TECHNICAL NOTE

Huntingdonshire Strategic Transport Strategy

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Phase 2 Technical Note

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1. Introduction

1.1 Context

The Huntingdonshire Local Plan to 2046 is currently being prepared for submission in 2026. Following National Planning Policy Framework (NPPF) and National Planning Policy Guidance (NPPG), it is imperative that local planning authorities develop a robust transport evidence base to support the preparation and review of their Local Plan.

Huntingdonshire and the wider Cambridgeshire region has a growing population, and targets are in place for the development of new homes and commercial space in the district between the present year and 2046. These are to be delivered by the development of new housing and employment sites as well as retail and wider ancillary facilities to support them. Such development requires robust transport infrastructure to be sustainable, to ensure efficient movement of people and goods, and to enable further housing and economic growth across Huntingdonshire.

This Technical Note has been prepared by AtkinsRéalis, who have been commissioned by Huntingdonshire District Council (HDC) to deliver a Strategic Transport Study for Huntingdonshire.

The purpose of the Strategic Transport Study is to inform the development of the Huntingdonshire Local Plan to 2046. The study will:

- Identify and test the transport implications of development across four potential development strategies;
- Recommend the most sustainable development strategy in transport terms for delivering the homes and employment required during the Local Plan period;
- Highlight where there are opportunities for increasing the usage of sustainable transport modes;
- Identify and cost where amended or additional transport infrastructure is required to mitigate the predicted impacts of each potential development strategy; and
- Form the basis of a district-wide transport strategy that mitigates the transport implications of the chosen development strategy.

The study is being conducted in three phases:

- **Phase 1:** Preferred Options testing for the Draft Local Plan (Completed in June 2025)
- **Phase 2:** Finalisation of the Preferred (Hybrid) Option
- **Phase 3:** Proposed Submission Local Plan

During Phase 1 of testing, four spatial strategies were tested by AtkinsRéalis to analyse various quanta and distributions of development throughout the District. The four strategies were defined as follows:

- *Spatial Strategy 1* with a strong focus on existing towns and cities;
- *Spatial Strategy 2* focussing on sustainable locations well served by public transportation, employment, and infrastructure (i.e., market towns and service centres);
- *Spatial Strategy 3* with dispersed development to support existing settlements; and

- *Spatial Strategy 4* developing freestanding strategic sites with limited dispersed growth.

As part of Phase 1, the four strategies were assessed against the draft objectives of the Huntingdonshire Local Plan as well as a variety of criteria focused on development potential and its impact on the transport network. It was found that of the four strategies assessed, Strategy 2 performed most favourably in transport terms with Strategy 3 performing the second most favourably. This was due to a variety of factors, including:

- Lower overall growth quantum, resulting in reduced travel demand and fewer vehicle trips.
- A more even distribution of growth between strategic and non-strategic sites, helping to avoid over-concentration of demand in specific locations.
- A better balance between the number of jobs and resident workers, supporting higher levels of internal trip-making within Huntingdonshire and reducing pressure from out-commuting.

For further information on Phase 1 and its conclusions, please refer to the previously issued Phase 1 technical note[1].

The conclusions of Phase 1 determined that there was potential to develop a refined 'hybrid' strategy, combining the strongest-performing elements of multiple strategies to achieve a better balance of housing and employment, maximise internal trip-making and reduce reliance on external commuting journeys. This hybrid strategy aims to optimise the benefits of Strategy 2 by including complementary sites from the other strategies to meet local plan targets as part of Phase 2: Finalisation of the Preferred (Hybrid) Option.

A high-level summary of the Phase 2 objectives is outlined below:

- **Defining the Hybrid Strategy**: Developing the composition of the hybrid strategy by combining the strongest-performing elements of Strategy 2 with complementary elements from other strategies (such as selected non-strategic sites from Strategy 3) and understanding those that align best with the strategic objectives as outlined within the MCAF preparing during Phase 1.
- **Refinement of a Hybrid Strategy specific mitigation package**: A tailored mitigation package of transport interventions to improve the transport network which will accommodate the quantum of development identified within the hybrid strategy, through refinement of individual measures proposed at Phase 1 and the introduction of more strategic-level interventions.
- **Scenario testing of the Hybrid Strategy**: The transport impacts of the hybrid strategy (with and without mitigation) were assessed using the Cambridge and Peterborough Combined Authority Model (CaPCAM), focusing on network performance, and demand patterns.

1.2 Structure of this document

The remainder of this report is structured as follows:

- *Section 2* introduces the sites included as part of the Hybrid Strategy, highlighting changes made between this and the original Spatial Strategy 2;

[1] '*Hunts STS Phase 1 Technical Note_v1.0.pdf*'

- *Section 3* summarises findings from the Do-Minimum CaPCAM model testing of the Hybrid Strategy;
- *Section 4* presents the identified package of transport mitigations;
- *Section 5* considers the results of the Do-Something CaPCAM model testing of the Hybrid Strategy and the modelled impact of the mitigations;
- *Section 6* details the additional sensitivity testing undertaken using CaPCAM; and
- *Section 7* draws the report to a conclusion.

2. Proposed Development Strategy

In Phase 1 of testing, AtkinsRéalis considered four separate spatial scenarios to determine their alignment with the relevant emerging Local Plan strategic objectives defined by HDC under the 'Travel transformed' theme, which are set out below:

- *Provision of high-quality digital infrastructure and co-locating homes, jobs, and local services will reduce the need to travel* (objective 1 for the purposes of the Multi-Criteria Appraisal Framework (MCAF)).
- *Realistic alternatives to private car use will exist to encourage walking, cycling, wheeling and use of public transport* (objective 2 for the purposes of the MCAF).

The Hybrid Strategy has been developed based upon Spatial Scenario 2 from Phase 1, with some changes due to the deliverability of certain sites as well as the addition of some smaller, non-strategic sites, to ensure the strategy continues to provide the required quantum of dwellings and employment. Spatial Scenario 2 performed the best in Phase 1 modelling primarily due to its dispersed spread of sites around the district and relatively minimal impact on the highway network compared to the other scenarios tested.

Strategic site 11 (*Land East of St Neots*) was removed due to a significant portion of the site being identified as being located within the defined safeguarding zone for the proposed East-West Rail (EWR) scheme. In place of this site, strategic site 10 (*The Lattenburys*) has been added to the Hybrid Strategy to maintain a similar level of provision for dwellings and employment.

A list of the strategic sites included as part of the Hybrid Strategy is provided below in Table 2-1. This selection of strategic sites to include in the Hybrid Strategy was agreed through further discussion with HDC. The locations of these sites are shown in Figure 2-1.

Table 2-1 - Strategic sites included as part of the Hybrid Strategy

Site ID	Strategic Site	Number of Dwellings	Number of Jobs
7	Lodge Farm	4,989	2,040
9	Wyton Airfield	4,491	2,188
10	The Lattenburys	3,824	1,689
12	Land North of A141	-	3,439
	Total strategic allocation	***13,304***	***9,356***

Several smaller non-strategic sites have also been identified and included as part of the Hybrid Strategy as a way to complement the District-wide growth, mostly located away from the major towns in Huntingdonshire. A list of the non-strategic sites included as part of the Hybrid Strategy is shown in Table 2-2, with these being mapped in Figure 2-2.

Figure 2-1 - Strategic sites by land use

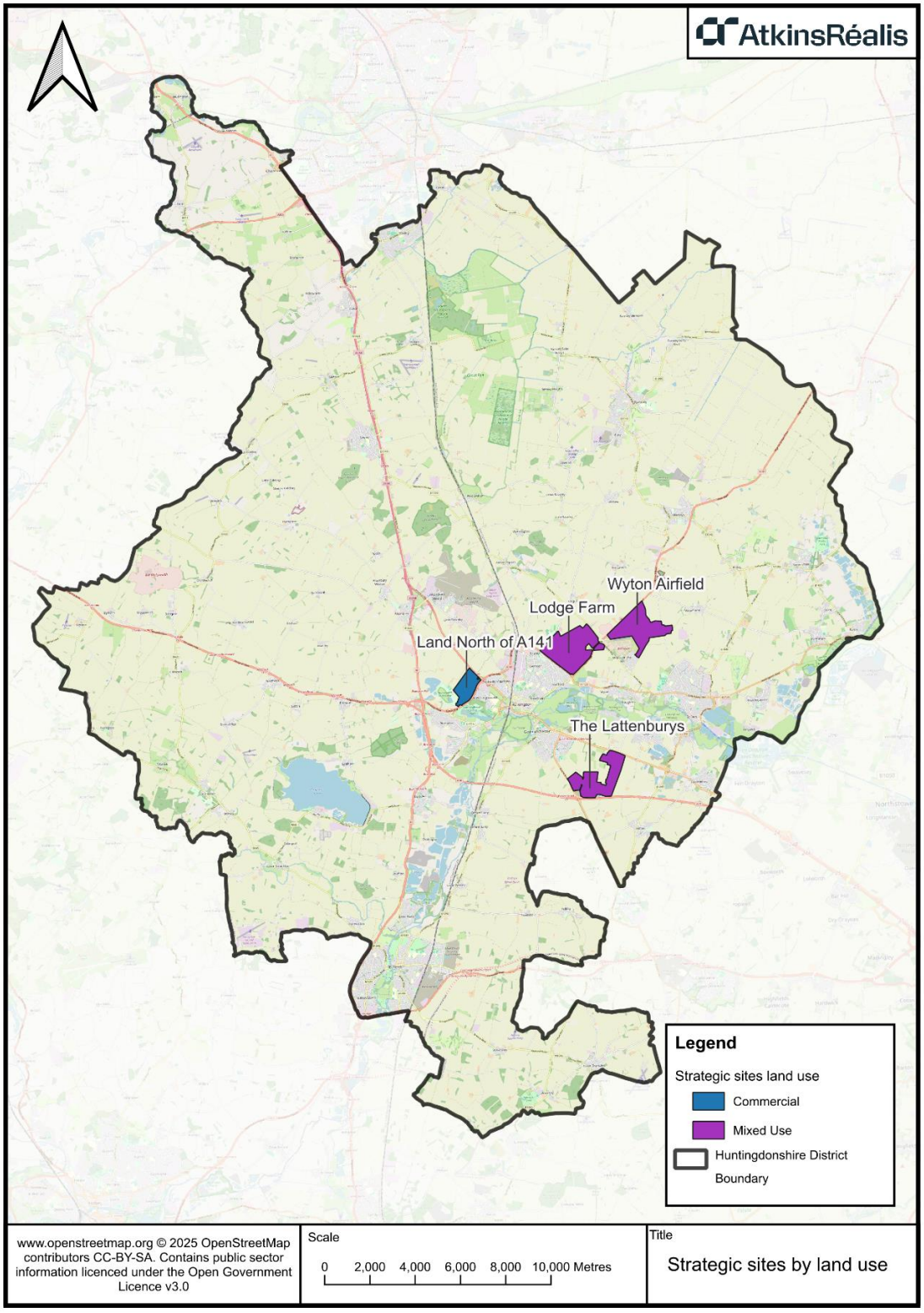
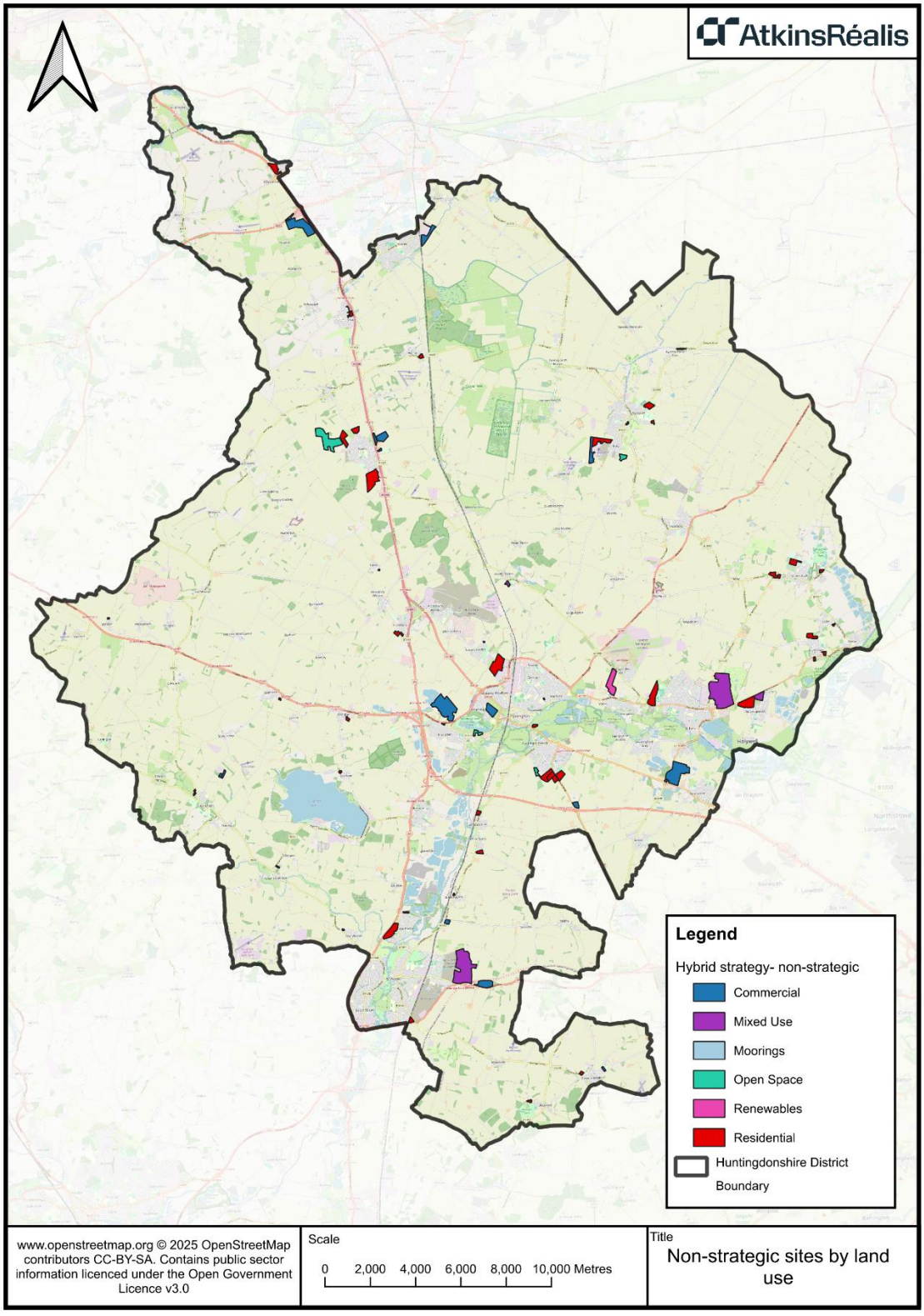


Table 2-2 - Non-strategic sites included as part of the Hybrid Strategy

Non-strategic Site	Number of Dwellings	Number of Jobs
Gifford's Park, St Ives	1,828	743
Land East of Loves Farm (aka *Tithe Farm Extension*), St Neots	1,097	554
Land to the East of St Judith's Lane and West of Toll Bar Way and Green End Road, Sawtry	607	-
Land North East of Ermine Street, Huntingdon	594	-
Land West of Little Paxton	410	-
Land to the North of Houghton Road, St Ives	357	-
Land to the West of Glatton Road, Sawtry	328	-
Land West of London Road and South of Stokes Drive, Godmanchester	220	-
Dexters Farm, Godmanchester	214	-
Land South of Station Road, Needingworth	189	-
RAF Upwood (Phase 3), Bury	172	-
Land East of Glatton Road and North of Brookside Industrial Estate, Sawtry	170	-
Land North of 23 to 33 Oundle Road, Alwalton	167	-
Residential sites smaller than 150 dwellings	1,560	-
Galley Hill, Fenstanton	-	2,095
Land West of A1, South of Peterborough Motorway Services	-	1,700
Eagle Business Park (Phase 3), Yaxley	-	914
North of Wintringham Hall, St Neots	-	814
Former Motorway Compound Site, North of A1198 Roundabout, Godmanchester	-	771
Huntingdon Racecourse, Brampton	-	747
RAF Upwood (Phase 4), Bury	-	588
Land at Little Common Farm, Sawtry	-	417
Land South East of Bicton Industrial Park, Kimbolton	-	309
Land North of Harley Industrial Park, Paxton Hill	-	303
Employment sites providing fewer than 200 jobs	-	655
Mixed-use sites smaller than 150 dwellings providing fewer than 200 jobs	115	118
Total non-strategic allocation	***8,028***	***10,728***

Figure 2-2 - Non-strategic sites by land use



Further to those highlighted above in Table 2-2, there are several non-strategic sites allocated to uses other than residential or commercial. Glebe Farm (Sawtry), Land off Chevrill Lane (Bury), Land East of Silver Street (Godmanchester) and Land off Huntingdon Road (Brampton) are designated to be secured as open space for recreation and environmental conservation. Moorings are to be constructed at Ramsey Forty Foot, and a parcel of land at Ruddles Lane (Wyton) is to be reserved for renewable energy generation.

Full build-out of sites associated with the Huntingdonshire Local Plan Hybrid Strategy includes 21,332 dwellings and sufficient commercial provision to support 20,084 jobs. Dwellings are primarily allocated to be built in strategic sites, whereas commercial space is more evenly distributed between strategic and non-strategic sites.

3. Technical Modelling (Do-Minimum Scenario)

3.1 Introduction

This chapter summarises the technical modelling work undertaken to assess the Hybrid Strategy, in particular the creation and assessment of the Do-Minimum (DM), without mitigation scenario. Exploration of further technical modelling work undertaken to generate the Do-Something (DS) scenario (with mitigation schemes represented and implemented) is detailed in Section 4.5. Additional sensitivity tests focused on the completion of the proposed EWR scheme as well as the A141 Core Scheme and are summarised in Section 6.

3.2 Methodology

3.2.1 CaPCAM Reference Case

The CaPCAM Reference Case scenario was generated to understand and set out the levels of growth between the base year and 2046 (the forecast scenario testing year) that is already committed and not associated with this Local Plan development strategy. This scenario acts as a baseline from which it is possible and appropriate to observe the changes to the transport network attributable to the growth associated with the proposed Huntingdonshire LP Hybrid Strategy.

The Reference Case models 90,723 dwellings in Huntingdonshire and a total of 87,334 jobs. The Area of Detailed Modelling (AoDM) within CaPCAM covers the majority of Cambridgeshire and Peterborough, with sparser representations of the network beyond, including in the counties neighbouring Huntingdonshire (Northamptonshire and Bedfordshire).

3.2.2 CaPCAM Huntingdonshire LP DM

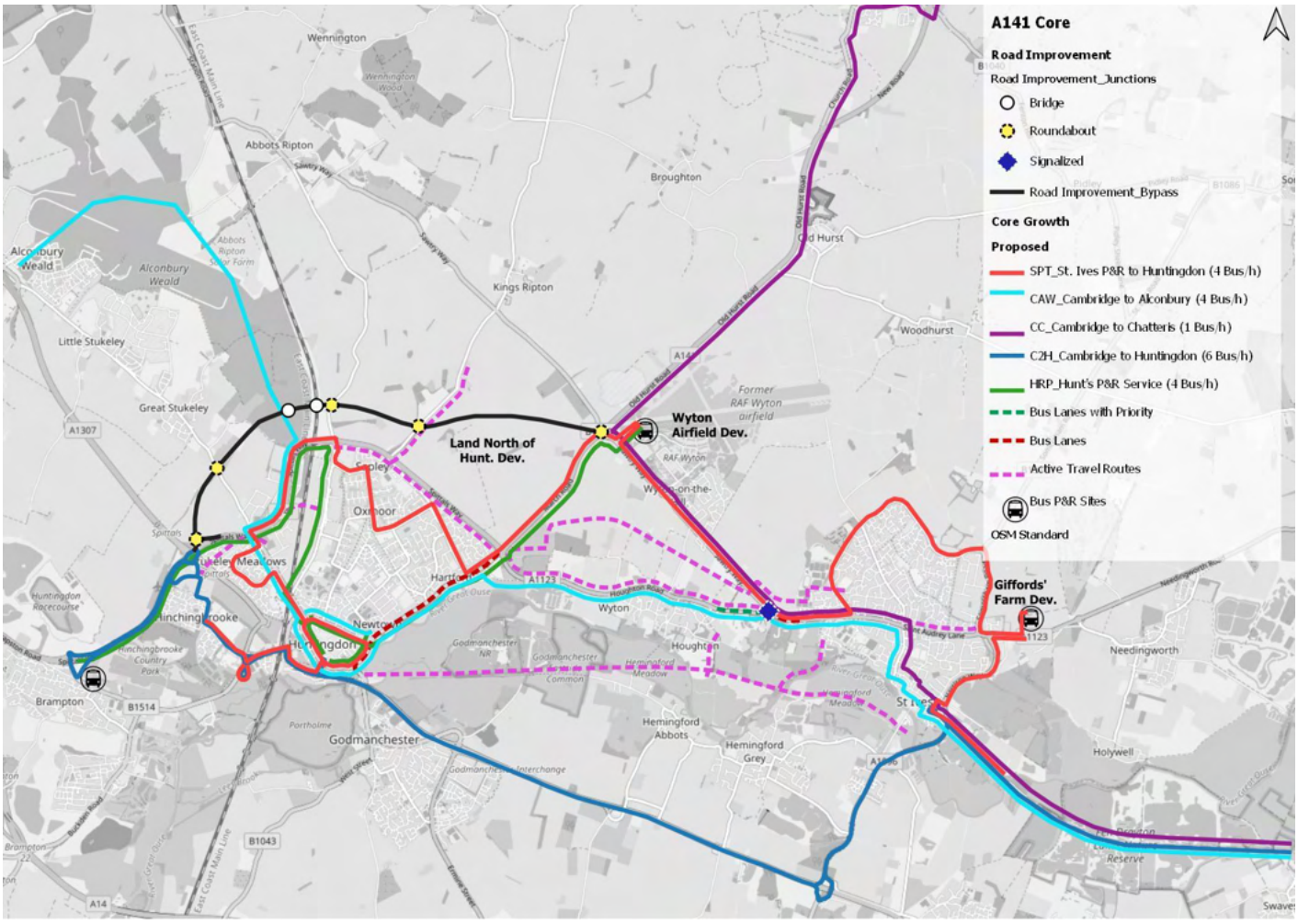
The DM scenario was constructed to test the impact of the growth committed as part of the Huntingdonshire LP Hybrid Strategy *without* additional mitigation to support said development. It is therefore considered as a ‘worst-case’ scenario able to be compared against the Reference Case and utilised to inform the identification of appropriate and reasonable transport mitigation.

Additional dwellings and employment were added on a zonal basis typical of modelling within CaPCAM. Strategic sites (see Table 2-1) were added into their own discrete development zones, with access arrangements loading in an unconstrained manner onto the road network in order to test the highest possible expected vehicular demand from them. New stops were added on existing public transport (PT) services passing strategic sites, and active travel connections were provided to the nearest parts of the active travel network. Non-strategic sites (see Table 2-2) providing upwards of 1,000 dwellings and / or 1,000 jobs were also represented in this way. Smaller non-strategic site allocations were implemented within existing zones.

It was agreed with HDC that, consistent with the Phase 1 modelling, the proposed A141 bypass scheme should be included in the DM given the likelihood of these works being completed by 2046. The scheme represents a key element of the emerging transport strategy for the area, intended to relieve congestion on the existing A141 corridor and improve accessibility between Huntingdon, St Ives, and the wider district.

The scheme comprises a new bypass to the north of Huntingdon, with associated upgrades including new roundabouts, signalised junctions, and road widening in selected sections. In addition to highway improvements, the scheme includes dedicated active travel infrastructure and enhanced public transport connectivity through provision of three new park and ride sites, new bus lanes, and new or upgraded bus services. The full extent of the scheme as coded into the model is shown in Figure 3-1, including all junction treatments and network improvements

Figure 3-1 - A141 Bypass Scheme Design[2]



[2] Details of the proposed A141 and St Ives Improvement Scheme can be found at the Consult Cambs site: https://consultcambs.uk.engagementhq.com/a141-stives (accessed 31/07/2025)

3.3 Results

Table 3-1 and Table 3-2 present total 24-hour trip demand and mode share for Huntingdonshire and its strategic sites under the DM scenario. The results highlight a clear reliance on car travel, with car accounting for 68% of trips district-wide and reaching as high as 91% at Land North of A141. While active modes perform relatively well at Lodge Farm and Wyton Airfield, public transport and Park & Ride usage remain low across all sites despite the addition of three new Park & Ride sites as part of the A141 scheme. The figures indicate that, without intervention, strategic sites are likely to be heavily car-dependent, reinforcing the need for targeted mitigation to improve public transport accessibility and relieve stress on the highway network.

3.3.1 Trips and mode share

Table 3-1 - 24hr trip volumes for Huntingdonshire and strategic sites for the DM scenario (Forecast Year 2046)

Site/district	Active Modes	PT	P&R	Car	Total
Huntingdonshire excluding strategic sites	146,659	29,895	2,750	380,664	**559,969**
Lodge Farm	6,578	614	82	13,960	**21,234**
Wyton Airfield	6,642	644	77	12,645	**20,008**
The Lattenburys	3,551	384	105	11,581	**15,621**
Land North of A141	478	187	11	7,237	**7,913**

Table 3-2 - 24hr mode share split for Huntingdonshire and strategic sites for the DM scenario (Forecast Year 2046)

Site/district	Active Modes	PT	P&R	Car	Total
Huntingdonshire excluding strategic sites	26%	5%	0%	68%	100%
Lodge Farm	31%	3%	0%	66%	100%
Wyton Airfield	33%	3%	0%	63%	100%
The Lattenburys	23%	2%	1%	74%	100%
Land North of A141	6%	2%	0%	91%	100%

3.3.2 Highway assignment

Appendix A presents plots of mean link delay and vehicle flows for the AM (08:00-09:00), Interpeak (IP; average hour 10:00-16:00), and PM (17:00-18:00) peak hour assignments under the DM scenario. Significant delays are evident on roads surrounding Huntingdon, particularly during the AM and PM peak periods. These delays are pronounced along the A141 bypass and near strategic development sites including Lodge Farm and Wyton Airfield to the east, and Land

North of A141 to the west, indicating substantial network pressure and congestion in these areas under the DM scenario. Vehicle flow plots reflect this pattern, with high volumes observed on links experiencing delay, especially along the A141 and A1307 corridors. These routes appear to be under considerable strain, suggesting that without intervention, the existing network may struggle to accommodate future traffic demand, especially during peak periods.

3.4 Further steps

The results of the DM model run of the Hybrid Strategy highlight a number of areas of increased congestion beyond the limits of what can be considered reasonable. These results have been utilised by the transport planning team to develop a comprehensive mitigation strategy, which is detailed and explored in the following section.

4. Proposed Mitigation Package

4.1 Context

The overall aim whilst developing the proposed mitigation package was to ensure the creation of a joined-up network which facilitates the sustainable movement of people whilst also reducing the scale of delays observed on the highway network in the DM model runs. The mitigations proposed do this by improving the convenience and accessibility of public and active modes, thereby encouraging modal shift and reducing the number of private vehicles on the highway network (particularly at peak times). In cases where no alternative was considered sufficient to appropriately mitigate the issues identified, changes to the highway network have been made directly (i.e., the introduction of traffic signals at a particular junction, or increased capacity) to attempt to fix or alleviate particularly notable pinch points.

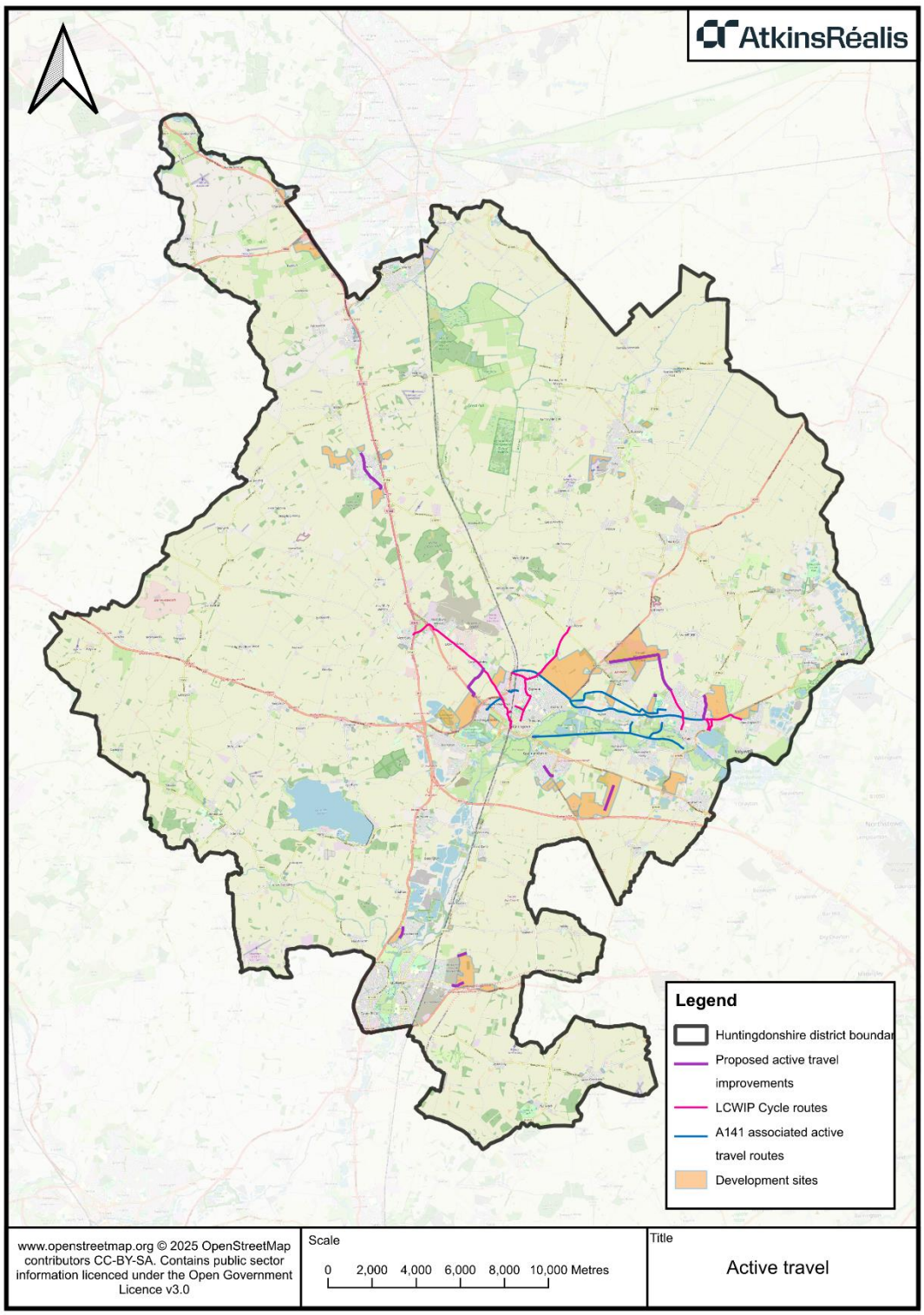
In cases where mitigation measures cannot be accurately represented in a strategic transport model, they have been excluded. An example of this is a small-scale intervention such as walk and cycle connections between minor roads not captured in the model, or improved signage at a junction.

4.2 Active travel interventions

Active travel facilitates the shortest journeys (reasonable cycling distance is considered as up to 5 miles) and, despite the rural nature of Huntingdonshire, could support some journeys between towns, villages, and service centres located near to each other as well as internal trips. Active travel mitigations focused on central Huntingdonshire as the most highly developed and dense area of an otherwise mostly rural District. Mitigations proposed as part of this package are supported by several other proposals already being considered by HDC, such as Local Cycling and Walking Improvement Plan (LCWIP) schemes. Furthermore, the A141 improvement scheme includes several walking / cycling proposals particularly serving journeys between Huntingdon and St Ives. Where possible and sensible, interventions have been planned to feed into an integrated active travel network.

A figure of the active travel package proposed is displayed in Figure 4-1.

Figure 4-1 - Proposed active travel mitigations



4.2.1 LCWIP schemes

In October 2022, Huntingdonshire District Council considered the construction of several cycleways as part of their LCWIP to improve active travel provision within and between villages and towns. The routes of these LCWIP schemes have been interrogated and a number have been identified as directly beneficial for the development and mitigation of the LP. These schemes are:

- *LCWIP scheme 3* - Alconbury to Huntingdon;
- *LCWIP scheme 5* - Sapley to Huntingdon;
- *LCWIP scheme 10* - St Ives (north) to St Ives (centre); and
- *LCWIP scheme 12* - Hartford to King's Ripton.

These schemes were put forward for inclusion as part of the combined mitigation package primarily due to their location and perceived benefit for future users of strategic and non-strategic sites contained within the hybrid package. A number of these schemes also provide good connectivity to other cycleways proposed (see Section 4.2.3), the cycleways associated with the A141 bypass and improvements, and some sporadic existing provisions - particularly in central Huntingdonshire.

4.2.2 A141 scheme-associated cycleways

To supplement the highway aspects of the proposed A141 scheme, a number of active travel routes between and within St Ives and Huntingdon are proposed in order to reduce reliance on the private vehicle to travel between the two market towns. The cycleways introduced as part of this scheme are:

- Hill Rise (St Ives) to Spittals Way / March Road / Houghton Road / Main Street roundabout (Huntingdon)
- St Ives to Huntingdon via Houghton Road
- St Ives to Godmanchester Town Bridge via the Great Ouse meadows
- Spittals Way
- Kingfisher Way (Hinchingbrooke) to Stukeley Road (Huntingdon) via Stukeley Meadows

4.2.3 Other cycleways

To supplement the LCWIP schemes as well as cycleways associated with the A141 (which tend to be longer distance), several additional cycleways have been proposed. These cycleways tend to have one of two distinct purposes: either to connect strategic and non-strategic sites to the rest of the (proposed) active travel network, or to provide a connecting link between other cycleways in order to create a more comprehensive and well-linked network.

The proposed schemes are as follows:

- Lodge Farm internal cycleways with connection to the Pathfinder Long Distance Path on the northern bounds of the strategic site;
- Cycleway or shared-use path parallel to Old Ramsey Road, between St Ives and the Wyton Airfield development;
- Lattenbury Green Corridor, between the proposed Great Lattenbury and South Lattenbury;

- Shared-use path (and other measures invoking a 'quiet road'[3]) in Sawtry;
- Shared-use path on Great North Road, Little Paxton;
- Shared-use path on Somersham Road, St Ives; and,
- 'Quiet road' measures in Godmanchester at London Road, London Street, and Causeway.

Should all of the schemes described above be constructed, journeys between Alconbury and Needingworth would be possible entirely off-road using a combination of the LCWIP and A141 schemes as well as those schemes proposed as part of the Hybrid Strategy, along with existing infrastructure.

4.3 Public transport interventions

A series of public transport schemes comprise a significant portion of the mitigation package. These have been proposed to facilitate some longer-distance journeys (such as between Huntingdonshire and Cambridge) as well as journeys between strategic and non-strategic sites towards their closest town or service centre (i.e., Lodge Farm to Huntingdon, Gifford's Farm to St Ives). Furthermore, some improvements to existing services have been proposed to better serve communities, especially those significantly increasing in size due to proposed development as part of the Local Plan (i.e., Sawtry).

To supplement new and improved bus routes, new bus stops located mainly adjacent to areas of additional development have been proposed.

Finally, there are a number of new bus and guided bus routes associated with the proposed A141 scheme. These include the addition of three Park and Ride sites and a number of routes which utilise the existing Cambridgeshire Guided Busway. Despite some of the new Park and Ride sites being served by the longer-distance timetables to Cambridge, the primary intention of these sites is to facilitate more sustainable shorter-distance journeys to Huntingdon and St Ives, as well as reducing congestion within these highly-congested towns by moving road users to more efficient means of transport for the final stage of their journeys.

A map of the public transport package proposed, including proposals made as part of the A141 scheme, is displayed in Figure 4-2. A map of the individual bus routes proposed as part of the A141 scheme is displayed in Figure 4-3 for reference.

[3] A 'quiet road' (often referred to as a 'Quiet Lane') is a designated minor rural route intended to prioritise the safety and enjoyment of walkers, cyclists, horse riders and the mobility-impaired. These roads are designed to maintain the character and tranquility of rural areas by encouraging shared use and reducing the speed of motor vehicles.

Figure 4-2 - Proposed public transport mitigations

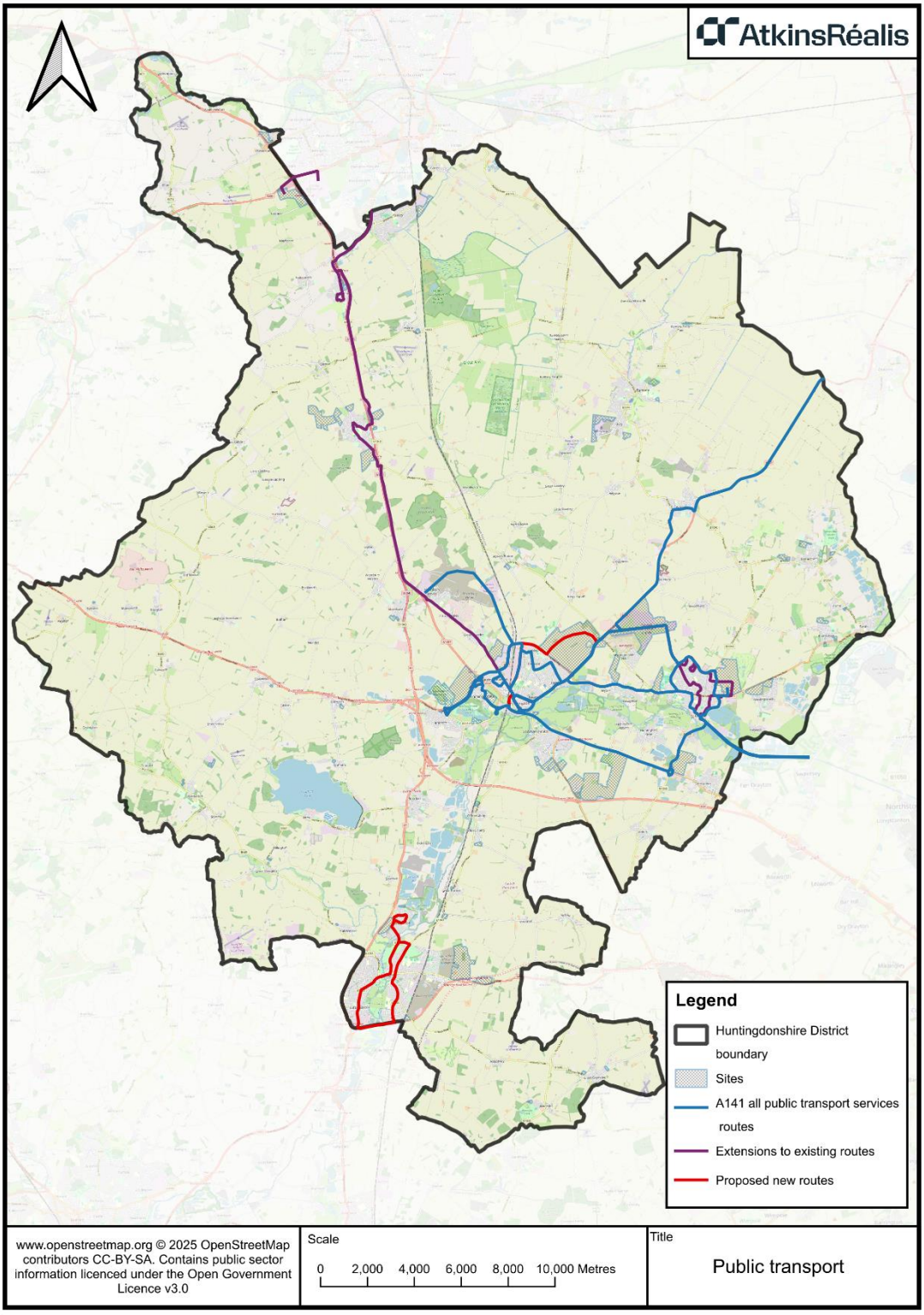
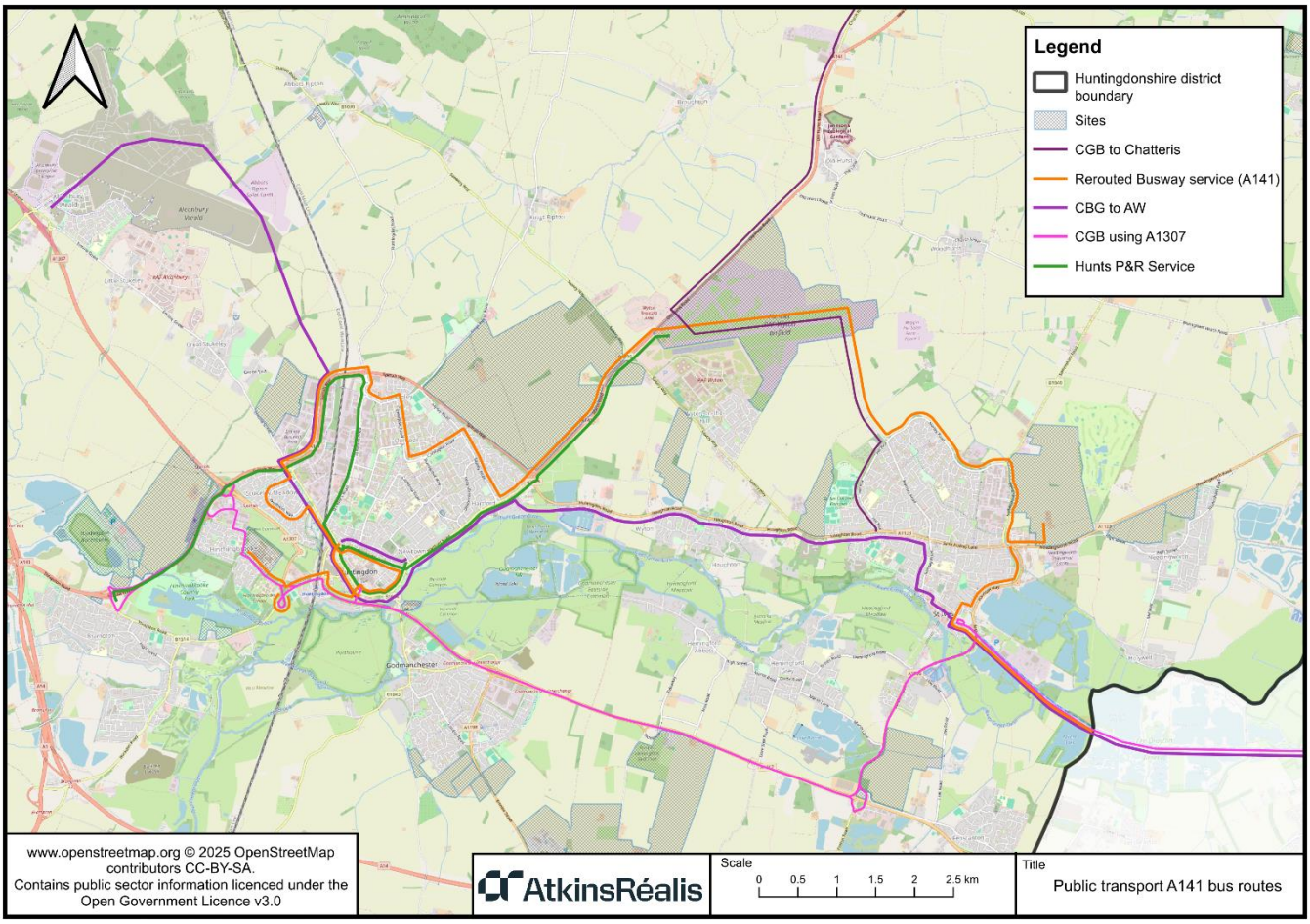


Figure 4-3 - A141 associated public transport routes



4.3.1 Additional bus stops

Additional bus stops have been proposed to serve new areas of development and connect them to existing and proposed services and the wider public transport network. These are located in the following areas:

- A141 adjacent to Wyton Airfield;
- A1198 adjacent to South Lattenbury;
- Great Lattenbury (internal);
- Roundabout access to Land North of A141;
- A1123 Needingworth Road, St Ives;
- Toll Bar Way, Sawtry;
- Eastern extent of Cambridge Road, St Neots;
- Ermine Street, south of the Ermine Street non-strategic site; and
- Galley Farm, Fenstanton.

4.3.2 Additional bus routes

Additional bus routes have been proposed to serve gaps which have appeared due to portions of new development outside existing services. These are:

- Huntingdon / Lodge Farm loop (2 buses per hour)
- St Neots / Little Paxton shuttle (2 buses per hour)

4.3.3 Existing bus route interventions

Improvements are proposed to some existing bus routes serving areas which are set to be developed to better cater for increased populations post-development and further facilitate more sustainable journeys. The improved routes are:

- For buses terminating at Morrisons St Ives, extend route to loop around Gifford's Park non-strategic site;
- Increased frequency of Stagecoach 904 Huntingdon to Peterborough service to 2 per hour; and
- Extension of Stagecoach 25 (Peterborough) service to Land West of A1 non-strategic site.

4.3.4 Bus priority measures

Some bus priority measures have been proposed to improve the timetabling and convenience of taking the bus, in particular versus taking the car. These are centred around the development at Wyton Airfield to mitigate the significant impacts on the road network this site is expected to have.

Firstly, it is proposed that Old Ramsey Road be converted to busway (with a parallel cycleway) to enable much faster and more direct journeys between Wyton Airfield and St Ives avoiding the B1090 Sawtry Way. Doing this also allows for the potential creation of a bus priority corridor through the strategic site, improving the catchment through the entire development and having a greater potential impact.

Secondly, the running of the Do-Minimum CaPCAM scenario showed significant delays on the A141 towards the A141 / B1090 roundabout, creating a large potential choke point for buses to and from Wyton Airfield Park and Ride. Therefore, it has been proposed that a direct bus-only connection between Wyton Airfield Park and Ride and the A141 / B1090 roundabout be constructed in a southbound direction only, terminating at a bus-only flare on the north-easternmost A141 arm of the roundabout.

4.3.5 A141 scheme-associated bus routes

There are five proposed bus services to be implemented (or altered) as part of the A141 scheme. These are mostly longer-distance routes to improve connectivity between Huntingdonshire and its neighbouring districts, especially South Cambridgeshire and Cambridge city, using the existing Cambridgeshire Guided Busway infrastructure. Routes are displayed as part of Figure 4-3 and are as follows:

- Extension to Busway B service, to serve Gifford's Farm P&R, Wyton Airfield P&R, and Hinchingbrooke (4 buses per hour);
- New Cambridgeshire Guided Busway service between Cambridge and Alconbury Weald via St Ives P&R, Huntingdon town centre, and Grange Farm (Alconbury Weald) (4 buses per hour);

- New Cambridgeshire Guided Busway service between Cambridge and Chatteris via St Ives P&R and Warboys (1 bus per hour);
- New Cambridgeshire Guided Busway service between Cambridge and Huntingdon Racecourse P&R via St Ives P&R, the A1307, Huntingdon town centre, and Hinchingbrooke (6 buses per hour); and
- New bus service between Wyton Airfield P&R and Huntingdon Racecourse P&R via Hartford, Huntingdon town centre, St Peter's Road, and Spittals Way (4 buses per hour).

4.4 Highway interventions

Proposed highway interventions primarily consist of speed limit changes, particularly reductions near or adjacent to areas of new development to comply with safety requirements.

The stretches of road which are to be reduced in speed are as follows:

- A141 between Brampton and Spittals Interchange to 50mph;
- A1307 between access to Great Lattenbury and Huntingdon to 40mph;
- B1040 Somersham Road (St Ives) between A1123 and Marley Road to 30mph;
- A1123 Needingworth Road (St Ives) between Morrisons and High Street (Needingworth) to 30mph;
- Great North Road (Little Paxton) to 30mph; and
- Houghton Road (St Ives) to 30mph.

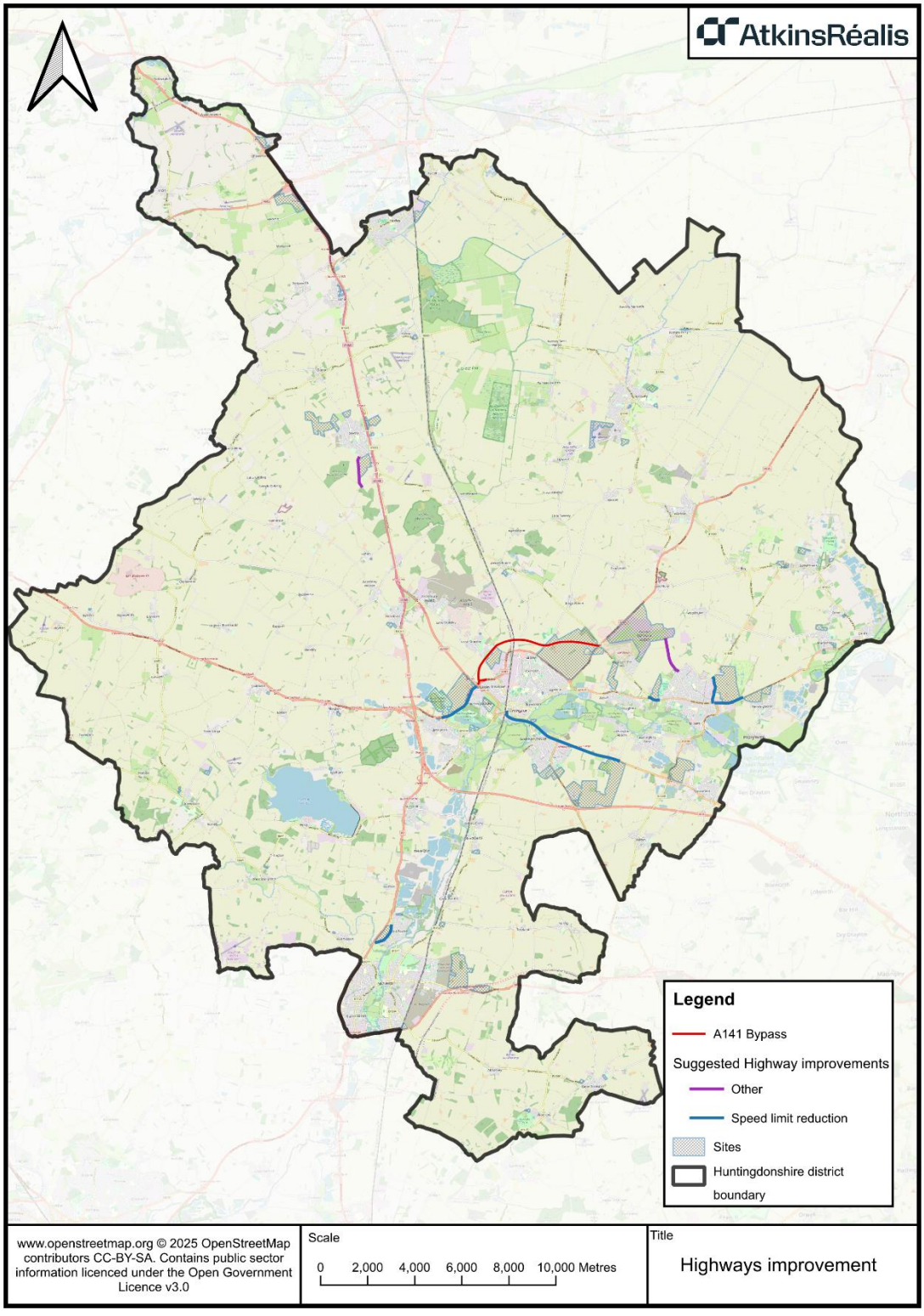
Further to these speed limit reductions, two sections of road are proposed to be closed to the private motor vehicle. The specification for Old Ramsey Road's conversion to a bus-only road with parallel cycle / walk track is discussed in Section 4.3.4. In Sawtry, it has been proposed that a section of St Judith's Lane outside of the current village boundary be converted into a byway. This is to ensure that vehicular traffic does not use St Judith's Lane as an access point for the large non-strategic development site there, as well as to encourage walking and cycling for intra-village trips from the site using this shorter route. This would also help shield the ancient woodland at Aversley Wood nearby from noise and particulate pollution from vehicles.

The proposed five-arm roundabout connecting the terminus of the new A141 bypass, the existing A141, and the B1090 Sawtry Way located to the south-west of the Wyton Airfield site has been signalised to attempt to regulate flows to the west of the strategic site. Depending upon the estimated impact of this mitigation, further work may be needed at this location to improve traffic flow. Depending on results of the modelling, potential further improvements could include:

- Simplifying the junction to a 4-arm roundabout, by re-aligning the B1090, to make the proposed signal staging simpler.
- Expanding the size of the junction to increase its overall stacking capacity.
- Upgrading the roundabout to an interchange style or grade separated junction.

The proposed changes to the highway network are shown below using Figure 4-4. The route of the proposed A141 bypass is represented for reference.

Figure 4-4 - Suggested highway improvements



4.5 Indicative cost estimates

The full list of suitable mitigation measures for the proposed Hybrid Strategy agreed upon were costed based on a series of high-level cost assumptions. Costs developed at this stage were to be indicative only subject to a more interrogative analysis and approach at a later stage. Details of the costs, including construction and maintenance, operation, and replacement (on-going) have been provided as part of the separate Mitigation Log issued[4], along with the specification and cost assumptions.

5. Technical Modelling (Do-Something Scenario)

5.1 Introduction

This chapter summarises the technical modelling work undertaken to assess the Hybrid Strategy. It presents a comparison between the Do-Minimum (DM) and Do-Something (DS) scenarios for the Hybrid Strategy to evaluate the effectiveness of the proposed mitigation measures. The DS scenario incorporates the mitigation strategy outlined in Section 20, which was developed in response to issues identified in the DM scenario.

5.2 Sector system

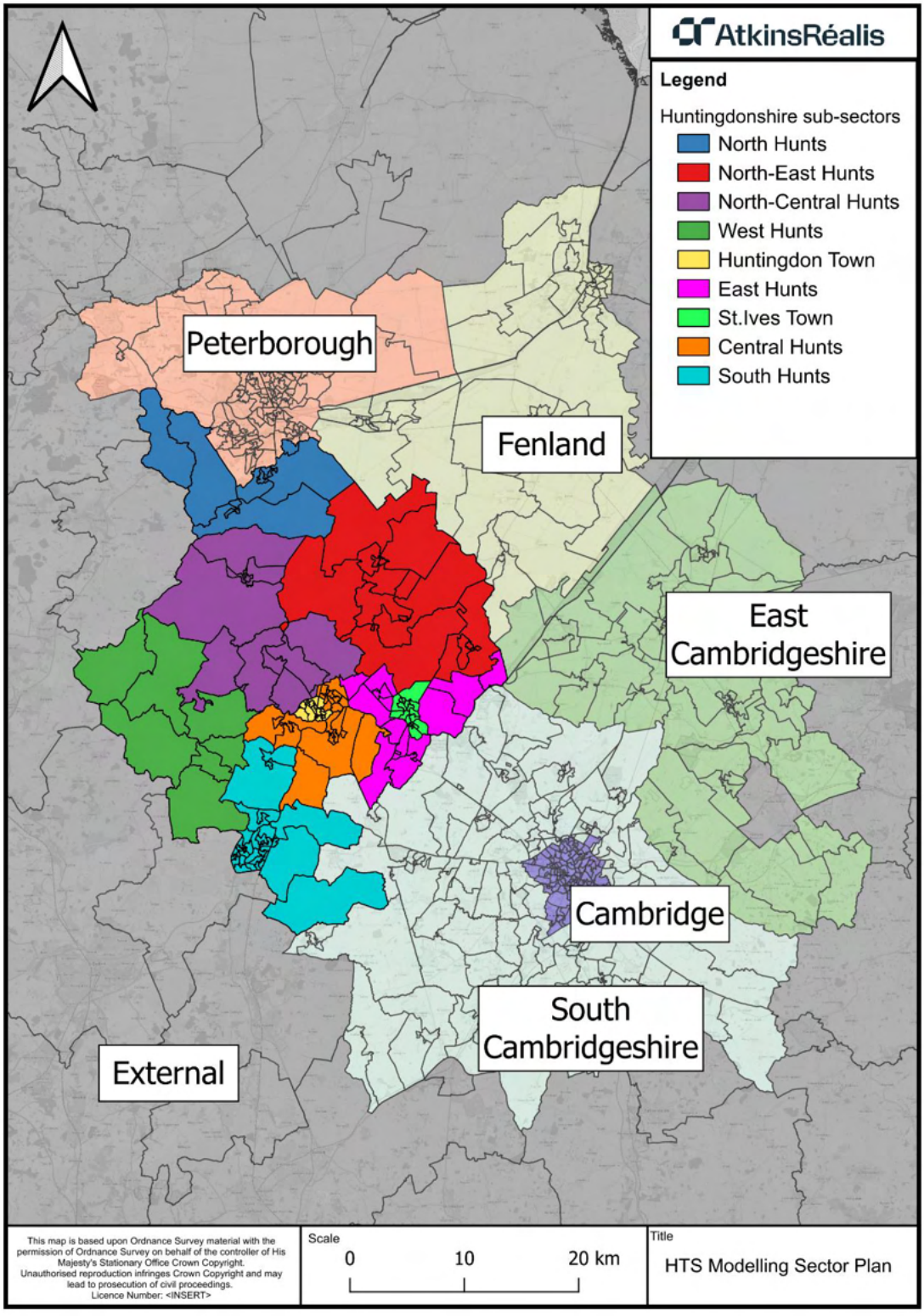
A set of 19 sectors has been used in this analysis. These are based on the CaPCAM zoning structure and have been grouped to support the specific requirements of this study. The sector system comprises:

- 6 core CaPCAM sectors aligned with local authority boundaries across the CaPCAM study area.
- 9 Huntingdonshire sub-sectors, which have been derived from the underlying zoning structure in CAPCAM. These provide greater resolution within Huntingdonshire to support localised impact analysis.
- The 4 strategic site sectors.

The sector system is plotted in Figure 5-1.

[4] *'Hunts STS Hybrid Strategy Mitigation Log_v1.0.xlsm'*

Figure 5-1 - Sector system - CaPCAM modelled area



5.3 Results

5.3.1 Trips

Table 5-1 presents the forecast 24-hour trip volumes in Huntingdonshire (including all strategic sites) by mode for the year 2046, comparing the DM and DS scenarios under the Hybrid Strategy. The results highlight the impact of the mitigation measures introduced in the DS scenario, showing modest but meaningful shifts in travel behaviour relative to the DM scenario:

- Public Transport trips increase by 4,531 trips (+14%), reflecting the positive impact of enhanced bus services, new routes, and Park & Ride facilities introduced in the DS scenario.
- Park & Ride (P&R) usage rises slightly by 290 trips, consistent with the activation of P&R sites associated with the A141 improvement scheme.
- Car trips decrease by 4,575 trips (-1.1%), suggesting a small but notable reduction in private vehicle dependency, driven by improved sustainable travel options.
- Active Modes experience a marginal decline of 290 trips, due to mode shift from walking/cycling to public transport for longer-distance trips, as bus connectivity improves.
- Overall trip volumes remain broadly unchanged (-44 trips), indicating that the mitigation measures primarily influence mode choice rather than total demand.

Table 5-1 - 24hr trip volumes by mode in Huntingdonshire (Forecast Year 2046)

Mode	Hybrid DM trips	Hybrid DS trips	Change in trips between DM and DS
Active Modes	163,909	163,619	- 290
Public Transport	31,723	36,255	4,531
P&R	3,026	3,316	290
Car	426,086	421,511	- 4,575
Total	624,745	624,701	- 44

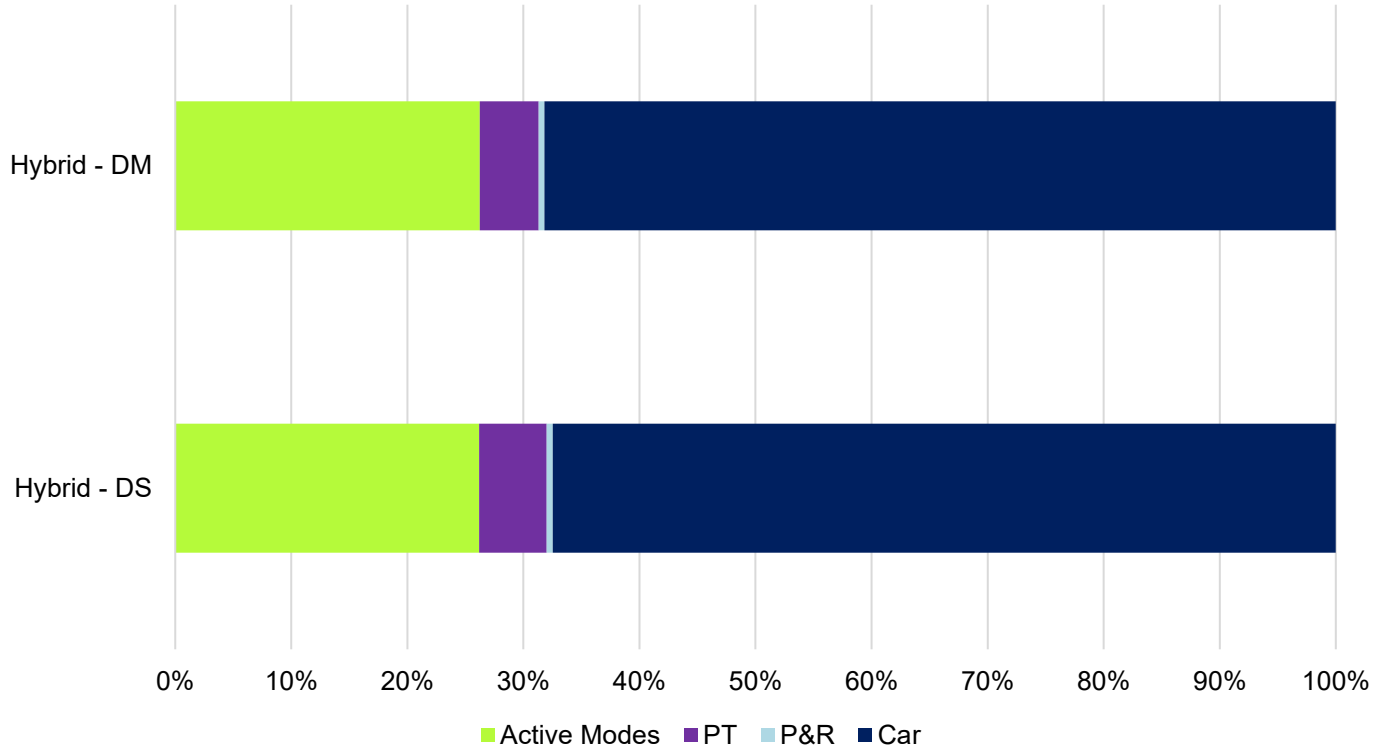
5.3.2 Mode share

Table 5-2 and Figure 5-2 illustrate the corresponding mode shares for each scenario. The trends observed in mode share closely mirror those in trip volumes: public transport gains a larger share, car dependency reduces slightly, and active modes remain stable. These results indicate that the DS scenario supports a gradual shift towards more sustainable travel modes, even if the overall scale of change remains modest at the district level.

Table 5-2 - 24hr mode share (%) in Huntingdonshire (Forecast Year 2046)

Mode	Hybrid DM mode share	Hybrid DS mode share	Change in mode share between DM and DS
Active Modes	26.2%	26.2%	0.0%
Public Transport	5.1%	5.8%	0.7%
P&R	0.5%	0.5%	0.0%
Car	68.2%	67.5%	-0.7%

Figure 5-2 - 24hr mode Share split (%) in Huntingdonshire



5.3.3 Sector mode share

Table 5-3Table and Table 5-4 present mode share results for trips originating from each sector under the DM and DS scenarios. These tables assess the effectiveness of the hybrid mitigation package by highlighting changes in mode share and absolute trip volumes, with a focus on both district-wide sectors and individual strategic sites.

Across Huntingdonshire sectors the following can be observed:

- Public transport usage improves modestly across most sectors, with notable gains in Huntingdonshire North Central (+671 trips), Huntingdon Town (+469 trips), and Huntingdonshire South (+627 trips). These increases reflect the introduction of new and extended bus routes serving Huntingdon and St Ives, alongside additional bus stops and improved frequencies.
- P&R trips increase modestly across all sectors, however trip volumes remain low and account for only a small share of overall travel
- Car trips reduce slightly across most sectors, with the largest absolute reductions in Huntingdonshire North Central (-673 trips), Huntingdon Town (-504 trips), and Huntingdonshire Central (-560 trips), reflecting the combined effect of bus service enhancements and active travel links.

Most strategic sites demonstrate a strong positive shift in travel behaviour, with consistent increases in public transport and Park & Ride trips. Although car remains the predominant mode, the mitigation measures appear to be effective in promoting more sustainable travel choices. However, active travel trips remain largely unchanged despite the active travel mitigations in the DS scenario.

- **Lodge Farm:** Public transport trips increase by 835, supported by new bus routes and improved pedestrian access. Car trips fall by 535, and the car mode share drops by 2.6 percentage points to 63%. PT mode share more than doubles, rising from 3% to 7%, indicating a strong response to mitigation.
- **The Lattenburys:** Public transport usage increases by 724 trips, and car trips decrease by 409. The car mode share falls by 2.8 percentage points to 71%, while PT mode share rises from 2% to 7%. Despite this improvement, the site retains one of the highest car mode shares among strategic sites, suggesting that further intervention may be needed to reduce car dependency.
- **Wyton Airfield:** Public transport trips increase by 217, supported by bus service enhancements and proposed priority measures. Car trips reduce by 386, with a 1.7 percentage point drop in car mode share to 62%. PT mode share increases from 3% to 4%, showing a positive but minimal shift.
- **Land North of A141:** Public transport trips rise by 123, and P&R trips increase significantly, though from a low base. Car trips fall by 238, and the car mode share drops by 3.1 percentage points to 88%. PT mode share doubles from 2% to 4%, and P&R increases from near-zero to 1%, but overall car dominance remains very high due to the site's access onto the A141 providing strong links to the strategic road network. Similar to the Lattenburys site, the Land North of A141 is likely to require targeted interventions to increase sustainable travel choices.

These results show that strategic sites do respond to mitigation to an extent, largely in terms of public transport uptake and modest reductions in car mode share. However, the persistently high car dependency - especially at The Lattenburys and Land North of A141 - highlights the need for further targeted interventions.

Table 5-3 - Sector origin trips by mode (24hrs) - DM vs DS (Forecast Year 2046)

	Hybrid DM				Hybrid DS				Difference (%)			
	Active Modes	PT	P&R	Car	Active Modes	PT	P&R	Car	Active Modes	PT	P&R	Car
Huntingdon Town	11,641	5,145	459	30,161	11,695	5,614	511	29,657	0%	9%	11%	-2%
St Ives Town	14,042	3,623	507	27,374	14,190	3,819	505	26,997	1%	5%	0%	-1%
Huntingdonshire South	44,568	8,024	508	86,017	44,360	8,651	521	85,727	0%	8%	3%	0%
Huntingdonshire Central	22,263	4,983	409	55,903	22,376	5,210	428	55,343	1%	5%	5%	-1%
Huntingdonshire East	11,408	2,218	318	39,091	11,531	2,358	329	38,778	1%	6%	3%	-1%
Huntingdonshire North	8,809	1,506	51	32,672	8,728	1,787	55	32,498	-1%	19%	8%	-1%
Huntingdonshire North East	13,682	1,374	197	36,675	13,727	1,393	208	36,588	0%	1%	6%	0%
Huntingdonshire North Central	18,333	2,587	233	56,345	18,348	3,258	255	55,672	0%	26%	9%	-1%
Huntingdonshire West	1,914	436	67	16,425	1,921	437	74	16,398	0%	0%	10%	0%
Lodge Farm	6,578	614	82	13,960	6,276	1,449	103	13,425	-5%	136%	26%	-4%
Wyton Airfield	6,642	644	77	12,645	6,715	861	88	12,259	1%	34%	14%	-3%
The Lattenburys	3,551	384	105	11,581	3,255	1,108	124	11,172	-8%	189%	18%	-4%
Land North of A141	478	187	11	7,237	496	310	114	6,999	4%	66%	918%	-3%
Cambridge	214,287	50,013	9,750	173,410	214,831	49,826	9,706	173,065	0%	0%	0%	0%
South Cambridgeshire	100,513	25,053	2,741	385,159	100,580	25,130	2,751	385,029	0%	0%	0%	0%
East Cambridgeshire	58,885	8,414	641	175,791	58,917	8,409	638	175,830	0%	0%	-1%	0%
Peterborough	174,813	39,888	305	535,622	174,807	40,166	333	535,300	0%	1%	9%	0%
Fenland	68,044	8,747	221	194,037	68,147	8,761	229	193,938	0%	0%	4%	0%
External	1,957	14,255	2,045	229,445	1,966	14,213	2,085	229,421	0%	0%	2%	0%
Hunts (excluding SS)	146,659	29,895	2,750	380,664	146,877	32,527	2,887	377,657	0%	9%	5%	-1%

Table 5-4 - Mode share split (%) of sector origin trips (24hrs) - DM vs DS (Forecast Year 2046)

	Hybrid DM				Hybrid DS				Difference (%)			
	Active Modes	PT	P&R	Car	Active Modes	PT	P&R	Car	Active Modes	PT	P&R	Car
Huntingdon Town	25%	11%	1%	64%	25%	12%	1%	62%	0.1%	1.0%	0.1%	-1.2%
St Ives Town	31%	8%	1%	60%	31%	8%	1%	59%	0.3%	0.4%	0.0%	-0.8%
Huntingdonshire South	32%	6%	0%	62%	32%	6%	0%	62%	-0.2%	0.4%	0.0%	-0.3%
Huntingdonshire Central	27%	6%	0%	67%	27%	6%	1%	66%	0.2%	0.3%	0.0%	-0.5%
Huntingdonshire East	22%	4%	1%	74%	22%	4%	1%	73%	0.2%	0.3%	0.0%	-0.5%
Huntingdonshire North	20%	3%	0%	76%	20%	4%	0%	75%	-0.2%	0.6%	0.0%	-0.5%
Huntingdonshire North East	26%	3%	0%	71%	26%	3%	0%	70%	0.1%	0.0%	0.0%	-0.2%
Huntingdonshire North Central	24%	3%	0%	73%	24%	4%	0%	72%	0.0%	0.9%	0.0%	-0.9%
Huntingdonshire West	10%	2%	0%	87%	10%	2%	0%	87%	0.0%	0.0%	0.0%	-0.1%
Lodge Farm	31%	3%	0%	66%	30%	7%	0%	63%	-1.4%	3.9%	0.1%	-2.6%
Wyton Airfield	33%	3%	0%	63%	34%	4%	0%	62%	0.5%	1.1%	0.1%	-1.7%
The Lattenburys	23%	2%	1%	74%	21%	7%	1%	71%	-1.9%	4.6%	0.1%	-2.8%
Land North of A141	6%	2%	0%	91%	6%	4%	1%	88%	0.2%	1.5%	1.3%	-3.1%
Cambridge	48%	11%	2%	39%	48%	11%	2%	39%	0.1%	0.0%	0.0%	-0.1%
South Cambridgeshire	20%	5%	1%	75%	20%	5%	1%	75%	0.0%	0.0%	0.0%	0.0%
East Cambridgeshire	24%	3%	0%	72%	24%	3%	0%	72%	0.0%	0.0%	0.0%	0.0%
Peterborough	23%	5%	0%	71%	23%	5%	0%	71%	0.0%	0.0%	0.0%	0.0%
Fenland	25%	3%	0%	72%	25%	3%	0%	72%	0.0%	0.0%	0.0%	0.0%
External	1%	6%	1%	93%	1%	6%	1%	93%	0.0%	0.0%	0.0%	0.0%
Hunts (excluding SS)	26%	5%	0%	68%	26%	6%	1%	67%	0.0%	0.5%	0.0%	-0.5%

5.3.4 Sector to sector car trips

Table 5-5 presents the car sector-to-sector matrix, highlighting a general trend of reduced car trips in the DS scenario compared to the DM. The most substantial decreases are seen in trips destined for Huntingdon Town, St Ives Town, Huntingdonshire Central, and Huntingdonshire North Central. These reductions reflect the impact of bus infrastructure enhancements, junction upgrades, and Park & Ride schemes, which appear to be encouraging a shift away from car use - particularly for longer-distance commuting trips.

In addition to this, modest reductions are observed in trips between strategic sites and other areas of the district, suggesting that the mitigation strategy is supporting more internalised travel patterns or encouraging a shift to sustainable modes for short- and medium-distance journeys. However, the overall volume of car trips remains relatively stable, with some origin-destination pairs even showing increases.

These patterns are consistent with the broader DS scenario findings: while the mitigation measures contribute to incremental improvements in network performance and modest shifts in mode share, it appears that the current level of mitigation has limited capacity to drive significant behavioural change in travel patterns.

Table 5-5 - Sector to sector car trips (24hr) - Hybrid Strategy DM vs DS (Forecast Year 2046)

Origins \ Destinations	Lodge Farm	Wyton Airfield	The Lattenburys	Land North of A141	Huntingdon Town	St Ives Town	Huntingdonshire South	Huntingdonshire Central	Huntingdonshire East	Huntingdonshire North	Huntingdonshire North East	Huntingdonshire North Central	Huntingdonshire West	Cambridge City	South Cambridgeshire	East Cambridgeshire	Peterborough	Fenland	External	**Total**
Lodge Farm	-15	-59	-7	-11	-10	-70	-1	-13	-63	-3	-50	-37	-6	-22	-58	-23	-13	-57	-16	**-535**
Wyton Airfield	-56	42	-13	-15	-44	-9	-26	-82	-12	-7	34	-66	-12	-37	-74	25	-52	51	-31	**-386**
The Lattenburys	-8	-14	-48	-11	-40	-7	-29	-52	-22	-3	-9	-24	-5	-12	-58	-10	-23	-11	-22	**-409**
Land North of A141	-10	-12	-8	0	-2	-15	-12	-10	-20	-5	-12	-23	-6	-7	-25	-5	-24	-16	-26	**-239**
Huntingdon Town	-11	-43	-34	-5	22	-43	11	34	-85	-2	-34	5	-1	-59	-168	-37	22	-52	-26	**-505**
St Ives Town	-63	-15	-7	-17	-38	46	-15	-67	25	-11	-2	-79	-16	8	14	-24	-78	3	-44	**-377**
Huntingdonshire South	-1	-27	-27	-12	10	-18	-90	24	-31	-2	-18	-7	4	-11	-30	-12	2	-29	-16	**-290**
Huntingdonshire Central	-13	-82	-47	-15	32	-73	26	70	-120	5	-53	17	8	-72	-186	-55	78	-76	-5	**-561**
Huntingdonshire East	-58	-13	-22	-23	-82	24	-27	-115	81	-10	1	-83	-17	14	72	61	-73	-10	-34	**-313**
Huntingdonshire North	-3	-7	-3	-6	-3	-11	-2	5	-10	-17	-3	-22	0	-3	-8	-2	-73	-8	1	**-174**
Huntingdonshire North East	-49	34	-8	-15	-35	-1	-18	-55	2	-3	33	-35	-6	5	9	17	14	29	-4	**-86**
Huntingdonshire North Central	-37	-63	-22	-29	4	-83	-7	17	-87	-22	-32	-85	-2	-23	-75	-27	-43	-59	2	**-673**
Huntingdonshire West	-6	-12	-5	-7	-2	-17	5	8	-18	0	-6	-1	16	1	0	-4	18	-11	16	**-27**
Cambridge City	-22	-37	-13	-9	-63	6	-12	-77	11	-3	5	-25	0	-185	30	19	-5	7	28	**-344**
South Cambridgeshire	-52	-70	-57	-24	-166	5	-29	-188	62	-8	7	-75	-1	77	343	14	-25	9	49	**-130**
East Cambridgeshire	-21	24	-10	-7	-37	-23	-12	-54	59	-2	16	-29	-4	31	13	74	-5	22	1	**39**
Peterborough	-14	-43	-20	-30	5	-70	2	66	-67	-69	12	-46	15	-2	-20	-4	-114	-28	105	**-323**
Fenland	-53	48	-9	-19	-53	3	-28	-75	-8	-8	27	-62	-11	8	11	24	-27	135	-2	**-99**
External	-16	-31	-22	-27	-30	-45	-15	-9	-35	1	-4	0	16	32	53	3	105	-2	0	**-24**
Total	**-507**	**-380**	**-383**	**-281**	**-532**	**-400**	**-279**	**-574**	**-337**	**-167**	**-88**	**-678**	**-29**	**-258**	**-157**	**33**	**-316**	**-101**	**-23**	**-5,457**

5.3.5 Highway model assignment statistics

Table 5-6 presents a comparison of highway assignment metrics between the DM and DS scenarios across the AM, IP, and PM periods. The comparison reveals only marginal changes in overall trip volumes, travel distances, and vehicle hours across all time periods. These modest differences are consistent with the nature of the highway mitigation measures implemented, which are primarily focused on speed reductions for safety reasons rather than capacity enhancements or major network changes.

Notably, travel distances and vehicle hours decrease by around 1%, suggesting slight improvements in routing efficiency. Delay outcomes are mixed, with minor increases in AM and IP periods, while the PM period shows a 2% reduction in delay.

Table 5-6 - Key highway assignment model statistics for Huntingdonshire (Forecast Year 2046)

Metric	Analysis area		Hybrid DM	Hybrid DS	Difference	Difference (%)
Matrix Totals	Whole model area	AM	247,168	246,532	-636	0%
		IP	182,816	182,584	-232	0%
		PM	254,668	254,239	-429	0%
Travel Distance (km)	Huntingdonshire	AM	1,016,032	1,006,298	-9,734	-1%
		IP	783,630	779,162	-4,468	-1%
		PM	1,023,500	1,015,922	-7,577	-1%
Travel Time (vehicle hours)	Huntingdonshire	AM	16,882	16,869	-13	0%
		IP	11,098	11,088	-10	0%
		PM	16,257	16,093	-165	-1%
Total delay (hours)	Huntingdonshire	AM	4,653	4,703	50	1%
		IP	1,686	1,713	26	2%
		PM	3,910	3,833	-77	-2%

5.3.6 Junction delay

While overall differences in total vehicle delay between the DM and DS scenarios are minimal (as shown in Table 5-6), a more detailed examination of junction-level performance highlights a critical constraint on the network: the A141/B1090 roundabout.

Although Wyton Airfield exhibits a relatively low car mode share compared to the wider Huntingdonshire area, this masks significant localised congestion issues. The A141/B1090 roundabout emerges as a key pinch point, particularly during the AM peak, where it performs poorly in the DM scenario and significantly worse in the DS.

In the DS scenario, interventions were introduced to improve bus reliability at the junction, including bus lanes on the northern A141 arm and signalisation of the roundabout. These measures - alongside other mitigation strategies - appear to reduce car trips departing the Wyton Airfield site. However, the mean link delay plot (Figure B-1 in Appendix B) indicates that, in the AM, this reduction is primarily due to the roundabout acting as a constraint on car movements, particularly for trips originating from the strategic development site at Wyton. The signalised junction introduces delays and queuing on multiple links that limit the ability of vehicles to access the wider highway network. This bottleneck effect suppresses car trip volumes rather than redistributing them across the network.

The flow difference plot in Appendix B supports this interpretation: during the AM peak, flows at the junction are notably reduced, while some surrounding roads show increased volumes, which suggests some rerouting. Overall, this analysis points to the roundabout as a key limiting factor in network permeability for car traffic from Wyton, highlighting the need for revised junction enhancements in future mitigation strategies.

6. Sensitivity Testing

6.1 Introduction

This section presents the results of two sensitivity tests undertaken using the strategic transport model, designed to assess the impact of key infrastructure interventions on travel demand, highway network performance, and mode share outcomes. The first test includes the proposed East West Rail (EWR) connection between Oxford and Cambridge. Given the high likelihood of EWR being delivered, this test reflects a plausible future network condition and helps to understand how enhanced rail connectivity may influence car trip patterns and modal shift. The second test excludes the A141 scheme, which comprises a bypass around Huntingdon as well as active travel, public transport and Park & Ride improvements. This test is intended to assess the extent to which the A141 scheme affects highway network conditions and mode share, particularly in relation to the accessibility and deliverability of strategic growth sites in Huntingdonshire.

6.2 Results

6.2.1 Trips

Table 6-1 presents the forecast trip volumes in Huntingdonshire (including all strategic sites) for each sensitivity test. The comparison between the core Hybrid DS scenario and the DS with EWR and without A141 scheme are outlined below:

- Public Transport (PT) trips increase by 1,639 trips (+4.5%) in the DS with EWR scenario compared to the core DS, which, as expected, indicates that the inclusion of EWR enhances public transport attractiveness and usage.
- Park & Ride (P&R) usage remains broadly stable between DS and DS with EWR (-87 trips), suggesting that EWR has limited influence on P&R demand.
- Car trips decrease by 1,886 trips (-0.4%) in DS with EWR, reflecting a modest shift away from private vehicle use, likely due to improved rail alternatives.
- Active Modes decline slightly by 1,356 trips (-0.8%) in DS with EWR, potentially due to the loss of multiple cycleway schemes associated with the A141 improvements.

In contrast, the DS without A141 scenario reveals the influence of removing a key road scheme:

- Public Transport trips fall by 2,808 trips (-7.7%) compared to the core DS, as the absence of A141-related PT infrastructure - such as bus lanes and park & ride sites - reduces accessibility and attractiveness of public transport options.
- P&R usage drops significantly by 1,776 trips (-53.5%), consistent with the removal of P&R facilities linked to the A141 corridor.
- Car trips decrease by 4,185 trips (-1.0%) relative to DS, which reflects suppressed demand and rerouting effects in the absence of A141 capacity enhancements.
- Active Modes increase by 4,739 trips (+2.9%), indicating a shift toward walking and cycling where motorised options are less attractive or accessible.

Total trip volumes remain broadly consistent across all variants, with a net difference of just 4,031 trips between the highest (DS) and lowest (DS without A141), reinforcing that these sensitivity tests primarily affect mode choice rather than overall demand.

Table 6-1 - 24hr trip volumes by mode in Huntingdonshire (Forecast Year 2046)

Scenario	Active Modes	PT	P&R	Car	Total
Hybrid DS	163,619	36,255	3,316	421,511	624,701
Hybrid DS with EWR	162,263	37,894	3,229	419,625	623,011
Hybrid DS without A141	168,358	33,447	1,540	417,326	620,670

6.2.2 Mode share

Table 6-2 shows the change in mode share across key travel categories under two sensitivity tests - Hybrid DS with EWR and Hybrid DS without A141 - relative to the core Hybrid DS scenario. Introducing EWR into the Hybrid DS leads to subtle but meaningful changes in travel behaviour:

- Public Transport (PT) share increases by 0.3%, driven by improved regional rail connectivity and enhanced access to destinations via EWR.
- Active Modes decrease by 0.1%, likely reflecting a small shift from walking and cycling to rail-based trips.
- Car mode share drops by 0.1%, suggesting a modest diversion of car trips to public transport.
- Park & Ride (P&R) remains unchanged, indicating that EWR does not compete with, and draw trips away from, bus P&R corridors such as Cambourne to Cambridge.

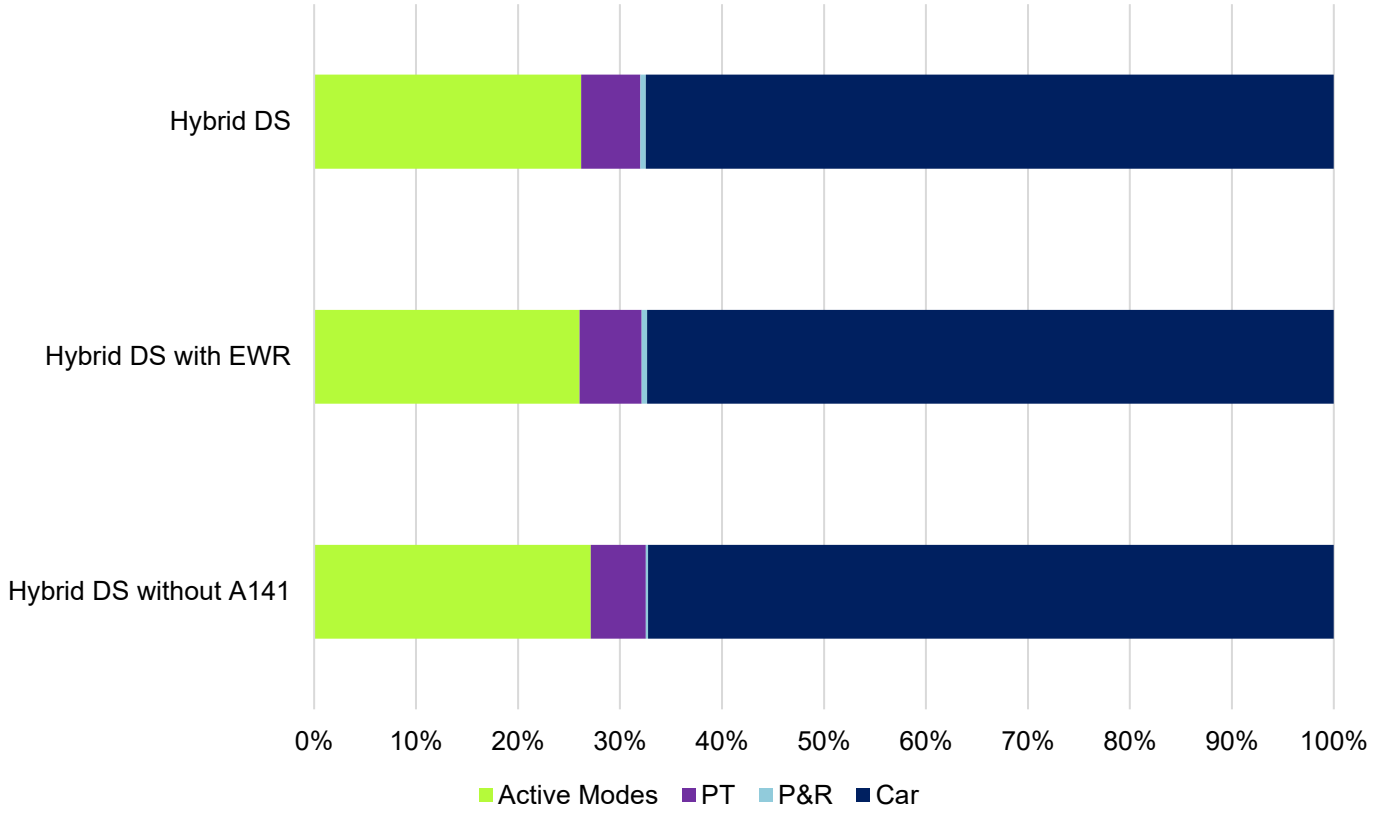
Table 6-2 also shows that excluding the A141 scheme from the Hybrid DS results in more pronounced shifts across all modes:

- PT share drops by 0.4%, as the absence of A141-related PT infrastructure, reduces accessibility and attractiveness of public transport.
- P&R share falls by 0.3%, reflecting the direct removal of P&R facilities tied to the A141 corridor.
- Car mode share decreases by 0.2%, possibly due to suppressed demand or mode shift toward active travel in the absence of highway improvements.
- Active Modes increase by 9%, suggesting a shift toward walking and cycling where motorised options are less attractive.

Table 6-2 - 24hr mode share (%) in Huntingdonshire (Forecast Year 2046)

	Mode share				Change in mode share from DS			
Scenario	**Active Modes**	**PT**	**P&R**	**Car**	**Active Modes**	**PT**	**P&R**	**Car**
Hybrid DS	26%	6%	1%	67%	-	-	-	-
Hybrid DS with EWR	26%	6%	1%	67%	-0.1%	0.3%	0.0%	-0.1%
Hybrid DS without A141	27%	5%	0%	67%	0.9%	-0.4%	-0.3%	-0.2%

Figure 6-1 - 24hr mode share split (%) in Huntingdonshire



6.2.3 Sector mode share

Table 6-3 to Table 6-6 present mode share results for trips originating from each sector under the Hybrid DS scenario compared with the two sensitivity tests. These tables assess the impact each scheme has on mode share and absolute trip volumes, with a focus on Huntingdonshire district-wide sectors and the individual strategic sites.

6.2.3.1 Huntingdonshire sectors

Across Huntingdonshire sectors the following can be observed:

Hybrid DS with EWR

- Public transport usage improves from the DS across most sectors, most notably Huntingdonshire South (+1,199 trips). These increases reflect enhanced rail connectivity and new stops on existing bus services at Cambourne Station.
- P&R trips decrease modestly, though volumes and mode share remain very low overall.
- Car trips reduce slightly across all sectors, with the largest reductions in South Huntingdonshire (-1,150) reflecting mode shift to PT.
- Mode share shifts are modest - PT share edges up by +0.2 % to +0.9 %, car share trims by -0.1 % to -0.6 % (except in Huntingdon and St Ives), and active mode share is essentially unchanged (±0.1 %).

Hybrid DS without A141

- Public transport usage falls in nearly all sectors, most severely in Huntingdon (-798, -14%) and St Ives (-760, -20%), with Huntingdonshire South the sole exception (+1,471; +17 %).
- Park & ride collapses everywhere - with losses of 25-441 trips (-24 % to -86 %), led by Huntingdon (-441, -86%), and St Ives (-266, -54 %).
- Car trips generally decline or remain largely unchanged; the largest falls are in Huntingdon (-1,232,-4%) and Huntingdonshire Central (-1,619, -3 %).
- Mode share shifts reflect these volume changes - PT share is down in most sectors, car and P&R shares dip, with active modes making up for most of the mode share increase.

6.2.3.2 Strategic sites

Across strategic sites the following can be observed:

Hybrid DS with EWR

- Public transport usage rises in three of four sites, most notably at The Lattenburys (+89 trips, +8%). with Land North of A141 the only site to see a decline (-13 trips, -4%). Land North of A141's role as an employment site means better PT accessibility to other parts of the model slightly reduces the number of PT trips attracted by the site, though the impact is very small overall.
- Park & ride remains effectively unchanged across all sites.
- Car trips decrease modestly at Lodge Farm (-18), The Lattenburys (-109, -1%), and Land North of A141 (-28), while Wyton Airfield sees a slight increase (+41).
- Active modes decline slightly at all sites.

Mode share split remains mainly unchanged across all four sites when compared to the DS. The Lattenburys see a slight uptick in PT mode share (+0.6%) replacing some car trips from the site

Hybrid DS without A141

- Public transport usage drops significantly across all sites, most severely at The Lattenburys (-703 trips, -63%) and Land North of A141 (-152 trips, -49%).
- Park & ride usage declines sharply, with reductions ranging from -50 to -112 trips across all sites.

- Car trips fall at Lodge Farm (-423), Wyton Airfield (-279), and Land North of A141 (-319), but increase at The Lattenburys (+351, +3%). These changes are primarily driven by worsened network conditions resulting from the removal of the A141 scheme. The three sites experiencing reductions are located close to the scheme and are directly impacted by increased congestion and delay, which discourages car travel and would impede future residents' ability to access their destinations. In contrast, The Lattenburys, being further from the A141 corridor, is less affected by these pressures and benefits from freed-up capacity on the network, which enables a slight increase in car trips from this location.
- Active modes increase at three sites, most notably at Lodge Farm (+660, +11%) and Wyton Airfield (+483, +7%), while Land North of A141 sees a decline (-56, -11%).

Overall, the absence of the A141 scheme results in a more car-oriented travel pattern as it promotes a substantial shift away from public transport and park & ride usage across all sites. Not only would this result in a significant increase in total vehicle delay, but it would also result in increased levels of congestion across Huntingdonshire and difficulties in undertaking key journeys across the county.

Whilst active mode share increases significantly at Lodge Farm, Wyton Airfield, and The Lattenburys, partially offsetting the drop in PT; this shift is due to increased internalisation, with worsened network conditions limiting the number of trips able to exit these sites. Car mode share rises at The Lattenburys (+3%) but declines elsewhere.,

The analysis shows that while EWR delivers consistent increases in public transport trips and modest reductions in car use across all strategic sites, car mode share for trips originating at strategic sites largely unchanged from the DS, due to the scheme's limited proximity to Huntingdonshire and its strategic sites. Without the A141 scheme, the effects of mitigation are reversed: car trips and mode share increase beyond DS levels, and public transport usage drops significantly across all sites.

Table 6-3 - Sector origin trips by mode (24hrs) - DS vs DS with EWR (Forecast Year 2046)

	Hybrid DS				Hybrid DS with EWR				Difference (%)			
	Active Modes	PT	P&R	Car	Active Modes	PT	P&R	Car	Active Modes	PT	P&R	Car
Huntingdon Town	11,695	5,614	511	29,657	11,623	5,362	508	29,599	-1%	-4%	-1%	0%
St Ives Town	14,190	3,819	505	26,997	14,079	3,785	502	27,148	-1%	-1%	-1%	1%
Huntingdonshire South	44,360	8,651	521	85,727	43,742	9,850	484	84,577	-1%	14%	-7%	-1%
Huntingdonshire Central	22,376	5,210	428	55,343	22,224	5,352	416	55,121	-1%	3%	-3%	0%
Huntingdonshire East	11,531	2,358	329	38,778	11,413	2,549	318	38,669	-1%	8%	-3%	0%
Huntingdonshire North	8,728	1,787	55	32,498	8,720	1,801	54	32,459	0%	1%	-3%	0%
Huntingdonshire North East	13,727	1,393	208	36,588	13,700	1,411	205	36,572	0%	1%	-2%	0%
Huntingdonshire North Central	18,348	3,258	255	55,672	18,259	3,386	248	55,480	0%	4%	-3%	0%
Huntingdonshire West	1,921	437	74	16,398	1,891	567	70	16,260	-2%	30%	-5%	-1%
Lodge Farm	6,276	1,449	103	13,425	6,244	1,467	103	13,407	-1%	1%	0%	0%
Wyton Airfield	6,715	861	88	12,259	6,654	870	87	12,300	-1%	1%	-1%	0%
The Lattenburys	3,255	1,108	124	11,172	3,223	1,197	121	11,063	-1%	8%	-3%	-1%
Land North of A141	496	310	114	6,999	491	297	113	6,971	-1%	-4%	0%	0%
Cambridge	214,831	49,826	9,706	173,065	214,065	54,244	9,429	172,885	0%	9%	-3%	0%
South Cambridgeshire	100,580	25,130	2,751	385,029	99,636	28,577	2,669	382,186	-1%	14%	-3%	-1%
East Cambridgeshire	58,917	8,409	638	175,830	58,930	8,322	632	175,753	0%	-1%	-1%	0%
Peterborough	174,807	40,166	333	535,300	174,724	39,870	322	534,914	0%	-1%	-3%	0%
Fenland	68,147	8,761	229	193,938	68,124	8,730	227	193,920	0%	0%	-1%	0%
External	1,966	14,213	2,085	229,421	1,966	14,554	2,036	229,052	0%	2%	-2%	0%
Hunts (excluding SS)	146,877	32,527	2,887	377,657	145,650	34,063	2,805	375,885	-1%	5%	-3%	0%

Table 6-4 - Sector origin trips by mode (24hrs) - DS vs DS without A141 scheme (Forecast Year 2046)

	Hybrid DS				Hybrid DS without A141				Difference (%)			
	Active Modes	PT	P&R	Car	Active Modes	PT	P&R	Car	Active Modes	PT	P&R	Car
Huntingdon Town	11,695	5,614	511	29,657	12,220	4,816	70	28,425	4%	-14%	-86%	-4%
St Ives Town	14,190	3,819	505	26,997	14,828	3,059	239	27,022	4%	-20%	-53%	0%
Huntingdonshire South	44,360	8,651	521	85,727	44,192	10,122	398	85,316	0%	17%	-24%	0%
Huntingdonshire Central	22,376	5,210	428	55,343	23,414	4,669	193	53,724	5%	-10%	-55%	-3%
Huntingdonshire East	11,531	2,358	329	38,778	12,049	1,822	184	38,754	4%	-23%	-44%	0%
Huntingdonshire North	8,728	1,787	55	32,498	8,777	1,784	30	32,597	1%	0%	-45%	0%
Huntingdonshire North East	13,727	1,393	208	36,588	14,007	1,348	112	36,604	2%	-3%	-46%	0%
Huntingdonshire North Central	18,348	3,258	255	55,672	18,733	3,006	112	55,328	2%	-8%	-56%	-1%
Huntingdonshire West	1,921	437	74	16,398	1,951	438	42	16,370	2%	0%	-44%	0%
Lodge Farm	6,276	1,449	103	13,425	6,936	1,103	43	13,002	11%	-24%	-59%	-3%
Wyton Airfield	6,715	861	88	12,259	7,198	716	41	11,980	7%	-17%	-53%	-2%
The Lattenburys	3,255	1,108	124	11,172	3,613	405	74	11,523	11%	-63%	-40%	3%
Land North of A141	496	310	114	6,999	440	158	2	6,680	-11%	-49%	-98%	-5%
Cambridge	214,831	49,826	9,706	173,065	217,598	48,978	8,507	172,457	1%	-2%	-12%	0%
South Cambridgeshire	100,580	25,130	2,751	385,029	102,016	24,287	2,303	385,738	1%	-3%	-16%	0%
East Cambridgeshire	58,917	8,409	638	175,830	58,868	8,483	599	176,360	0%	1%	-6%	0%
Peterborough	174,807	40,166	333	535,300	176,061	40,225	193	535,967	1%	0%	-42%	0%
Fenland	68,147	8,761	229	193,938	68,585	8,585	169	194,370	1%	-2%	-26%	0%
External	1,966	14,213	2,085	229,421	1,996	14,308	1,735	229,721	2%	1%	-17%	0%
Hunts (excluding SS)	146,877	32,527	2,887	377,657	150,171	31,065	1,380	374,141	2%	-4%	-52%	-1%

Table 6-5 - Mode share split (%) of sector origin trips (24hrs) - DS vs DS with EWR (Forecast Year 2046)

	Hybrid DS				Hybrid DS without A141				Difference (%)			
	Active Modes	PT	P&R	Car	Active Modes	PT	P&R	Car	Active Modes	PT	P&R	Car
Huntingdon Town	25%	12%	1%	62%	25%	11%	1%	63%	0.0%	-0.4%	0.0%	0.4%
St Ives Town	31%	8%	1%	59%	31%	8%	1%	60%	-0.2%	-0.1%	0.0%	0.3%
Huntingdonshire South	32%	6%	0%	62%	32%	7%	0%	61%	-0.3%	0.9%	0.0%	-0.6%
Huntingdonshire Central	27%	6%	1%	66%	27%	6%	1%	66%	-0.1%	0.2%	0.0%	-0.1%
Huntingdonshire East	22%	4%	1%	73%	22%	5%	1%	73%	-0.2%	0.4%	0.0%	-0.1%
Huntingdonshire North	20%	4%	0%	75%	20%	4%	0%	75%	0.0%	0.0%	0.0%	0.0%
Huntingdonshire North East	26%	3%	0%	70%	26%	3%	0%	70%	0.0%	0.0%	0.0%	0.0%
Huntingdonshire North Central	24%	4%	0%	72%	24%	4%	0%	72%	-0.1%	0.2%	0.0%	-0.1%
Huntingdonshire West	10%	2%	0%	87%	10%	3%	0%	87%	-0.1%	0.7%	0.0%	-0.5%
Lodge Farm	30%	7%	0%	63%	29%	7%	0%	63%	-0.1%	0.1%	0.0%	0.0%
Wyton Airfield	34%	4%	0%	62%	33%	4%	0%	62%	-0.3%	0.0%	0.0%	0.2%
The Lattenburys	21%	7%	1%	71%	21%	8%	1%	71%	-0.1%	0.6%	0.0%	-0.4%
Land North of A141	6%	4%	1%	88%	6%	4%	1%	89%	0.0%	-0.1%	0.0%	0.1%
Cambridge	48%	11%	2%	39%	48%	12%	2%	38%	-0.5%	0.9%	-0.1%	-0.3%
South Cambridgeshire	20%	5%	1%	75%	19%	6%	1%	74%	-0.2%	0.7%	0.0%	-0.5%
East Cambridgeshire	24%	3%	0%	72%	24%	3%	0%	72%	0.0%	0.0%	0.0%	0.0%
Peterborough	23%	5%	0%	71%	23%	5%	0%	71%	0.0%	0.0%	0.0%	0.0%
Fenland	25%	3%	0%	72%	25%	3%	0%	72%	0.0%	0.0%	0.0%	0.0%
External	1%	6%	1%	93%	1%	6%	1%	93%	0.0%	0.1%	0.0%	-0.1%
Hunts (excluding SS)	26%	6%	1%	67%	26%	6%	1%	67%	-0.1%	0.3%	0.0%	-0.1%

Table 6-6 - Mode share split (%) of sector origin trips (24hr) - DS vs DS without A141 scheme (Forecast Year 2046)

	Hybrid DS				Hybrid DS without A141				Difference (%)			
	Active Modes	PT	P&R	Car	Active Modes	PT	P&R	Car	Active Modes	PT	P&R	Car
Huntingdon Town	25%	12%	1%	62%	27%	11%	0%	62%	2.2%	-1.2%	-0.9%	0.0%
St Ives Town	31%	8%	1%	59%	33%	7%	1%	60%	1.7%	-1.6%	-0.6%	0.5%
Huntingdonshire South	32%	6%	0%	62%	32%	7%	0%	61%	-0.3%	1.0%	-0.1%	-0.6%
Huntingdonshire Central	27%	6%	1%	66%	29%	6%	0%	66%	1.7%	-0.6%	-0.3%	-0.9%
Huntingdonshire East	22%	4%	1%	73%	23%	3%	0%	73%	1.1%	-1.0%	-0.3%	0.2%
Huntingdonshire North	20%	4%	0%	75%	20%	4%	0%	75%	0.1%	0.0%	-0.1%	0.0%
Huntingdonshire North East	26%	3%	0%	70%	27%	3%	0%	70%	0.5%	-0.1%	-0.2%	-0.2%
Huntingdonshire North Central	24%	4%	0%	72%	24%	4%	0%	72%	0.6%	-0.3%	-0.2%	-0.1%
Huntingdonshire West	10%	2%	0%	87%	10%	2%	0%	87%	0.2%	0.0%	-0.2%	0.0%
Lodge Farm	30%	7%	0%	63%	33%	5%	0%	62%	3.4%	-1.6%	-0.3%	-1.5%
Wyton Airfield	34%	4%	0%	62%	36%	4%	0%	60%	2.4%	-0.7%	-0.2%	-1.4%
The Lattenburys	21%	7%	1%	71%	23%	3%	0%	74%	2.4%	-4.5%	-0.3%	2.4%
Land North of A141	6%	4%	1%	88%	6%	2%	0%	92%	-0.2%	-1.7%	-1.4%	3.4%
Cambridge	48%	11%	2%	39%	49%	11%	2%	39%	0.6%	-0.2%	-0.3%	-0.1%
South Cambridgeshire	20%	5%	1%	75%	20%	5%	0%	75%	0.2%	-0.2%	-0.1%	0.0%
East Cambridgeshire	24%	3%	0%	72%	24%	3%	0%	72%	-0.1%	0.0%	0.0%	0.1%
Peterborough	23%	5%	0%	71%	23%	5%	0%	71%	0.1%	0.0%	0.0%	-0.1%
Fenland	25%	3%	0%	72%	25%	3%	0%	72%	0.1%	-0.1%	0.0%	0.0%
External	1%	6%	1%	93%	1%	6%	1%	93%	0.0%	0.0%	-0.1%	0.1%
Hunts (excluding SS)	26%	6%	1%	67%	26%	6%	1%	67%	-0.1%	0.3%	0.0%	-0.1%

6.2.4 Sector to sector car trips

Table 6-7 and Table 6-8 present origin-destination matrices showing the difference in 24-hour car trips between the Hybrid Strategy DS scenario and the two sensitivity tests. The following observations are noted:

With EWR scenario

- The largest reductions in car trips are to and from South Cambridgeshire, particularly from Huntingdonshire Central and Huntingdonshire South.
- This reflects a mode shift for longer-distance trips, especially commuting to South Cambs with trips being redirected to rail.
- Within Huntingdonshire South, there's a noticeable drop in internalised trips, suggesting reduced local car use due to improved rail alternatives using the new Cambourne Station.
- For strategic sites, the impact is minimal:
  - Only the Lattenburys to South Cambridgeshire shows a notable, but still slight, reduction (-48).
  - Other sites see small changes, indicating EWR's influence is more regional than local.

Without A141 scenario

- The A141 scheme serves Huntingdon Town, Huntingdonshire Central and South, and nearby strategic sites such as Lodge Farm, Wyton Airfield, and Land North of A141, providing improved highway connectivity and additional PT and P&R.
- Removing the scheme from the DS leads to major trip reductions from key areas: Huntingdon Town (-1,232), Huntingdonshire Central (-1,619), and strategic sites like Lodge Farm (-423) and Wyton Airfield (-279), indicating suppressed demand and reduced accessibility.
- Trip containment effects are observed at strategic sites, with increased internal trips (e.g. Lodge Farm +220, Wyton Airfield +205), suggesting that poor external connectivity limits outward movement.
- Trip increases in peripheral areas such as Peterborough (+667) and Fenland (+433) suggest rerouting away from congested Huntingdon, highlighting the bypass's role in maintaining efficient network flow.

Table 6-7 - Sector to sector car trips (24hr) - Hybrid Strategy DS vs DS with EWR (Forecast Year 2046)

Origins \ Destinations	Lodge Farm	Wyton Airfield	The Lattenburys	Land North of A141	Huntingdon Town	St Ives Town	Huntingdonshire South	Huntingdonshire Central	Huntingdonshire East	Huntingdonshire North	Huntingdonshire North East	Huntingdonshire North Central	Huntingdonshire West	Cambridge City	South Cambridgeshire	East Cambridgeshire	Peterborough	Fenland	External	Total
Lodge Farm	-10	6	-1	-3	-8	53	-7	-17	16	-2	5	-12	-3	-4	-17	5	-20	9	-8	**-18**
Wyton Airfield	6	-15	1	1	7	5	4	13	2	2	-7	13	2	3	0	-3	10	-11	9	**41**
The Lattenburys	-1	1	-5	0	-4	1	-10	-10	-5	-1	1	-3	-1	-7	-48	1	-10	1	-8	**-109**
Land North of A141	-2	2	0	-2	-2	5	-6	-5	1	0	2	-5	-3	0	-8	2	-5	3	-3	**-28**
Huntingdon Town	-9	7	-3	-3	-17	70	-22	-32	18	-1	7	-12	-6	-2	-53	13	-20	13	-8	**-58**
St Ives Town	48	5	2	4	58	-85	7	105	-26	4	-12	34	5	2	-17	-16	27	-13	19	**151**
Huntingdonshire South	-7	4	-10	-8	-24	6	-302	-44	-17	-4	3	-26	-23	-93	-389	-11	-58	5	-152	**-1,151**
Huntingdonshire Central	-17	13	-9	-7	-32	120	-41	-70	30	-3	11	-22	-8	-23	-136	23	-45	20	-25	**-221**
Huntingdonshire East	14	1	-4	1	14	-22	-15	25	-20	1	-1	15	2	-16	-95	-11	3	-3	3	**-108**
Huntingdonshire North	-2	2	-1	0	0	4	-3	-2	2	-3	0	-3	-1	-1	-8	1	-21	0	-3	**-38**
Huntingdonshire North East	5	-7	1	1	8	-11	4	12	0	0	-20	7	2	3	2	-9	-2	-18	5	**-16**
Huntingdonshire North Central	-12	14	-2	-6	-12	40	-24	-21	18	-5	7	-43	-8	-9	-55	11	-77	15	-23	**-192**
Huntingdonshire West	-3	2	-1	-4	-7	6	-25	-9	2	-1	2	-10	-18	-5	-27	1	-25	3	-16	**-138**
Cambridge City	-4	3	-6	1	1	4	-79	-18	-10	-1	3	-7	-4	139	-148	-27	-15	-1	-12	**-180**
South Cambridgeshire	-16	-1	-41	-11	-45	-17	-341	-124	-85	-9	0	-52	-22	-257	-1,547	-44	-106	-1	-125	**-2,843**
East Cambridgeshire	5	-3	2	2	12	-13	-4	22	-8	0	-8	10	1	-35	-17	-67	2	-17	40	**-77**
Peterborough	-15	13	-6	-1	-3	29	-34	-24	9	-14	3	-43	-14	-17	-75	3	-168	13	-41	**-385**
Fenland	10	-9	2	3	15	-10	8	22	1	1	-15	16	3	-1	6	-17	10	-67	9	**-17**
External	-8	9	-8	-4	-8	20	-152	-24	4	-4	6	-23	-15	-22	-137	38	-50	9	0	**-369**
Total	**-18**	**47**	**-89**	**-38**	**-47**	**205**	**-1,043**	**-204**	**-69**	**-41**	**-12**	**-165**	**-112**	**-345**	**-2,771**	**-109**	**-571**	**-38**	**-337**	**-5,758**

Table 6-8 - Sector to sector car trips (24hr) - Hybrid Strategy DS vs DS without A141 (Forecast Year 2046)

Origins \ Destinations	Lodge Farm	Wyton Airfield	The Lattenburys	Land North of A141	Huntingdon Town	St Ives Town	Huntingdonshire South	Huntingdonshire Central	Huntingdonshire East	Huntingdonshire North	Huntingdonshire North East	Huntingdonshire North Central	Huntingdonshire West	Cambridge City	South Cambridgeshire	East Cambridgeshire	Peterborough	Fenland	External	Total
Lodge Farm	220	95	-45	-90	-140	178	-188	-75	82	-9	92	-69	-57	-106	-336	54	-51	132	-109	**-423**
Wyton Airfield	96	205	-34	-108	-200	92	-180	-183	118	0	173	-197	-69	-56	-152	94	10	212	-100	**-279**
The Lattenburys	-43	-32	64	3	15	-29	45	9	6	4	-16	4	11	58	191	-7	40	-13	41	**351**
Land North of A141	-76	-97	3	-2	-21	-34	27	-36	-54	6	-82	15	18	0	5	-21	40	-74	62	**-319**
Huntingdon Town	-140	-197	15	-37	-12	-60	-13	-94	-120	-4	-192	-6	-28	-10	-41	-42	-6	-204	-43	**-1,232**
St Ives Town	166	87	-29	-40	-72	369	-101	35	199	-19	88	-140	-38	-63	-251	54	-152	65	-132	**25**
Huntingdonshire South	-182	-174	43	31	-5	-101	82	-96	-120	8	-138	13	51	27	122	-20	83	-172	135	**-411**
Huntingdonshire Central	-78	-183	8	-63	-105	50	-113	-54	-86	-7	-167	-93	-49	-63	-225	-23	-6	-193	-169	**-1,619**
Huntingdonshire East	80	112	4	-60	-122	204	-121	-87	216	-15	72	-175	-40	3	-25	61	-113	74	-94	**-23**
Huntingdonshire North	-10	-1	4	6	-2	-18	8	-7	-14	9	5	35	8	1	3	-3	41	0	36	**100**
Huntingdonshire North East	87	165	-16	-91	-200	87	-145	-176	69	7	229	-163	-55	-18	-60	81	113	213	-109	**15**
Huntingdonshire North Central	-82	-205	6	7	-12	-144	10	-102	-182	40	-165	362	17	-5	-36	-104	436	-212	27	**-344**
Huntingdonshire West	-55	-70	10	20	-21	-39	54	-41	-40	8	-55	20	54	12	45	-6	86	-71	62	**-28**
Cambridge City	-101	-54	55	2	-16	-69	21	-66	-6	1	-19	-7	11	-321	-38	-72	4	-1	68	**-608**
South Cambridgeshire	-296	-129	177	10	-54	-254	109	-206	-40	3	-60	-33	41	32	1,070	39	30	-24	293	**709**
East Cambridgeshire	48	81	-10	-19	-46	35	-22	-31	36	-3	66	-99	-6	-63	24	406	-8	113	29	**530**
Peterborough	-61	5	35	46	17	-131	65	7	-97	23	80	350	75	6	16	-10	-118	-21	380	**667**
Fenland	114	181	-13	-82	-209	50	-177	-205	57	0	185	-203	-68	3	-24	131	25	762	-94	**433**
External	-109	-103	41	64	-39	-137	135	-167	-98	36	-111	27	61	74	298	29	396	-97	0	**300**
Total	**-424**	**-314**	**320**	**-405**	**-1,243**	**52**	**-507**	**-1,573**	**-74**	**91**	**-15**	**-360**	**-62**	**-489**	**586**	**641**	**851**	**488**	**285**	**-2,155**

6.2.5 Highway model assignment statistics

Table 6-9 and Table 6-10 present a comparison of highway assignment metrics between the Hybrid DS scenario and two sensitivity tests: one including EWR, and one excluding the A141 scheme. The EWR comparison shows only marginal changes in overall trip volumes, travel distances, and vehicle hours across all time periods, with delay slightly reduced in the AM and IP peaks. While EWR is a rail-based intervention expected to draw trips away from car use, its impact on highway network performance within Huntingdonshire is minimal due to the scheme's distance from the district.

In contrast, the removal of the A141 scheme results in more pronounced impacts on the highway network. Travel time increases by up to 3.5%, and total delay rises significantly - by 11% in the AM, 14% in the IP, and 15% in the PM peak. These changes reflect increased congestion and reduced network efficiency, particularly around Huntingdon. Given the location and proximity of strategic sites such as Lodge Farm, Wyton Airfield, and Land North of A141 to the A141 corridor, the scheme is clearly critical to their deliverability. Without it, access to these sites is constrained with high delay, trip-making is suppressed, and further mitigation would likely be required to support development viability.

Table 6-9 - Key highway assignment model statistics for Huntingdonshire - Hybrid DS vs Hybrid DS with EWR (Forecast Year 2046)

Metric	Analysis area	Time period	Hybrid DS	Hybrid DS with EWR	Difference	Difference (%)
Matrix Totals	Whole model area	AM	246,532	247,162	631	0.3%
		IP	182,584	182,740	156	0.1%
		PM	254,239	254,537	297	0.1%
Travel Distance (km)	Huntingdonshire	AM	1,006,298	1,011,244	4,946	0.5%
		IP	779,162	780,765	1,603	0.2%
		PM	1,015,922	1,018,180	2,258	0.2%
Travel Time (vehicle hours)	Huntingdonshire	AM	16,869	16,863	-6	0.0%
		IP	11,088	11,079	-9	-0.1%
		PM	16,093	16,151	58	0.4%
Total Delay (hours)	Huntingdonshire	AM	4,703	4,641	-62	-1%
		IP	1,713	1,683	-30	-2%
		PM	3,833	3,844	11	0%

Table 6-10 - Key highway assignment model statistics - Hybrid DS vs Hybrid DS without A141 (Forecast Year 2046)

Metric	Analysis area	Time period	Hybrid DS	Hybrid DS without A141	Difference	Difference (%)
Matrix Totals	Whole model area	AM	246,532	246,230	-302	-0.1%
		IP	182,584	186,697	4,113	2.3%
		PM	254,239	253,821	-418	-0.2%
Travel Distance (km)	Huntingdonshire	AM	1,006,298	1,003,516	-2,782	-0.3%
		IP	779,162	770,697	-8,465	-1.1%
		PM	1,015,922	1,009,165	-6,758	-0.7%
Travel Time (vehicle hours)	Huntingdonshire	AM	16,869	17,403	535	3.2%
		IP	11,088	11,267	179	1.6%
		PM	16,093	16,661	569	3.5%
Total Delay (hours)	Huntingdonshire	AM	4,703	5,205	501	11%
		IP	1,713	1,954	241	14%
		PM	3,833	4,400	567	15%

6.2.6 Junction delay

Appendix C presents plots showing the differences in mean delay by link for the AM, IP, and PM periods, as well as differences in link flow for the same time periods, comparing each sensitivity test against the DS scenario.

For the with EWR sensitivity test, changes in highway performance are relatively minimal overall. However, the plots show a clear reduction in delays at the A141/B1090 roundabout, driven by lower vehicle flows through this junction. While delay is reduced compared to the DS scenario, it remains elevated relative to the DM, reinforcing the need to re-consider future mitigation at this junction.

In the sensitivity test without the A141 scheme, the plots clearly show increased delays across the road network in Huntingdon. With vehicles no longer being able to use the bypass, there are increased flows on minor roads and a substantial rise in traffic volumes on the A141 itself compared to the DS. The removal of the scheme also causes traffic to re-route onto other roads surrounding Huntingdon, further contributing to network-wide delay and congestion. These findings highlight the critical role of the A141 scheme in supporting future traffic demand and maintaining good network performance across Huntingdon and the district as a whole.

7. Conclusions and Recommendations

7.1 Context

This document has introduced the Hybrid Strategy for the Huntingdonshire Local Plan, noting the modelled impacts of the development as well as a viable mitigation package to both reduce impact on the highway network and facilitate an increase in journeys made by public transport and active modes. It has been ensured that the mitigation package includes measures previously explored by HDC, such as the LCWIP schemes, to further strengthen the package's deliverability. Transport modelling results show that the mitigation package has the desired outcome, though with some impacts which would require further refinement as plans progress. Sensitivity tests conducted show that whilst the construction of EWR does have a moderate impact in reducing the number of car trips taken across Cambridgeshire, this impact is far less significant within Huntingdonshire itself. Furthermore, by removing the A141 scheme, vehicle delays and journey times in Huntingdonshire significantly increase District-wide, demonstrating the significance of this scheme in supporting growth.

7.2 Assessment of mitigation package

The mitigation package prepared, utilising existing proposals as a framework, has varying success around the District. Whilst there are several active travel routes planned with a focus on inter-town connectivity, overall active travel use remains constrained primarily to intra-sectoral local trips. These schemes overall have a more minimal impact than might be expected if they were located in, for example, South Cambridgeshire and Cambridge city, due to the much higher utilisation of active modes for commuting in those areas. During model testing in Huntingdonshire, active use remained consistent between the Do-Minimum and Do-Something scenarios.

For Huntingdonshire sectors in the Do-Something scenario, car mode share ranges from 59% (St Ives Town) to 87% (Huntingdonshire West); sectors with lower car rates display higher rates of walking and cycling. As expected, the more urban sectors with greater densities of residents, jobs, and leisure opportunities nearby have the lowest rates of car use. When compared to this, it can be observed that the Wyton Airfield sector is displaying higher-than-expected rates of internalisation for a relatively remote medium-sized settlement. Furthermore, there is lower bus use compared to the other residential strategic sites (4% at Wyton Airfield compared to 7% at The Lattenburys and 7% at Lodge Farm) despite the bus infrastructure and routes serving the development. Access arrangements for the private car are highly congested, especially at the A141 / B1090 Sawtry Way roundabout. Care must be taken not to over-develop around the proposed A141 bypass, given the location of both the Lodge Farm and Wyton Airfield strategic sites.

While the Park and Ride sites at Huntingdon Racecourse, Gifford's Park, and Wyton Airfield are more closely associated with the A141 improvement scheme than the Local Plan development, their location and intention to reduce the number of vehicles being driven into St Ives and Huntingdon in particular mean they comprise an important part of the overall transport mitigations in Huntingdonshire.

Given Huntingdonshire's existing makeup as a mix of semi-rural and urban areas, over the entire district various mode-shares are typical of semi-rural and urban locations. Greater mitigation efforts to reduce reliance on private car travel would be merited, but the mitigation package overall can be considered broadly successful in that it ensures that areas of new development operate at similar mode shares to the rest of Huntingdonshire. However, specific areas of high

congestion, such as on the A141 bypass and within St Ives, remain as areas of where further mitigation could enhance the strategy.

7.3 Conclusion

The proposed Local Plan Hybrid Strategy and associated mitigation package unlock the required quantum of growth for Huntingdonshire while reducing impact on the highway network and improving the share of journeys taken by means more sustainable than the private car.

Despite increased public transportation usage, significant areas of congestion remain. However, it should be noted that parts of central Huntingdonshire (i.e., the A141 adjacent to the Wyton Airfield site) experience high levels of delay even within the tested Reference Case scenario, therefore issues observed in the Do-Minimum and Do-Something model tests cannot be entirely attributed to the growth associated with the Local Plan nor the mitigation measures implemented.

7.4 Further recommendations

Huntingdonshire District Council is to consult on this preferred option with local residents, in order to consider the overall public response to this proposal. This consultation period is currently predicted to conclude in December 2025 or January 2026. Once the consultation has closed, AtkinsRéalis and Huntingdonshire District Council will work together to prepare Phase 3 of the Local Plan development, confirming the proposed Local Plan submission land use and transport assumptions and subsequently testing the confirmed proposal.

It is likely that some alterations will need to be made during Phase 3 of the Local Plan development, in particular surrounding transport mitigations in highly congested areas. Specifically, further consideration is required of the A141 / B1090 Sawtry Way roundabout. Initial design proposals put forward by the A141 scheme were refined as part of the Hybrid Strategy development with signalisation, however this has not had the intended impact due to high flows from four of the five arms of the roundabout. Additional modelling of a higher capacity configuration would allow greater confidence in the network's ability to accommodate the proposed growth.

The capacity constraints of the A141 limit the ability of highway trips from Wyton Airfield to leave the site, and opening additional connections onto Old Ramsey Road (potentially in both directions, North to Old Hurst Road and South to St Ives) could offer a better distribution of trips without creating pinch points or overloading single junctions. Therefore it is recommended that future work should consider the strategic benefits of opening alternative site accesses.

TECHNICAL
NOTE

Appendices

Appendix A. Highway assignment delay and flow plots for DM scenario

TECHNICAL NOTE

Figure A-1 - Mean link delay for the DM scenario - AM

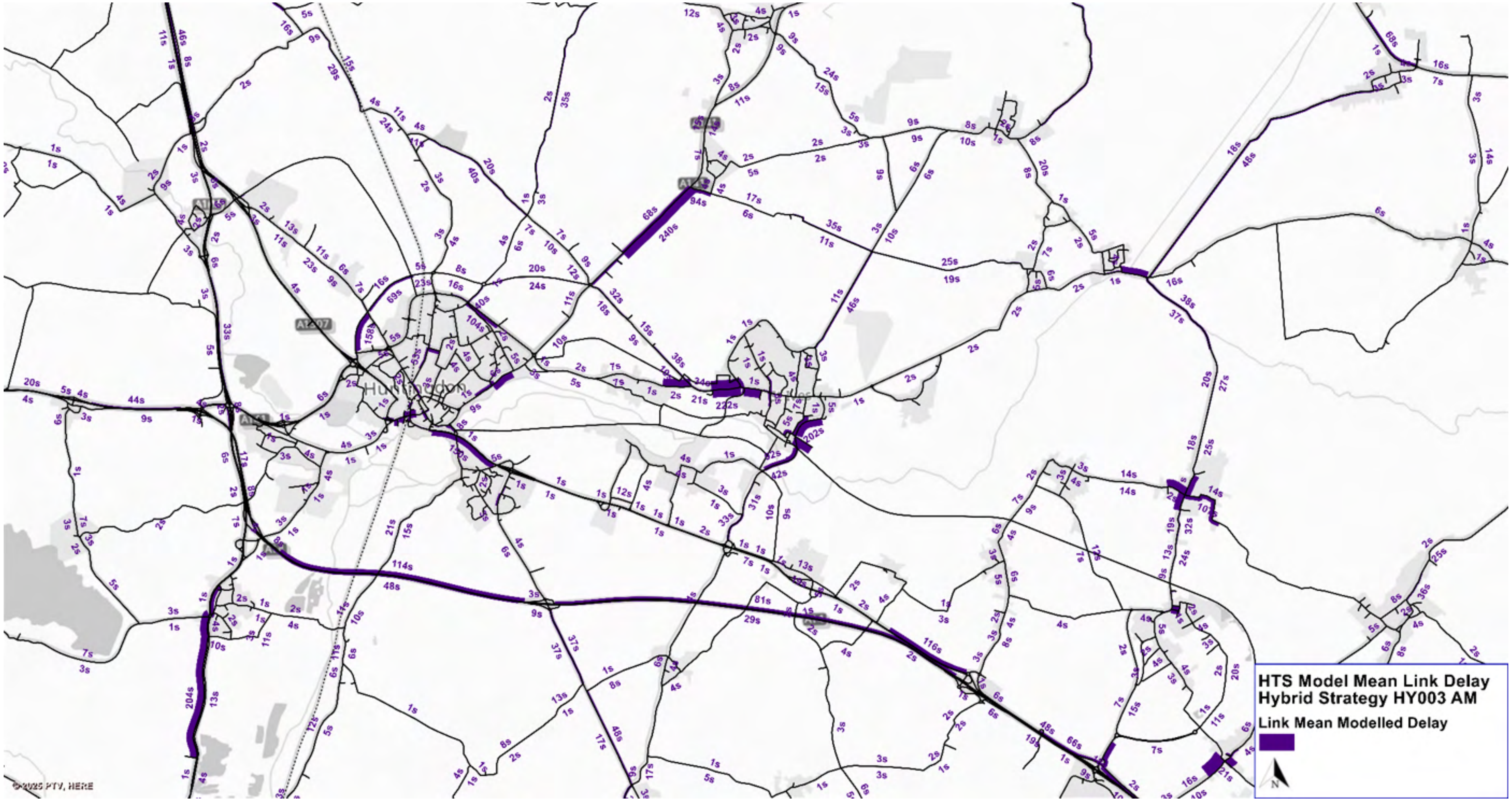


Figure A-2 - Mean link delay for the DM scenario - IP

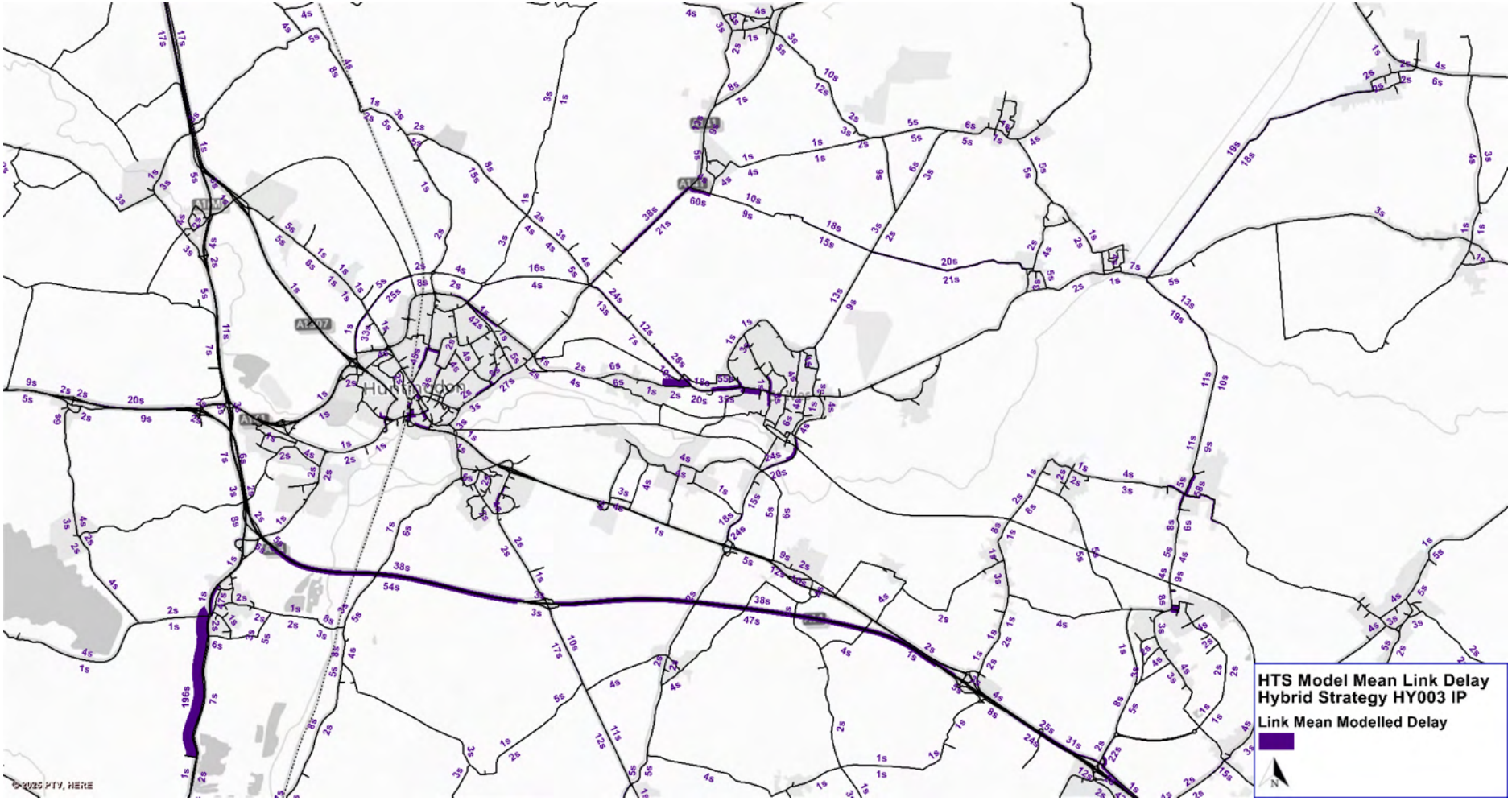


Figure A-3 - Mean link delay for the DM scenario - PM

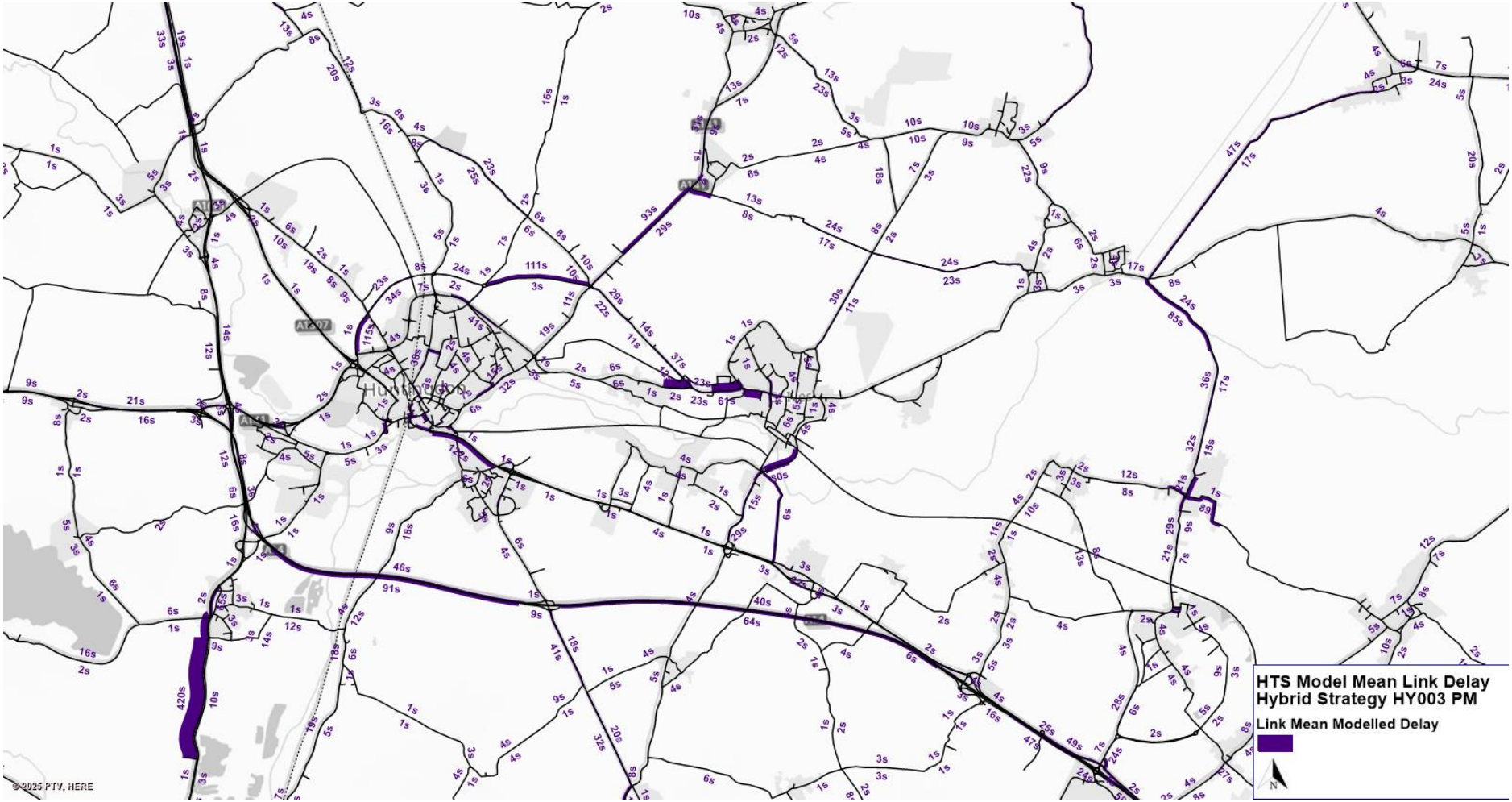


Figure A-4 - Total vehicle flow for the DM scenario – AM period

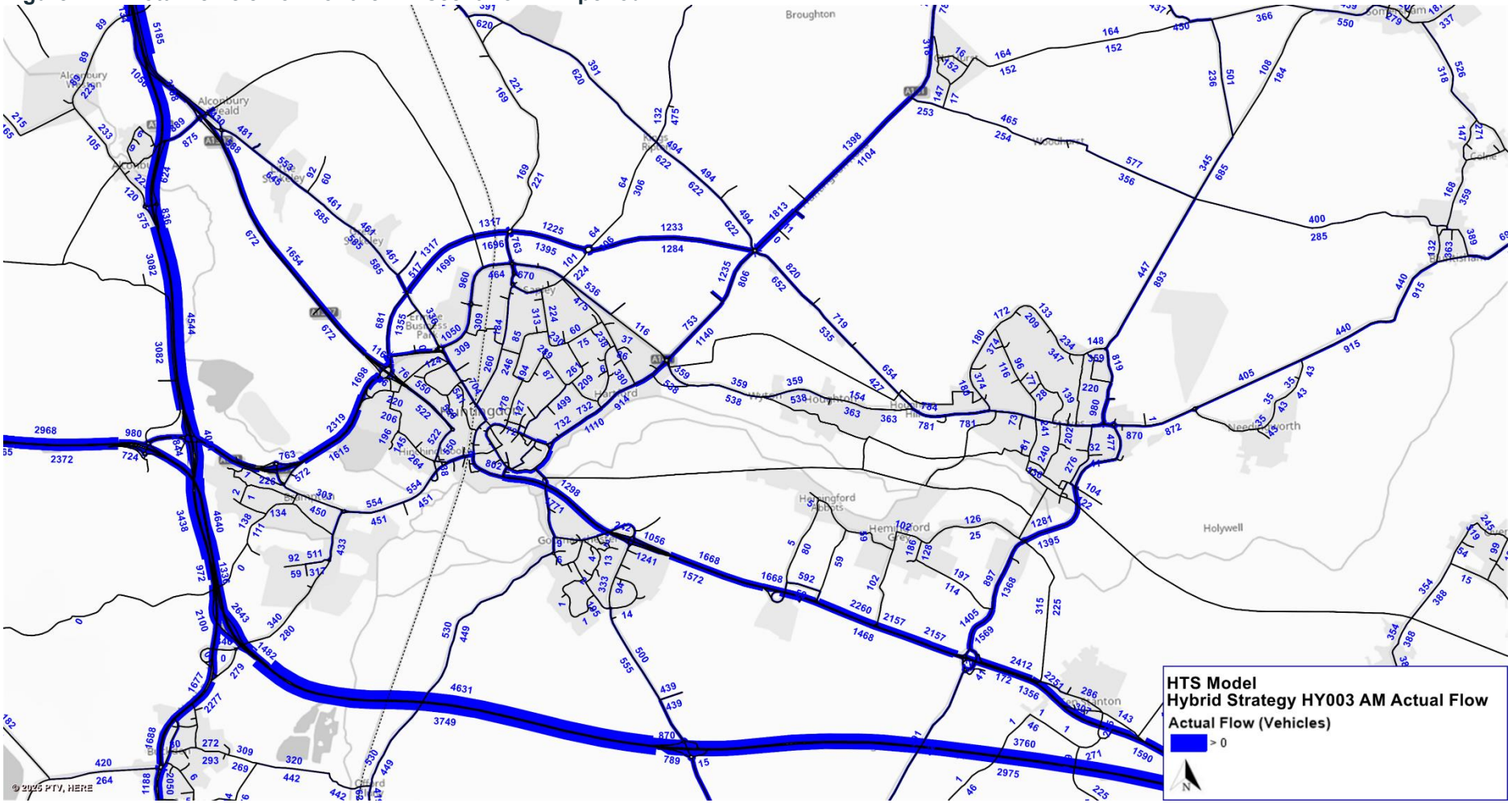


Figure A-5 - Total vehicle flow for the DM scenario – IP period

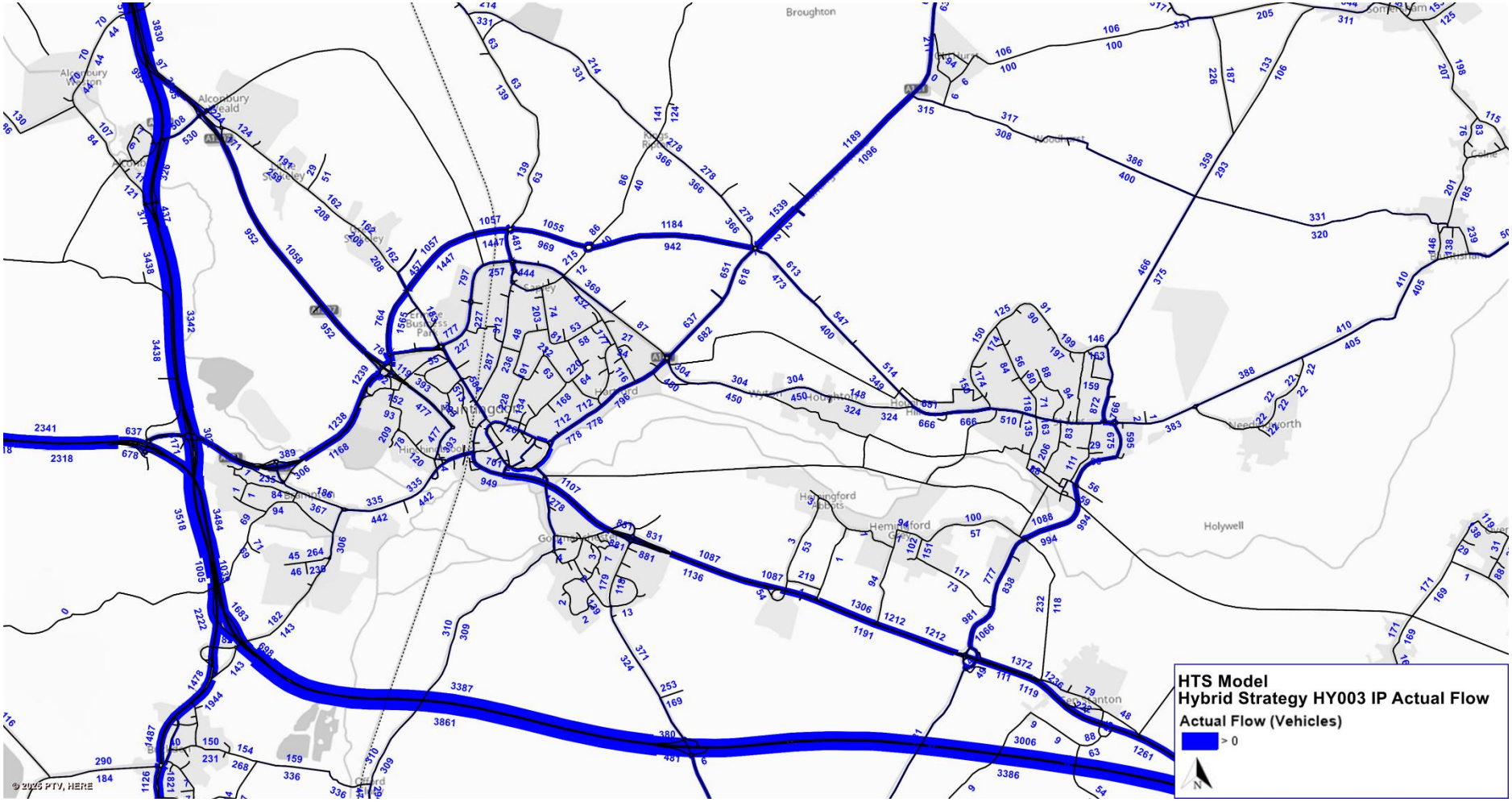
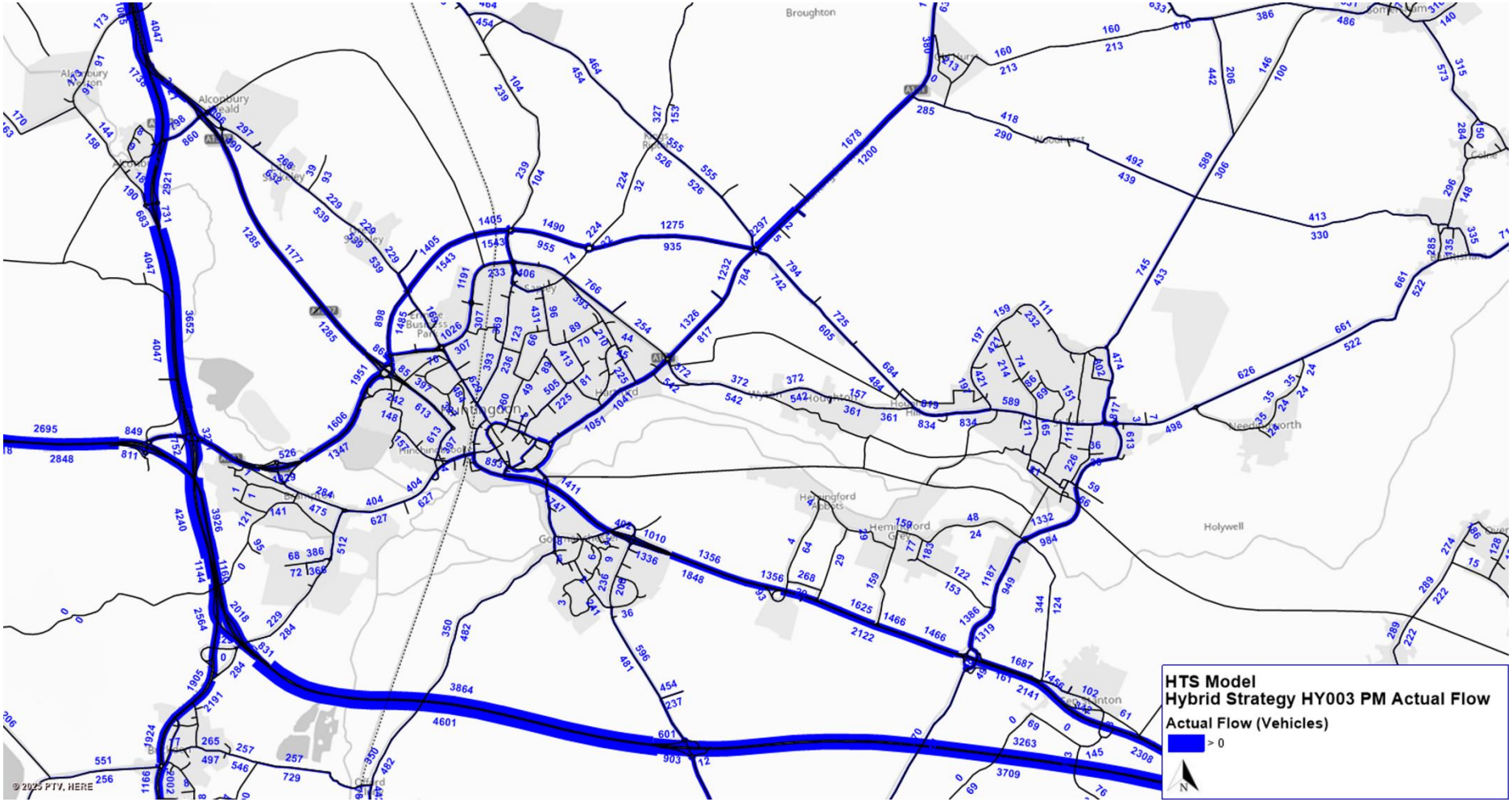


Figure A-6 - Total vehicle flow for the DM scenario – PM period



Appendix B. Highway assignment delay and flow difference plots for DM vs DS comparison

Figure B-1 - Difference in mean link delay (seconds) between the DM and DS - AM

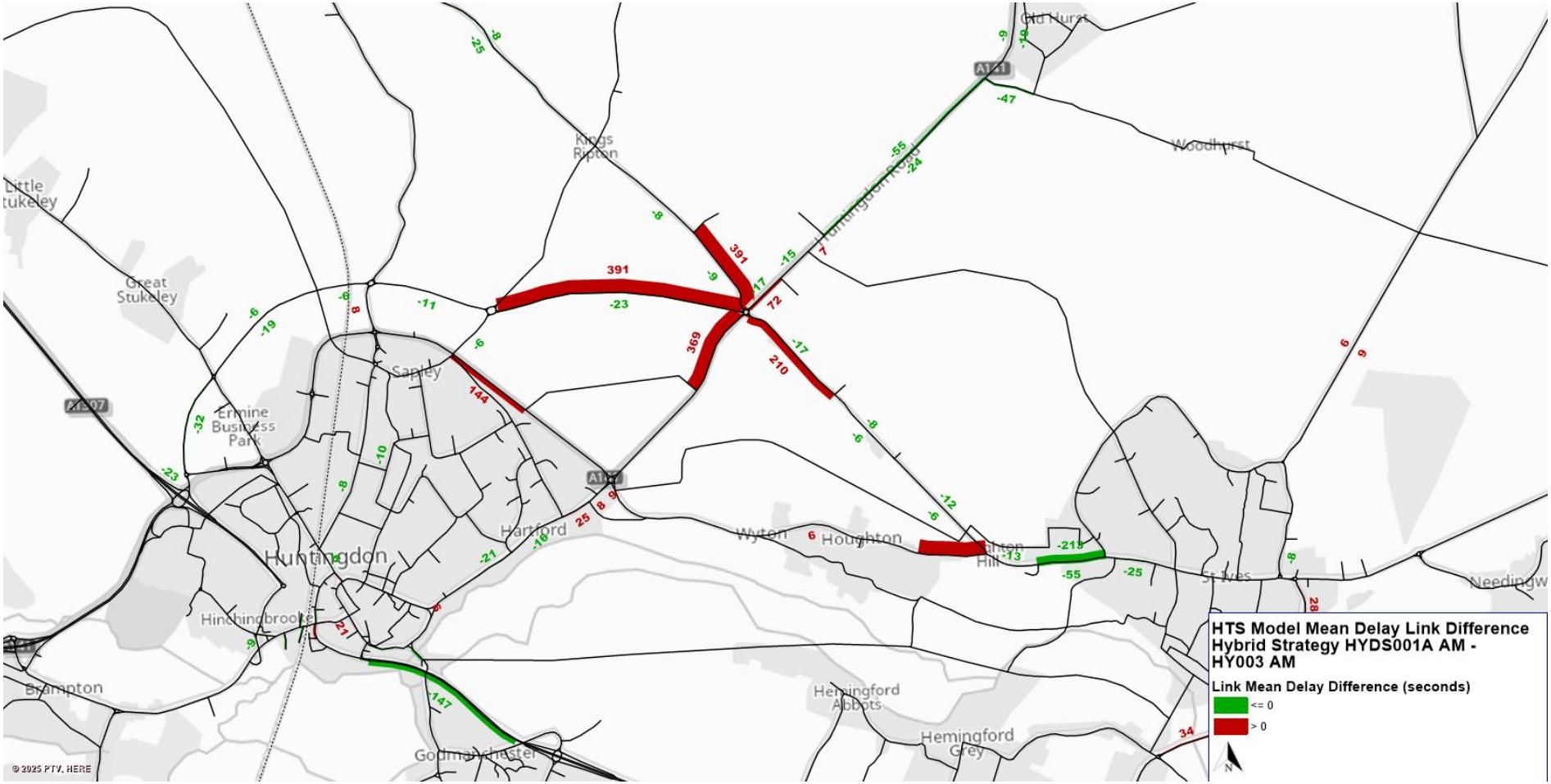


Figure B-2 - Difference in mean link delay (seconds) between the DM and DS - IP

Figure B-3 - Difference in mean link delay (seconds) between the DM and DS - PM

Figure B-4 - Difference in vehicle flow between the DM and DS for the – AM period

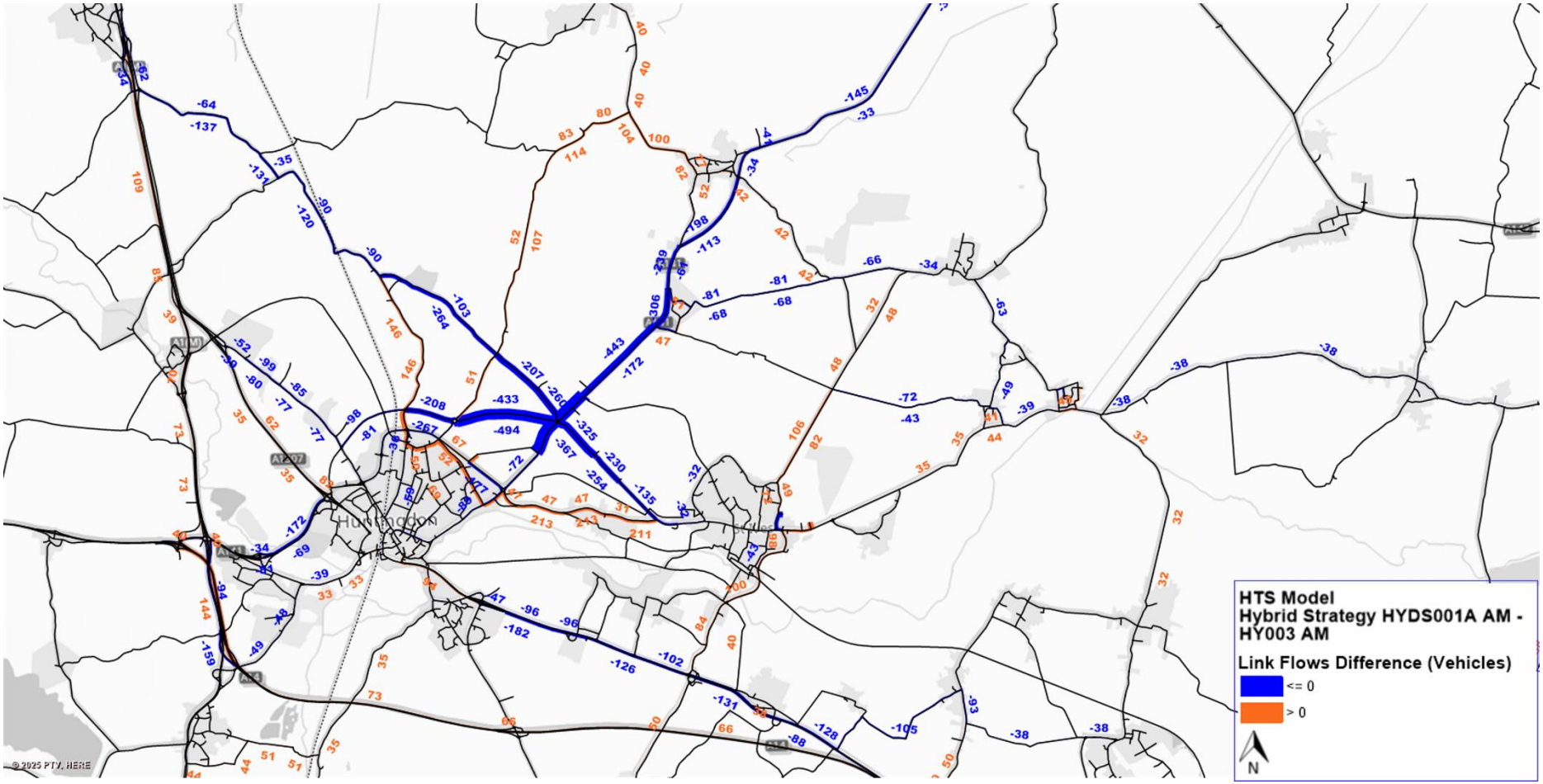


Figure B-5 - Difference in vehicle flow between the DM and DS – IP period

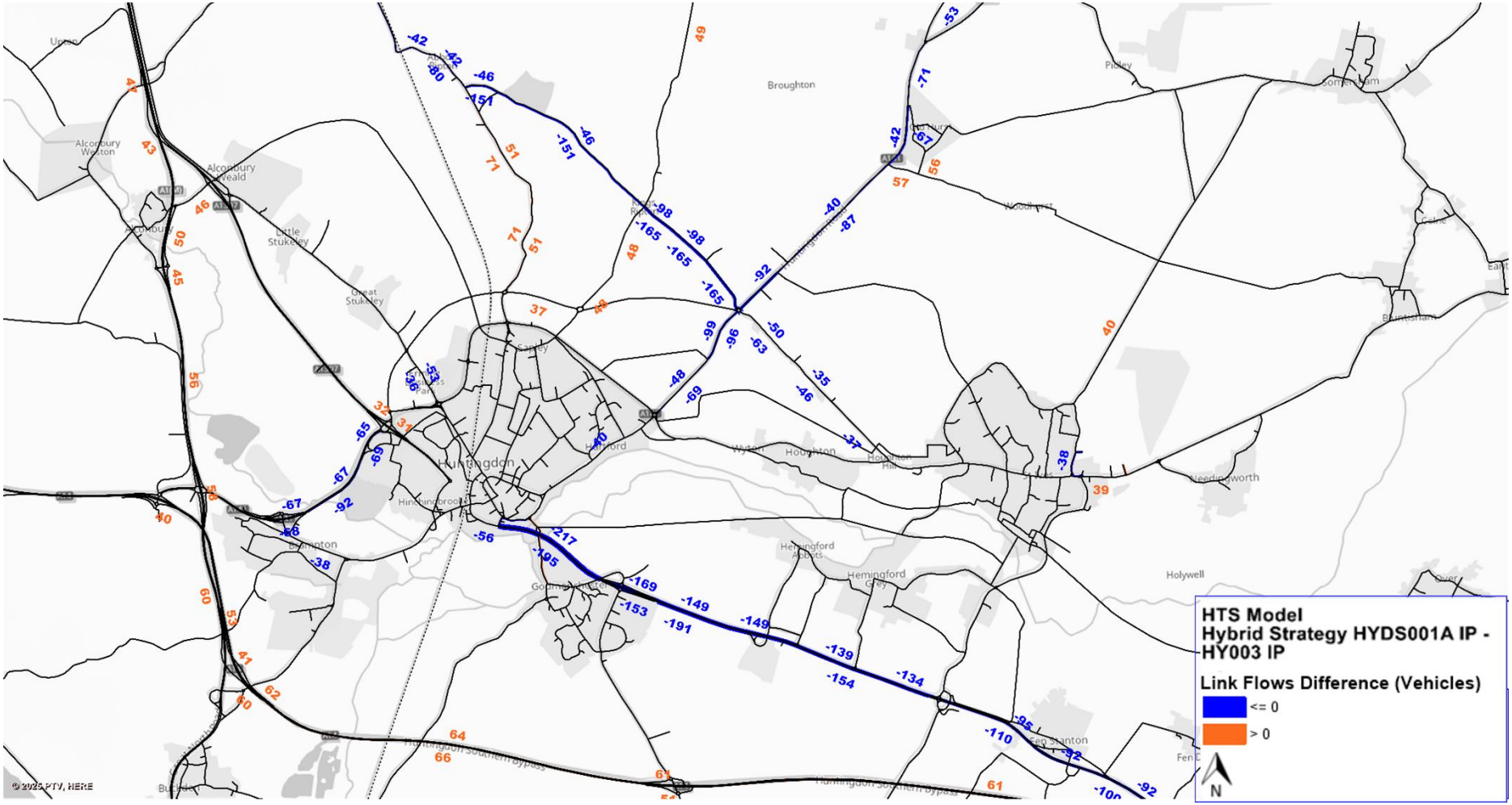
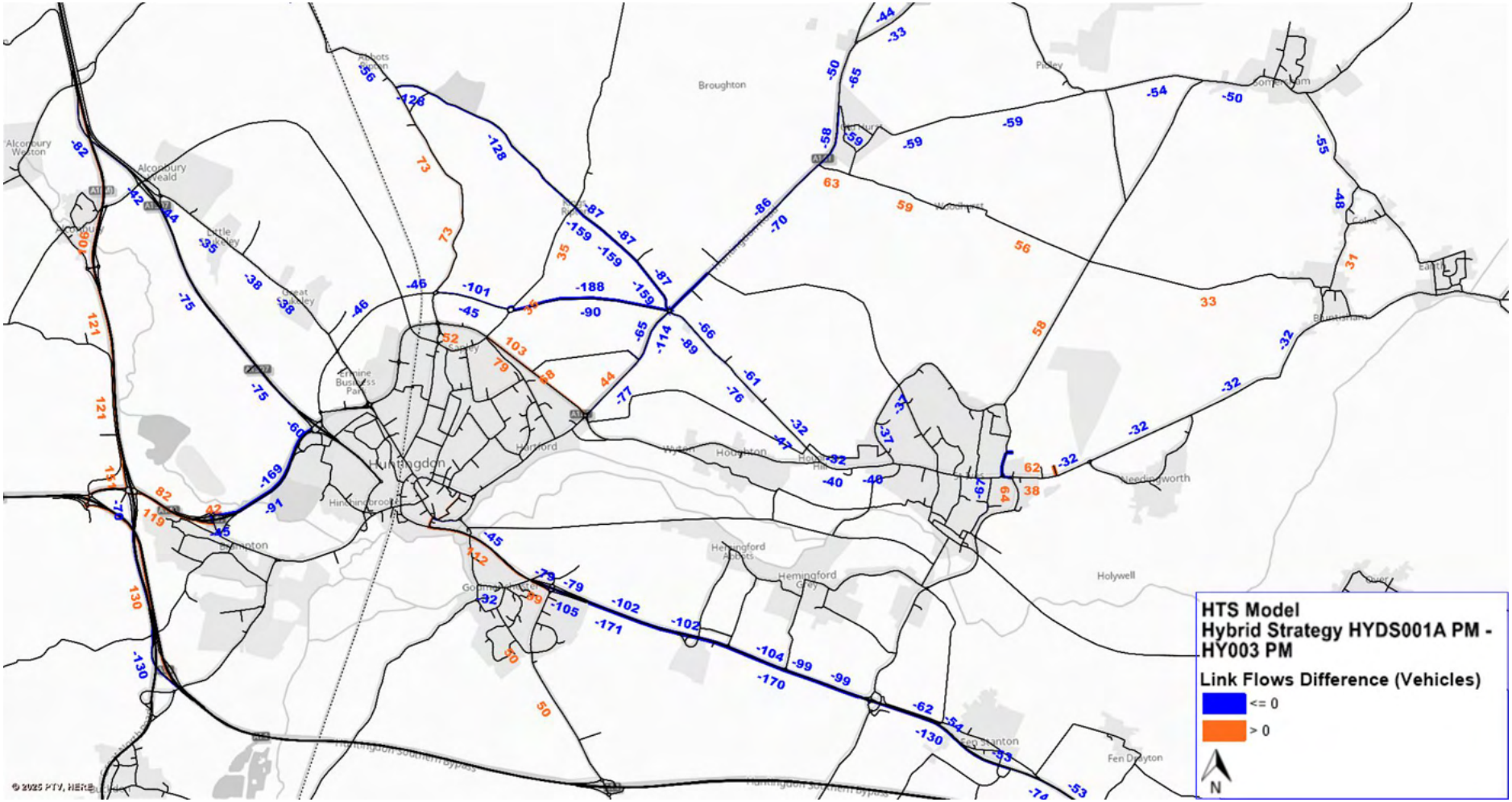


Figure B-6 - Difference in vehicle flow between the DM and DS – PM period



Appendix C. Highway assignment delay and flow difference plots for DS vs sensitivity test scenarios

Figure C-1 - Difference in mean link delay (seconds) between the DS and DS with EWR - AM

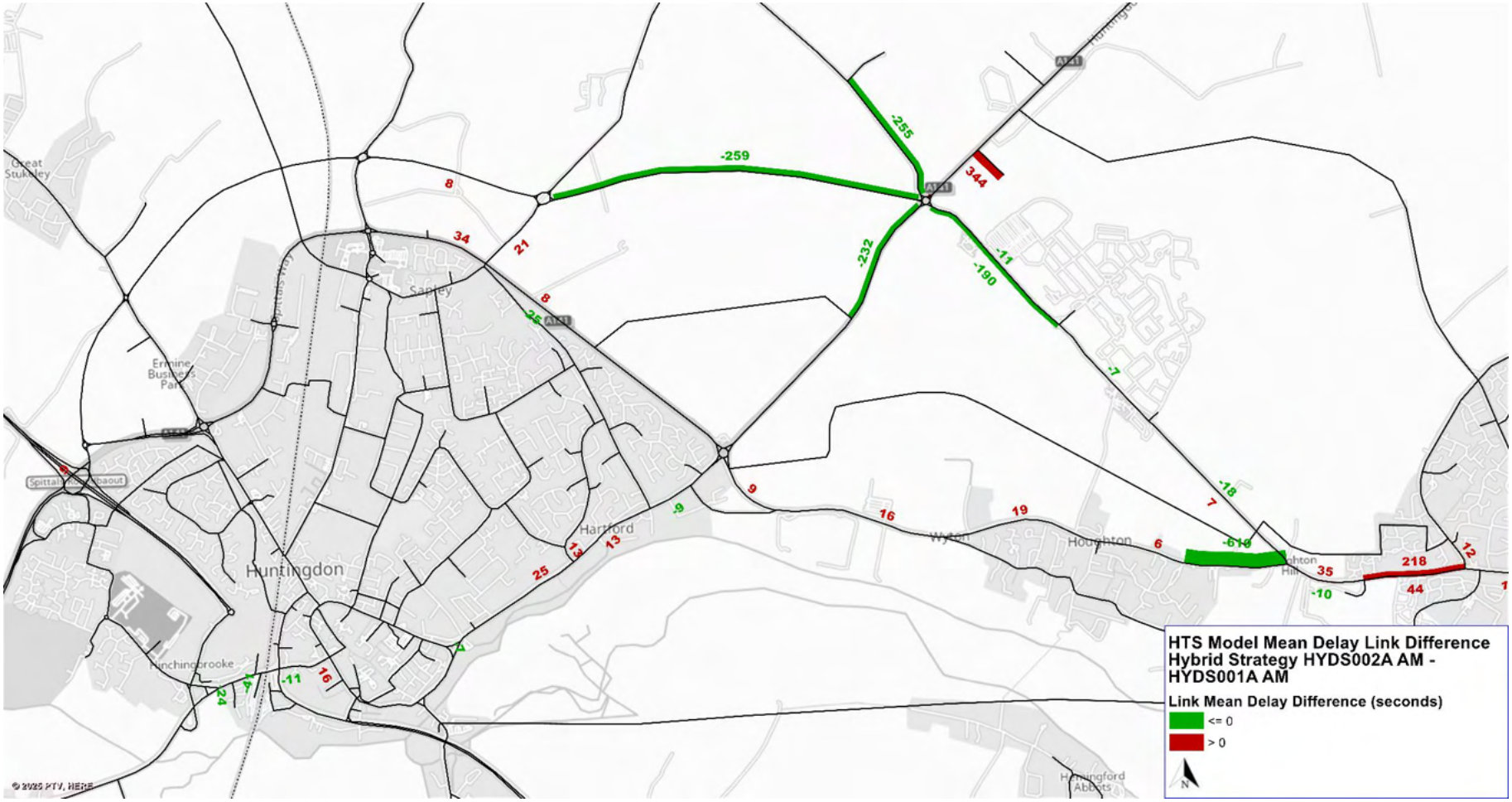


Figure A-2 - Difference in mean link delay (seconds) between the DS and DS with EWR - IP

Figure C-3 - Difference in mean link delay (seconds) between the DS and DS with EWR - PM

Figure C-4 - Difference in mean link delay (seconds) between the DS and DS without A141- AM

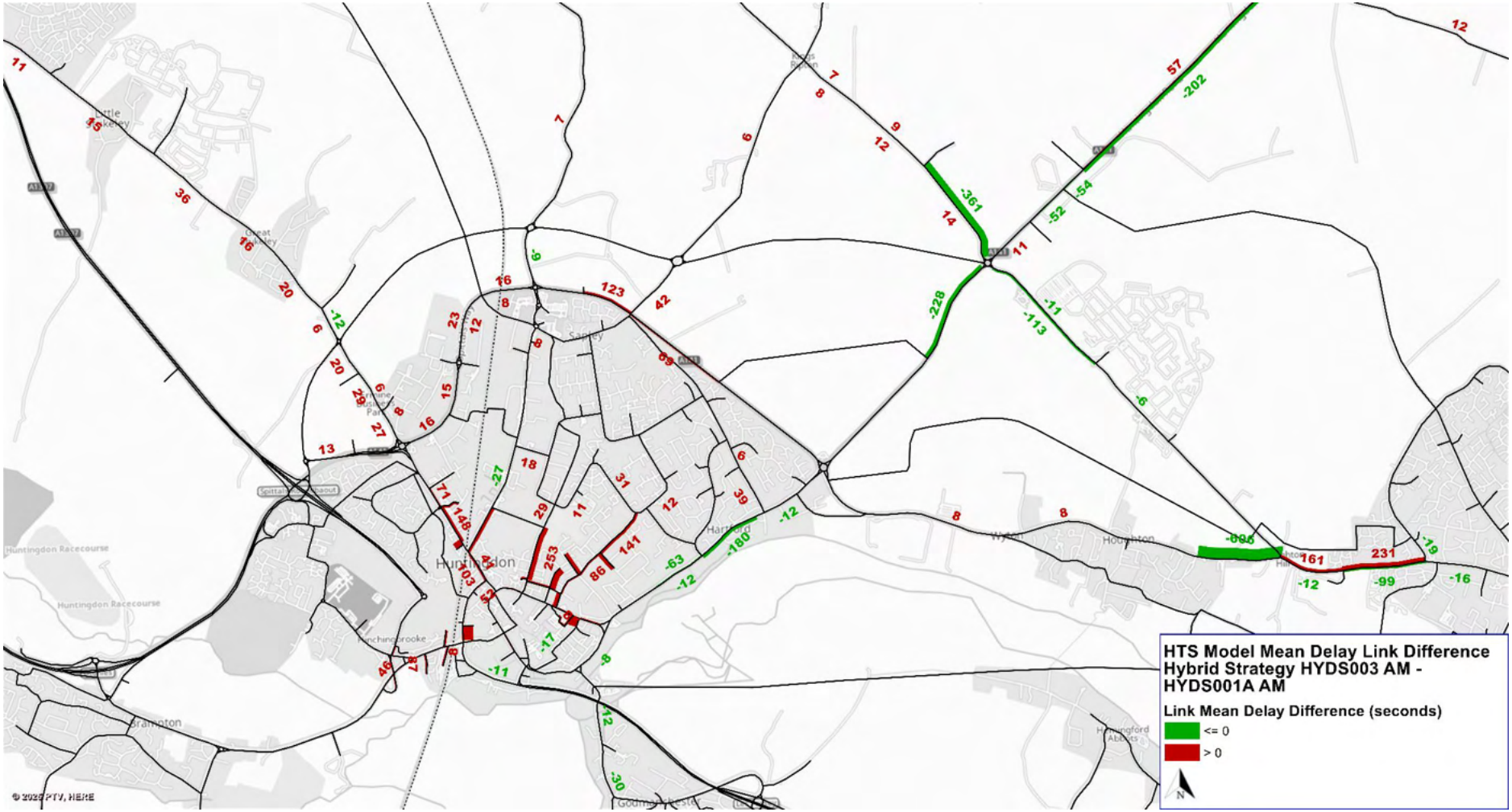


Figure C-5 - Difference in mean link delay (seconds) between the DS and DS without A141- IP

Figure C-6 - Difference in mean link delay (seconds) between the DS and DS without A141- PM

Figure C-7 - Difference in link flow between the DS and DS with EWR – AM period

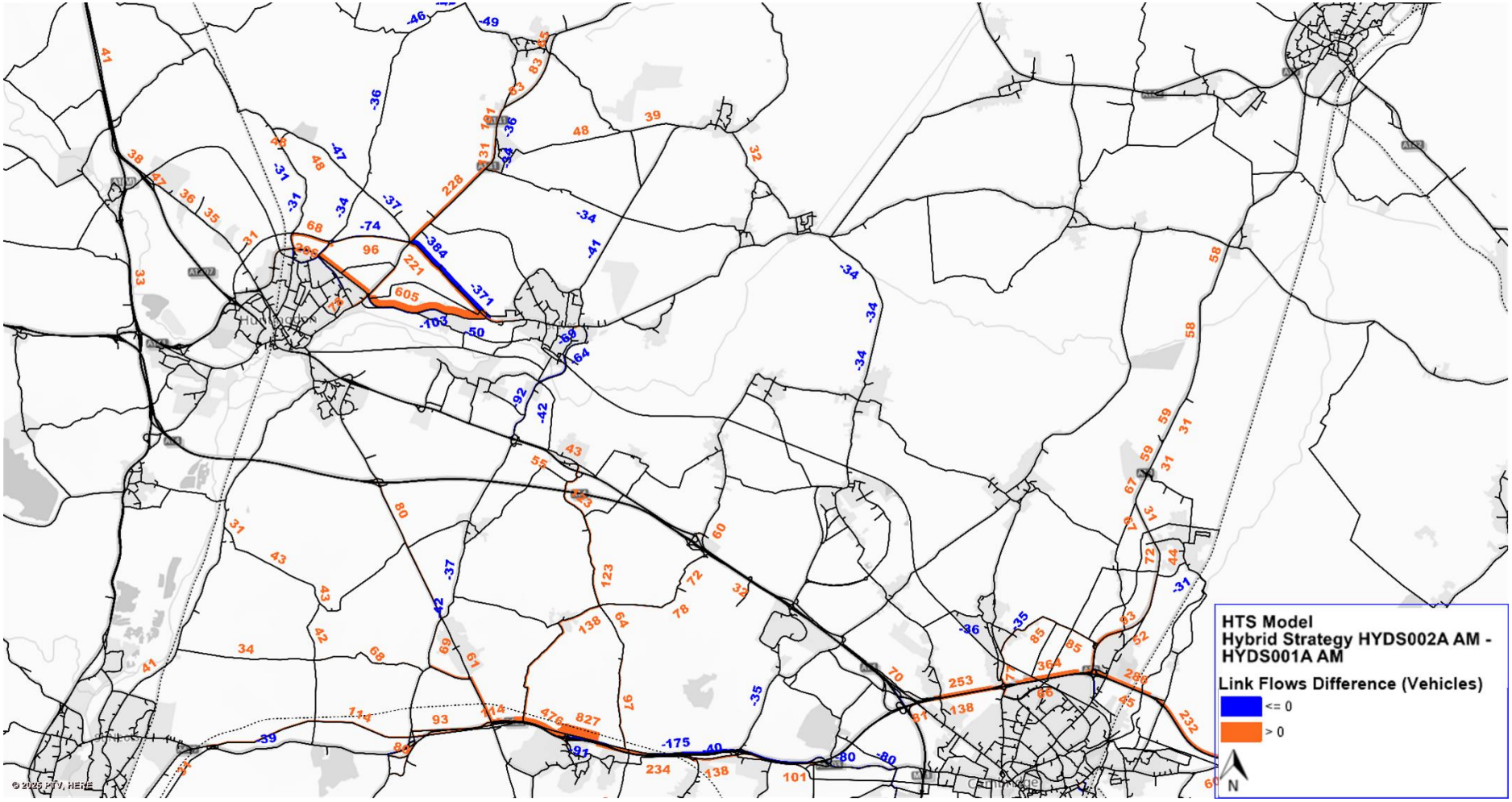


Figure C-8 - Difference in link flow between the DS and DS with EWR – IP period

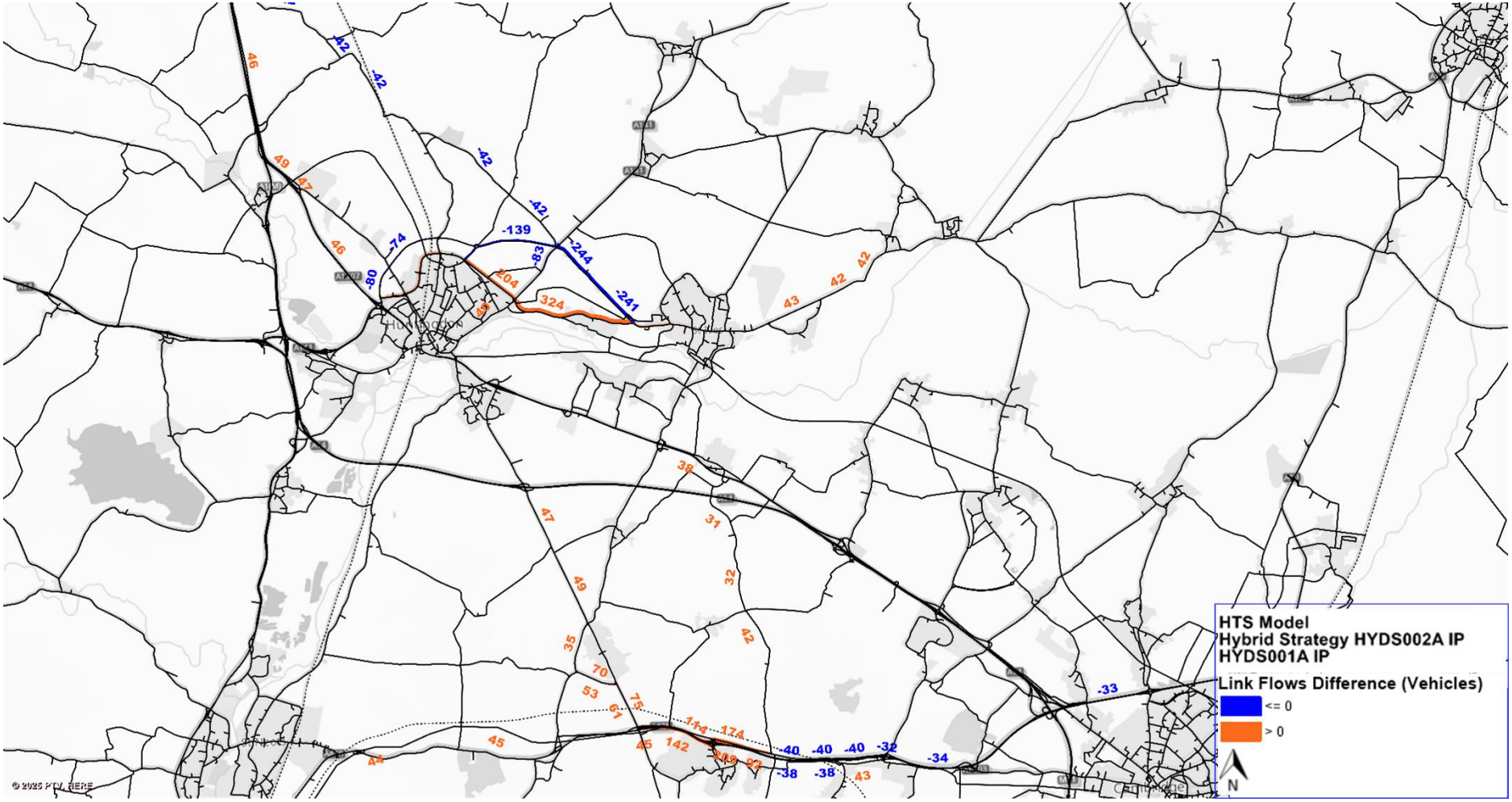


Figure C-9 - Difference in link flow between the DS and DS with EWR – PM period

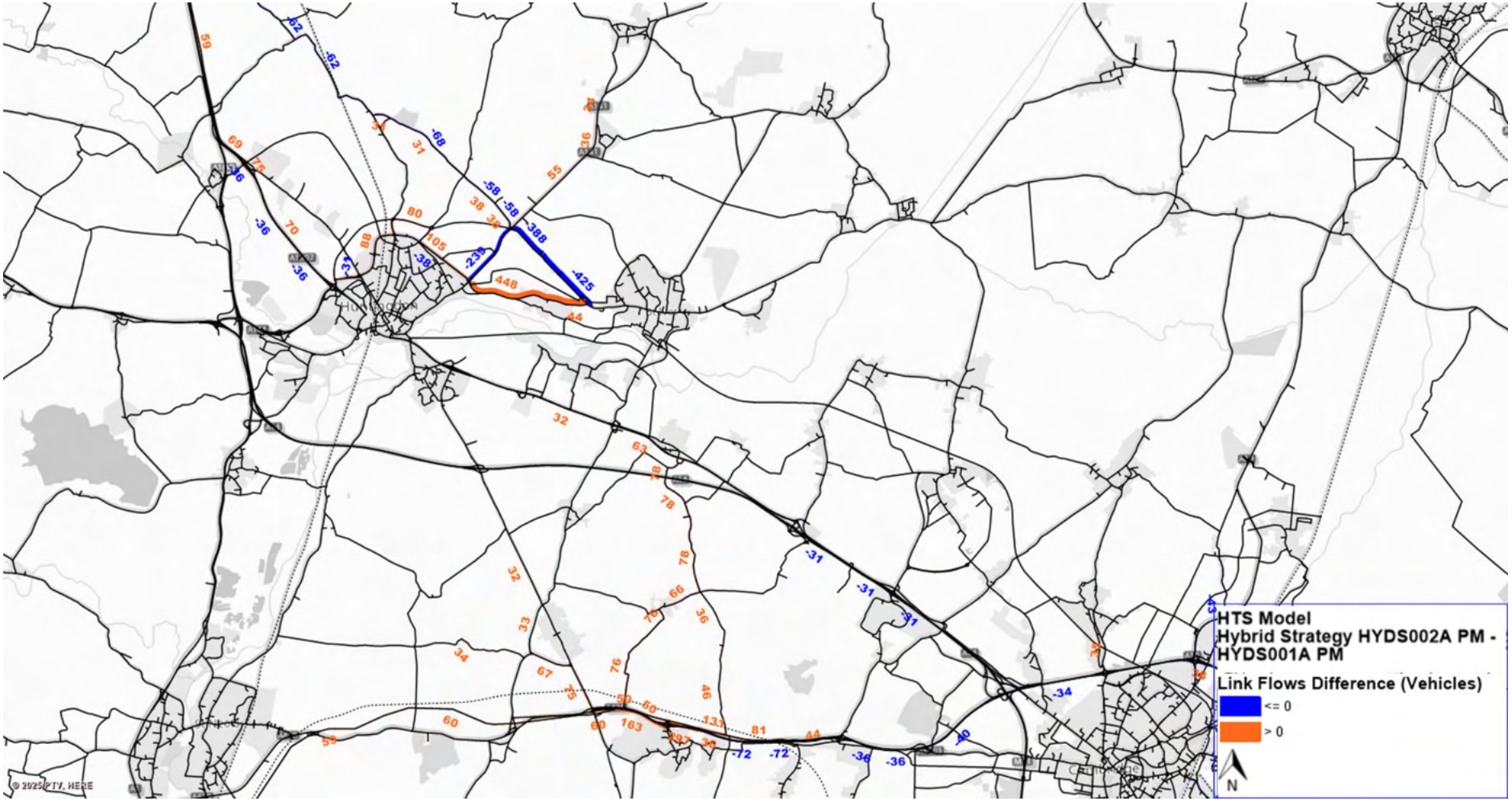


Figure C-10 - Difference in link flow between the DS and DS without A141 – AM period

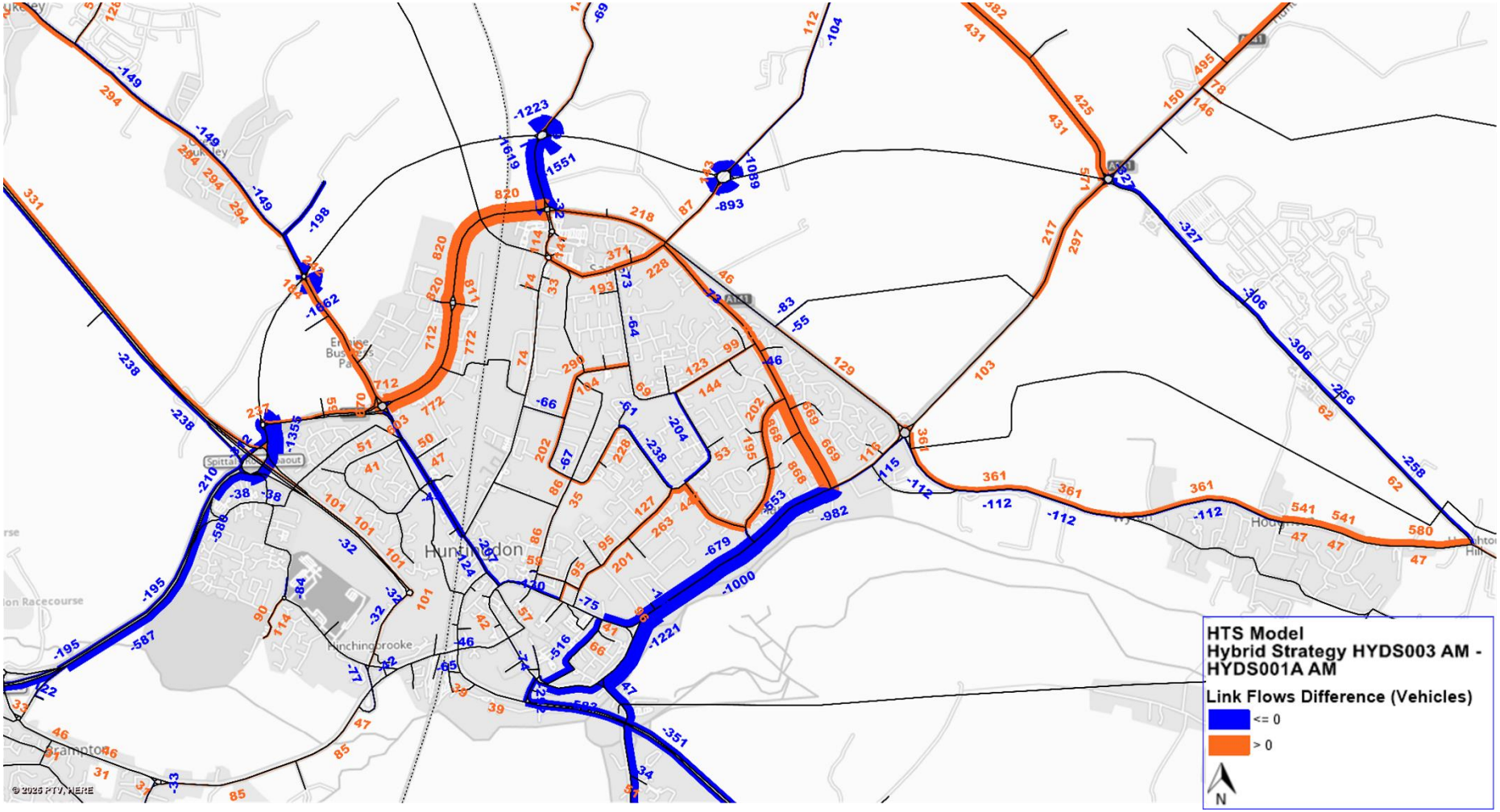


Figure C-11 - Difference in link flow between the DS and DS without A141 scheme- IP period

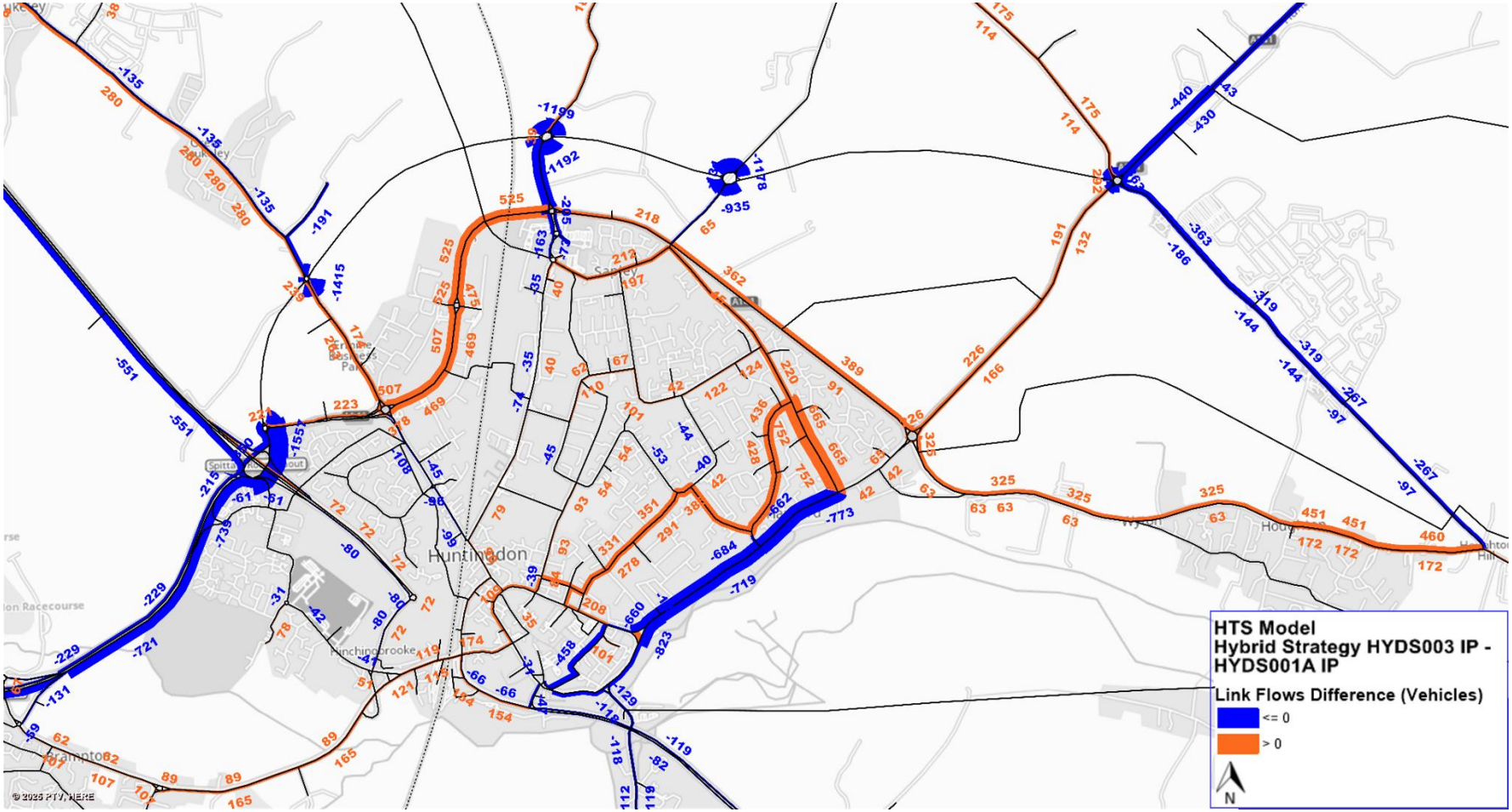


Figure C-12 - Difference in link flow between the DS and DS without A141 scheme- PM period