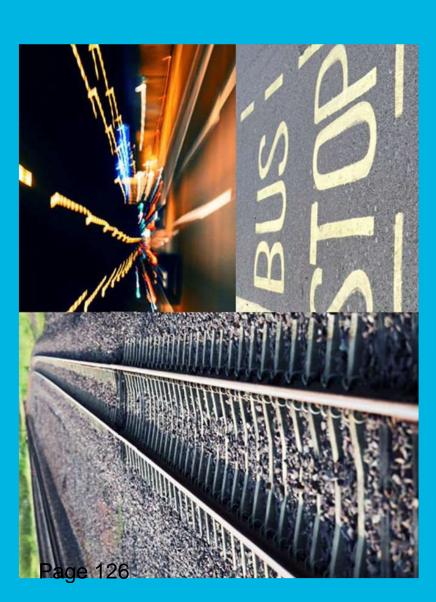
COMET St Albans Enhancement Progress meeting 2



This Presentation

Introduction

- Realism Test Results (Stage 2c)

- 2031 Do Minimum Results (Stage 3)

Actions / Timescales / Invoicing each Task 6

Introduction

Context

- Hertfordshire County Council (HCC) commissioned AECOM to develop a strategic countywide multi-modal model, COMET
- A first version, with Base Year 2014, was delivered in February 2016
- 2016. Changes were undertaken to the Prior Matrix (overall) and in particular was included in the Growth and Transport Plan (GTP) work due in 2016/17. to calibration and validation of model in Watford and its vicinity, as this area The first enhancement of the model was undertaken in the second half of

공 을 The enhancement work also included (where possible) updates to the official c modelling standards. This resulted in COMET V2.

- SADC commissioned AECOM in Autumn 2016 to use COMET V2 to aid the development of its Detailed Local Plan.
- The updated 2014 Base Model for this study including changes in St Albans and Harpenden was delivered in Spring 2017.



- SADC highlighted the following:
- COMET model in the St Albans District area, collect new data and - The current task objectives are "to review the performance of the enhance the model as necessary".
- scope) which will use the enhanced COMET V3 "to test the implications of Local Plan growth and adequacy of identified mitigation measures". - In addition, this work will be followed by Task 6 (out of the current
- Task 5, the preliminary design of schemes to be tested in Task 6, is currently being progressed by AECOMs Highways Team.

- The overall objective for this COMET model enhancement work is to:
- Have a good representation of St Albans and Harpenden areas to test the cumulative growth from the Local Plan alongside broad, strategiclevel interventions in St Albans District; and
- Be able to demonstrate the scale and location of the impacts from both Local Plan growth and potential strategic schemes.



Realism Tests (Stage 2c)

Realism Tests (Stage 2c)

- were used to run standard sensitivity tests i.e. +10% increase in rail fare, public The updated highway and public transport models (from Stages 2a and 2b) transport journey times, highway journey times or fuel costs.
- demand matrices. Global changes to the demand compared to the updated The Variable Demand Model (VDM) produced for each 'realism test' new Base Year model were used to estimate elasticity factors.
- Department for Transport (DfT)'s WebTAG advice, unit M2, Variable Demand These factors were compared to the expected standards set out by the Modelling.
- elasticities lie within specified bands . Car fuel cost elasticity tests are required tests are required in all cases where changes in public transport generalised The primary realism tests require that car fuel cost and public transport fare in all cases where a highway model is used. Public transport fare elasticity costs, including changes in fares, are modelled. Car journey time elasticity tests are also required.

Realism Test 1: Fuel Cost

The car fuel cost elasticity required is the percentage change in car vehicle-kms with the percentage change in fuel cost.

10% increase in car fuel cost Sensitivity in range -0.25 to -0.35

Segment	AM	<u>ط</u>	PM	ОР	Annl
Commuting	-0.139	-0.109	-0.133	-0.177	-0.136
Business	-0.170	-0.194	-0.176	-0.189	-0.183
Other	-0.377	-0.406	-0.378	-0.359	-0.388
All Pers Annl	-0.277	-0.347	-0.276	-0.301	-0.318
TGV	0.015	0.007	0.018	-0.014	000'0
HGV	0.006	0.001	0.012	-0.021	-0.004

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Trip Distance Elasticity



St Albans COMET Enhancement

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Realism Test 2: Public Transport Fare

The public transport fare elasticity required is the percentage change in public transport trips by all public transport modes with respect to the percentage changes in public transport fares.

10% increase in PT fares Sensitivity in range -0.20 to -0.90

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Segment	AM	<u>Д</u>	PM	ОР	Annl
Commuting	-0.458	-0.448	-0.456	-0.460	-0.457
Business	-0.504	-0.479	-0.389	-0.466	-0.459
Other	-0.525	-0.426	-0.607	-0.548	-0.487
All Pers Annl	-0.484	-0.431	-0.509	-0.490	-0.466

Trip Elasticity

Realism Test 3: Car Journey Time

The car journey time elasticity required is the change in car trips with respect to the change in journey time.

10% increase in car journey times Sensitivity in range 0.00 to -2.00

Segment	AM	<u>Д</u>	PM	ОР	Annl
Commuting	-0.169	-0.010	-0.187	-0.091	-0.110
Business	-0.043	-0.004	-0.175	-0.154	990'0-
Other	-0.144	-0.110		-0.122	-0.127
All Pers Annl	-0.144	-0.091	-0.170	-0.118	
LGV	0.000	0.000	0.000	000'0	000'0
HGV	0.000	0.000	0.000	0.000	0.000

Trip Elasticity



2031 DM Scenario (Stage 3)

2031 DM Scenario - Context

District planning assumptions for a Forecast Year 2031 without the introduction of any growth to enable potential hotspots and additional locations of traffic congestion to be The 2031 Do Minimum Scenario (Stage 3) aims to test the impacts of St Albans potential mitigation schemes. The purpose of this test is to identify the impact of

It is understood that the 2031 Do-Minimum scenario will only consider:

- Unconstrained Local Plan growth in all Hertfordshire districts including St Albans

NTEM v7 assumptions will apply directly outside Hertfordshire

The schemes included in the 2031 Reference Case / Do Minimum Scenarios

2031 DM Scenario - Highways Schemes

And Turided International (inprovements to allow access to proposed growth and followed prometrated) West Hoddesdorn (High Leigh) development access onto A10 link West Hoddesdorn (High Leigh) development access onto A10 link West Hoddesdorn (High Leigh) development access onto A10 link West Hoddesdorn (High Leigh) development access onto A10 link A41 & Bensissed Way / Majands Lane Reallocation Breakspear Way / Majands Lane Reallocation Western Hempfleded Access Swallowdise Lane! Three Cherry Trees Lane Junction improvement Trial signalisation on Marchanot Lein Hempfleded — Development site access onto Long Chaulden Western Hempfleded — Development site access onto Long Chaulden Western Hempfleded — Development site Secondary site access onto The Arenue (extension of ensiting spur.) Marchanot of ensiting spur.) Marchanot of severage Conford Strategy Stage 1 Ballotys Stordford North Development, Access onto Hadham Road A20 Little Hadham Bypas A20 Little Hadham Bypas Ballotys Stordford North Development, Access onto Hadham Road Ballotys Stordford North Development, Access onto Hadham Road Ballotys Stordford North Development, Access onto Hadham Road Ballotys Stordford North Development, access to Rye Street A20 Little Hadham Bypas Ballotys Stordford North Majands Ballotys Stordford North miligation A20 Little Hadham Bypas Ballotys Stordford North Majands Strategord Strategory A20 Little Hadham Bypas Ballotys Stordford North Majands Strategory A20 Little Hadham Bypas Ballotys Stordford North Majands Strategory A20 Little Hadham Bypas Ballotys Stordford North Majands Strategory A20 Little Hadham Bypas Ballotys Stordford North Road access to Rye Street Ballotys Stordford Strategory Ballotys Stordford North Majands Strategory A20 A20 A20 Radio Majands A20 A14 Colney Heath Longplack Stage Ballotys Stordford North Road Groneding North Ballotys Stordford A41 Colney Heath Longplack Board Road Stage Ballotys Stordford A41 (M) juridin 6 plant access road A41 (M) juridin 6 plant access road		Scheme	District
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A10 Amwell Roundabout Bus Lane Removal Bishop's Stortford Goods Yard – bus link from London Road Land North and East of Ware Spine Road Borehamwood - Station Road/Theobald StAllum Lane junction signalisation Borehamwood - Elstree Way Corridor New link road connecting North Baldock development to North Road and Royston Road A414 Colney Heath Longabout signalisation Radlett Raliffreight (spine road and associated junction improvements) Oaklands development site access North Harpenden development access Woodside Road/Long Link (Thomas Sawyer Way) Hospital access road A1(M) junction 6 pinch point scheme ramp metering West of Hatfield (Stanborough - HAT1) development access Symondshyde development access Birchall development access	2	Gilston development access	East Hertfordshire
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ne junction signalisation nt to North Road and on improvements)		Bishop's Stortford Goods Yard – bus link from London Road	East Hertfordshire
ne junction signalisation nt to North Road and on improvements)		Land North and East of Ware Spine Road	East Hertfordshire
on improvements)		Borehamwood - Station Road/Theobald St/Allum Lane junction signalisation	Hertsmere
on improvements)		Borehamwood - Elstree Way Corridor	Hertsmere
on improvements)		New link road connecting North Baldock development to North Road and Royston Road	North Hertfordshire
on improvements)		A414 Colney Heath Longabout signalisation	St Albans
ssesse s		Radlett Railfreight (spine road and associated junction improvements)	St Albans
sseoce		Oaklands development site access	St Albans
ssesse s		North Harpenden development access	St Albans
ssesoce		Woodside Road Roundabout	Three Rivers
ssecoose		Uxbridge Road/Long Ln Roundabout	Three Rivers
s second		Watford Health Campus Link (Thomas Sawyer Way)	Watford
s second		Hospital access road	Watford
T1) development access		A1(M) junction 6 pinch point scheme ramp metering	Welwyn Hatfield
		West of Hatfield (Stanborough - HAT1) development access	Welwyn Hatfield
vewodo		Symondshyde development access	Welwyn Hatfield
		Birchall development access	Welwyn Hatfield
		A1(M) junction 6 - 8 Smart motorway	Welwyn Hatfield / Stevenage / North Hertfordshire

2031 DM scenario. All schemes included in Hertfordshire in the In total, 38 highways schemes are expected to proceed.

4 in St Albans District:

- A414 Colney Heath Longabout Signalisation
- Radlett Railfreight
- Oaklands development access
- North Harpenden development access



2031 DM Scenario - Highways Schemes

Scheme	Area
A5 - M1 link	Central Bedfordshire
M11 J8 short term capacity improvements	Uttlesford (Essex)
M25 J23-25 Permanent use of Hard Shoulder	Hertfordshire / London Borough of Enfield
Widening of M25 J25-27	Essex / London Borough of Enfield
M25 Junction 25 Enhancement (Highways England RIS scheme)	London Borough of Enfield
A414 / London Road Enterprise Zone New Access & Link Road	Harlow (Essex)
ັນ A414 / Clocktower Junction Capacity Upgrade	Harlow (Essex)
© A414 First Avenue / Gilden Way Junction Upgrade	Harlow (Essex)
ည် A414 Cambridge Road (Gates) Upgrade - including widening to 4 lanes of တ Edinburgh Way;	Harlow (Essex)
A414 Edinburgh Way / East Road Signal Junction Improvement	Harlow (Essex)
Cambridge Road - new access into River Way	Harlow (Essex)
New junction on M11 (J7a) with associated link to & rbt on B183 Gilden Way; localised widening of Gilden Way	Epping Forest (Essex)
A1 Biggleswade Junction improvements - capacity improvements and dedicated left turn	Biggleswade (Central Bedfordshire)
Luton Town Centre Bypass	Luton
Luton London Road Grade Separated Junction	Luton

In total, 15 highways schemes included outside Hertfordshire in the 2031 DM scenario. All schemes are expected to proceed.



2031 DM Scenario - Public Transport Schemes

and Watford Junction through Watford High Street, the creation of two new stations at creation of the forecast network was the Croxley Rail link. This consists of the closure of Watford Metropolitan line station, the creation of a new rail link between Croxley Ascot Road and Watford Vicarage Road, and running 4-6 trains per hour in each The only new public transport scheme in Hertfordshire to be added during the direction along the new route.

In addition to this scheme, timetable changes/frequency increases were implemented ondhe following rail services:

- Hertford East to/from Liverpool St (frequency increase)
- Thameslink/Great Northern (timetable changes)

No changes to the future year bus network were made.

Outside Hertfordshire, a light rail scheme was added that links Luton Airport Parkway station to Luton airport.

St Albans COMET Enhancement

2031 DM Scenario - Dwelling Assumptions in Hertfordshire

District	2031 HCC Dwellings (Do-Minimum)
Broxbourne	266,9
Dacorum	9,566
East Hertfordshire	16,594
Hertsmere	4,426
B North Hertfordshire	15,969
St Albans	7,809
Stevenage	7,856
Three Rivers	2,517
Watford	7,937
Welwyn Hatfield	11,538

These DM figures represent an increase of approximately 20,000 additional dwellings compared to NTEM 2031 projections



2031 DM Scenario - Employment Assumptions in Hertfordshire

District	2031 HCC Jobs
Broxbourne	7,458
Dacorum	4,782
East Hertfordshire	4,123
_ф Hertsmere	4,258
a North Hertfordshire	10,575
St Albans	13,968
Stevenage	11,254
Three Rivers	6,627
Watford	12,686
Welwyn Hatfield	16,613

These DM figures represent an increase of approximately 43,000 additional jobs compared to NTEM 2031 projections

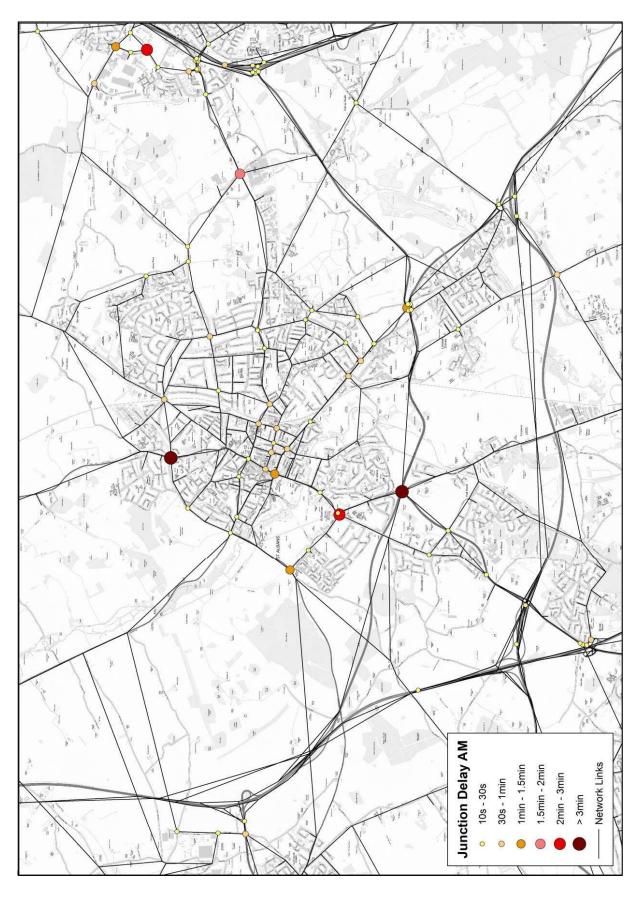


2031 DM Scenario - Dwellings, Employment and Population growth outside Hertfordshire

	2014- 2021	2021-2026	2026-2031
Dwellings	6.43%	3.84%	3.53%
Employment	4.76%	1.48%	1.23%
Population	4.56%	2.96%	2.51%

NTEM v7. The annual growth rates are provided by 5 year intervals in the Consequently, growth in terms of housing, employment and population in the rest of Great Britain outside Hertfordshire was derived directly from table above. It is worth noting that these growth figures are likely to be lower than growth being proposed through the Local Plan process in The availability of planning data outside Hertfordshire is limited. these areas.

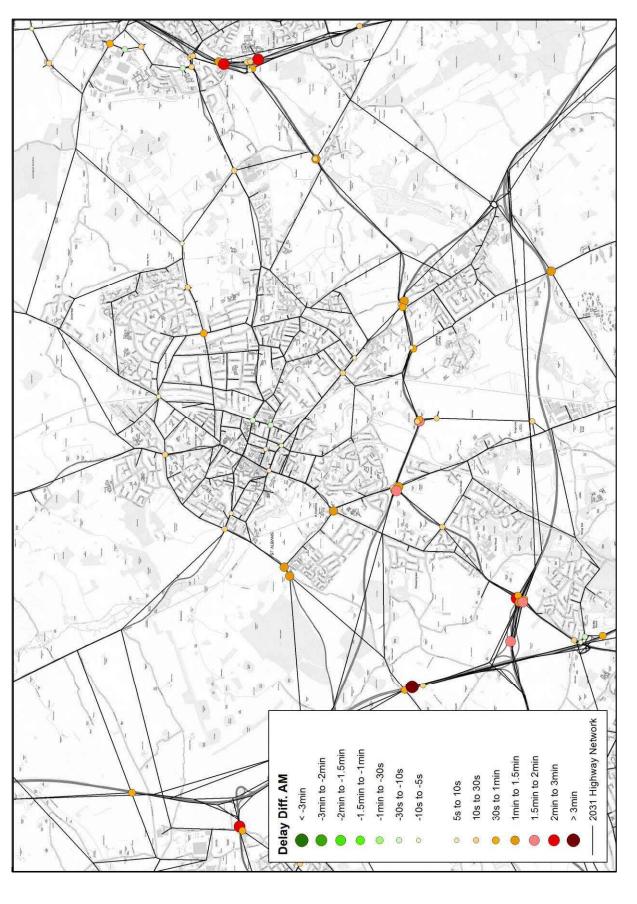
2014 AM Junction Delays - St Albans

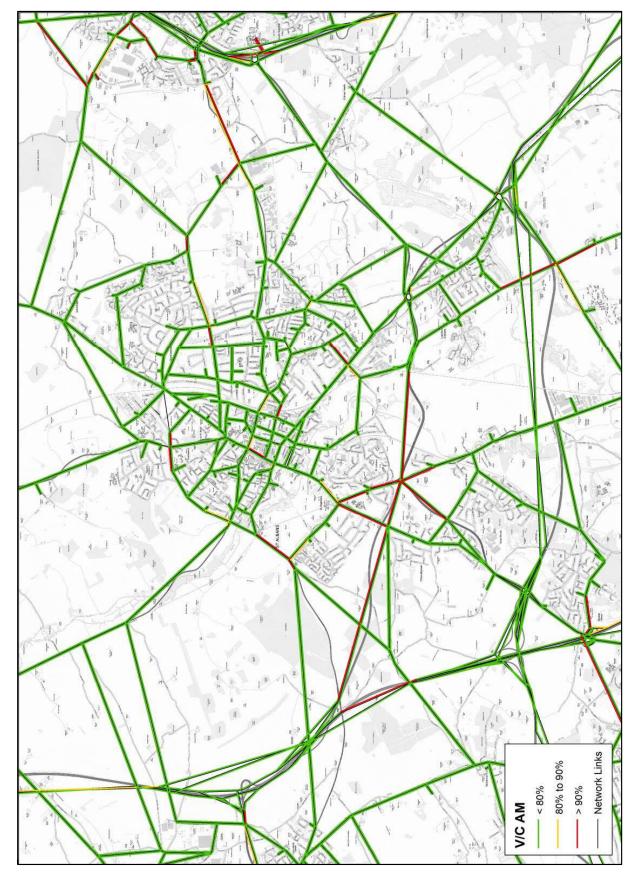


June 2017

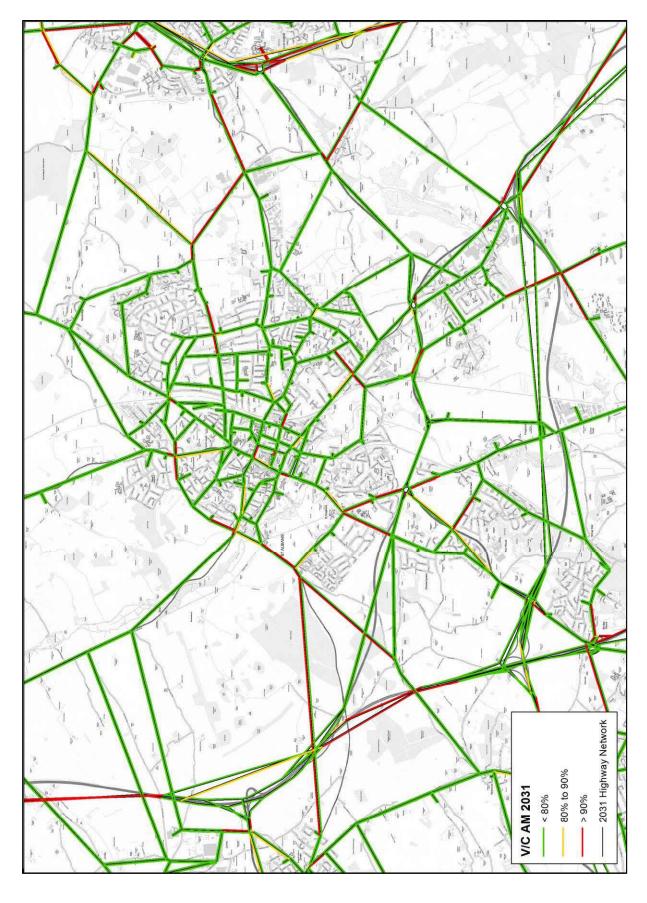
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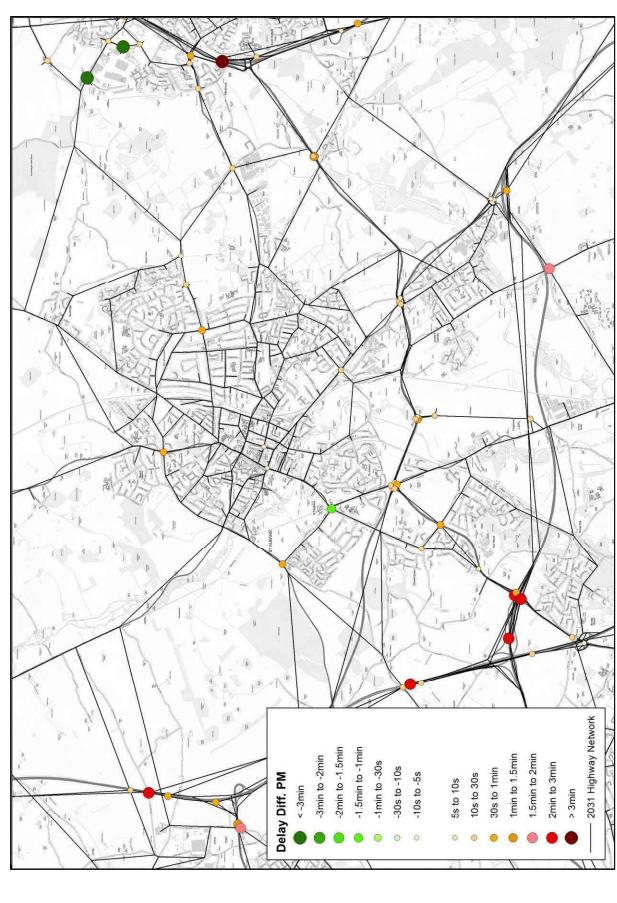
St Albans COMET Enhancement



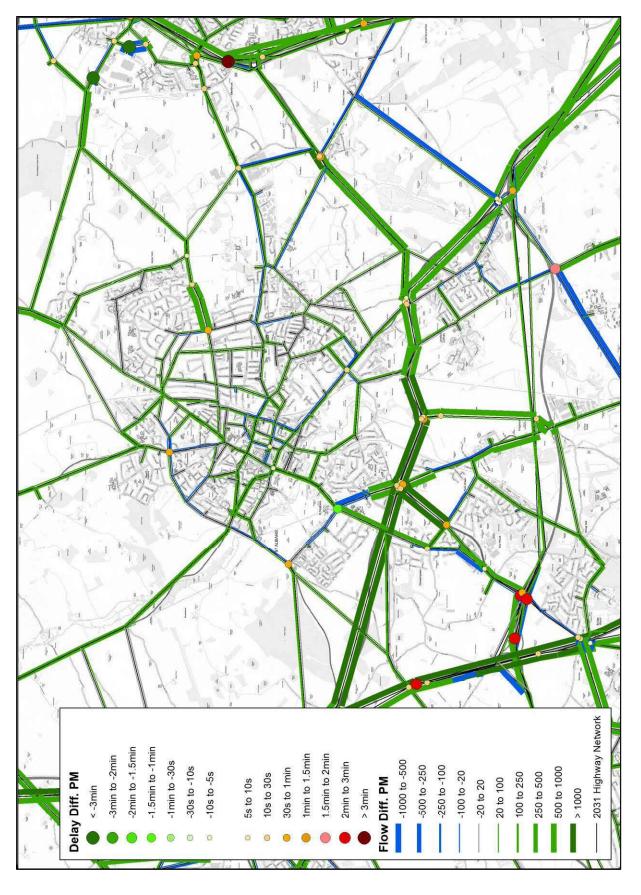


2031 AM Congestion - St Albans





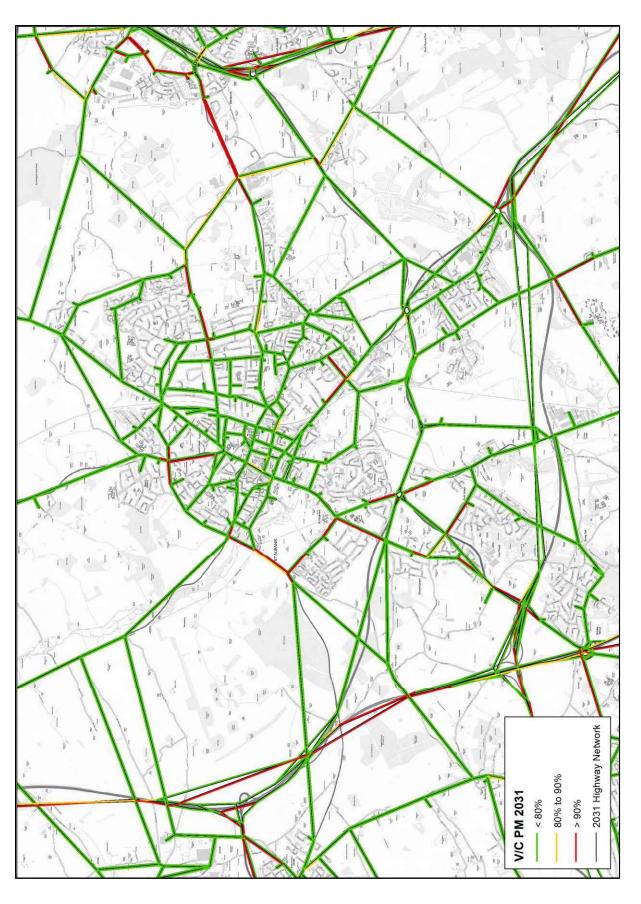
2014-31 PM Junction Delay Differences - St Albans



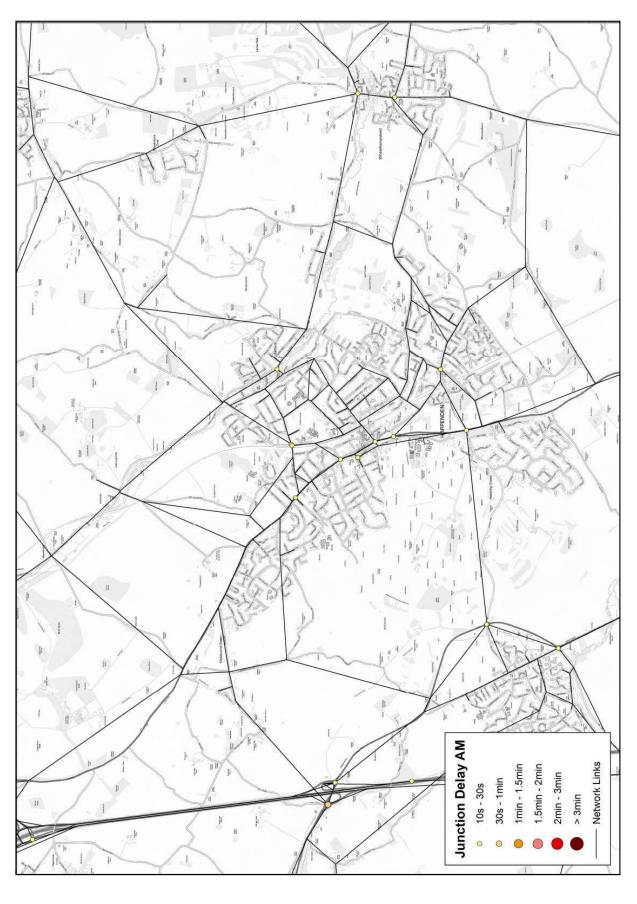
2014 PM Congestion - St Albans

Network Links

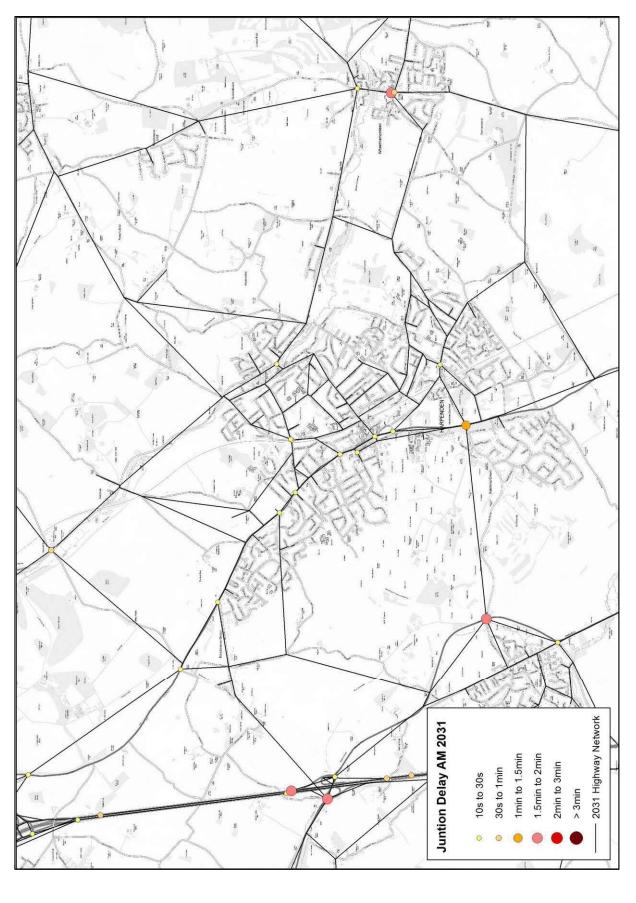
2031 PM Congestion - St Albans



2014 AM Junction Delays - Harpenden



2031 AM Junction Delays - Harpenden

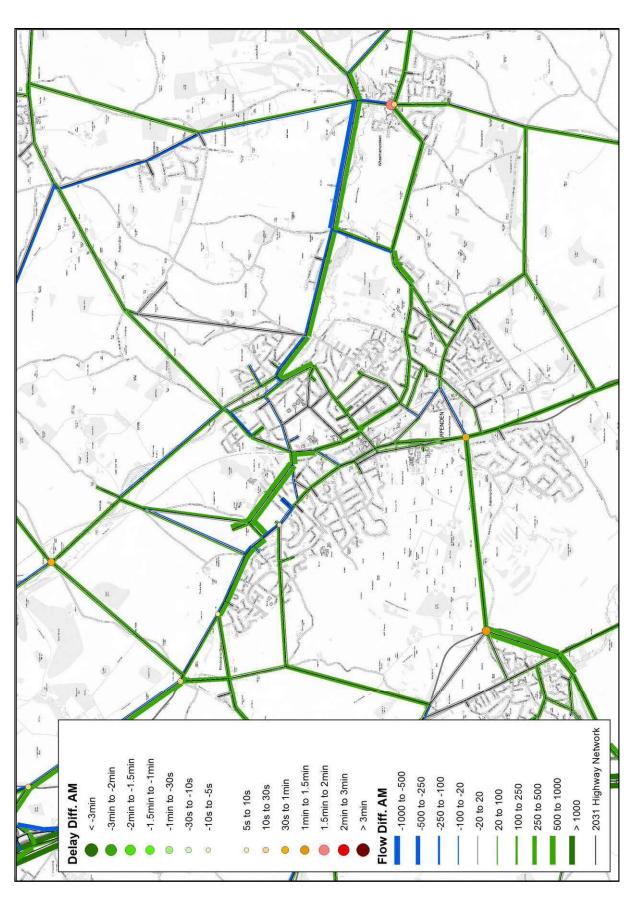


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2031 Highway Network

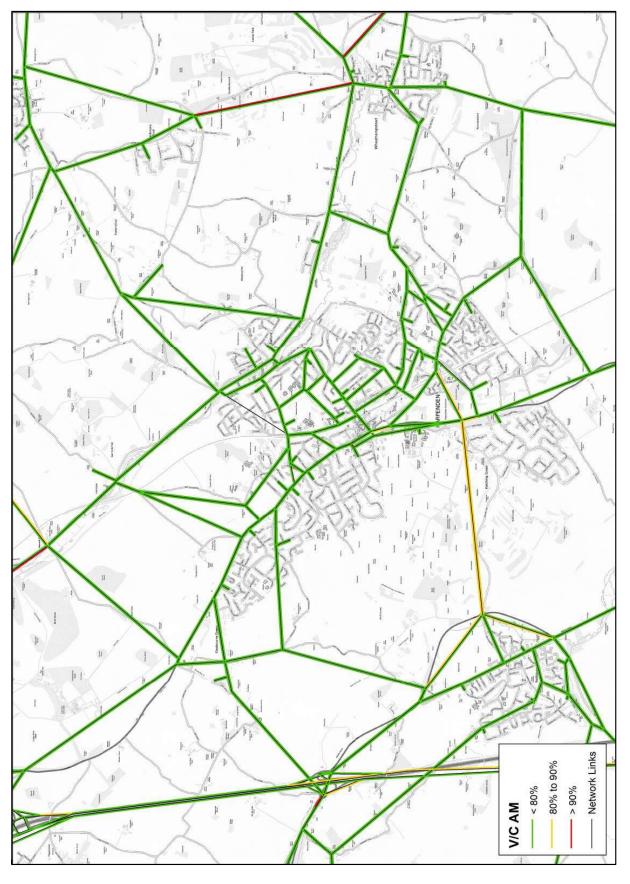
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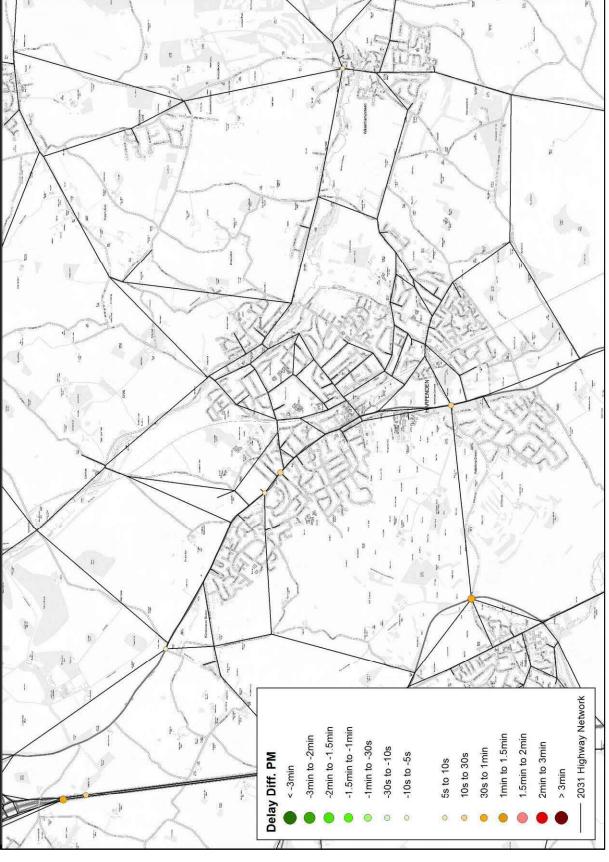
2014-31 AM Junction Delay and Flow Differences - Harpenden

June 2017

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2031 Impact Summary

- 2031 DM Scenario highlights the increased delay at junctions and congestion expected on all routes into St Albans. Key delays on the "ring road" are impacting route choice and flows.
- Impacts in Harpenden not as large but smaller delays start to occur at most junctions along A1081 Luton Road
- Highlights the possible need to consider east-west movements into St Albans/Harpenden from Hemel and Redbourn
- The impact of congestion on the A1 may induce rat running in eastern St Albans

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 Congestion at the Wheathampstead Roundabout and links from Redbourn should be monitored

