

# A141 & St Ives Improvements Study

Technical Appendix

September 2026

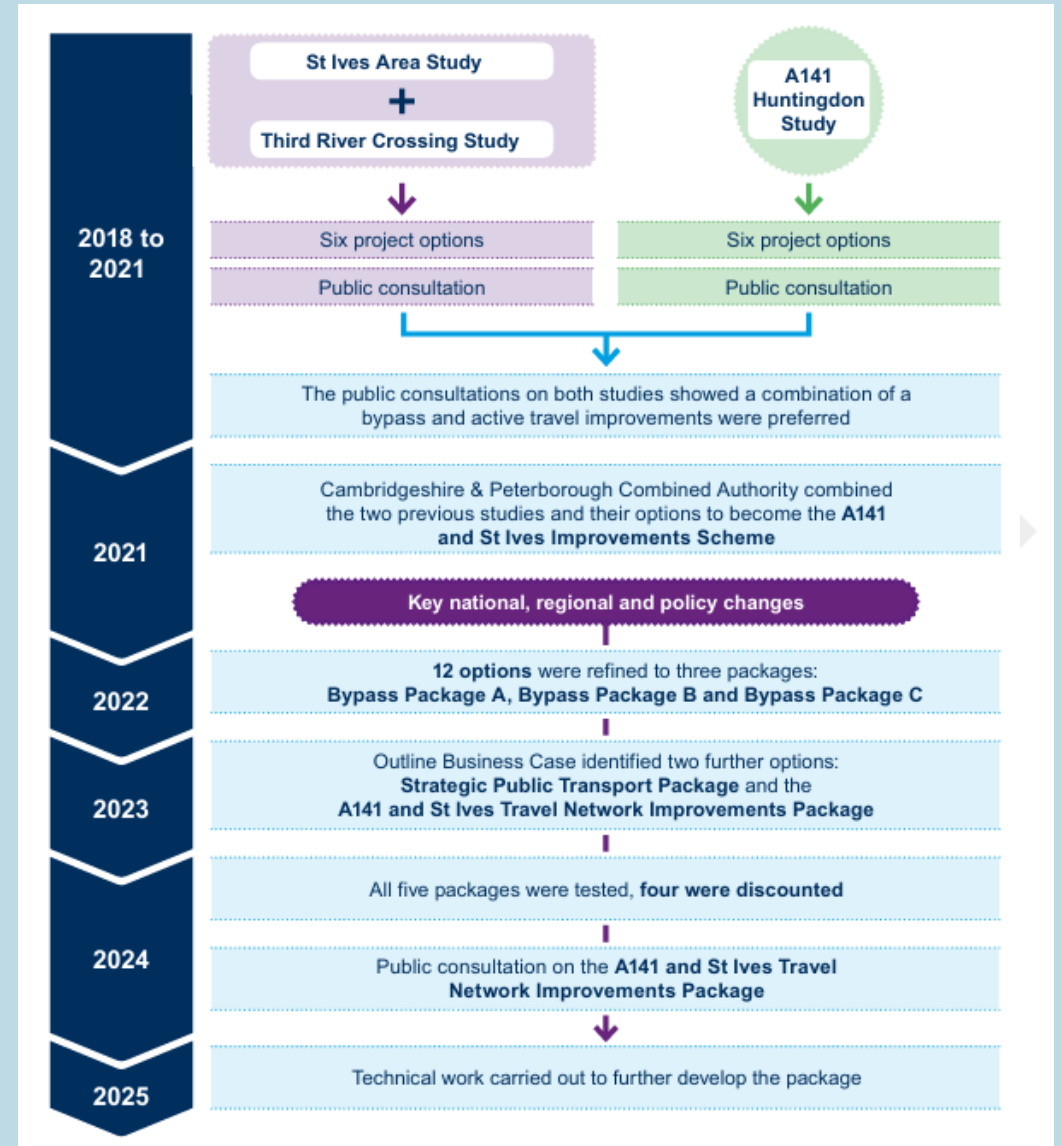
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# Option development and assessment

# Development of the Hybrid Package

- The Outline Business Case (OBC) follows on from extensive work undertaken by both AtkinsRéalis and Skanska on behalf of CCC and CPCA.
- Prior to commencing the Strategic Outline Case (SOC), the A141 Huntingdon Northern Bypass Study and the St Ives Transport Study were running concurrently but as separate studies. The two studies were combined during the development of the SOC and treated as one study. Following the findings of the SOC, three highway options were taken forward for further assessment.
- Due to an evolving policy landscape further work was undertaken to develop modal options. Whilst the strategic public transport option achieved the greatest shift in mode split, it was insufficient to resolve highway congestion.
- Consequently, a Hybrid Package was developed, combining elements of the bypass and Strategic PT options. An iterative process of public consultation and modelling/design work, with an increased focus on growth has been undertaken to refine the hybrid package, arriving at Hybrid Package 4 presented in the OBC.





# Pre-OBC Option Assessment (based on CSRM2 modelling)

|                                               | SOC Bypass<br>Option A                                                   | SOC Bypass<br>Option B                                                   | SOC Bypass<br>Option C                                                            | Strategic PT<br>Package                                                                  | Hybrid Package 1                                                        | Hybrid Package 2                                                        |
|-----------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Model Analysis                                | <b>Decongestion:</b><br>Significant<br><b>Mode Shift:</b><br>Towards Car | <b>Decongestion:</b><br>Significant<br><b>Mode Shift:</b><br>Towards Car | <b>Decongestion:</b><br>Mixed<br><b>Mode Shift:</b><br>Limited but towards<br>Car | <b>Decongestion:</b><br>Limited<br><b>Mode Shift:</b><br>Towards PT and<br>Active Travel | <b>Decongestion:</b><br>Significant<br><b>Mode Shift:</b><br>Towards PT | <b>Decongestion:</b><br>Significant<br><b>Mode Shift:</b><br>Towards PT |
| Capital Costs<br>(Outturn)                    | £497.21m                                                                 | £585.64m                                                                 | £307.78m                                                                          | £349.24m                                                                                 | £201.91m                                                                | *£201.91m                                                               |
| User Benefits<br>(TUBA PVB)                   | £309.84m                                                                 | £410.01m                                                                 | £18.38m                                                                           | £54.70m                                                                                  | £220.09m                                                                | £246.60m                                                                |
| Active Mode<br>Benefits (AMAT<br>PVB)         | £3.36m                                                                   | £3.39m                                                                   | £4.07m                                                                            | £3.44m                                                                                   | £8.12m                                                                  | *£8.12m                                                                 |
| Benefit Cost Ratio<br>(BCR)                   | 1.23                                                                     | 1.38                                                                     | 0.14                                                                              | 0.33                                                                                     | 2.23                                                                    | 2.49                                                                    |
| Carbon (increase<br>compared to DM,<br>tCo2e) | +62,000                                                                  | +80,000                                                                  | +20,500                                                                           | +10,500                                                                                  | +16,500                                                                 | *+16,500                                                                |
| Objective Fit                                 | Mixed alignment                                                          | Mixed alignment                                                          | Poor alignment                                                                    | Mixed alignment                                                                          | Strong alignment                                                        | Strong alignment                                                        |

\*Results carried over from Hybrid Package 1 assessments.

# Strategic objectives

# Current and future challenges

## A. Unlocking growth and development

- Challenge of delivering significant growth sustainably with a congested network

## B. Car dependency & social isolation

- High car mode share
- Commuting patterns

## C. Congestion and rat-running

- Rat-running and congestion in St Ives
- Potential blocker to growth
- Delays on A141, A1096 and A1123

## D. Poor active travel provision

- Low active travel demand
- Gaps in the active travel network
- Needed to support sustainable development

## E. Poor bus connectivity

- Low bus demand
- Congestion impacting bus reliability
- Needed to support sustainable development

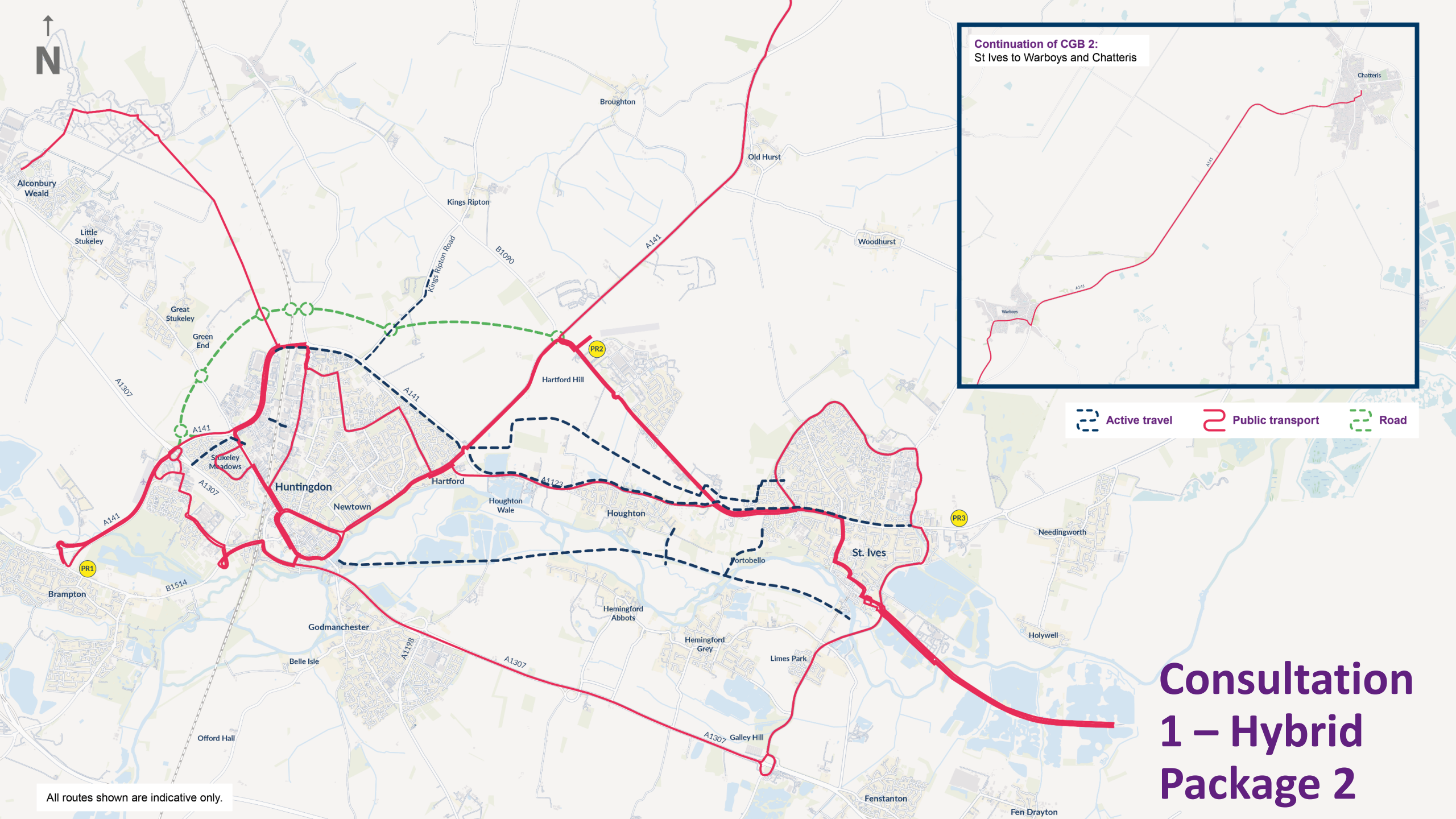
# Issues and opportunities

| Theme                                                                                                                                                                  | Issues                                                                                                                                                                                                                                                                                                              | Opportunities                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                       | Significant housing and employment growth is planned across Huntingdon and St Ives. Without intervention, the existing transport network is unlikely to accommodate future travel demand, risking transport becoming a constraint on growth and investment.                                                         | Deliver an integrated transport package that enables growth and improves connectivity.                                                                             |
| <br> | High levels of car dependency place significant pressure on key corridors. Congestion and rat-running reduce journey reliability, impact businesses and communities, and are forecast to worsen as growth comes forward. High vehicle volumes contribute to a worsening of air quality and noise in the study area. | Improve performance of the highway network, reducing congestion and rat-running and supporting more reliable journeys.                                             |
|                                                                                      | Active travel networks are not currently attractive enough to meet existing travel demand or support future growth. This contributes to continued dependency on private vehicles.                                                                                                                                   | Create a more attractive active travel network, supporting mode shift, improving access to jobs and services, and reducing future pressure on the highway network. |
|                                                                                     | Bus services are affected by congestion, poor punctuality and a limited network, whilst some growth locations have limited access to high-quality public transport.                                                                                                                                                 | Enhance public transport network, enabling a greater proportion of future travel demand to be accommodated by sustainable modes.                                   |

# Package objectives

1. **Enabling growth and development** by ensuring sufficient transport capacity to accommodate transport demand in the study area from new growth including those within the adopting and emerging Local Plans.
2. **Addressing congestion issues and delay in the study area**, thus reducing journey times and improving reliability, and relieving local routes affected by traffic re-routing from the A141 and A1096/A1123;
3. **Improving sustainable travel alternatives to the private vehicle.** This includes improvements to both active travel and public transport:
  - **Public transport:** Improving bus service routing, access and reliability across the study areas and through St Ives and Huntingdon Town Centres;
  - **Active travel:** Improving connectivity and quality for walking and cycling along and across the study area.

# Public consultation



Continuation of CGB 2:  
St Ives to Warboys and Chatteris

Active travel Public transport Road

Consultation  
1 – Hybrid  
Package 2

All routes shown are indicative only.

# Consultation 1 (Oct/Nov 2024) – Key Feedback

## **Active Travel:**

- We should prioritise safe and direct routes
- We should also look to improve existing infrastructure
- There is a lack of intervention in St Ives
- The flood zone between Huntingdon and St Ives would be an issue for the offline route to the south of the A1123

## **Public Transport:**

- We should prioritise direct routes and connectivity to Cambridge
- Reliability of bus services is poor and impacted by congestion
- The P&R site at Gifford's Farm would not generate significant demand

## **Road:**

- The bypass would benefit the A141 corridor and Huntingdon but would not address congestion through St Ives, where there is high HGV traffic
- Reliability of journey times through St Ives is impacted by flooding



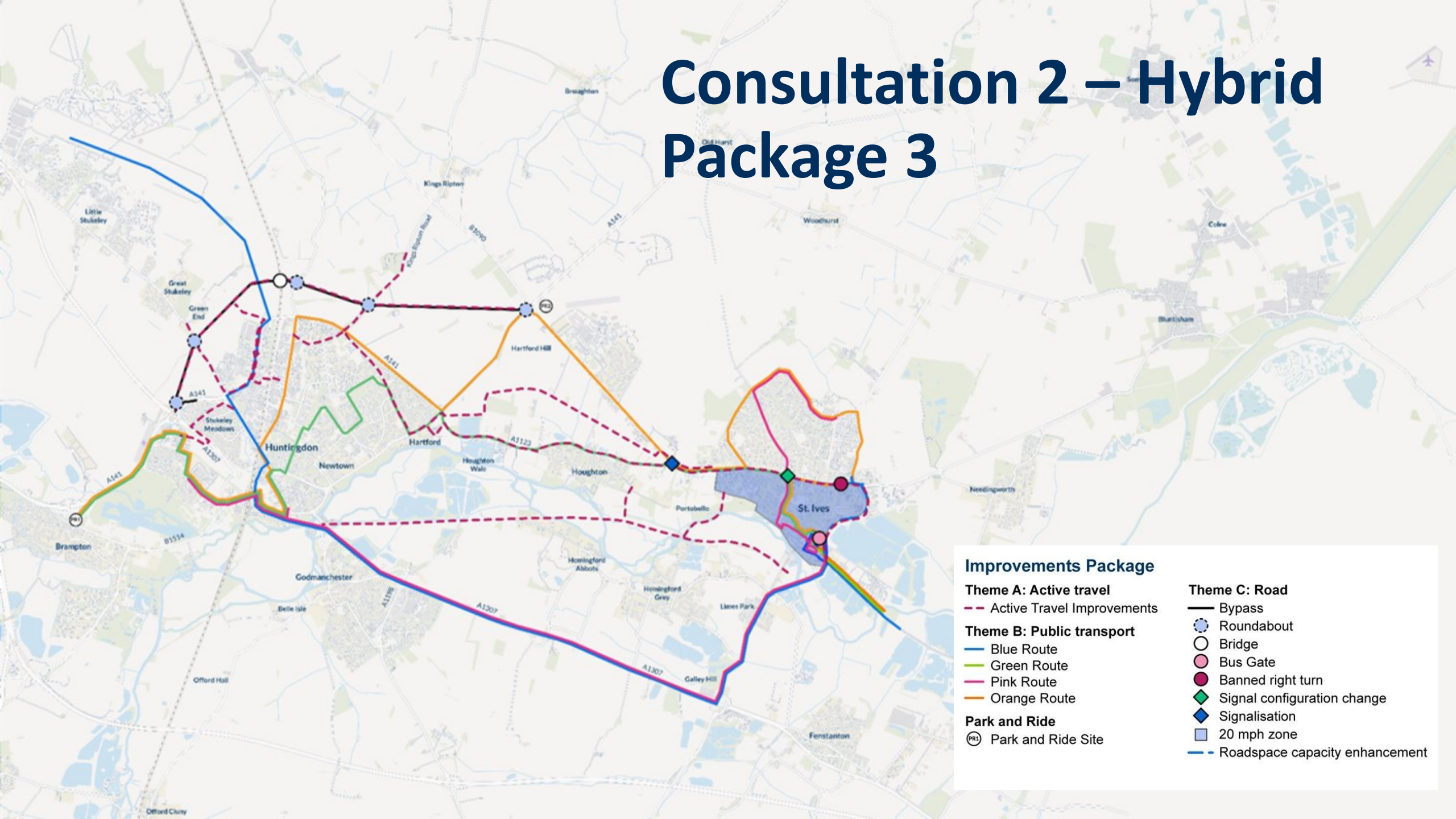
# Package Optimisation

In parallel with the development of the OBC, we progressed a **Package Optimisation** workstream drawing on the following evidence:

- Key outcomes from the public consultation;
- A **full review of Active Travel** measures that form part of the package;
- A **full review of Public Transport** measures that form part of the package, driven by an assessment of operational viability of the routes;
- **Further modelling** in PARAMICS to test the impact of **addressing rat-running and improving road capacity in St Ives**; and
- Further refinement of the package design.

These individual assessments led to the development of a **specification for Hybrid Package 3**.

# Consultation 2 – Hybrid Package 3



# Consultation 2 (Oct/Nov 2025) – Key Feedback

Responses for the consultation represent only those who chose to respond, i.e. not the whole population. Many may be neutral or positive in their views and may not have commented as such.

The key results across the board for each theme are below:

## **Theme A: Active travel**

- High interest in using Route B (south Huntingdon to south St Ives), however localised concern from residents regarding proposed alignment and environmental factors.
- Positive interest and feedback for Route E (A1123) and Route I (Harrison Way) from survey and in person events.
- Support for safe and direct routes between Huntingdon and St Ives.
- Suggestion to ensure active travel routes are safe for all users.

## **Theme B: Public transport**

- Support for green and pink bus routes.
- Limited interest in orange and blue routes with suggestions of diversions (e.g. blue route to allow for connectivity to the Hemingfords).
- Suggestion to increase frequency of existing bus services as well as proposed bus services.
- Support for improved bus services and suggestions of additional routes.
- Limited interest in Park & Ride sites – 92% of survey respondents identify as a resident and therefore may not use the Park & Ride.
- Concerns regarding Park and Ride 1: Huntingdon Racecourse, in relation to location and flooding.

## **Theme C: Road**

- Mixed interest in using the proposed bypass , with questions on current proposals e.g. alignment.
- Support for capacity enhancements in St Ives – a general acceptance that congestion needs to be addressed.
- Suggestion for an additional river crossing to resolve congestion in St Ives - this has been considered and discounted previously.
- Opposition to the proposed bus gate on Meadow Lane, with regards to access to town centre and concerns of congestion.

# Emerging package design

# Development of Hybrid Package 4

- The second consultation demonstrated continued support for many elements of the package, particularly the objectives of improving connectivity, supporting sustainable travel and addressing congestion.
- However, it also identified specific areas where concerns remained, notably in relation to the St Ives highway measures, the alignment of some active travel routes and aspects of the public transport and bypass proposals.
- At the same time, a greater focus on High Growth testing (utilising PARAMICS modelling) has identified locations where additional intervention would be required to ensure the package continues to support future development and network performance.
- This iterative process enabled potential issues to be investigated in greater detail, alternative options to be tested and the package to be refined where appropriate.
- This process identified four key focus areas where refinement of the package was required. These represent the locations or interventions where either significant consultation concerns were raised, where High Growth testing identified operational issues, or where further design development was necessary to improve deliverability.

# Development of Hybrid Package 4

The four focus areas are:

- **St Ives:** identified as both a key area of concern during consultation and the location of the most significant congestion challenges under the High Growth scenario. Further modelling and design development were therefore undertaken to identify an alternative approach to managing congestion following concerns raised regarding the Meadow Lane bus gate and associated restrictions.
- **Bypass:** High Growth modelling highlighted operational issues associated with the proposed eastern tie-in arrangement between the bypass, the existing A141 and the B1090. As a result, additional design options were investigated to ensure the bypass could accommodate future traffic demand while minimising land take and environmental impacts.
- **Offline Active Travel Routes:** consultation feedback identified concerns regarding the alignment of the proposed routes between Huntingdon and St Ives, particularly where they interacted with residential and business land parcels. This prompted a review of route alignments to reduce potential conflicts while maintaining the strategic objectives of the package.
- **Public Transport:** previous public transport recommendations had been developed primarily in the context of Core Growth. With greater certainty surrounding future development proposals, a further review was undertaken to determine whether service patterns developed for the High Growth scenario should be incorporated within Hybrid Package 4 to better support future communities and travel demand.



# Changes between HP3 and HP4

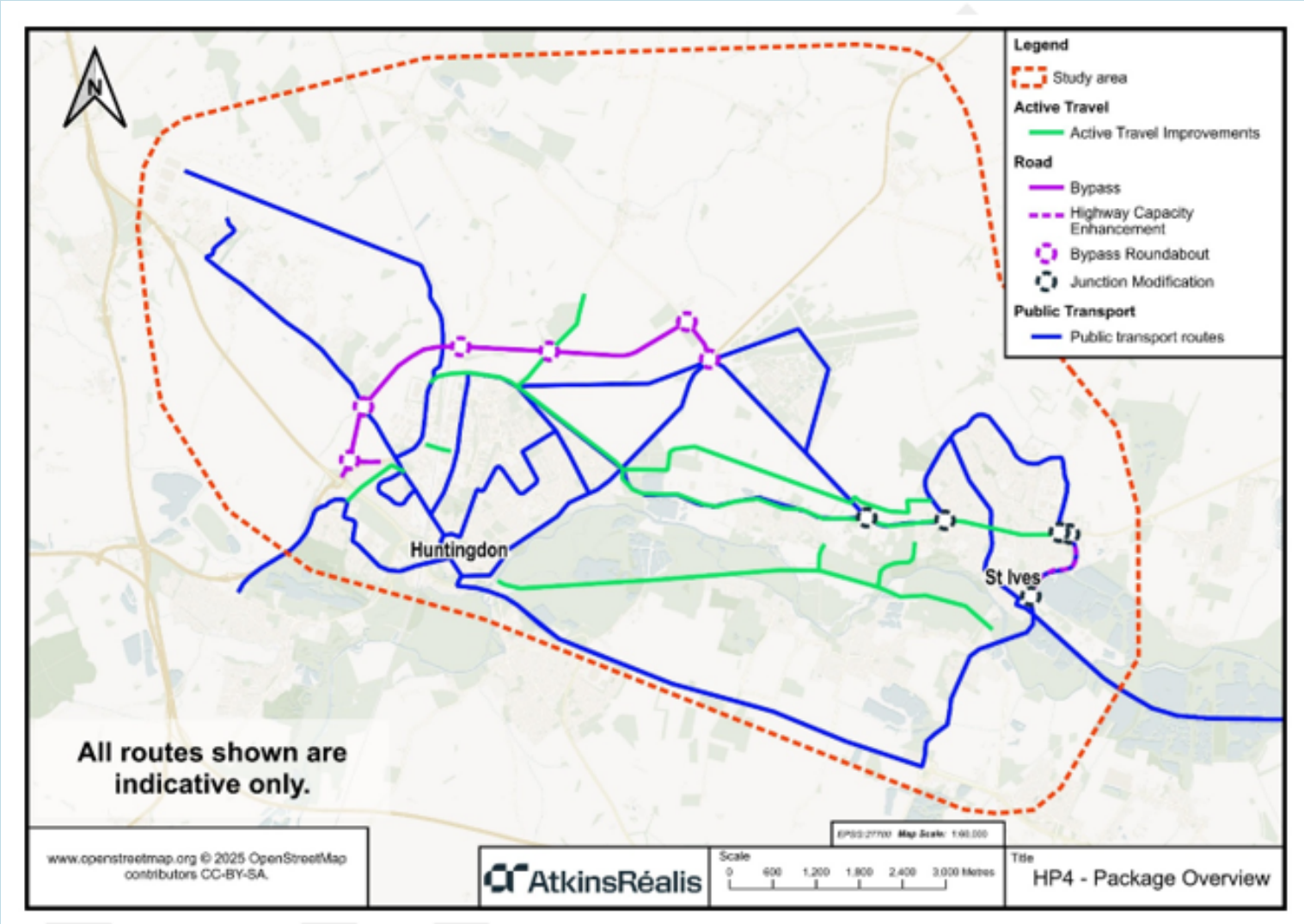
|                  | What has changed between HP3 and HP4?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Rationale for changes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Active Travel    | Offline active travel routes between Huntingdon and St Ives (Route A and Route B) - these alignments have been tweaked to avoid potential conflicts with residential and business land parcels.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | This was a key area for feedback from the second consultation period, where residents and businesses were concerned about these routes potentially impacting on their land.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Public Transport | Introduction of the Yellow Route, operating 3 bph as an extension of the CGB between St Ives P&R and Alconbury Weald via St Ives Bus Station, Wyton Airfield, Lodge Farm, Huntingdon Bus Station and The Stukeleys.<br><br>Doubling of frequency of the Pink Route from St Ives to Hinchingsbrooke Hospital via St Ives Bus Station and Huntingdon Bus Station to 2 bph                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | This enhanced service provision had previously been developed for the High Growth scenario as part of a review of all Public Transport services to ensure operational viability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Road             | St Ives - removal of the bus gate and banned right turn onto Needingworth Road from the A1123. 20mph speed limit on all roads south of A1123 and west of Harrison Way now forms part of the Do Minimum scenario. Widening of Harrison Way now incorporates an additional lane to operate as a tidal flow system. This would be supplemented with partial signalisation of the Meadow Lane roundabout as well as additional capacity at the A1123/B1040/Harrison Way roundabouts.<br><br>Bypass - instead of the eastern end of the bypass forming a 5-arm junction arrangement at Wyton, the bypass would connect to the B1090 via a roundabout with dualling of the section between this roundabout and the existing 4-arm junction. The bypass itself is also recommended to be upgraded from a single carriageway to a dual carriageway. | St Ives - this was a key area for feedback from the second consultation period and the issues in St Ives have also been considered under the High Growth scenario. Removing the bus gate and banned right turn onto Needingworth Road meant that rat-running needed to be addressed in an alternative way. Alongside this, we have investigated whether congestion along Harrison Way is primarily driven by low capacity or by conflicts with pedestrian crossings from the busway car park. A first option looked at full signalisation of the Meadow Lane junction and a footbridge over Harrison Way at the busway crossing but this did not address the High Growth congestion. A second option has therefore been proposed which focuses on widening of Harrison Way with an additional lane to operate as a tidal flow system. This would be supplemented with partial signalisation of the Meadow Lane roundabout and additional capacity at the A1123/B1040/Harrison Way roundabouts. These measures have a significant impact on the High Growth congestion hotspots. Design investigations indicate that this is a feasible approach, albeit with potential challenges around the cost of operating the tidal flow system and widening a structure under the A1123.<br><br>Bypass - there were issues arising at the junction with the existing A141 and B1090 under the High Growth scenario. The design team have looked at a number of different options - their recommendation based on traffic flows and looking to minimise land take is to connect the bypass to the B1090 at a new roundabout, with the section of the B1090 between the bypass roundabout and the A141 roundabout being upgraded to a dual carriageway. This has been tested in the PARAMICS model and performed well (on the assumption that capacity upgrades along the A141 past Wyton would be the responsibility of the developer). In addition to this under the High Growth scenario it is recommended to upgrade the bypass itself to a dual carriageway. This is because, given the level of traffic flows on the bypass under High Growth (21,000-27,000 AADT by the design year), a dual carriageway would ensure sufficient capacity for traffic flows to achieve journey time benefits as well as operational safety. |

# Specification of Hybrid Package 4

|                  |                                                                                                                                                                                 |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Active Travel    | East Huntingdon to west St Ives (offline)                                                                                                                                       |
|                  | South Huntingdon to south St Ives (offline)                                                                                                                                     |
|                  | ECML Crossing (offline)                                                                                                                                                         |
|                  | Ermine Street to Kingfisher Way (offline)                                                                                                                                       |
|                  | A1123 Route (online, segregated)                                                                                                                                                |
|                  | Sapley Road Route (online, segregated)                                                                                                                                          |
|                  | Kings Ripton Road Route (online, segregated)                                                                                                                                    |
|                  | Ermine Street/A141 Route (online, segregated)                                                                                                                                   |
|                  | Harrison Way Route (online, segregated)                                                                                                                                         |
|                  | Bypass Route (online, segregated)                                                                                                                                               |
| Public Transport | P&R 1: Huntingdon Racecourse                                                                                                                                                    |
|                  | P&R 2: Wyton Airfield                                                                                                                                                           |
|                  | CGB 1: St Ives P&R to Huntingdon Racecourse P&R via St Ives Bus Station, Wyton Airfield P&R and Huntingdon Bus Station (Red Route, 3 bph)                                       |
|                  | CGB 2: St Ives P&R to Huntingdon Racecourse P&R via St Ives Bus Station, A1123 and Huntingdon Bus Station (Green Route, 3 bph)                                                  |
|                  | CGB 3: St Ives P&R to Alconbury Weald via St Ives Bus Station, A1307 and Huntingdon Bus Station (Blue Route, 3 bph)                                                             |
|                  | CGB 4: St Ives P&R to Alconbury Weald via St Ives Bus Station, Wyton Airfield, Lodge Farm, Huntingdon Bus Station and The Stukeleys (Yellow Route, 3 bph)                       |
|                  | Pink Bus Route: St Ives to Hinchbrook Hospital via St Ives Bus Station and Huntingdon Bus Station (2 bph)                                                                       |
| Road             |                                                                                                                                                                                 |
|                  | Bypass from Spittals Interchange to new roundabout on B1090 (dual carriageway with intermediate junctions) with dualling of B1090 between bypass roundabout and A141 roundabout |
|                  | Partial signalisation of Meadow Lane junction on Harrison Way                                                                                                                   |
|                  | Extra lane on Harrison Way between A1123 and busway (tidal flows)                                                                                                               |
|                  | Improve capacity at B1040/A1123/ Harrison Way roundabouts                                                                                                                       |
|                  | Increase green time for A1123 at Ramsey Rd and B1090 junctions                                                                                                                  |
|                  |                                                                                                                                                                                 |
|                  |                                                                                                                                                                                 |



# Hybrid Package 4 Map



# Operation of a Tidal Flow system on Harrison Way

Several existing UK examples have been reviewed to identify key infrastructure, operational, and delivery considerations.

The considerations identified at this early stage are as follows:

- The scheme would require a suitable location for a control centre building. Subject to the final system specification, continuous operator presence may not be necessary.
- National Highways currently recognises a limited number of approved PLC-based control system suppliers, including AIS and Core Controls.
- Significant power and communications infrastructure would be required, including ducting, chambers, and a resilient communications network. A dual fibre optic ring should be considered.
- A video management and CCTV system would be required to verify lanes are clear of stopped vehicles before opening traffic in the opposite direction, and for general monitoring of traffic flow along the route.
- Depending on the available highway boundary along Harrison Way, land acquisition may be required to accommodate infrastructure.
- Positioning of overhead gantries is likely to be particularly challenging on curves due to potential visibility issues.
- We have also started considering options for how the tidal lane will interact with existing and proposed junctions. At Parsons Green Roundabout, for example, the tidal lane is suspended on the roundabout approaches, with the carriageway widened to provide an additional lane. This allows traffic to be distributed across the approach lanes, helping to avoid congestion for tidal lane traffic joining the adjacent lane.
- An alternative design considered was converting this to a through-about with the tidal line going through the roundabout, but this would require more land acquisition to accommodate, and more works such as signalising the roundabout and shifting the island.

From a delivery perspective, a high-level estimate suggests a programme duration of approximately 2-3 years for design, approvals, procurement, and construction.

Overall, the research so far suggests that a tidal lane solution is feasible, but would require substantial investment in ITS infrastructure, operational controls, and supporting civil works.

# Dualling of the bypass

Early design outputs indicate that the dualling option is being driven by forecast Annual Average Daily Traffic. Given the significance of this outcome, further validation and testing are underway, including a review against current HDC Local Plan assumptions, to confirm that the proposed intervention is justified and proportionate and not over engineered.

## **Traffic Demand and Capacity:**

Based on the traffic modelling undertaken for the High Growth scenario along the A141 bypass, forecast traffic flows are expected to be in the region of 21,000–27,000 AADT by the end of the design year. Such traffic volumes are considered relatively high for a single-carriageway solution.

## **Journey Time, Safety and Reliability:**

The higher forecast traffic demand would result in longer vehicle queues behind HGVs and other slow-moving vehicles. This would reduce the number of safe overtaking opportunities, which could lead to driver frustration and increase the likelihood of unsafe overtaking manoeuvres, raising the risk of collisions. In addition, being delayed behind slow-moving vehicles would increase journey times and reduce journey time reliability, making it more difficult for the scheme to achieve its objectives of improving safety, reducing congestion, and enhanced connectivity.

## **Access and Junction Strategy:**

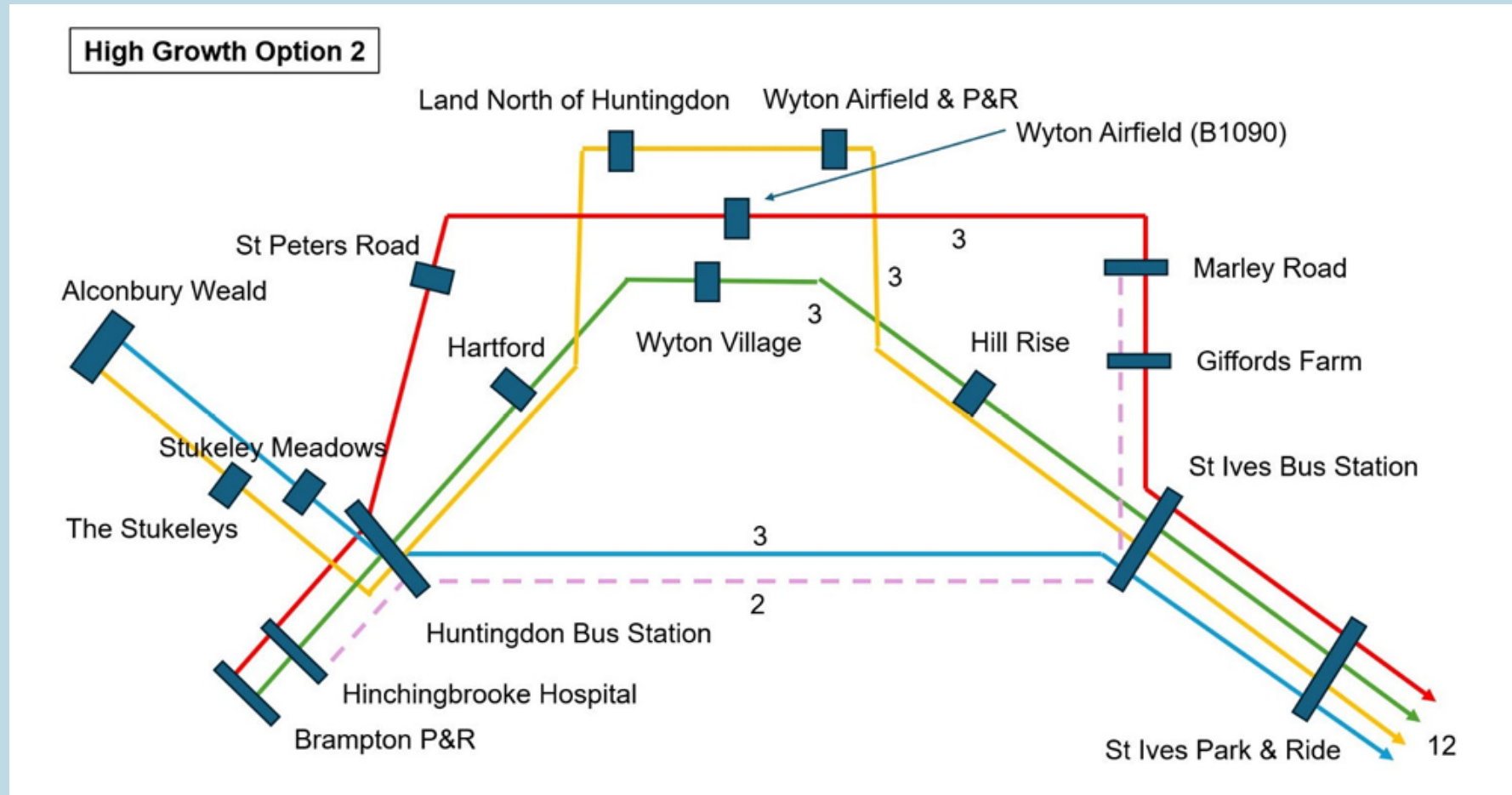
Greater traffic demand has led to a review of junction layouts to ensure that the appropriate junction type has been considered. The increased traffic would also make it more difficult for vehicles to enter and exit the mainline safely, particularly during peak periods.

## **Economic Assessment:**

With forecast AADT values approaching or exceeding the recommended limits for a wide single carriageway before the end of the intended design life, the likelihood that the route would require upgrading to a dual carriageway is high. This will result in additional capital expenditure, road works disruption for users, and increased carbon footprint of the successive design and construction work for the project.

A dual carriageway solution, combined with an appropriate junction strategy, would provide greater capacity, improve traffic flow, and maintain acceptable levels of operational and safety performance

# PT Operational Viability Assessment: High Growth

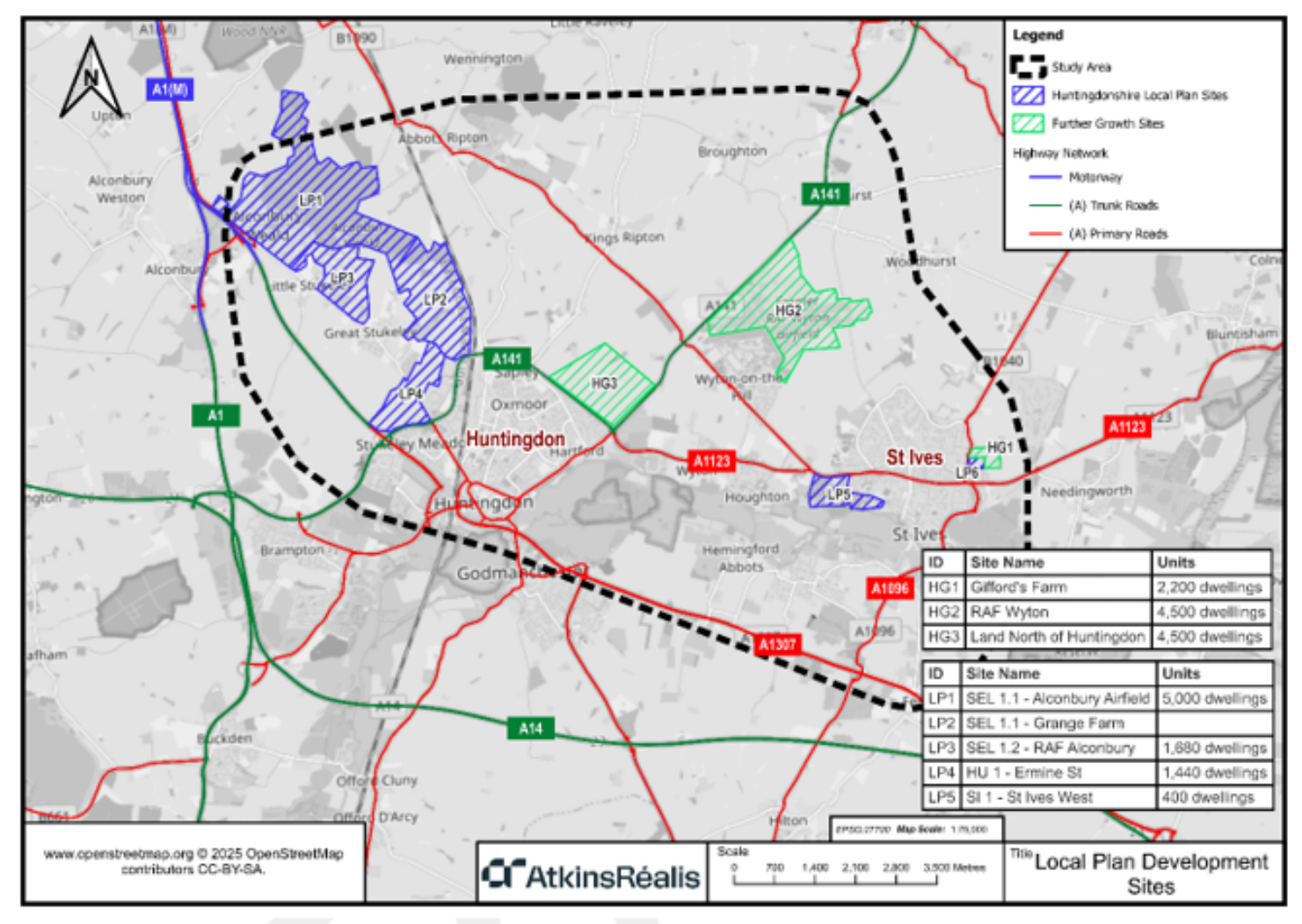


# Modelling and appraisal

# Transport modelling approach

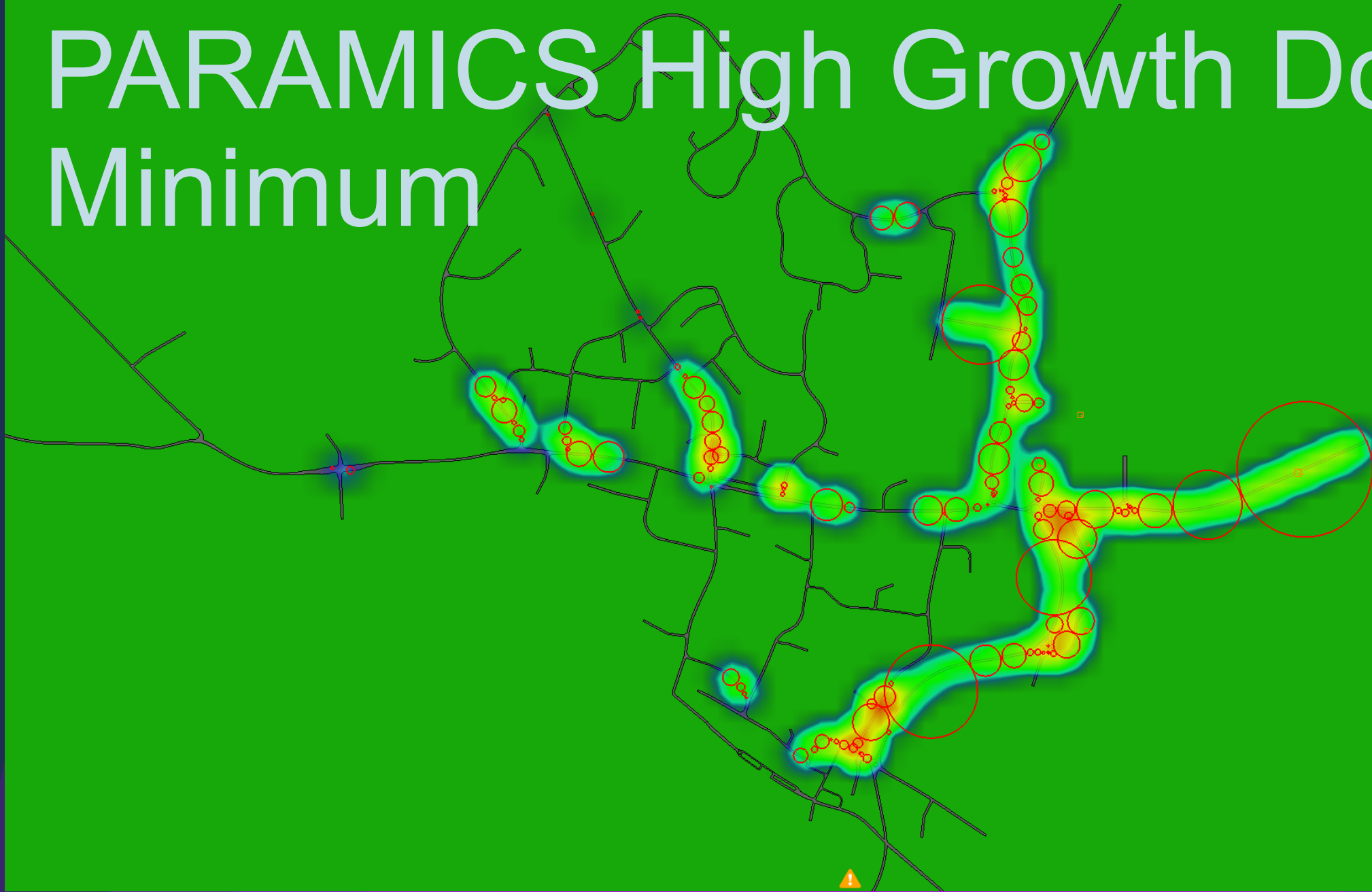
- Use of CSRM2 for strategic modelling and economic/environmental appraisal.
- Use of PARAMICS for package design refinement.
- Core Growth Scenario aligned with adopted Local Plan.
- High Growth Scenario including the following developments in addition to the adopted Local Plan:
  - i. Wyton Airfield (4,500 houses)
  - ii. Land north of Huntingdon (4,500 houses)
  - iii. Giffords Farm (2,200 houses)
- Application of COVID adjustments based on data analysis and in line with DfT guidance.
- Liaison with AtkinsRealis team working on HDC Strategic Transport Study, which has informed development of the Huntingdonshire Local Plan to 2046 by testing a range of land use strategies in CaPCAM with and without a transport mitigation package.

# Local Plan and High Growth Development Sites





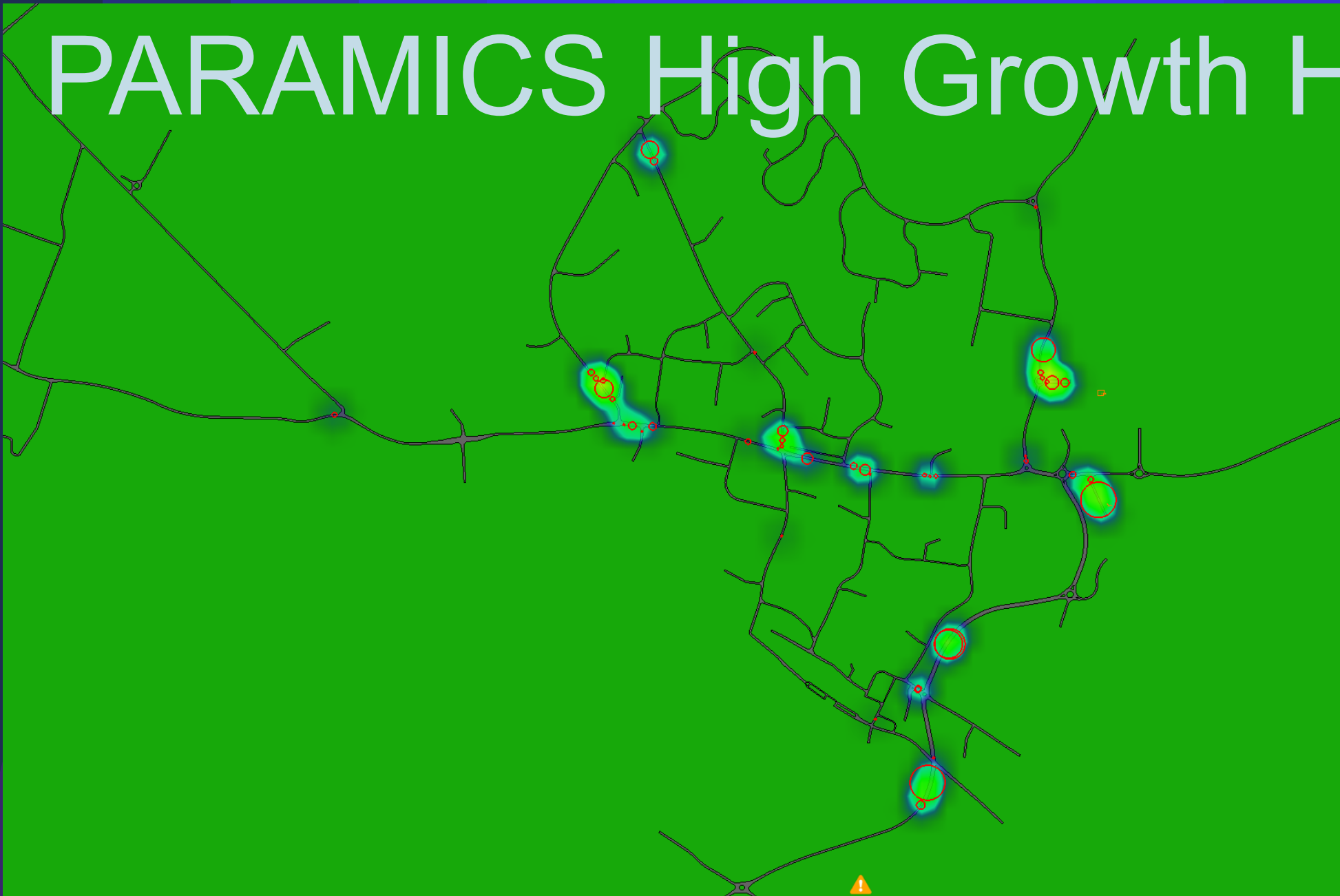
# PARAMICS High Growth Do Minimum



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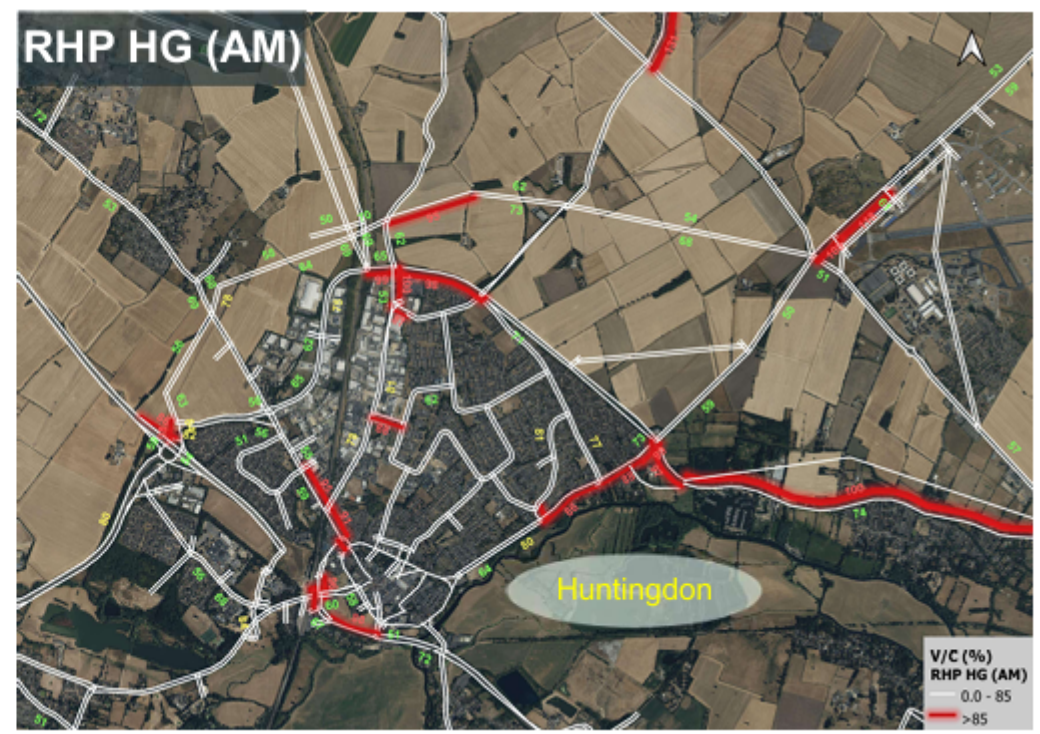
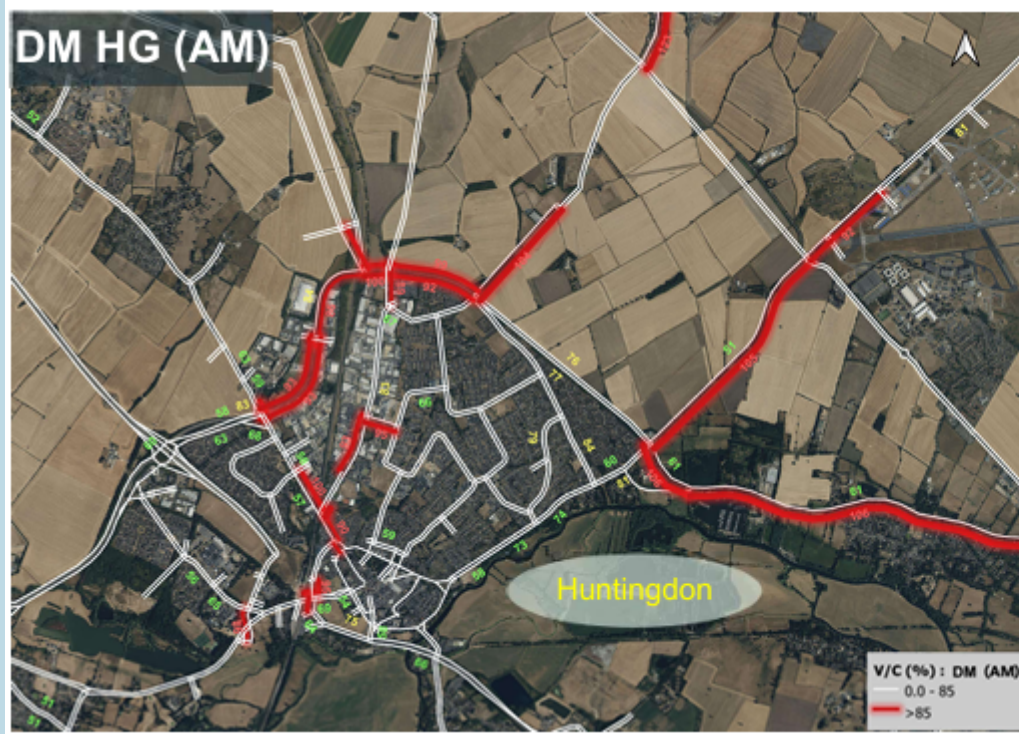


# PARAMICS High Growth HP4



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# CSRM2 High Growth Assessment (HP2)



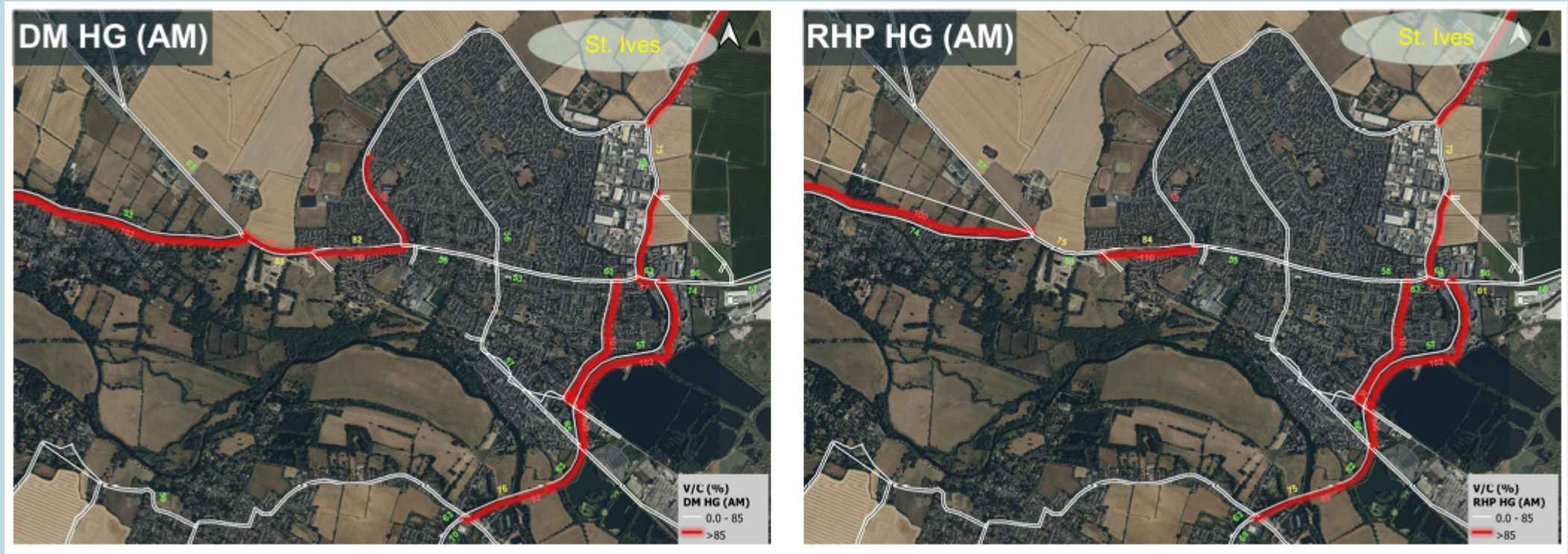


# CSRM2 High Growth Assessment (HP2)



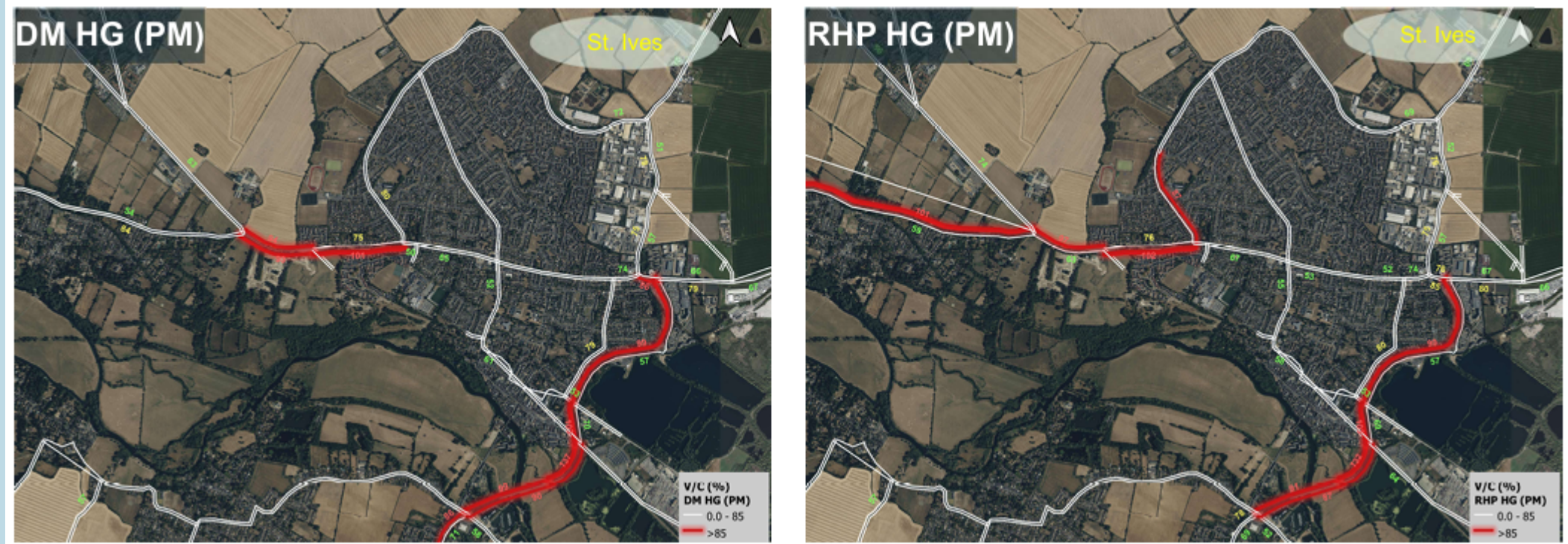


# CSRM2 High Growth Assessment (HP2)





# CSRM2 High Growth Assessment (HP2)



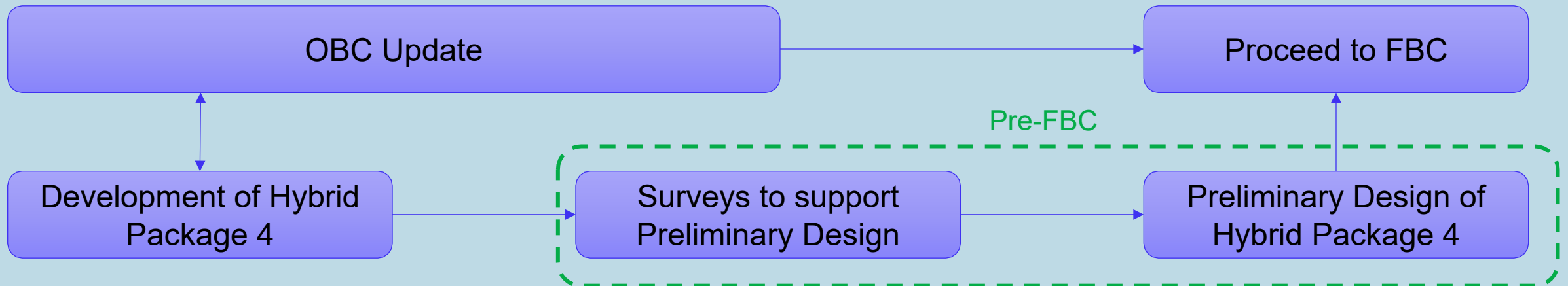
# Economic appraisal summary

- Model outputs have been used to inform an appraisal of scheme benefits and dis-benefits. This includes:
  - Monetised assessments of journey time impacts, safety impacts, active travel impacts and wider economic impacts;
  - Full range of environmental impacts; and
  - Qualitative assessments of construction impacts, reliability impacts, social and distributional impacts.
- Scheme cost estimates have been developed based on package design information covering Capex, Opex and Maintenance & Renewals.
- Under the High Growth scenario (including COVID adjustments), the package is forecast to achieve a BCR over 2 including wider economic impacts, which represents High value for money.
- The most likely estimate for the overall capital cost of the package is £330m in 2026 prices.

# Next steps

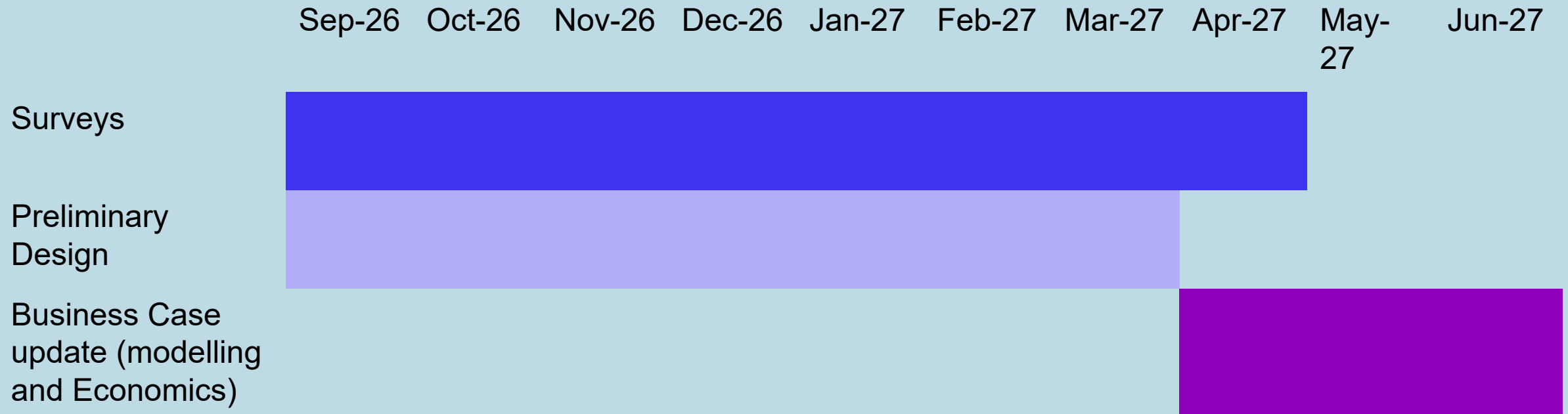
# Pre-FBC and FBC

- With the OBC stage approaching completion following the development of Hybrid Package 4, a scope and programme is being prepared for a pre-FBC stage that would involve surveys, the development of preliminary designs and updates to the Business Case.
- This will help to demonstrate that further design maturity is being progressed and ensure a smooth transition to the FBC.
- It is anticipated that work on the pre-FBC stage will commence from September 2026, with completion of surveys and preliminary designs by Spring 2027 followed by updates to the Business Case.
- Alongside this a scope for the FBC, including detailed design, is to be prepared with a view to commencing the FBC in Summer 2027.
- Timescales for the Business Case process are indicative and subject to change as clarity on potential funding routes emerges.





# Pre-FBC indicative timeline



Key dependency to note is the completion of the surveys that will feed into the updates to the designs across various disciplines.