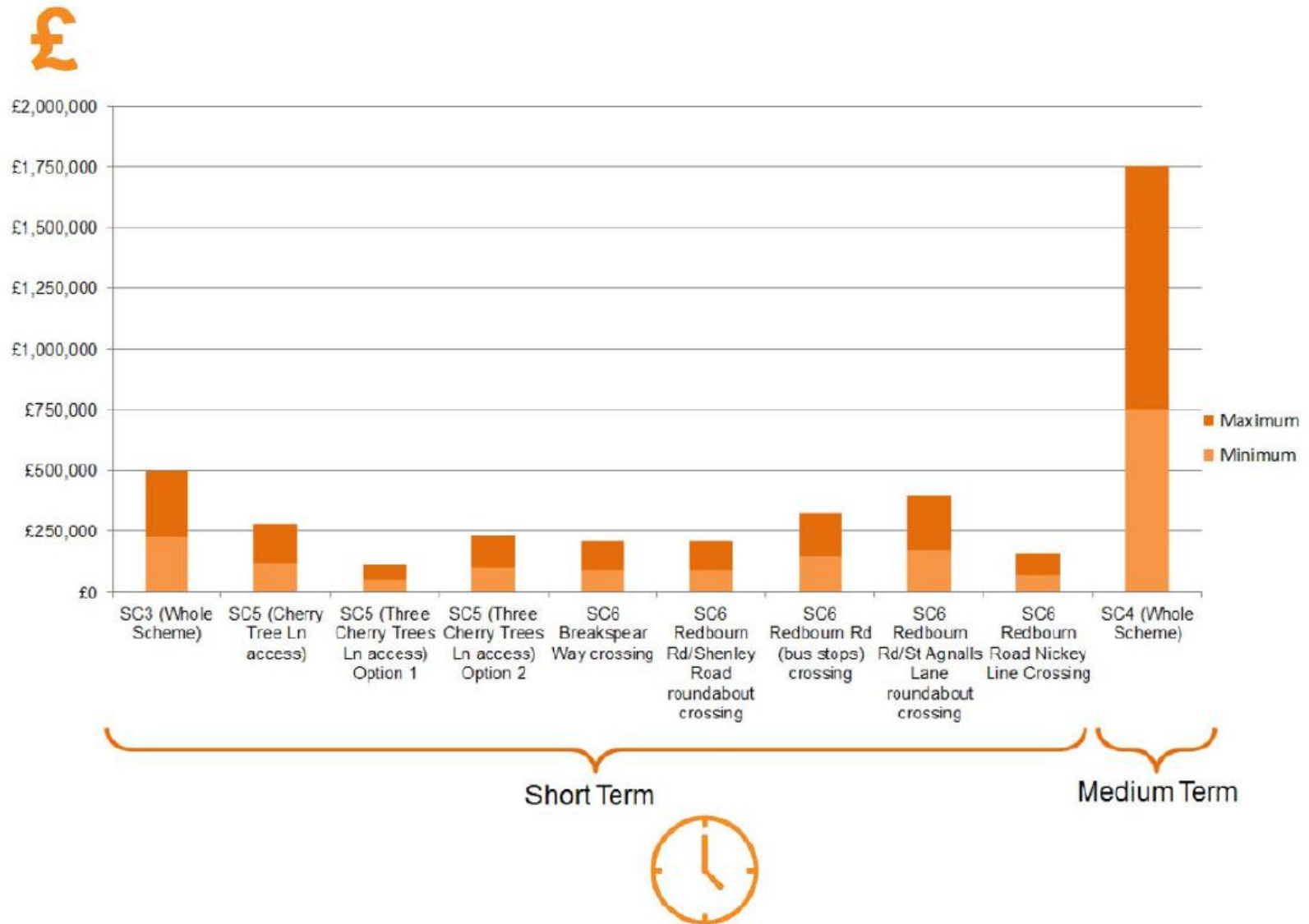
# Scheme Concept 6



B4147 Redbourn Road – Nickey Line signalised crossing



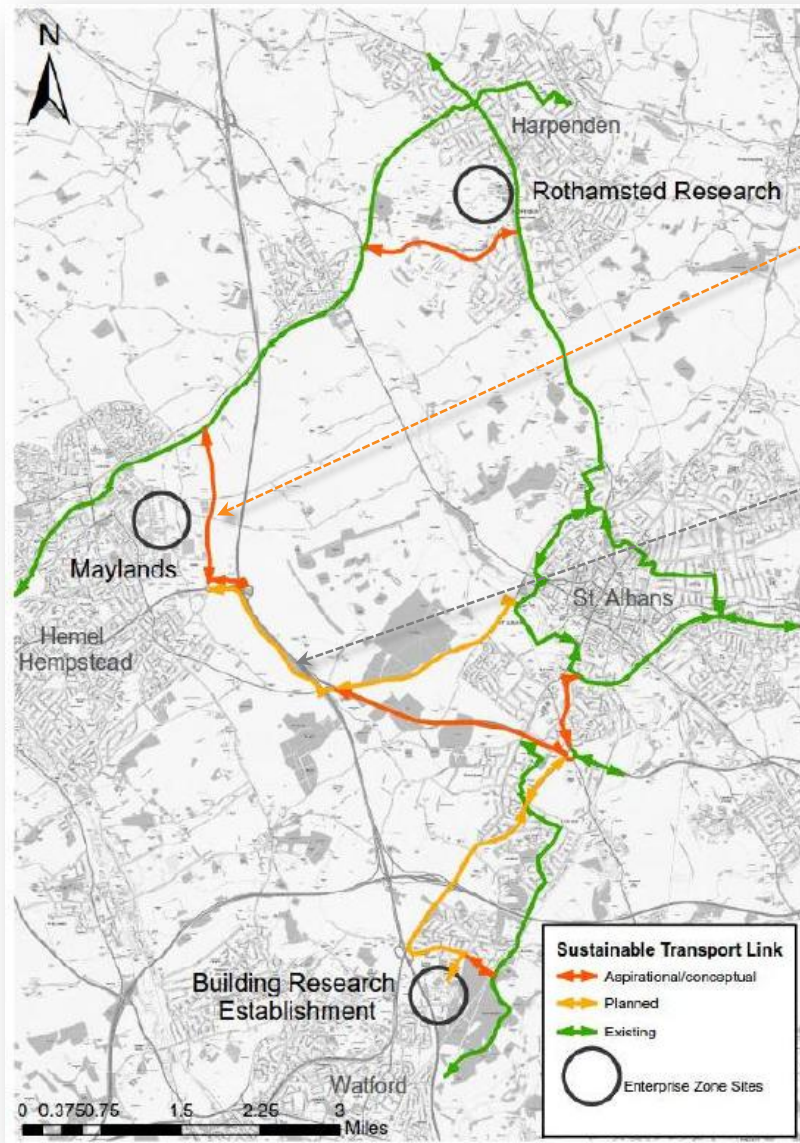
# Scheme Concepts 3-6 summary



# **7/ A4147-A414**

## **Cycle Link**

# A4147-A414 Cycle Linkage



**SC5 Nickey Line  
'branchline'**  
(alongside SC2  
N-S spine road)

**HCC-led project**  
A4147-A414T(M1)-A414  
Breakspear Way cycle  
link



# 8/ Next Steps

# Next Steps

- Model Enhancement on-going
  - Scheme testing resulted in initial sifting and suggested short list of SC1 options
  - Test short list in enhanced model
  - Undertake design & costing of SC1 short list
  - SC8 bus proposals
- 
- Next progress meeting w/c 6<sup>th</sup> June





Appendix 3: Maylands Growth Corridor Study: Stage 2 Scheme Concepts 1 & 2  
Model Sensitivity Testing Report April 2016

# **Maylands Growth Corridor Study**

## **Stage 2 Options and Strategy**

# **Scheme Concepts 1 & 2**

## **Model Sensitivity Testing Report**

**Hertfordshire Local Enterprise Partnership**







# **Maylands Growth Corridor Study**

**Stage 2(b)**

**Scheme Concepts 1 & 2 Model Sensitivity Testing  
Report**



## Quality information

Document name	Ref	Prepared for	Prepared by	Date	Reviewed by
SC1&2 Model Sensitivity Testing	M001.005	Simon Willison	Manuel Martinez	06/04/2016	Kit Tang

## Revision history

Revision	Revision date	Details	Name	Position
0	-	-	-	-

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## Contents

1 Introduction .....	7
2 Option Testing – Key Observations .....	12
3 Conclusion .....	29
Appendix .....	32

Three thin, dark grey lines intersecting on a white background. One line runs diagonally from the top-left towards the bottom-right. Another line runs diagonally from the top-right towards the bottom-left. A third line runs diagonally from the middle-left towards the top-right.

**Introduction**

**01**

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# 1 Introduction

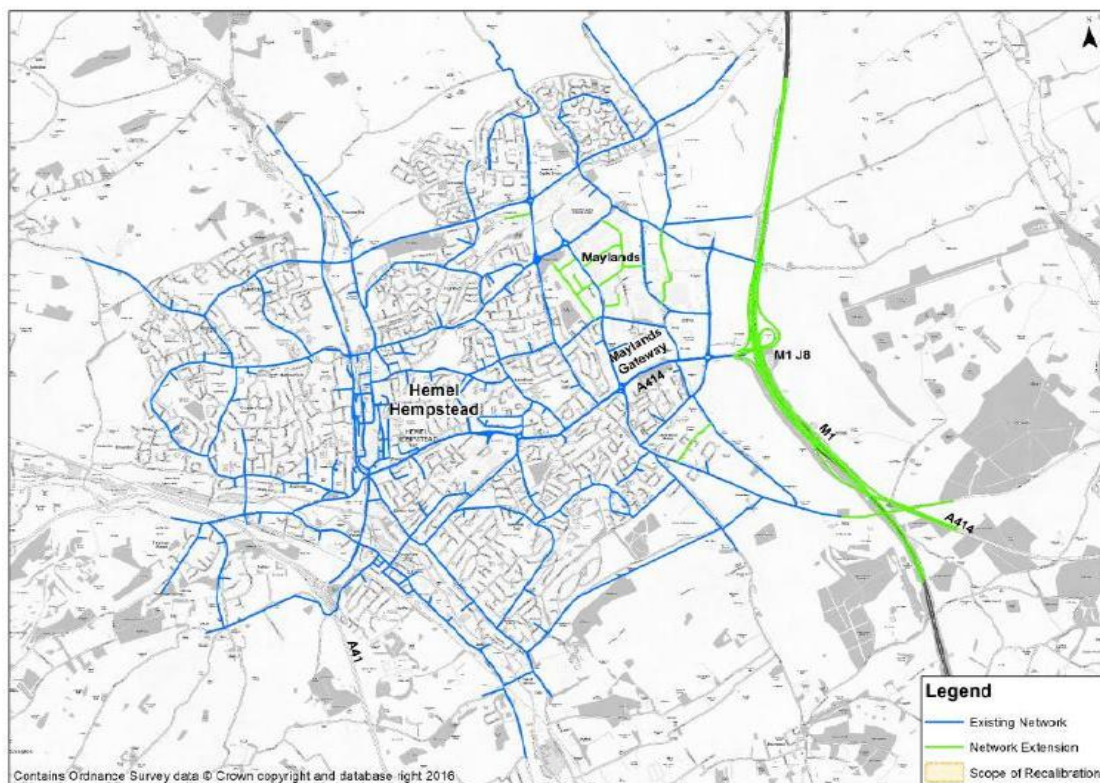
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This section outlines the background to the modelling undertaken to support the study and the scheme concepts identified

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## Model Background

- 1.1 An existing Hemel Hempstead S-Paramics microsimulation model, developed for Hertfordshire County Council (HCC), has been made available for this study. The model was originally developed in 2009 with a base year of 2008. The model was subsequently updated locally for the town centre and Maylands Gateway areas. As part of these model updates, the base year was also updated using count data from 2013 and 2014.
- 1.2 For Stage 1 of the Maylands Growth Corridor Study, the model was updated further for the Maylands. This latest model update includes extending the network coverage to include M1 Junction 8 and finer network structure for the Maylands study area. The base year of the model was also updated to 2015. **Figure 1** shows the model extent of the model following the Maylands model update.



**Figure 1 – Geographical Extent of the S-Paramics Model**

- 1.3 The Maylands model update utilized the network wide parameters and trip demand distribution of the existing Hemel Hempstead model. As the demand data of the existing Hemel Hempstead model is based on the 2001 Journey to Work (JtW) census data, it should be noted that there are limitations to the Maylands model update that although the traffic flow level of the updated model might be representative of 2015, the trip demand distribution pattern has not been verified to represent the current traffic conditions.
- 1.4 It should also be noted that the performance of the model outside of the immediate Maylands area is beyond the scope of this study, but has been monitored at a high level to ensure the existing level of model performance is retained.
- 1.5 Detailed information on the model update for the Maylands area can be found in the Maylands Growth Corridor Study Stage 1(a) Report – Local Model Validation Report<sup>1</sup>.

## Scheme Concepts

- 1.6 A number of scheme concepts have been identified during Stage 2(a), comprising of a mixture of smaller-scale interventions to encourage modal shift (SC3, 5 and 6), a new link road (SC4), measures to improve the situation of lorry parking and routing (SC7) and improvements to bus services (SC8).
- 1.7 SC1 and SC2 comprise of much larger interventions with a particular focus on highway connectivity and reducing traffic congestion. SC1 would involve improvements in the vicinity of M1 Junction 8 and the A414 Breakspear Way – Green Lane roundabout. SC2 would involve the creation of a new north-south spine road, utilizing part of the existing Green Lane alignment, and linking the B487 Redbourn Road with the A414 and the A4147.
- 1.8 A range of SC1 and SC2 options have been identified which are shown in **Table 1**.
- 1.9 SC1a to SC1e were defined originally. An initial modelling exercise indicated that there was not a simple solution to address the issues identified. Modelling work indicated that in the short-term only SC1a and SC1e could partially address current congestion but would not provide a long term solution. In the longer-term option SC1b, SC1c and SC1d were considered more appropriate but did not entirely address the issues.
- 1.10 After an initial workshop held with Hertfordshire LEP and other key stakeholders it was agreed that SC1c was unlikely to be viable or deliver benefits and would therefore be discounted from further analysis.

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<sup>1</sup> Maylands Growth Corridor Study, Stage 1a Report S-Paramics Model Recalibration, Local Model Validation Report (AECOM) ("Stage 1a\_Maylands Growth Corridor Study\_LMVR\_ISSUED 20160204.pdf")



- 1.11 S-Paramics micro-simulation of the previous options showed that options SC1b and d might deliver better performance, although it was envisaged that slight modifications of the design were worthwhile testing. Some additional options were devised, informed by the initial modelling, which could address the issues
- 1.12 As there is currently congestion occurring on routes within Maylands, such as on the A414 to the south and B487 to the north, poor north-south linkages between Woodhall Farm and Grovehill, vehicles using the country lanes that have lower capacities and potentially a significant amount of residential and employment development occurring to the east a significant scheme needs to be considered.
- 1.13 A number of alternatives have also been proposed:
- SC2a: Spine road connecting all parts of the proposed development, with links onto the A4147 Leverstock Green Road, A414 Breakspear Way and B487 Hemel Hempstead Road.
  - SC2b: Same as Sc2a except the northern spine road alignment runs closer to the M1.
  - SC2c: Same as Sc2a except the northern spine road follows along an upgraded Three Cherry Trees Lane.
- 1.14 A forthcoming masterplanning exercise to be carried out by the Crown Estate and local authorities will help define the exact alignment and composition of the spine road, however conceptually it is understood that a link road of some form will be provided between the B487, A414 and A4147.

**Table 1 – Scheme Concept 1 and 2 Options**

	<b>Scheme Concept ID</b>	<b>Description</b>
A414 Breakspear Way/Green Lane roundabout, M1 Junction 8	<b>SC1a</b>	Enlarged signalised roundabout with a 'hamburger' style through arm from the A414 eastern arm heading westbound, plus widening on the Green Lane (North) approach.
	<b>SC1b</b>	A compact grade-separated junction with northern and southern roundabouts on Green Lane linked by an over/underbridge crossing the A414, which will incorporate a shared use footway/cycleway, and the A414 running as a continuous carriageway through the junction.
	<b>SC1b (II)</b>	Compact grade-separated junction with northern and southern roundabouts on Green Lane linked by an skewed overbridge crossing the A414, which will incorporate a shared use footway/cycleway, and the A414 running as a continuous carriageway through the junction.
	<b>SC1c</b>	A reconfigured M1 J8 with new Maylands eastern gateway access to the north
	<b>SC1d</b>	A reconfigured M1 J8 with new Maylands western gateway access to the north
	<b>SC1e</b>	Full signalisation of the existing roundabout plus widening on Green Lane (north & south), Breakspear Way eastern arm and the circulatory
	<b>SC1f</b>	Large lozenge signalised junction with access links north and south
	<b>SC1g</b>	Large roundabout and Green Lane flyover

East Hemel Hempstead development	<b>SC2a</b>	North-South Spine Road: B487-A4147 via Green Lane and A414 – northern link with HGV weight limit
	<b>SC2b</b>	North-South Spine Road: B487-A4147 via Green Lane and A414 – northern link with no weight restrictions in place
	<b>SC2c</b>	North-South Spine Road: B487-A4147 via Three Cherry Trees Lane, Green Lane and A414 – Three Cherry Trees Lane upgraded with new Nickey Line bridge and removal of width restriction.

1.15 Scheme proforma are provided in the **Appendix**.

1.16 SC1c was discounted early on the grounds that the use of land to the east of the M1 was not considered feasible at this time and that the alternative options showed greater promise in terms of addressing the issues.

1.17 To provide an early indication on the effectiveness of the Scheme Concept 1 and 2 options as identified in Stage 2(a), forecast year modelling was undertaken.

Three thin, dark grey lines intersect in the top-left corner of the page, creating a triangular pattern that extends towards the center.

## **Option Testing – Key Observations**

# **02**

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## 2 Option Testing – Key Observations

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This section outlines key observations made from the sensitivity testing of the various SC1 options.

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- 2.1 This section focuses on the individual performance of the different options considered to relieve the A414 Breakspear Way / Green Lane Junction.
- 2.2 S-Paramics modelling assessment has been carried out for each alternative which have been tested together with SC2c as it was considered as the preferred alternative to the East Hemel Hempstead North-South Spine Road.
- 2.3 The following model scenarios were tested in 2021 morning peak hour initially in order to gauge the potential of the scheme concept options:
- 2021 AM SC1a + SC2c
  - 2021 AM SC1b + SC2c
  - 2021 AM SC1b (II) + SC2c
  - 2021 AM SC1d + SC2c
  - 2021 AM SC1e + SC2c
  - 2021 AM SC1f + SC2c
  - 2021 AM SC1g + SC2c
- 2.4 For the scheme concept options that show potential to accommodate further growth, additional modelling tests were undertaken to gauge how these options perform in 2031 as well as during the evening peak hour.

### Forecast Year Demand Growth Overview

- 2.5 **Table 2** shows the growth in dwellings and employment within Hemel Hempstead from 2015 to 2021 and to 2031; and **Table 3** below shows the matrix totals for the 2015, 2021 and 2031 models.

**Table 2 – Planning Data Overview**

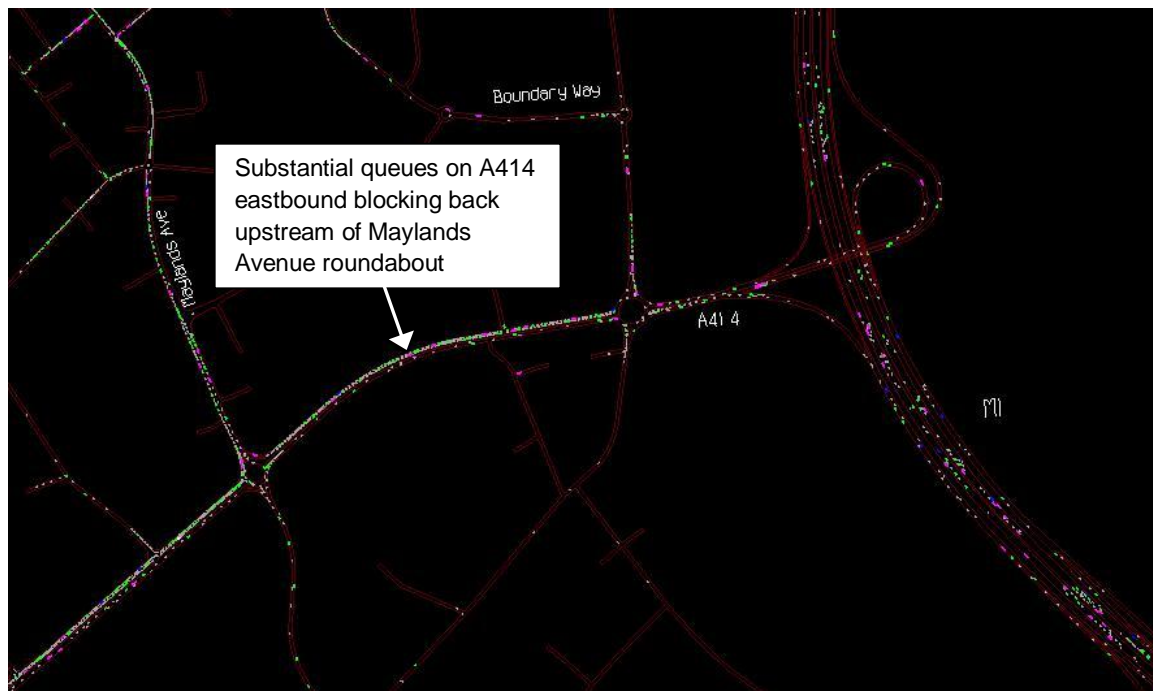
	2015 to 2021	2015 to 2031
No. of dwellings	3,130	12,410
Employment (sqm)	52,030	278,680

**Table 3 – Matrix Totals**

	2015	2021	2015 to 2021	2031	2015 to 2031
Morning Peak	95,840	105,610	+10% (+1.6% p.a.)	123,990	+29% (+1.6% p.a.)
Evening Peak	99,560	106,390	+11% (+1.8% p.a.)	126,940	+33% (+1.8% p.a.)

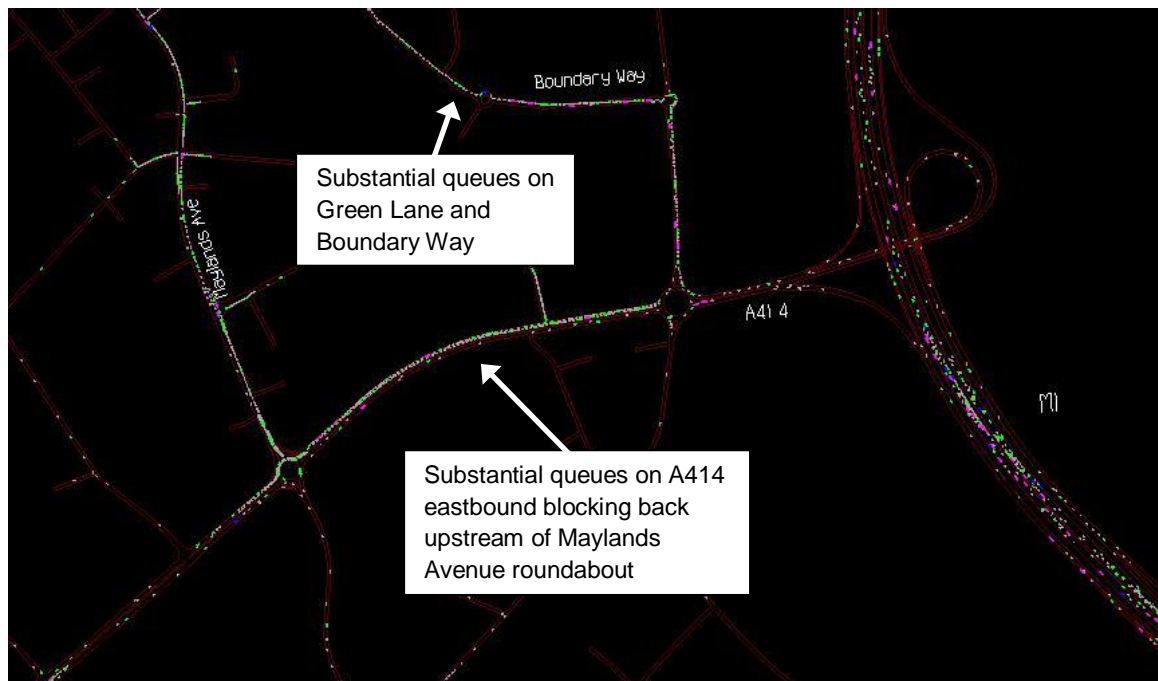
## 2021 Do Minimum Scenario

- 2.6 To provide a point of reference for comparison, modelling for 2021 Do Minimum scenario was also undertaken. As might be expected, without mitigation works, the performance of the A414 corridor is predicted to worsen by 2021. Figure 2 and 3 below show model screenshots from the 2021 morning and evening peak hour models respectively. The locations of queuing are highlighted.



**Figure 2 – 2021 AM Do Minimum**





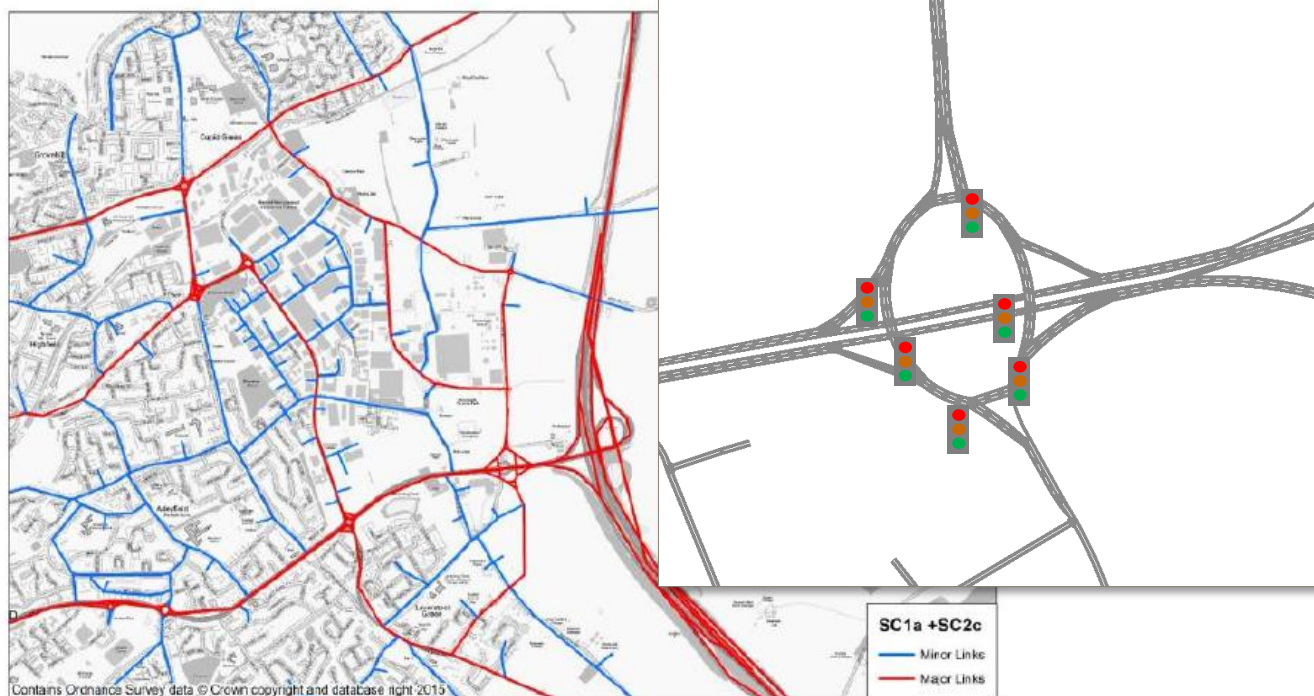
**Figure 2 – 2021 PM Do Minimum**

- 2.7 Equivalent testing of the 2031 Do Minimum scenario has not been undertaken at this time, as it is expected that the network performance will deteriorate even further however the model's performance will become overly sensitive to congestion.

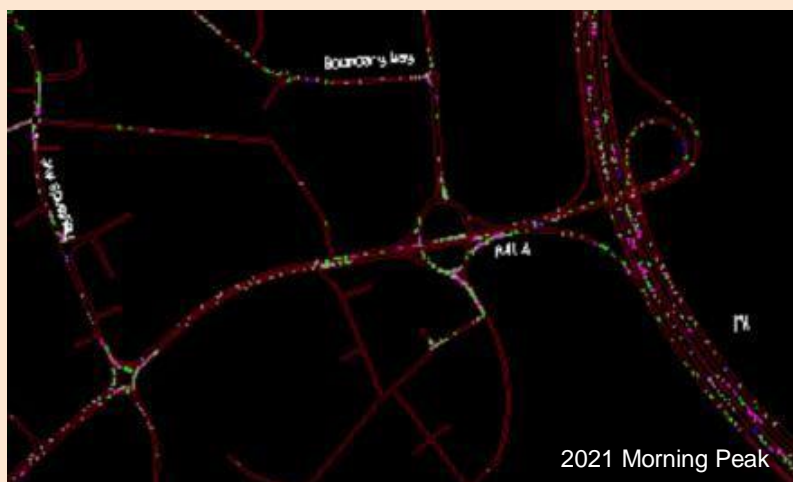
### **2021 (and 2031) Do Something – key Observations**

- 2.8 The following pages summarise the key observations from the 2021 sensitivity tests of the SC1 options. In some cases, where options perform well in 2021, additional tests in 2031 have been undertaken to consider whether or not the options still operate well in the longer term.

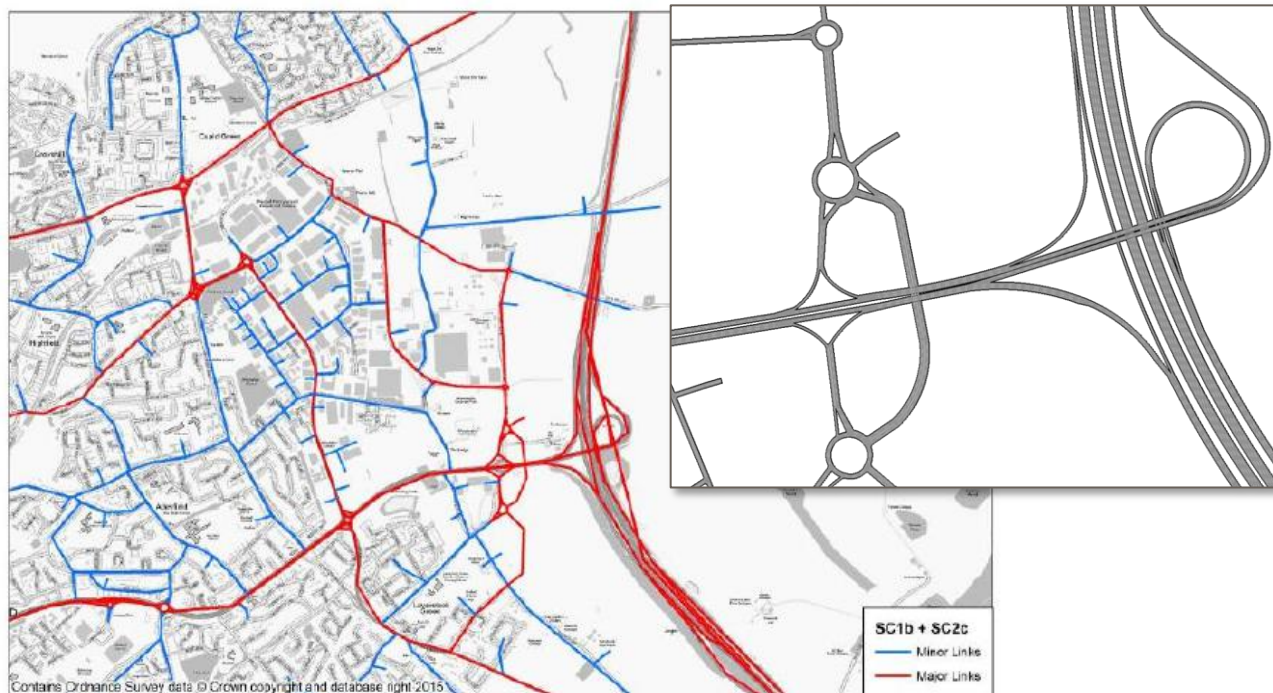
Scheme Concept Option	Description
<b>SC1a + SC2c</b>	Enlarged signalised roundabout with a 'hamburger' style through arm from the A414 eastern arm heading westbound, plus widening on the Green Lane (North) approach.
High Level Network	



Key Modelling Observations
1. Stretched roundabout provides greater stacking capacity on the circulatory lanes.
2. The 'hamburger style layout' provides greater capacity for A414 movements.
3. Signalisation provides greater control on the operation of the junction.
4. Modelling shows that for 2021 morning peak hour, SC1a will operate with short queues on some approaches:

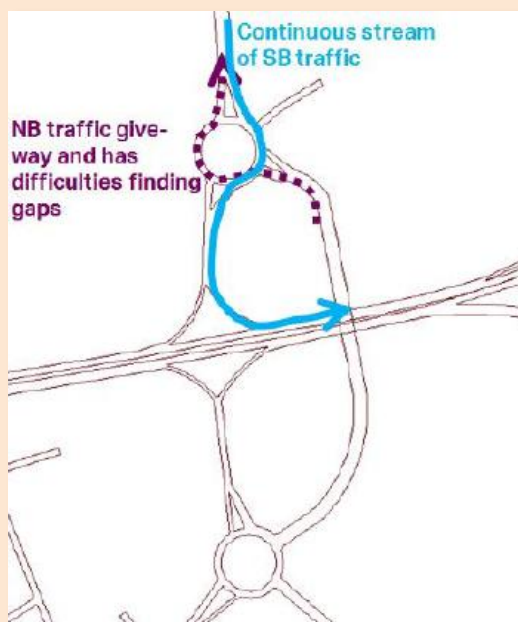


Scheme Concept Option	Description
<b>SC1b + SC2c</b>	A compact grade-separated junction with northern and southern roundabouts on Green Lane linked by an over/underbridge crossing the A414, which will incorporate a shared use footway/cycleway, and the A414 running as a continuous carriageway through the junction.
High Level Network	



### Key Model Observations

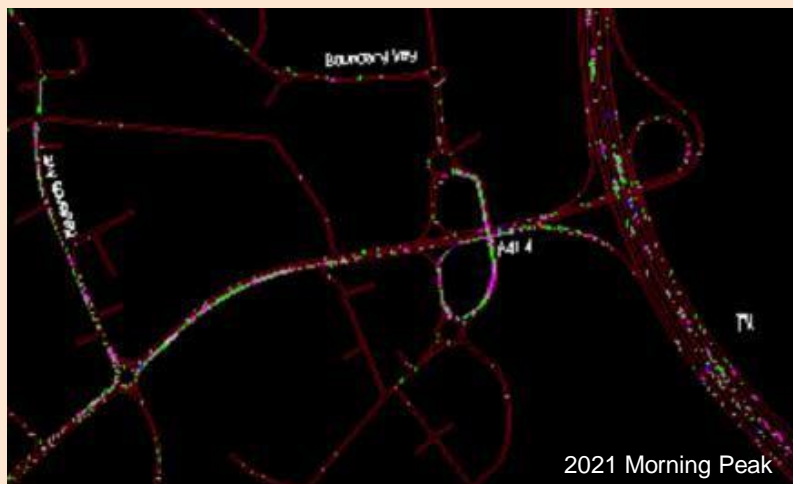
1. A414 straight ahead movements running as continuous carriageway through the junction which reduce delay for these east-west trips.
2. The modelling shows that for the northern roundabout, the stream of southbound traffic on Green Lane is continuous as there is no opposing traffic based on current modelling assumptions. As such, the northbound trips to the Maylands area have difficulties finding gaps to join the roundabout, resulting in long queues on the bridge link approach to the northern roundabout which was modelled to extend back onto the A414 westbound carriageway.



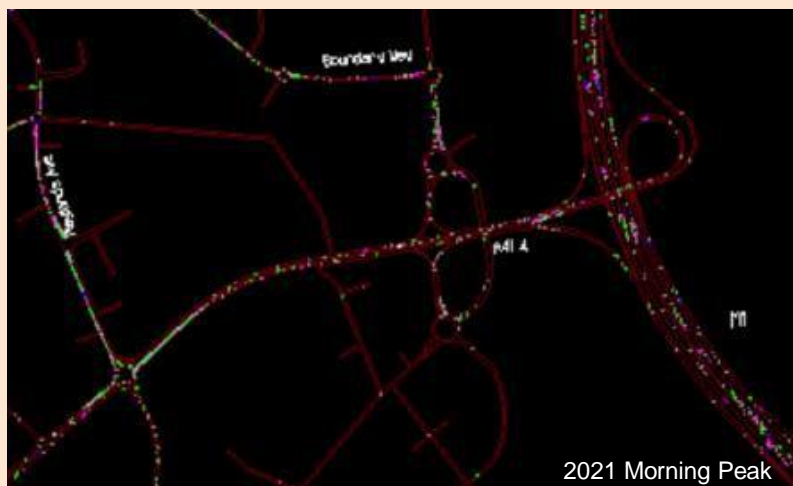
**3.** Pre-signal at the southbound approach arm for the northern roundabout to create more gaps for the northbound traffic to enter circulatory. This is not however considered to be a satisfactory solution to this scheme option's performance.



**4.** Modelling shows that for 2021 morning peak hour, the northbound queue on the approach the northern roundabout for SC1b (without signalisation of northern roundabout) will extend to the A414:

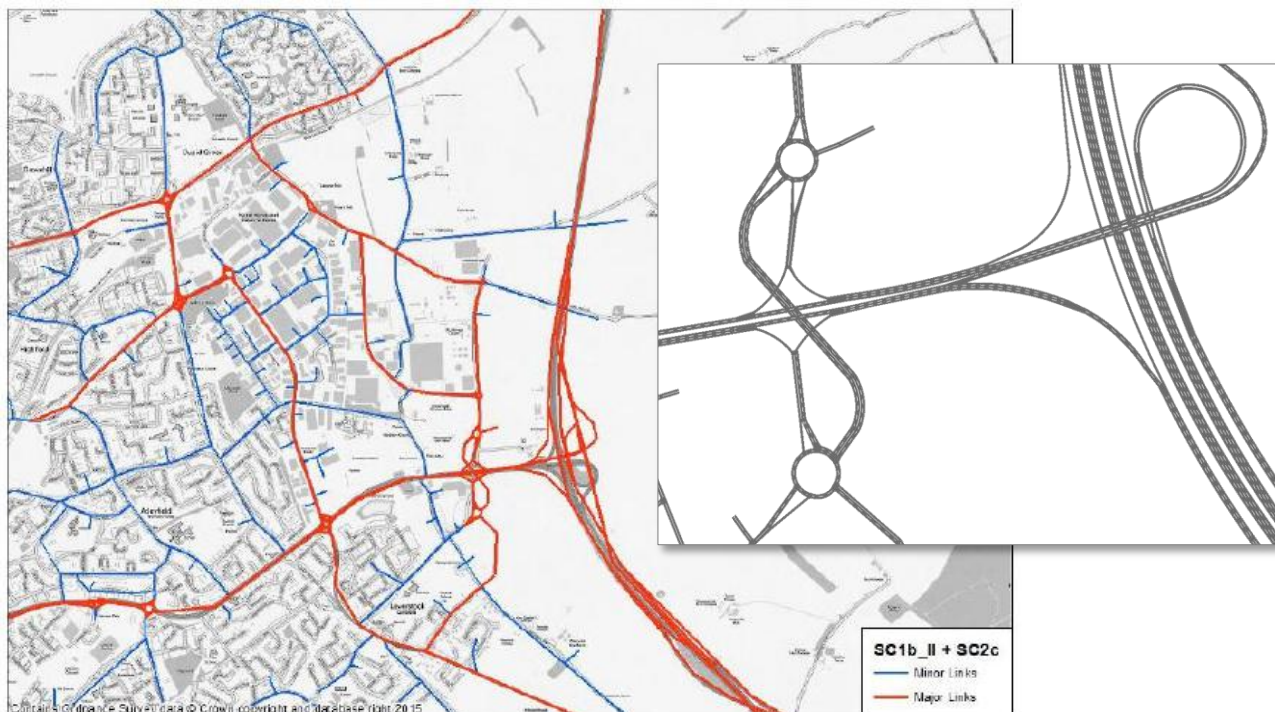


**4.** With the pre-signal for the southbound approach arm, more gaps are created for the northbound traffic, reducing the northbound queues, however queues could form on the Green Lane southbound approach:



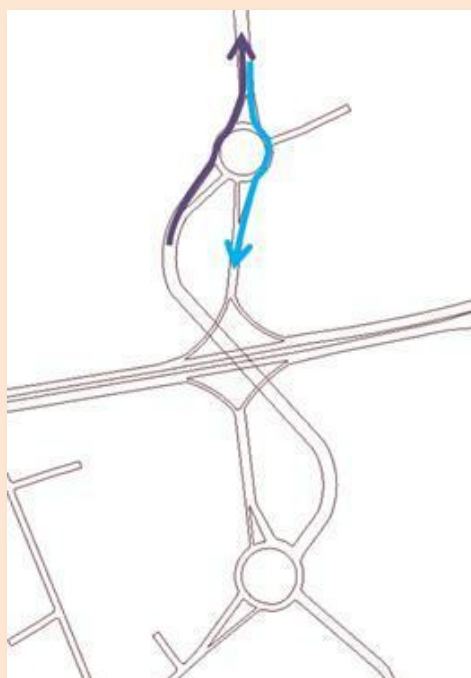


Scheme Concept Option	Description
<b>SC1b (II) + SC2c</b>	Compact grade-separated junction with northern and southern roundabouts on Green Lane linked by a skewed overbridge crossing the A414, which will incorporate a shared use footway/cycleway, and the A414 running as a continuous carriageway through the junction.
<b>High Level Network</b>	



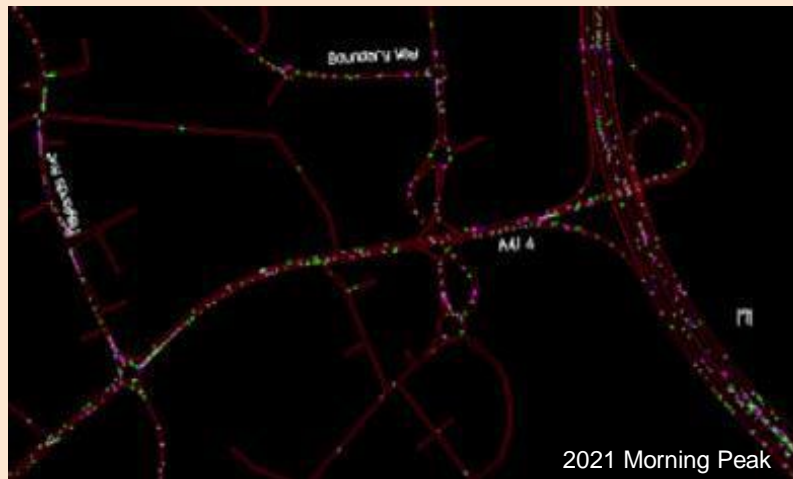
### Key Model Observations

1. A414 straight ahead movements running as continuous carriageway through the junction which reduce delay for these trips.
2. Skewed overbridge removes the conflicting movements of northbound traffic to the Maylands area and southbound traffic to the A414 and towards the M1.

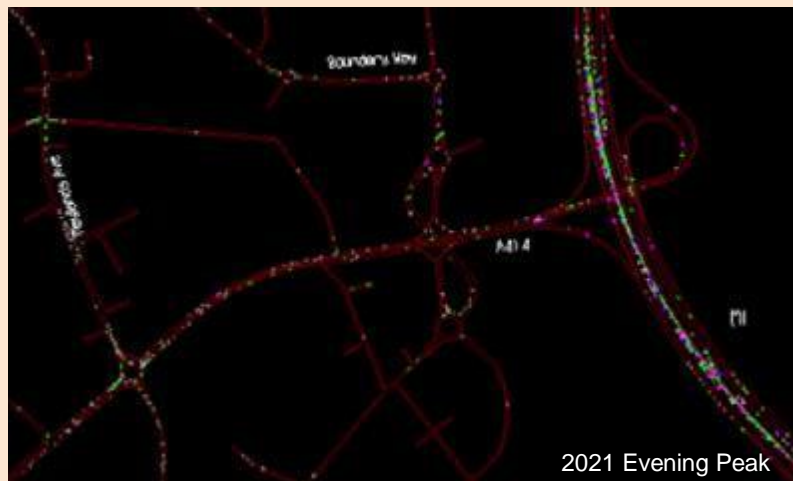




3. The modelling shows that for 2021 morning peak hour, SC1b (II) generally operates well:



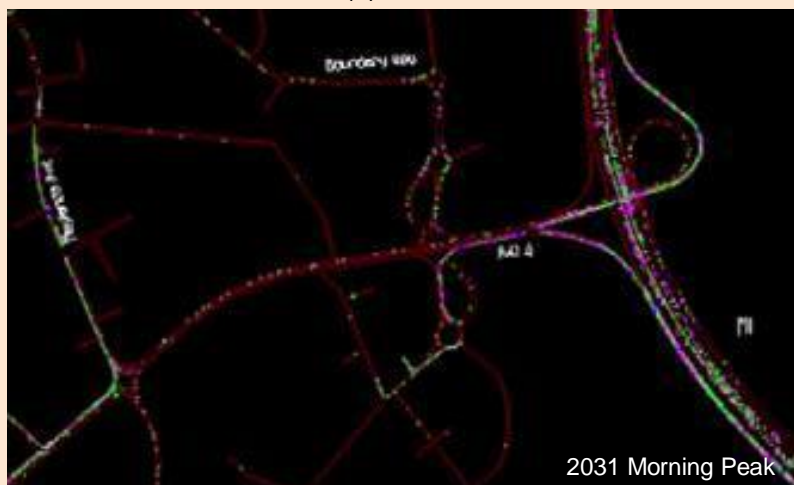
4. Further sensitivity test was undertaken to gauge how this scheme concept operates for the 2021 evening peak hour. The modelling suggests that SC1b (II) generally operates well for the 2021 evening peak hour:



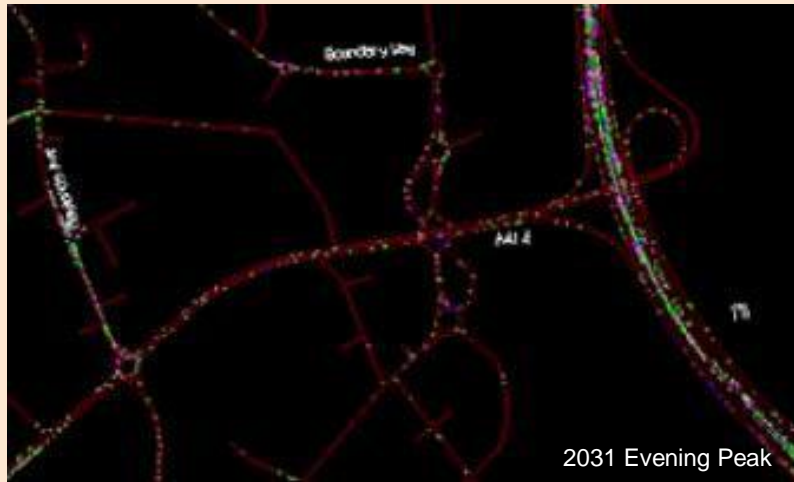
5. As the 2021 modelling suggests that SC1b (II) operates well, further 2031 sensitivity tests were undertaken to test how the scheme concept operates with greater demand growth.

For 2031 morning peak hour, the modelling shows that the A414 – Maylands Avenue roundabout is congested, and traffic travelling from the south towards the M1 could rat-run through Green Lane, causing conflicting movements at the southern roundabout for SC1b (II) and the southbound queues were modelled to extend to the A414 and beyond.

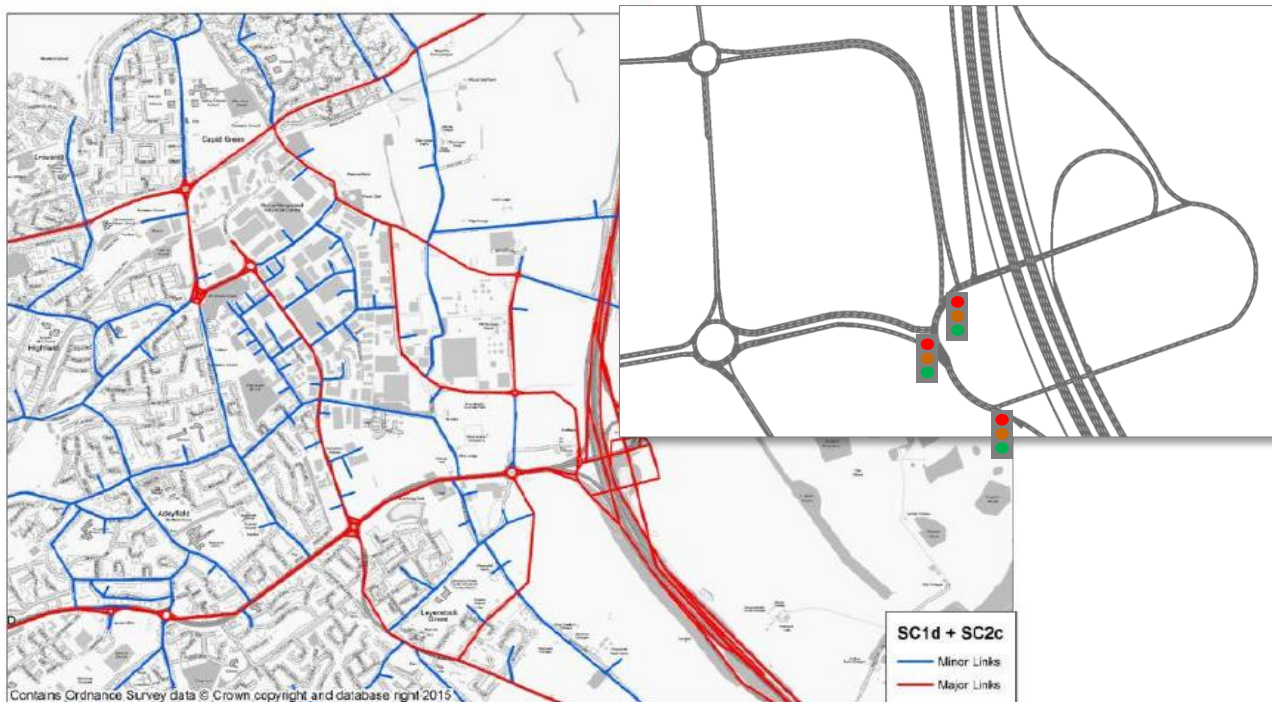
The rat-running can potentially be managed through traffic calming measures which may reduce the conflicts for the SC1b (II) southern roundabout.



For the 2031 evening peak hour, the modelling shows that SC1b (II) generally operates well.



Scheme Concept Option	Description
<b>SC1d + SC2c</b>	A reconfigured M1 J8 with new Maylands western gateway access to the north
High Level Network	



### Key Model Observations

1. Direct access to the Maylands area via Boundary Way and Green Lane from M1 Junction 8.
2. Signalisation required to provide greater control on the operation of the junction.
3. There are ample stacking capacity on the southern section of SC1d to ensure the queuing on the queues on the northbound off-slip do not extend back to the main carriageway.



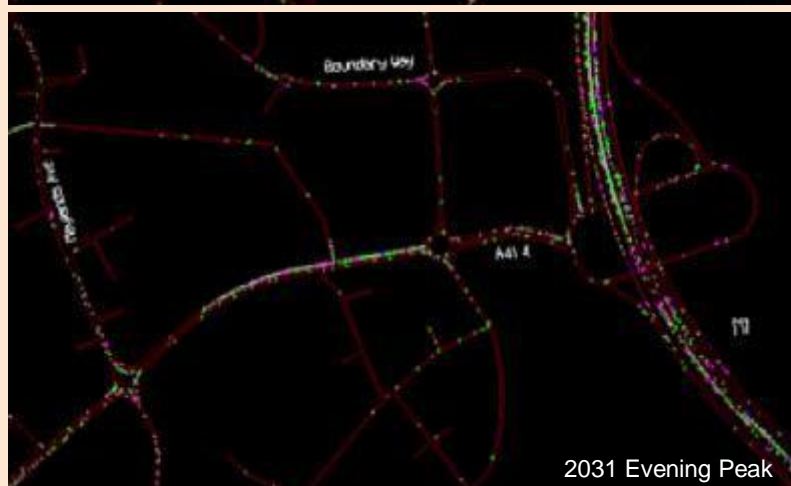
4. The modelling shows that for 2021 morning peak hour, SC1d generally operates well:



**5.** Further sensitivity test was undertaken to gauge how this scheme concept operates for the 2021 evening peak hour. The modelling suggests that SC1d generally operates well during this period:



**6.** As the 2021 modelling suggests that SC1d operates well, further 2031 sensitivity tests were undertaken to test how the scheme concept operates with greater traffic demand. For 2031 morning peak hour, the modelling suggests that queues will form on some approaches to SC1d. For 2031 evening peak hour, SC1d generally operates well with only short queues on outbound approaches from the Maylands area and Hemel Hempstead.





Scheme Concept Option	Description
<b>SC1e + SC2c</b>	Full signalisation of the existing roundabout plus widening on Green Lane (north & south), Breakspear Way eastern arm and the circulatory
<b>High Level Network</b>	



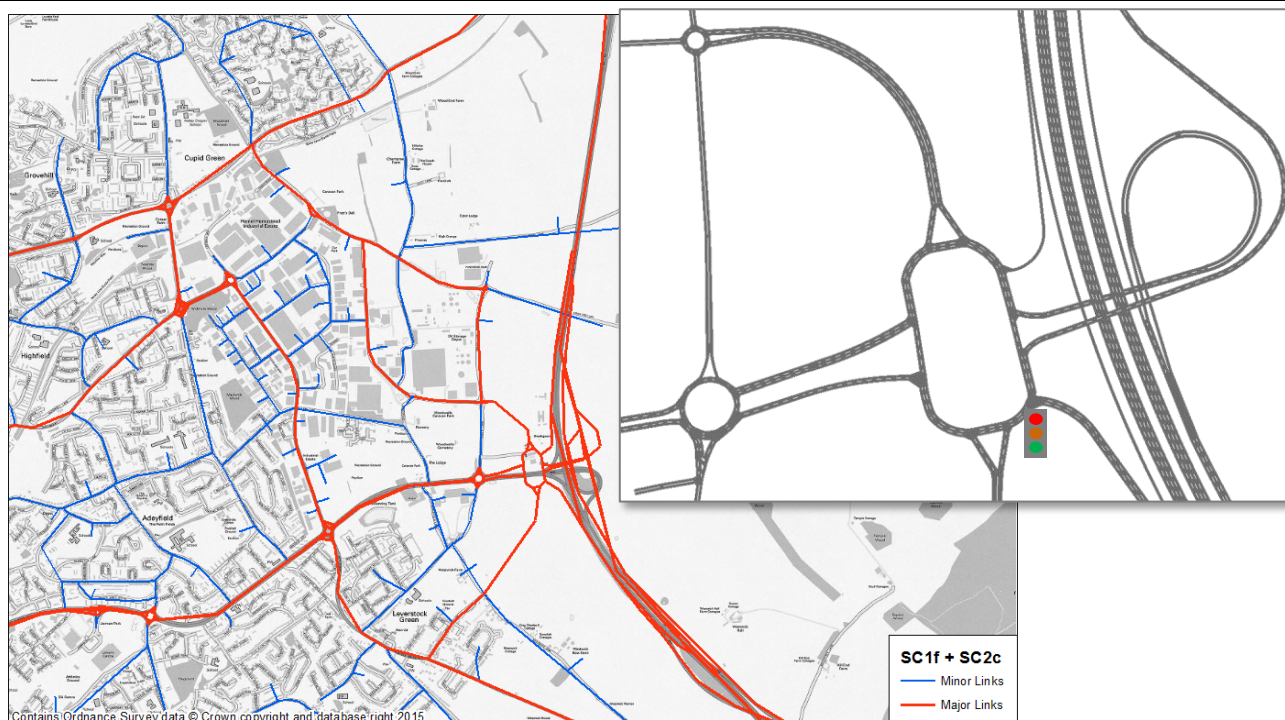
### Key Model Observations

1. Larger roundabout provides greater capacity. Signalisation also provides greater control on the operation of the junction.
2. Modelling shows that for 2021 morning peak hour, SC1e will operate with queues on most approaches, particularly the A414 eastbound and Green Lane southbound approach arms and therefore unlikely to provide sufficient capacity by 2031 and therefore not tested further:



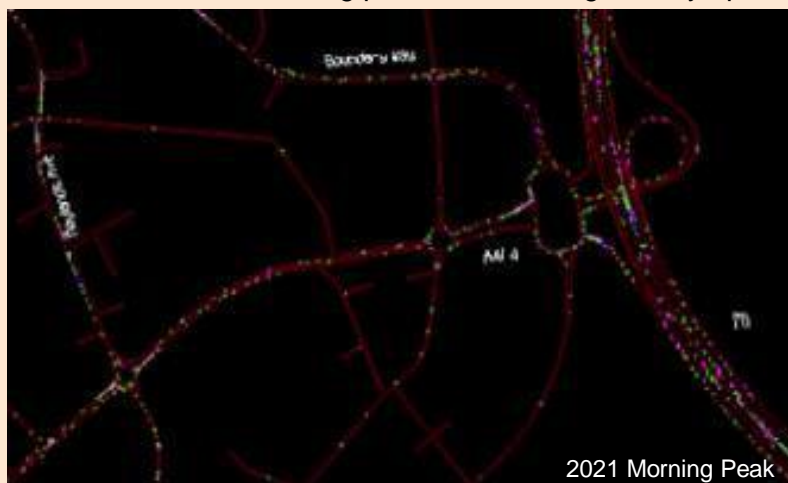


Scheme Concept Option	Description
<b>SC1f + SC2c</b>	Large lozenge signalised junction with access links north and south
<b>High Level Network</b>	

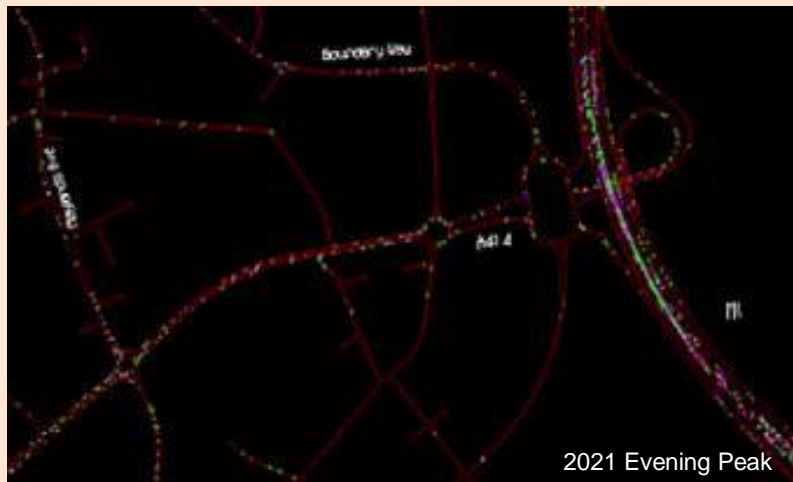


### Key Model Observations

1. Although SC1f does not remove the conflicting flows of traffic approaching from the M1 to the Town Centre and the Maylands area, and traffic leaving Hemel Hempstead travelling towards the M1, the modelling shows that SC1f will provide greater capacity for the junction.
2. SC1f also provides direct access to the Maylands area via Boundary Way and Green Lane.
3. Signalisation for the northbound off-slip to ensure the queues on the off-slip does not extend to the main carriageway.
4. The modelling shows that for 2021 morning peak hour, SC1f generally operates well:

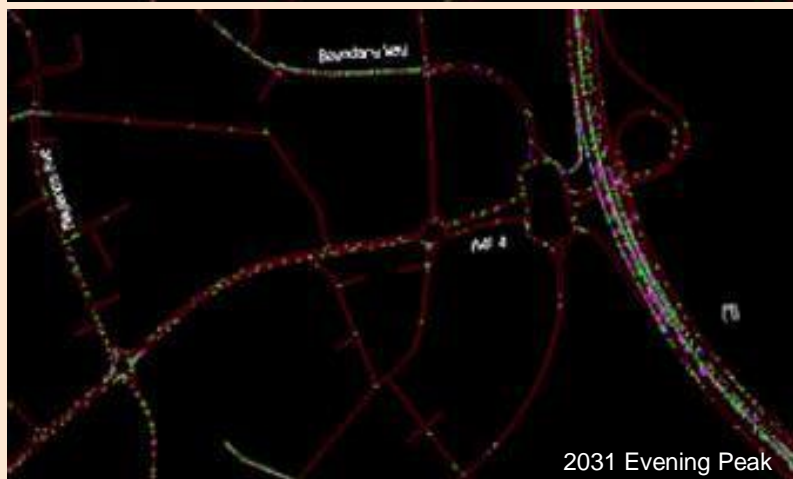
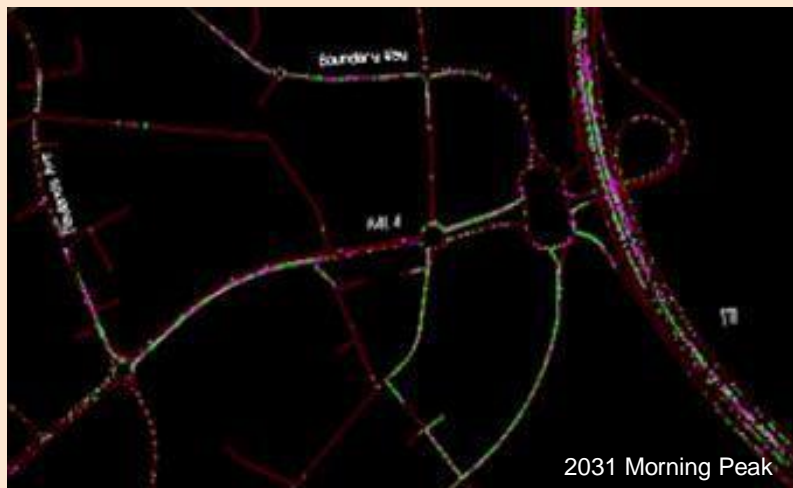


**5.** Further sensitivity test was undertaken to gauge how this scheme concept operates for the 2021 evening peak hour. The modelling suggests that SC1f generally operates well for the 2021 evening peak hour:

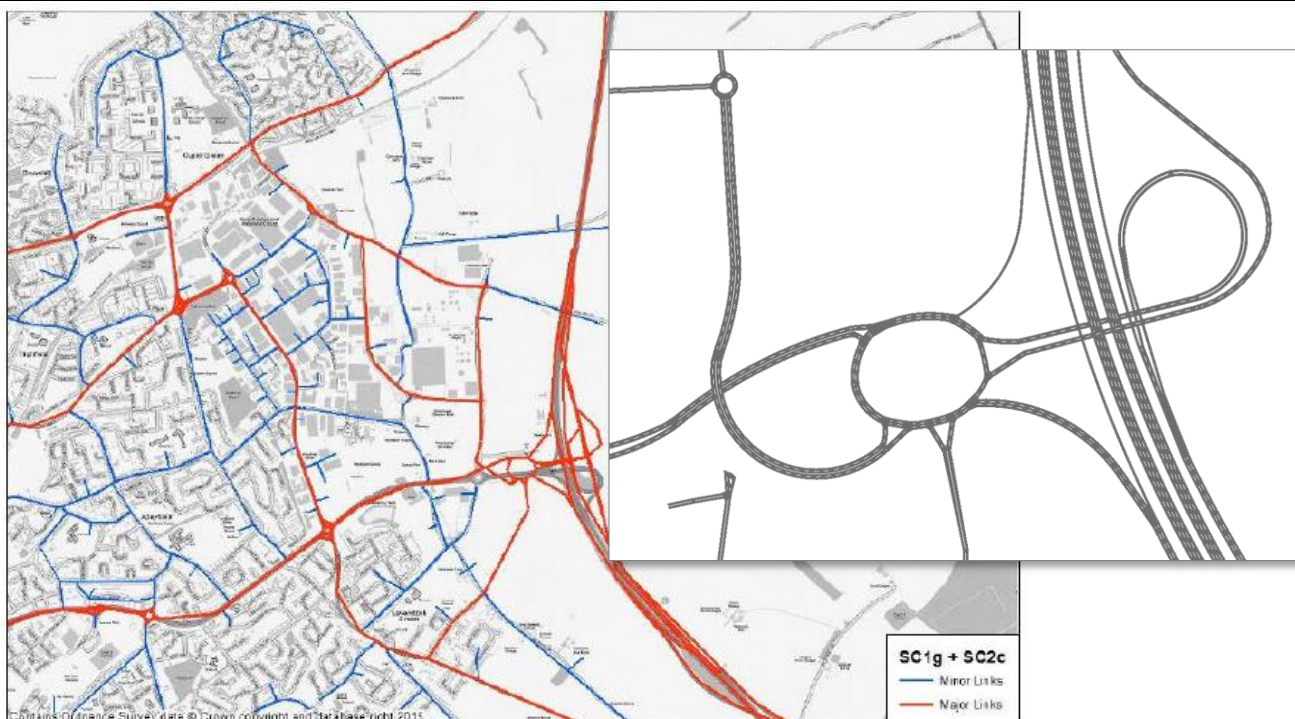


**6.** As the 2021 modelling suggests that SC1f operates well, further 2031 sensitivity tests were undertaken to test how the scheme concept operates with greater demand growth.

For 2031 morning peak hour, the modelling suggests that queues will form on some approaches to SC1f, but this could potentially be mitigated through signalisation. For the 2031 evening peak hour, SC1f generally operates well.

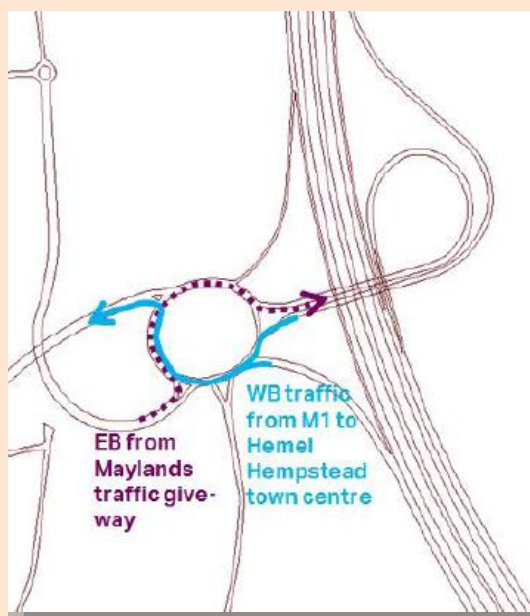


Scheme Concept Option	Description
<b>SC1g + SC2c</b>	Large roundabout and Green Lane flyover
<b>High Level Network</b>	

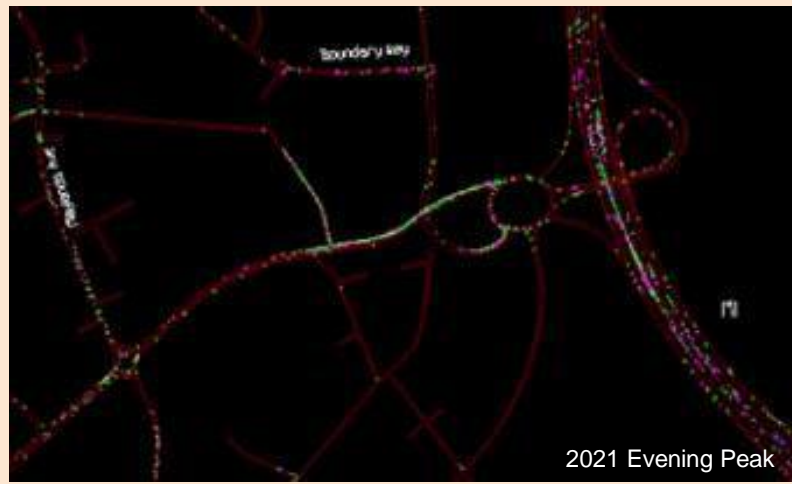
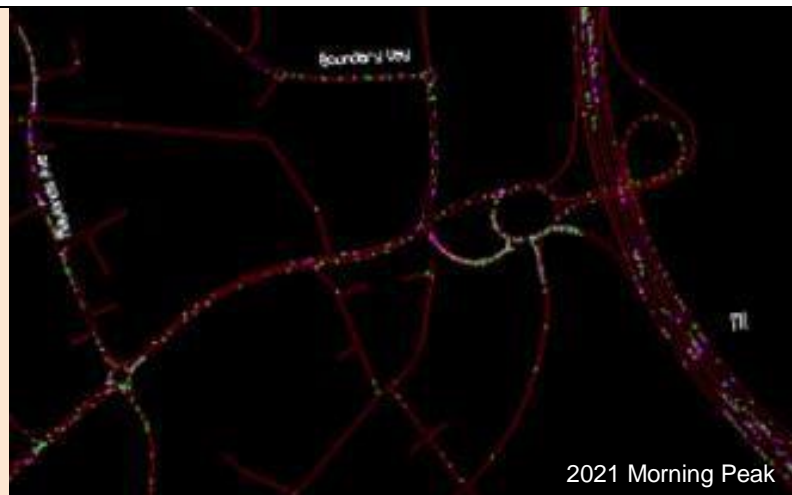


### Key Model Observations

1. Conflicting movements of traffic approaching from the M1 to the Town Centre and the Maylands area, and traffic leaving Hemel Hempstead travelling towards the M1 cause queues on the eastbound approach to SC1g from the Maylands area for both 2021 morning and evening peak hour.



2. Modelling shows that for 2021 morning and evening peak hour, there will be queuing on the eastbound approaches to SC1g:



No testing of 2031 as the option does not provide sufficient capacity in 2021.

Three thin, dark grey lines intersecting on a white background. One line is horizontal, while the other two are diagonal, creating a triangular shape in the upper left.

**Conclusion**

**03**



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## 3 Conclusion

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This section summarises the tests undertaken, key caveats with the modelling and recommended way forward.

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- 3.1 In summary at this stage, testing using the updated S-Paramics micro-simulation model, suggests that options SC1b (ii), SC1d and SC1f show the greatest potential to address the problem and provide capacity in both the short and long term.
- 3.2 All of these options however are subject to an assessment to determine their engineering feasibility and land-take implications which have not yet been considered in sufficient depth.
- 3.3 SC1b(ii) could address the key problem by removing the critical right-turning traffic and provide the opportunity for a grade-separated north-south link over the A414 connecting both parts of the East Hemel Hempstead development. The skewed bridge arrangement would need to be assessed in more detail to determine if its alignment would be feasible. A particular risk is the potential to require land which is on the north-western side of the A414 Breakspear Way roundabout which is zoned for development. If the scheme was, conceptually, determined as being feasible then it is recommended that consideration is given to whether or not the scheme can be designed in such a way that it did not require the parcel of land.
- 3.4 SC1d shows some merit however it could be penalised because of its likely cost, construction and timescales, particularly with regard to its interference with the M1 strategic road network. It would provide a dedicated access into Maylands however but would not provide the opportunity for a grade-separated link over the A414 for development traffic. This traffic would therefore need to route through the existing Breakspear Way roundabout.
- 3.5 SC1f also shows merit but like SC1d it could be penalised because of its likely cost, construction and timescales although potentially to a lesser extent. The option could be constructed offline with less disruption to the network. The option would not however provide the opportunity for a grade-separated link over the A414 for development traffic. This traffic could be routed through the new large roundabout or the existing Breakspear Way roundabout which could retain connections to Green Lane north and south, thus helping to spread traffic load.
- 3.6 The following caveats are noted with regard to the sensitivity tests.
- 3.7 The updated S-Paramics model has been used for this series of sensitivity tests. There is potential that if the options were re-tested in the enhanced S-Paramics model (to become available later in 2016) this could show a different level of option performance, particularly as the underlying traffic distribution data will have changed which could alter traffic volumes and routing patterns.
- 3.8 For the purpose of these tests, a series of assumptions have been made regarding development growth. As part of the forthcoming enhanced S-Paramics model, development growth assumptions will be re-examined and agreed between all parties.
- 3.9 With regard to the north-south development spine road, only SC2c has been tested alongside the SC1 options. It is possible that SC1a and SC1b, which at their northern and southern extremities would be brand new roads, could be more attractive routes for traffic. For the purpose of this model test, SC1c in



contrast comprises of a limited upgrade of existing roads and junctions within Maylands including Boundary Way. Without substantial capacity increases, which may not be feasible in terms of limited space, this option may not prove as attractive to traffic and may not encourage re-routing, certainly not to the extent of SC2a and SC2b.

- 3.10 Testing in 2026 has not been undertaken. It is considered that SC1a could provide short term relief to the network up to 2021, however it does not provide sufficient capacity by 2031. It is not known therefore when the scheme option could fall over. Theoretically, it could be five years by the time the scheme is implemented. If further testing indicated that it would not provide sufficient capacity by 2026, this would suggest the scheme would only provide a maximum of five years of relief and therefore the scheme option could be considered to offer poor value for money. Alternatively, if further testing did prove the scheme still provided capacity in 2026, SC1a could be considered as an interim scheme ahead of a more substantial scheme such as SC1b(ii), f or g.
- 3.11 Testing of SC1a and SC1b has been held off until the enhanced model is available which is likely to provide a more reliable platform for assessing potential wider traffic re-distribution and routing through Maylands.
- 3.12 The modelling has been based on the assumption of 243,600sqm of employment floorspace being provided at East Hemel Hempstead, split equally to B1, B2 and B8 land uses. It is understood this is greater than the Crown Estate's / Vectos' current assumptions regarding floorspace and therefore if tested with a lower figure this put reduce pressure on the surrounding network. The exact split between employment uses could significantly affect trip generation. For example, a greater proportion of B8 (warehouse) uses could reduce peak hour trip generation. It is uncertain what implications the Enterprise Zone designation will have on employment allocations in the area.
- 3.13 The modelling does not take in account any traffic peak spreading or modal shift which could occur in the future if traffic congestion was to continue increasing. Furthermore, it is not possible to assess wide-scale redistribution of traffic if congestion was to increase in the vicinity of Maylands.
- 3.14 The emerging Hertfordshire Transport Vision has identified potential schemes across the County. Consideration will need to be given to the nature of these schemes and any potential implications on the network within Hemel Hempstead. Subject to testing within the County's strategic COMET model, these schemes could alter the requirements for improvements in the vicinity of M1 Junction 8 and clarify the long term infrastructure requirements for Hemel Hempstead in the wider context of Hertfordshire.
- 3.15 A high level summary of the SC1 option performance is provided overleaf in **Table 4** along with the recommendations for next steps.


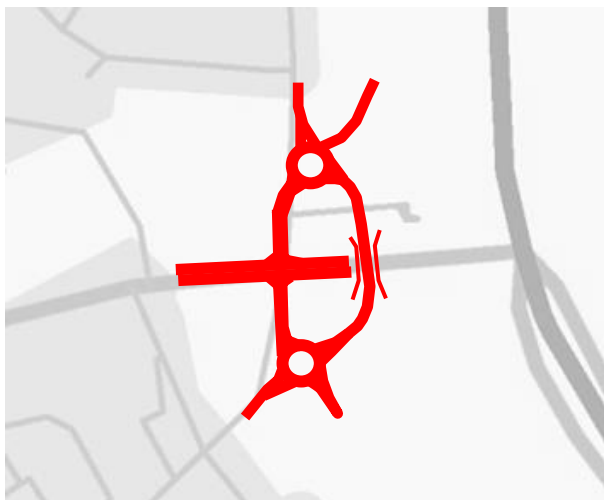
**Table 4 – Summary of model sensitivity testing**

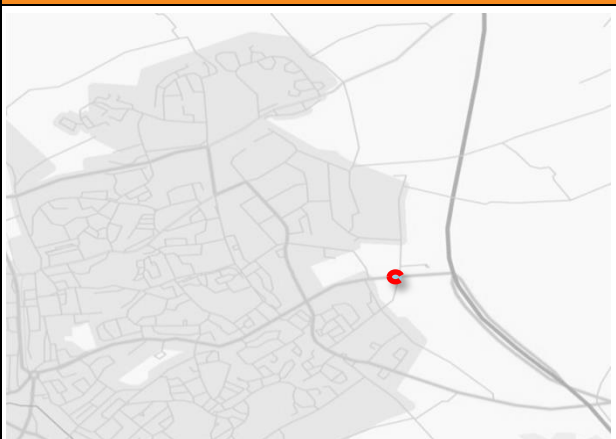
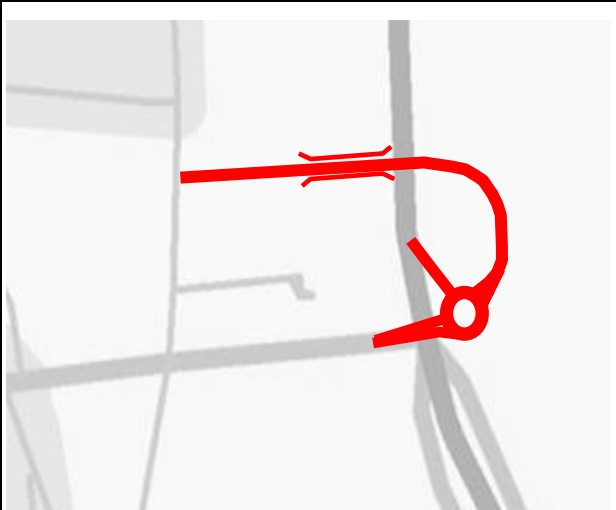
	Solves problem & accommodates future traffic growth		Comment	Recommendation
	2021	2031		
<b>SC1a</b>	Yes	No	Option could provide short-medium term relief but unlikely to provide sufficient long term capacity. Performance is dependent upon junction size.	Should be assessed further (as interim scheme only)
<b>SC1b</b>	Yes	No	May be more feasible than SC1b(ii) (fewer uncertainties) but design is compromised in terms of long term capacity.	Should not be assessed further
<b>SC1b(ii)</b>	Yes	Yes	Subject to engineering feasibility and land-take, this option shows potential to address future traffic growth.	Should be assessed further
<b>SC1d</b>	Yes	Yes	Subject to engineering feasibility and land-take, this option shows potential to address future traffic growth.	Should be assessed further
<b>SC1e</b>	No	No	Option does not address the problem or provide sufficient capacity in 2021.	Should not be assessed further
<b>SC1f</b>	Yes	Yes	Subject to engineering feasibility and land-take, this option shows potential to address future traffic growth.	Should be assessed further
<b>SC1g</b>	No	No	Option does not address the problem or provide sufficient capacity even in 2021.	Should not be assessed further


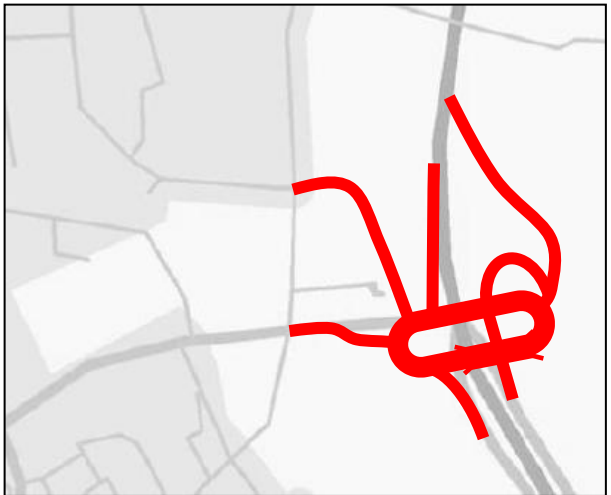
# Appendix

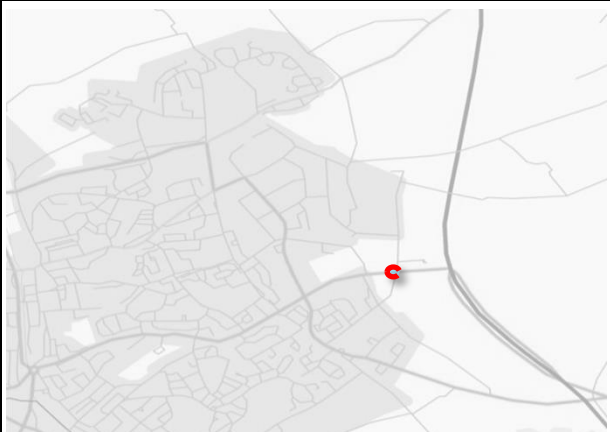

SC1a		Enlarged Signalized Hamburger Roundabout																																					
Issue Location		Issue Description																																					
		AM and PM peak eastbound severe congestion on the A414 Breakspear Way, caused by heavy opposing right-turning movement at the Breakspear-Green Lane roundabout and high volumes of traffic.																																					
Scheme Description																																							
Enlarged signalised roundabout with 'hamburger' style through arm, providing sufficient stacking space on circulatory plus potential segregated left turn from Green Lane north.																																							
Scheme Concept Sketch		Assessment Metrics																																					
		<table><tr><th></th><th>SC1a</th><th></th></tr><tr><td>M1</td><td>Medium</td><td>Issues</td></tr><tr><td>M2</td><td>Medium</td><td>Construction</td></tr><tr><td>M3</td><td>Low</td><td>Cost</td></tr><tr><td>M4</td><td>Medium</td><td>Wider Benefits</td></tr><tr><td>M5</td><td>High</td><td>Risks and Uncertainties</td></tr><tr><td>M6</td><td>Medium Term</td><td>Timescales</td></tr><tr><td>M7</td><td>Medium</td><td>Dependency</td></tr><tr><td>M8</td><td>High</td><td>Synergy</td></tr><tr><td>M9</td><td>High</td><td>Alignment with Study Objectives</td></tr><tr><td>M10</td><td>Medium</td><td>Alignment with Local Authority priorities</td></tr><tr><td>M11</td><td>Medium</td><td>Alignment with Herts LEP's priorities</td></tr></table>			SC1a		M1	Medium	Issues	M2	Medium	Construction	M3	Low	Cost	M4	Medium	Wider Benefits	M5	High	Risks and Uncertainties	M6	Medium Term	Timescales	M7	Medium	Dependency	M8	High	Synergy	M9	High	Alignment with Study Objectives	M10	Medium	Alignment with Local Authority priorities	M11	Medium	Alignment with Herts LEP's priorities
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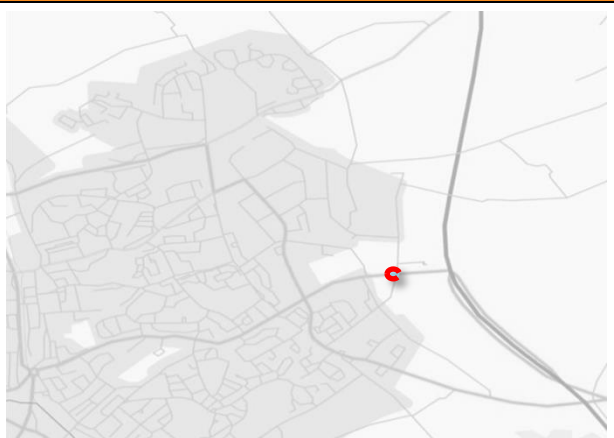

SC1b																																					
Issue Location	Issue Description																																				
	AM and PM peak eastbound severe congestion on the A414 Breakspear Way, caused by heavy opposing right-turning movement at the Breakspear-Green Lane roundabout and high volumes of traffic.																																				
Scheme Description																																					
Compact grade-separated junction with northern and southern roundabouts on Green Lane, incorporating shared used footway/cycleway plus bus laybys and parking.																																					
Scheme Concept Sketch	Assessment Metrics																																				
	<table><tr><th></th><th>SC1b</th><th></th></tr><tr><td>M1</td><td>Very High</td><td>Issues</td></tr><tr><td>M2</td><td>High</td><td>Construction</td></tr><tr><td>M3</td><td>High</td><td>Cost</td></tr><tr><td>M4</td><td>Very High</td><td>Wider Benefits</td></tr><tr><td>M5</td><td>High</td><td>Risks and Uncertainties</td></tr><tr><td>M6</td><td>Medium Term</td><td>Timescales</td></tr><tr><td>M7</td><td>High</td><td>Dependency</td></tr><tr><td>M8</td><td>High</td><td>Synergy</td></tr><tr><td>M9</td><td>Very High</td><td>Alignment with Study Objectives</td></tr><tr><td>M10</td><td>Medium</td><td>Alignment with Local Authority priorities</td></tr><tr><td>M11</td><td>High</td><td>Alignment with Herts LEP's priorities</td></tr></table>		SC1b		M1	Very High	Issues	M2	High	Construction	M3	High	Cost	M4	Very High	Wider Benefits	M5	High	Risks and Uncertainties	M6	Medium Term	Timescales	M7	High	Dependency	M8	High	Synergy	M9	Very High	Alignment with Study Objectives	M10	Medium	Alignment with Local Authority priorities	M11	High	Alignment with Herts LEP's priorities
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SC1c		Reconfigured M1 J8 / New Maylands Access [DISCOUNTED]																																					
Issue Location		Issue Description																																					
		AM and PM peak eastbound severe congestion on the A414 Breakspear Way, caused by heavy opposing right-turning movement at the Breakspear-Green Lane roundabout and high volumes of traffic.																																					
Scheme Description																																							
Reconfigured M1 J8 with new Maylands eastern gateway access to the north.																																							
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SC1d Reconfigured M1 J8 / New Maylands Access																									
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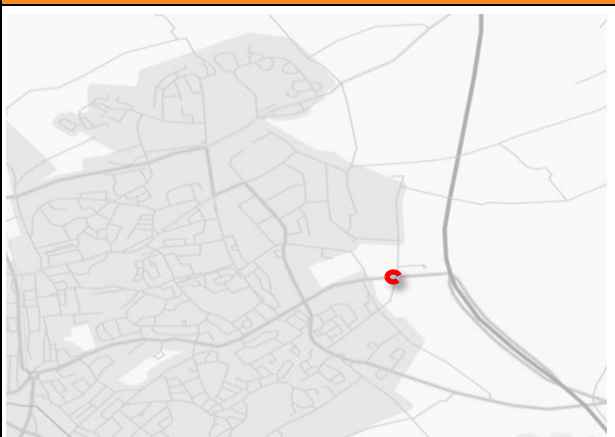

SC1e		Full signalisation and widening																																					
Issue Location		Issue Description																																					
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Scheme Description																																							
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SC1b (II)	Compact grade-separated junction with skewed overbridge																								
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	<table border="1"> <thead> <tr> <th colspan="2">SC1b</th></tr> </thead> <tbody> <tr> <td>M1</td><td>Very High Issues</td></tr> <tr> <td>M2</td><td>High Construction</td></tr> <tr> <td>M3</td><td>High Cost</td></tr> <tr> <td>M4</td><td>Very High Wider Benefits</td></tr> <tr> <td>M5</td><td>High Risks and Uncertainties</td></tr> <tr> <td>M6</td><td>Medium Term Timescales</td></tr> <tr> <td>M7</td><td>High Dependency</td></tr> <tr> <td>M8</td><td>High Synergy</td></tr> <tr> <td>M9</td><td>Very High Alignment with Study Objectives</td></tr> <tr> <td>M10</td><td>Medium Alignment with Local Authority priorities</td></tr> <tr> <td>M11</td><td>High Alignment with Herts LEP's priorities</td></tr> </tbody> </table>	SC1b		M1	Very High Issues	M2	High Construction	M3	High Cost	M4	Very High Wider Benefits	M5	High Risks and Uncertainties	M6	Medium Term Timescales	M7	High Dependency	M8	High Synergy	M9	Very High Alignment with Study Objectives	M10	Medium Alignment with Local Authority priorities	M11	High Alignment with Herts LEP's priorities
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A large lozenge-shaped signalised junction with access links north and south. The existing Breakspear Way roundabout would remain open to traffic.																																							
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SC1g		Large roundabout and Green Lane flyover																																					
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Large roundabout adjacent to M1 Junction 1. A414 Breakspear Way realigned to form the north-western arm of the new roundabout. Green Lane north realigned and extended to form the south-western arm of the roundabout. Green Lane south would be stopped up with traffic diverted to the southern arm of the new roundabout. Modified alignment of the M1 northbound on/offslips would be required. Land earmarked for development to the north-west of the existing roundabout may be required.																																							
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## About AECOM

AECOM (NYSE: ACM) is built to deliver a better world. We design, build, finance and operate infrastructure assets for governments, businesses and organizations in more than 150 countries.

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Appendix 4: East Hemel Hempstead Transport Assessment (to follow)