

Hertfordshire COMET:

TN 07 – Pattern of Travel across Hertfordshire



Executive Summary

ES1. This Report

In early 2015 Hertfordshire County Council (HCC) commissioned AECOM to develop a countywide multi-modal transport model: The Hertfordshire **C**ounty **M**odel of Transport (referred to as COMET from here on in this document) with the key principles for model development being set out as part of the “COMET Model Specification Report”.

This report is the short-term outcome from the development of COMET. Although the Highway and Public Transport assignment models are still being produced, the various data sources used to inform model development have been reviewed to provide an understanding on the current travel patterns across Hertfordshire.

This executive summary is intended to provide a short overview of the conclusions from the report by drawing together the findings from all the relevant data sources and discuss some potential policy and infrastructure solutions to cater for these travel patterns. In order to understand how we have reached our conclusions it is suggested that the reader takes time to read the entire document which reviews each data source in turn.

ES2. Data Sources

No single data source can provide a complete picture on the travel patterns in Hertfordshire. Therefore this report will draw upon the following data sources:

- 2011 Census Journey to Work data (JTW);
- Hertfordshire 2012 Household Travel Survey;
- LENNON rail ticket sales data;
- Electronic Ticket Machine data from bus operators; and
- Mobile phone origin-destination data.

ES3. Travel Patterns Across Hertfordshire

Mode Shares

The 2011 Census Journey to Work data has been the main data source for developing an understanding for (home-based work trips) mode share within Hertfordshire. The 2011 Household Travel Survey has also provided some insight. The key findings regarding mode share for travel across the county are as follows:

- Car is the main mode of travel for trips in Hertfordshire;
- The one exception is for trips from Hertfordshire into Central London which is predominantly undertaken by rail;
- Bus use is highest for trips within Stevenage – this is supported by findings from bus ticket sales data;
- The inter-urban trip with the highest mode share for bus is between St. Albans and Hatfield although this is still relatively low at approximately 10%;
- Walk and cycle mode share is highest for internal trips within relatively small / dense urban areas such as Baldock and Hertford; and
- The proportion of Hertfordshire residents who stated that they work from home in the 2011 Census is highest in rural areas.

Key Flows

The rest of this section focuses on the key travel corridors identified in the main report.

A1 Corridor

The A1 corridor represents the major internal flow for trips in Hertfordshire with Welwyn to Hatfield being within the top 10 for all JTW trips with a Hertfordshire origin. Flows are considerable between Baldock – Letchworth – Hitchin and Stevenage in both directions which are likely to be putting pressure on junction 8. In addition there is a significant commuting flow from Stevenage to Welwyn Garden City resulting in congestion issues around the junction 7 area. Reviewing the OD totals for areas to the north and south of the corridor suggests the proportion of strategic through trips on this corridor is quite low.

Despite being relatively well connected by the East Coast mainline rail corridor the majority of the JTW trips on this corridor are by car. This can be explained by the fact that journeys by public transport take considerably longer time than if the same journey was done by car. The journey planning feature from Traveline South East & Anglia has been used to obtain journey

times using public transport between particular destinations. This data has been obtained for journeys departing at 08:00 for a week day in September.

The main issue here is the connectivity of intra-urban public transport to the rail stations in urban areas (e.g. public transport links to Stevenage station). In addition major employment sites are located on the edge of urban areas away from town centre rail stations in areas more easily accessible by car (e.g. Mundells/Shire Park).

Table 1: A1 Corridor Journey Time Analysis (Departing at 8am)

Route	Direction	Car Journey Time	PT Journey Time
A1(M)	Northbound	26 mins	N/A
A1(M)	Southbound	33 mins	N/A
A602	Hitchin to Stevenage	15 mins	37 mins
A1000 – Chequers	Hatfield to Mundells/Shire Park	13 mins	30 mins
A1(M)	Stevenage to Mundells/Shire Park	18 mins	56 mins

East-West Corridor

The East-west corridor represents the A414, A602 and A120. The flows along this corridor have been found to be strongest between Hemel Hempstead / Watford – St Albans - Welwyn / Hatfield. Flows further east on the corridor are not as strong with Hertford and Ware being found to have stronger relationships with London, Cheshunt and Hoddesdon. Despite this, there is still a reasonable amount of people commuting from Stevenage to Hertford (+500 trips) and from Hertford to Welwyn Garden City (+800 trips). All commuting trips along this corridor are mainly undertaken by car.

Table 2 highlights that there is a significant gap in public transport provision along this corridor with only the journey time between Hertford and Welwyn Garden City being relatively comparable with car. The rest of the journeys reviewed are found to be significantly longer by public transport. The journey planning feature from Traveline South East & Anglia has been used to obtain journey times using public transport between particular destinations. This data has been obtained for journeys departing at 08:00 for a week day in September. It is felt that the level of strategic flows on this East to West corridor through Hertfordshire is quite low.

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Table 2: East-West Corridor Journey Time Analysis (Departing at 8am)

Route	Direction	Car Journey Time	PT Journey Time
A414	Hemel Hempstead to Hertford	38 mins	+ 2hours
A414	Hertford to Hemel Hempstead	38 mins	+ 2hours
Sandpit Lane	St Albans to Hatfield	16 mins	30 / 40 mins
B1000	Hertford to Welwyn Garden City	16 mins	20 mins
A602 / A120	Stevenage to Bishop's Stortford	35 mins	1 hour 35 minutes

M1, A41 and M25 Triangle

This triangle contains the towns of St Albans, Watford, Harpenden, Hemel Hempstead and also Luton & Dunstable just to the north of Hertfordshire. Although the main OD pairs from these urban areas are to central London, there is a considerable level of commuting trips within this triangle. Data has revealed over 2,000 people commuting from Hemel Hempstead to Watford and just under a 1,000 people commuting in the opposite direction. Luton & Dunstable is also a major source of commuting to the triangle of which the majority of trips are undertaken by car. The journey planning feature from Traveline South East & Anglia has been used to obtain journey times using public transport between particular destinations. This data has been obtained for journeys departing at 08:00 for a week day in September.

Table 3: M1, A41 and M25 Triangle Journey Time Analysis (Departing at 8am)

Route	Direction	Car Journey Time	PT Journey Time
Luton to Maylands Business Park	Southbound	23 mins	1 hour 5 mins
Hemel Hempstead to St Albans	Adeyfield to St Albans town centre Via Redbourn	20 mins	40 mins
Hemel Hempstead to Watford	Via M1 / Bus and Train	22 minutes	1 hour

A10 – M11 Corridor

Finally the A10 / M11 corridor has been found to be quite isolated from the rest of the county. The major flow from this corridor is to central London (by rail) whilst the major internal flows are between Hertford – Hoddesdon – Harlow and Cheshunt. There is also a significant level of commuting trips into Hertfordshire from Enfield and the external east area. Commuting patterns from Bishop's Stortford are predominantly to central London (by rail) and Stansted Airport (by car). Considering the interaction this corridor has with north London and Essex, it is recommended any proposed Growth and Transport Plan for this area is developed in collaboration with the neighbouring authorities. The journey planning feature from Traveline South East & Anglia has been used to obtain journey times using public transport between particular destinations. This data has been obtained for journeys departing at 08:00 for a week day in September.

Table 4: A10-M11 Corridor Journey Time Analysis (Departing at 8am)

Route	Direction	Car Journey Time	PT Journey Time
A10	Cheshunt to Royston	40 / 55 mins	1 hour 40 mins
Cheshunt to Hoddesdon	Northbound	9 – 12 mins	25 mins
Bishops' Stortford to Stansted Airport	Dunmow Road	12 – 16 mins	35 – 45 mins

Travel and activity synergies between cities/towns

Travel and activity synergies between cities and towns is shown in **Figure 1**:

- **A1 Corridor North:** Baldock – Letchworth – Hitchin to / from Stevenage
- **A1 Corridor South:** Stevenage to Welwyn Garden City, Welwyn Garden City to / from Hatfield
- **East-West:** Ware to Hertford, St Albans to / from Hatfield – WGC, Hertford to WGC
- **“Western Diamond”** : Hemel Hempstead – St Albans – Watford, Trips from Luton & Dunstable
- **Hertfordshire to Central London:** Along main rail corridors,
- **North London Boroughs to / from Hertfordshire:** Harrow – Watford, Borehamwood – Barnet, Cheshunt – Enfield
- **Luton & Dunstable to Hertfordshire:** To Western Diamond, Stevenage and Welwyn Garden City

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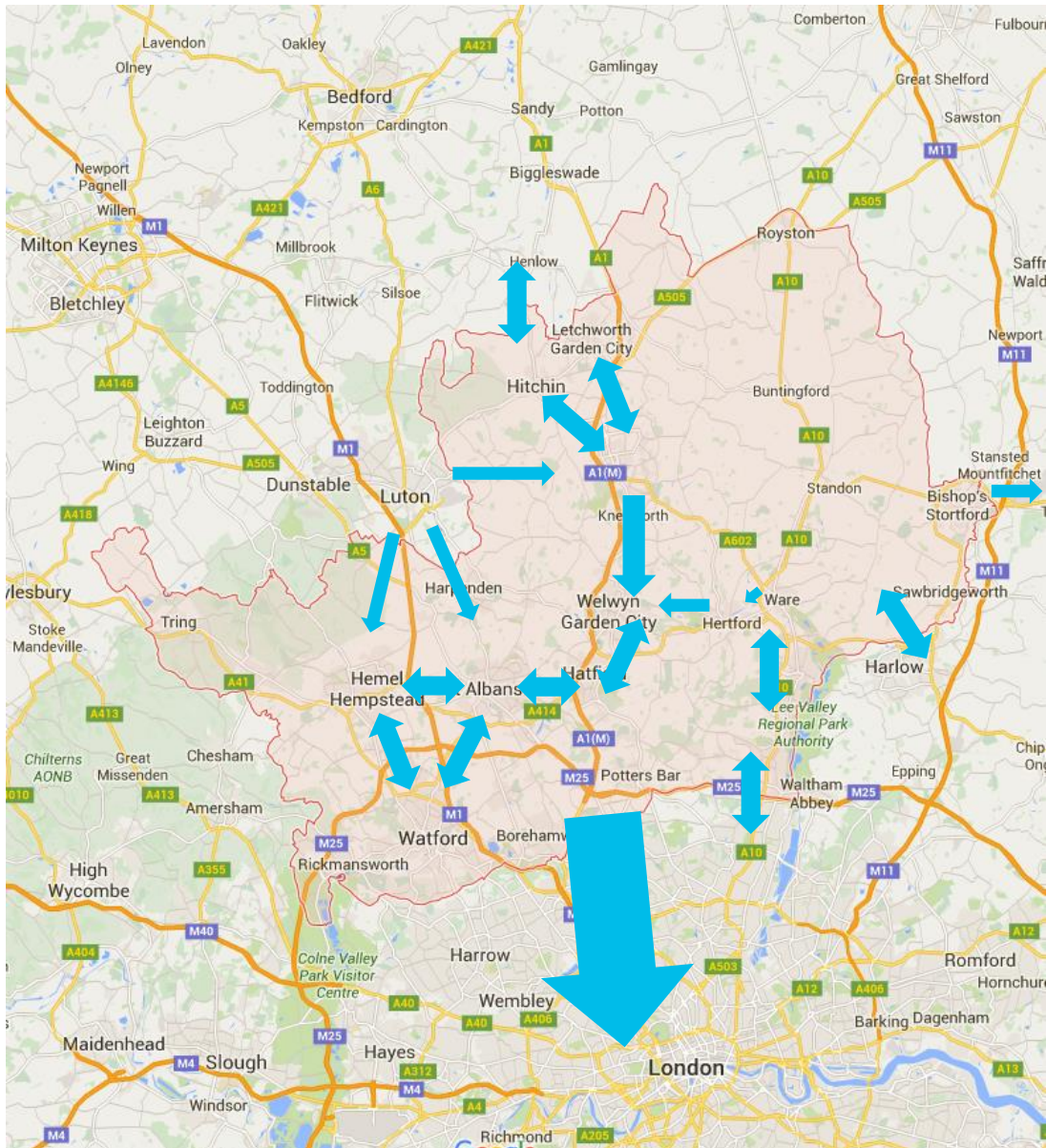


Figure 1: Activity and travel synergies between cities/towns in Hertfordshire

ES4. Key Issues and Focus Area

The findings from this work suggest that the main issues resulting from current travel patterns in Hertfordshire are as follows:

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- Car is by far the dominant mode for both inter-urban and intra-urban trips (trips into Central London are the only exception);
- On corridors which are connected relatively well by rail there is still a high mode share for car. This may be due to high rail fares or over-crowding due to the large volumes of people commuting into London but is something that should be investigated further;
- Towns centres on a corridor may be well connected by rail but actual employment sites such as Mundells/Shire Park and Maylands are located in areas which are better accessed by car for inter-urban trips; and
- Some cities/towns with considerable movements between them are poorly connected by public transport thus making it significantly more attractive to travel by car.

It is clear that significant improvements will need to be made to both intra and inter-urban public transport services as well as adopting a land-use planning policy which ensures that development is located / focused around the provision of high quality public transport services. In addition, there appears to be some considerable scope for promoting cycling as an alternative to the car for intra-urban commuting trips. All of this will be vital if Hertfordshire is to reduce its current reliance on the car.

We have also identified that the main flows within Hertfordshire focus along the A1 and East-West corridors and also the A41, M11 and M25 triangle. Therefore, any Growth and Transport Plan developed for these areas should consider the linkages these areas have with each other. A high-level representation of the flows (in the AM peak period) through Hertfordshire is displayed in the following figure:

Capabilities on project:
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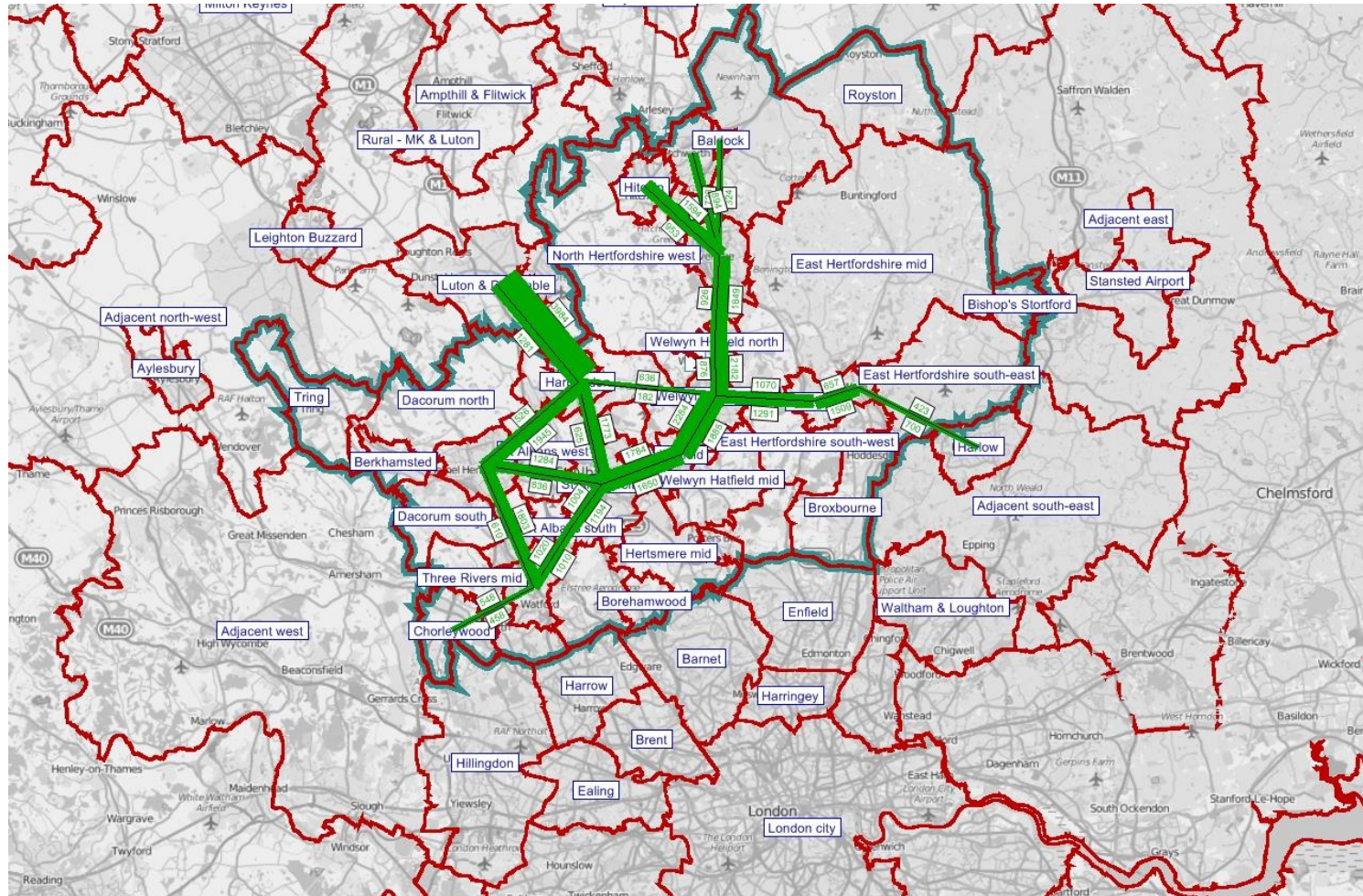


Figure 2: Hertfordshire Curve Corridor Flows – Mobile Phone Data – AM – Home Based Work Outbound¹

¹ Flows provided between MSOA Sectors; actual routing not provided

ES5. Policy and Infrastructure Options

The following table summarises the available options for addressing the current issues associated with the patterns of travel in Hertfordshire. This table looks at the possible pros and cons of each option as well providing a high level assessment on whether such options could be implemented within the short, medium or long term.

Table 5: Policy and Infrastructure Options

Option	Pros	Cons	Timescales
Expand junction capacity at congestion hotspots	Reduce congestion and improve journey time reliability	Further reinforce county's reliance on the car – may be unsustainable in future years	Short
Expand highway capacities along key corridors (road widening, by-passes etc.)	Provide additional capacity to reduce congestion	Further reinforce county's reliance on the car Significant new road building may be met with opposition Would require significant land take in town centres	Medium
Investigate joint-working with adjoining authorities where travel interactions are significant (e.g. London)	Collaborative working and joint-funding of schemes which can benefit both authorities	N/A	Medium
Review Land Use Policies	Adopt a strategy that ensures Hertfordshire's growth is planned in a sustainable way by enabling growth which supports the use more sustainable modes	Existing employment sites are well established – will have to improve public transport provision to these	Medium
Work with bus operators to provide enhanced services between key ODs	Provide a 'missing' public transport link between key commuting ODs	Initial work required to demonstrate to operators the commercial potential of running such services	Short
Lobby rail operators to provide cheaper fares for non-London Hertfordshire trips	Potential to provide mutual benefits in increased demand / revenue for operators whilst taking car trips off Hertfordshire's congested road network	Hertfordshire has no control over the rail services within the county Operators may be unwilling to alter fares whilst in the middle franchise contract	Medium
Enhance public transport integration for inter- and intra-urban travel	Improve access to stations to ensure rail becomes a viable mode with competing road corridors	At present HCC has minimal control over public transport services in the county	Medium / Long
Provide greater bus priority on key routes	Improve performance of bus journey times vs. car. Encourage modal shift thus reducing congestion and delays	Bus priority likely to come at a cost to general traffic without extensive infrastructure build	Medium / Long

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Option	Pros	Cons	Timescales
Expand public transport infrastructure (e.g. New rail links, tram, guided bus lanes)	Help provide a genuine alternative to using the car within Hertfordshire	High construction costs	Long
Implement a Work Place Parking Levy ²	Provide funding for public transport schemes. Incentive for employers to manage and potentially reduce their workplace parking	May meet opposition from business leaders. Would require considerable public consultation	Long

² For an example see Nottingham Work Place Parking Levy:
<http://www.nottinghamcity.gov.uk/whatisaWPL>

ES6. Next Steps

The aim of this report has been to identify the main patterns of travel across the county of Hertfordshire. The findings from this report can help decision makers identify their initial transport priorities and solutions.

HCC are currently in the process of developing and prioritising their Growth and Transport Plans (GTP). The findings from this report should help in informing each GTP and prioritise the order in which these are developed. **Figure 3** provides the recommended geographical location of the potential GTPs. These have been drawn from the findings from this report.

Table 6 provides a list of the GTPs in the order that AECOM believe are a priority for HCC. This table also provides some discussion on the available evidence from this report that the GTPs can make use but also some additional questions the GTPs should seek to address.

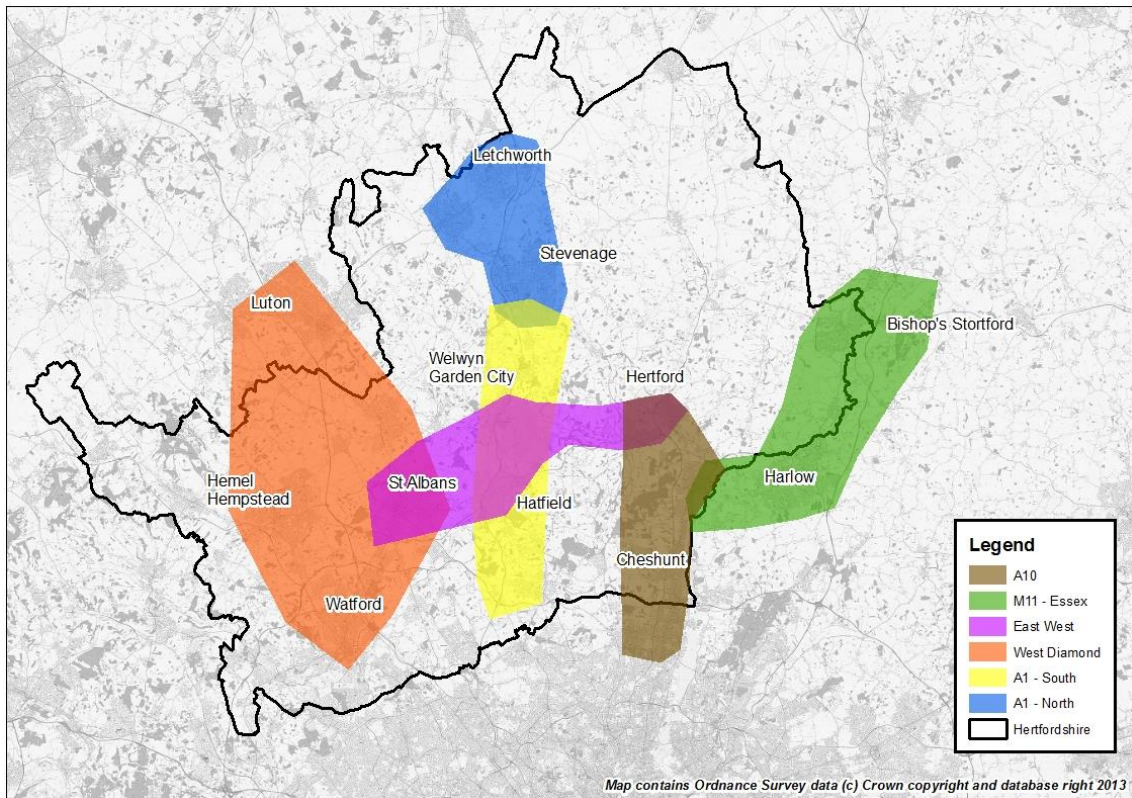


Figure 3: Recommended Location of Growth and Transport Plans

Table 6: Further Studies (Growth and Transport Plans)

Area of Focus	Evidence Available from Report	Questions that need answering
A1 Corridor – Stevenage and North	<ul style="list-style-type: none"> • Main O/Ds • Mode Shares • Route Journey times 	<ol style="list-style-type: none"> 1. What are difference in journey times by mode between the key origin destinations within the Growth and Transport? 2. How accessible are the rail stations within each Growth and Transport? 3. Can additional public transport corridors be provided? 4. What is the level of parking provision at key destinations? 5. Are employment sites adequately served by public transport? 6. Are there any bus priority opportunities? 7. Can cycle provision be improved for short trips?
A1 Corridor – Stevenage and WGC / Hatfield		
Luton – St Albans – Harpenden – Watford Diamond		
East-West Corridor		
A10 Corridor		
M11 & Essex		