

# Cambridge Biomedical Campus Transport Needs Review Non-Technical Summary

## Background

Cambridge Biomedical Campus (CBC) is a major asset in the UK’s life science research, teaching and healthcare industries. It contributes to Cambridge’s position as one of the UK’s most successful cities in terms of economic indicators such as productivity and knowledge-based jobs.

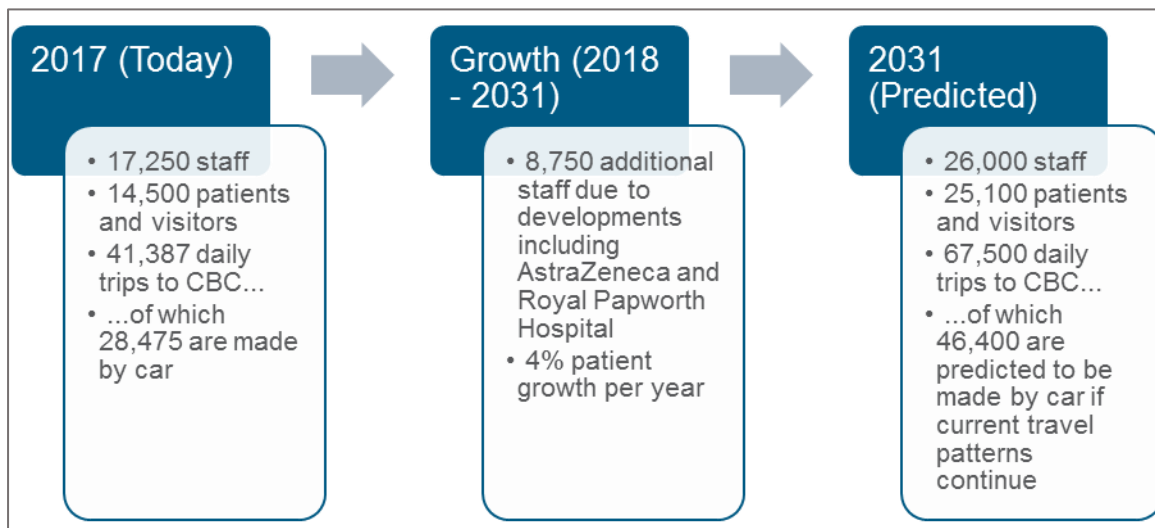
CBC is a major destination and generator of travel demand, with around 17,250 staff on-site and 14,500 patients and visitors each day. There are already concerns about access and congestion.

## Growth

CBC is set to grow. Royal Papworth Hospital will shortly move to CBC. AstraZeneca and Abcam are also due to relocate there and further growth is anticipated to 2031 and beyond.

This growth will lead to increased travel demand from patients, visitors and employees, and put more pressure on an already constrained transport network. It is critically important to respond to this demand, so that continued investment and economic growth are supported.

**Figure 1 Growth at CBC will increase the demand for travel<sup>1</sup>**



## Introduction to This Study

The Greater Cambridge Partnership (GCP) commissioned this Study to understand the growth in travel demand at CBC and the resulting transport needs.

**Part 1** of this Study looked at the evidence on transport demand and supply, to build up a picture of what travel to CBC looks like now and what it could look like in 2022 with the planned growth. It identified Potential Interventions to help manage growth in the short term, including improving access via foot and cycle, improved wayfinding, and addressing gaps in bus service provision.

**Part 2** looked at transport demand and supply from 2022 to 2031 and how this could change as a result of the proposed Cambridge South Station. It identified additional Potential Interventions in the longer term, and measures to support access to the proposed Station.

<sup>1</sup> Trips = One-way person trips

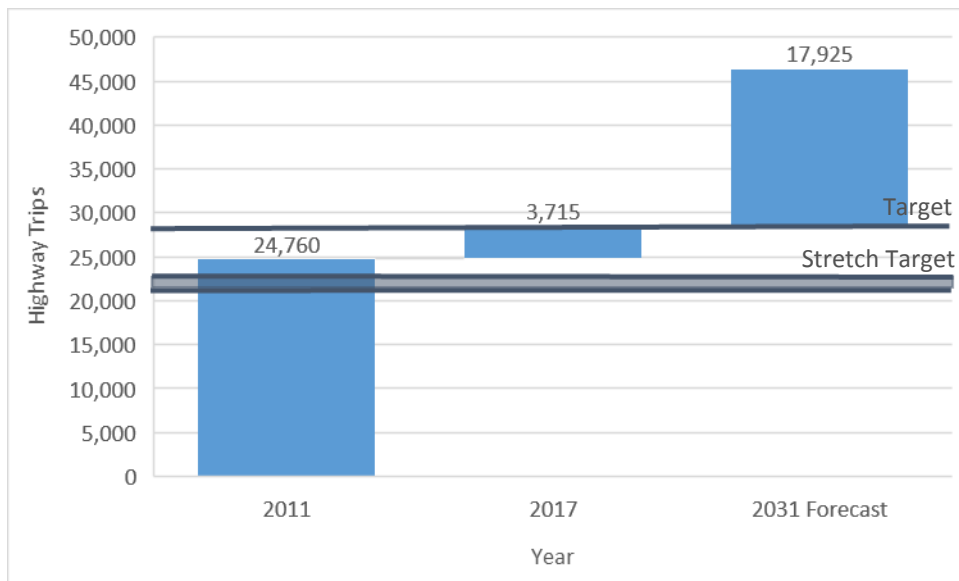
Part 3 assessed the impact of planned measures (including Cambridge South Station) and other Potential Interventions identified in Parts 1 and 2, in terms of highway access to CBC. Part 3 also assessed the impact of current scheme phasing on highway trips and parking.

## Targets

Targets for highway trip reduction to CBC were provided by GCP for the purposes of this Study, as follows:

- **Target:** Maintaining traffic at 2017 levels up to 2031; and
- **Stretch Target:** A 10% to 15% reduction in traffic from 2011 levels, which is aligned with the GCP City Access Strategy.

**Figure 2 Target for Highway Trip Reduction**



Although these targets are challenging, most of the growth is yet to happen and there is a window of opportunity to provide sustainable alternatives before car-based travel patterns are established.

## What Can Be Done to Meet the Targets?

There are a range of measures which could help to meet the targets:

- Planned Schemes:
  - Cambridge South East Transport Study;
  - Greenways;
  - Chisholm Trail;
  - Cambourne to Cambridge;
  - West of Cambridge Package;
  - Cambridge South West Park and Ride;
  - Expansion of Trumpington Park and Ride;
  - Cambridgeshire Autonomous Metro (CAM);
- Cambridge South Station;
- Other Potential Interventions identified in Parts 1 and 2 of this Study; and
- Demand management measures to encourage use of sustainable modes of transport.

## Potential Impacts of Measures

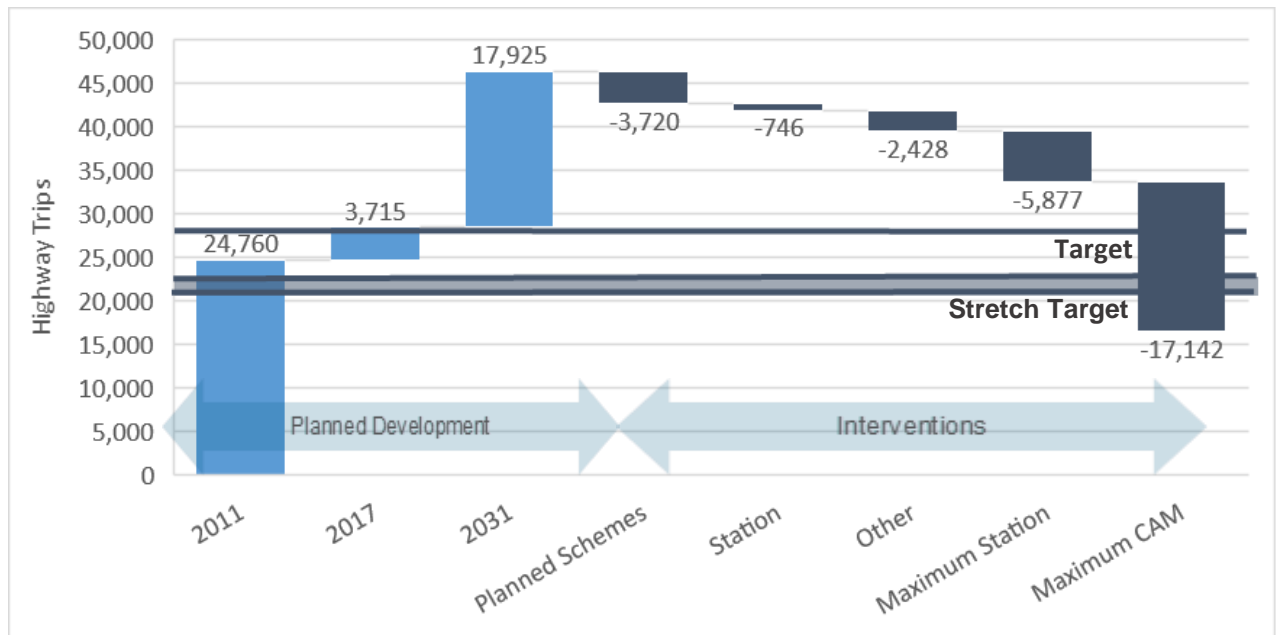
The potential impacts of measures have been estimated using data from GCP project teams, case studies of similar schemes, demand information, mode split data and census data. The impacts of Cambridge South Station and CAM have been estimated using two scenarios for each:

- **Baseline Station Demand:** based on previous forecasts using standard rail industry methods, updated to reflect growth at CBC;

- **Maximum Station Demand:** a bottom-up approach using CBC staff and patient catchment data based on the assumption that all who could reasonably travel to CBC by rail would do so;
- **Baseline CAM Demand:** a 35% increase in public transport demand, compared to 2015 levels, to represent mode shift delivered by an improved transit system; and
- **Maximum CAM Demand:** a 40% capture of relevant highway demand, to represent 40% of all existing highway trips to CBC transferring to public transport. The CAM Study noted that this level of mode shift “*would be unprecedented*” and represented “*the very upper end of what any scheme could realistically achieve*”<sup>2</sup> (CAM Study para 5.10)<sup>3</sup>.

Figure 3 shows the forecast cumulative impact of planned schemes, Cambridge South Station and other supporting interventions on highway trips to CBC in 2031.

**Figure 3 Impact of Interventions on Highway Trips to CBC**



By 2031, a reduction of 17,925 trips is required to meet the Target. Planned Schemes, Baseline Station Demand and Other Interventions work towards meeting the Target. However Maximum Station Demand and Maximum CAM Demand is required to fully meet the Target.

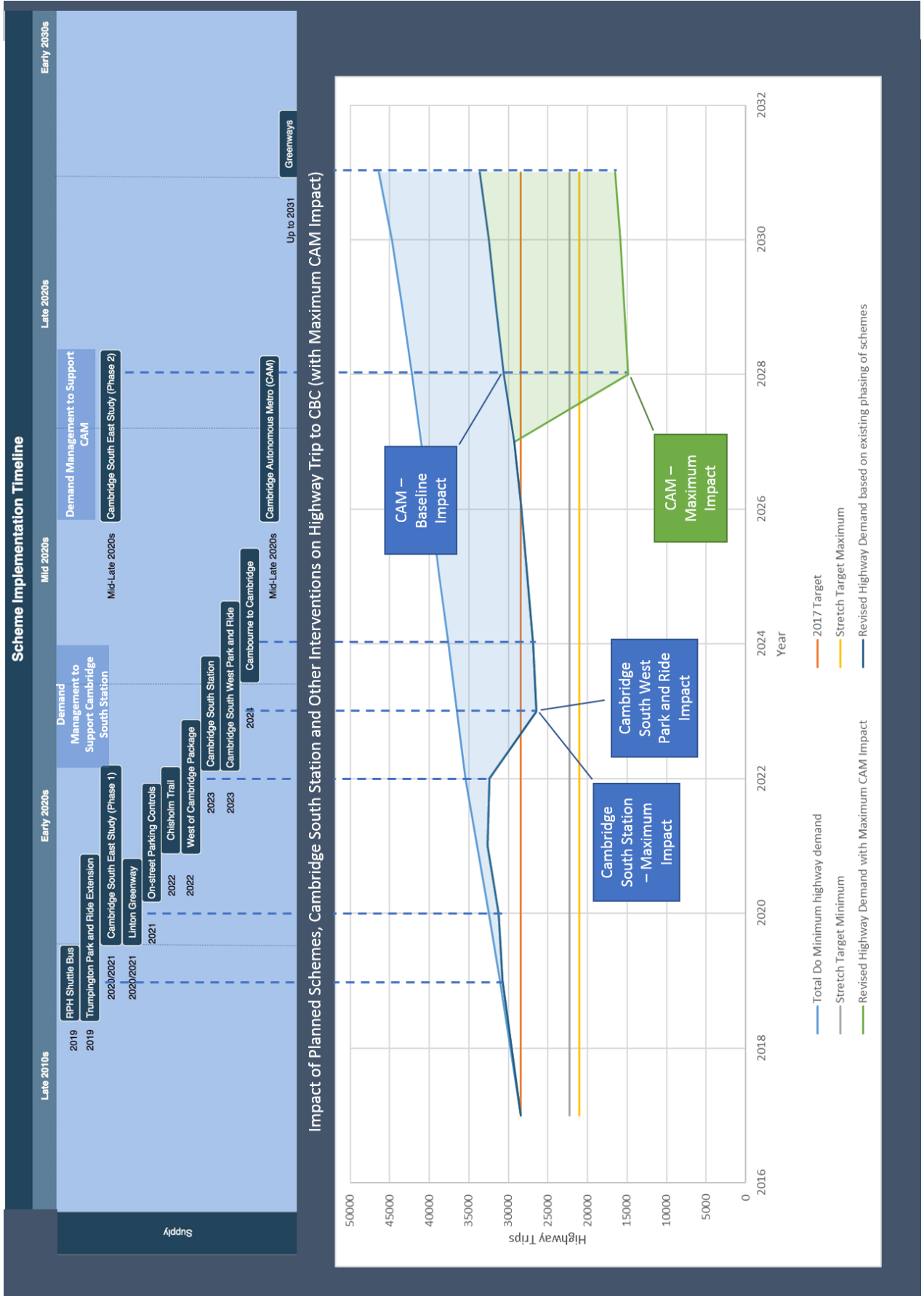
### Timeline of Impacts

The analysis above looks at a 2031 end-point. However, growth on the site is ongoing and some schemes are planned to be implemented before 2031. Figure 4 shows the year-by-year impacts of growth and schemes on highway traffic.

<sup>2</sup> <https://citydeal-live.storage.googleapis.com/upload/www.greatercambridge.org.uk/futureinvestmentstrategy/Cambridge%20Mass%20Transit%20Options%20Assessment%20Report%20Final%202022.pdf>

<sup>3</sup> The impact of CAM is based on planning scenarios set out by its project team, rather than demand forecasting

Figure 4 Timeline of Impacts



Highway trips to CBC will rise until 2022, with early schemes partly mitigating the impact. Around 2023, further schemes could achieve the Target. In the Baseline CAM scenario traffic would exceed the Target level from around 2027<sup>4</sup>. In the Maximum CAM scenario, with accompanying demand management measures, there is potential to reduce highway demand and meet the Stretch Target.

The timing of any demand management measures is critical to ensuring the greatest impact of Cambridge South Station and CAM. Demand management should be in place at the time of scheme opening to encourage use of the new infrastructure.

### Cambridge South Station

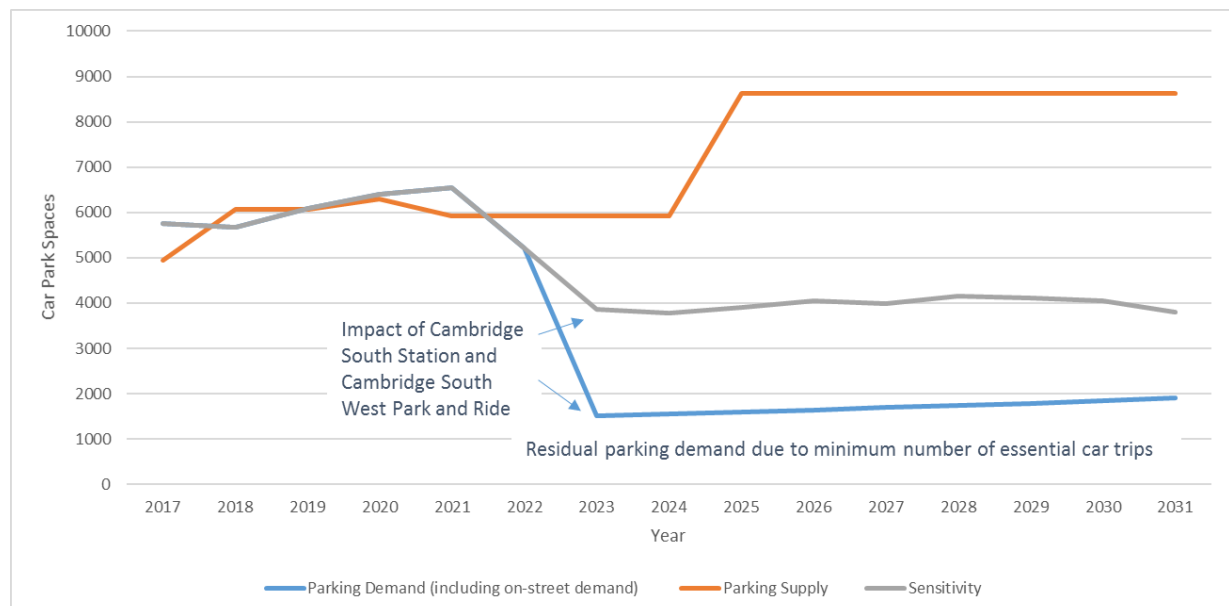
Rail access to CBC is limited by the need for a local journey leg between CBC and Cambridge Station. In 2017 the Government announced funding to support development of proposals for Cambridge South Station, which would be located to the west of CBC. This would be a step change in the mode choice available to patients, visitors and employees. Direct access to a range of potential routes would allow the Station to provide a competitive travel choice that could generate passenger growth and mode shift.

The overall impact of Cambridge South Station will depend on the level of demand management in place at CBC and in the wider transport network. However, even in the Baseline Station demand scenario described above, an estimated 5,800 return trips could use Cambridge South Station daily (across all its roles). This is broadly equivalent to the total current demand at Ely and Royston Stations combined.<sup>5</sup> The improved access and the nature and quality of the local, national and international connections that it could provide, has the potential to further increase economic activity on the Campus, with benefits for economic output at the local, regional and national levels.

### Impact on Parking

A reduction in highway trips leads to a reduction in parking demand and creates headroom in the supply, which could negate the need to construct further car parks. Figure 5 estimates the parking demand and supply at CBC following implementation of the measures and schemes. A sensitivity has also been applied which considers the Baseline Station Demand scenario.

**Figure 5 Impact on Campus Parking**



<sup>4</sup> The Baseline CAM scenario is shown as having limited impact as it is assumed to take on the impact of the GCP corridor schemes in this scenario. These extensive public transport interventions (which could be seen as interim steps towards CAM) have been assumed in prior years.

<sup>5</sup> 5,800 return trips daily in 2016/2017 – based on Office of Rail and Road Estimates of Station Usage 2016-2017 [http://orr.gov.uk/data/assets/excel\\_doc/0012/26130/estimates-of-station-usage-2016-17.xlsx](http://orr.gov.uk/data/assets/excel_doc/0012/26130/estimates-of-station-usage-2016-17.xlsx) converted to daily equivalents.

## Conclusions

- Highway trips are expected to continue to grow between 2017 and 2031;
- Although some imminent developments at CBC (Royal Papworth Hospital and AstraZeneca) have been delayed, these are still expected to become operational before most of the planned major transport schemes are implemented;
- GCP Schemes that are planned to come forward between 2022 and 2024, and Cambridge South Station, could have a significant impact on highway demand to CBC, bringing total highway demand to below 2017 levels in 2023. The 'Maximum Station' impact is required to meet this Target and therefore supporting measures and demand management are critical to doing so. The availability and management of car parking at CBC is critical to this;
- Post-2023, CAM has the potential for the greatest impact. The level of impact depends on supporting demand management measures to encourage the transition from private car to sustainable transport;
- For the Station and CAM to have maximum impact, citywide demand management needs to be in place;
- Achieving the Target for highway trip reduction opens up headroom in the parking supply and creates opportunities to avoid new parking construction, retire existing car parks, enhance public realm, and/or provide additional development sites; and
- The maximum impact of Cambridge South Station is not only dependent on supporting measures implemented at CBC itself, but also on the ability of the wider network to support that level of ridership. For example, early engagement with the Rail Industry around train capacity and the potential contribution of East-West Rail are important to provide the most effective access to the Station.

## Recommendations

- It is critical that GCP schemes are kept to programme to address short-term continued highway traffic growth, mitigating negative impacts on Campus operation and quality of life;
- Key players should collaborate to coordinate phasing of planned schemes, growth and any demand management measures, in order to have the maximum impact in the right timescales. These players include CBC, Cambridgeshire County Council, GCP, University of Cambridge, the Cambridge and Peterborough Combined Authority and the rail industry;
- Carry out further scheme development work on the measures identified for securing the transport and public realm goals relating to Cambridge South Station;
- Further work to understand the increase in footfall at rail stations at the other end of the rail journey, to determine if they need any infrastructure improvements to support the new rail trips to CBC via Cambridge South Station; and
- Further development of Potential Interventions identified in this Study, including possible 'quick wins' to help address the initial highway growth. This should commence as soon as possible.