Bus Services &
New Residential Developments

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GoAhead

Stagecoach

Bus Centre of Excellence

PROLOGUE

Buses continue to represent the most popular form of public transport in Britain. Across the UK, **over 4 billion passenger journeys** are made each year, and this number continues to grow. Impressive growth continues to be achievable with the implementation of supportive customer-focussed policies and delivery of suitable infrastructure, enabling improved frequency and reliability and offering attractive journey times.

Buses offer access to work, leisure, education, and a vast range of other activities. They play an important role in providing mobility and promoting social inclusion. Most bus journeys also involve elements of active travel with walking, cycling, or both: regular bus use sustains a greener and healthier lifestyle.

In parts of the bigger cities of Britain over one in three journeys to work is made by bus. Nationally, one in three secondary school pupils reaches school by bus.

Nevertheless, for the UK to reach legally set carbon mitigation targets, as well as achieve multiple public policy objectives including improved public health challenges, greatly increased bus use needs to be considered as a key tool to achieve the transformational change required. It is very clear that much more needs to be done, intentionally and consistently, if buses are to make the greatest possible contribution to sustainability, improved social mobility, both for local and longer-distance journeys. This case for this was made by the former Government in the Transport Decarbonisation Plan and National Bus Strategy, both published in 2021, and by the current Government in their Better Buses Bill, which was published in December 2024.

In localities where high levels of housing and population growth are committed in local plans, inclusion of suitable public transport provision is vital. There is the additional need to achieve modal shift from existing residents as well as support new development growth, if local highway networks are not to become further congested, and to prevent the wider environmental impacts of consequential emissions.

Partnership working is essential to meet the customer's expectation that bus services become increasingly reliable, frequent, affordable and convenient, offering higher standards of comfort on the most environmentally friendly vehicles. **Both Stagecoach Group and Go-Ahead Group have recognised the need to invest hundreds of millions of pounds** to support the decarbonisation of our bus fleets in the UK, with further expenditure in supporting facilities and technology, to meet this end.

It has never been more important that buses are recognised for the value they provide and are embedded in the design of our future built environments. A clear understanding of what is required to facilitate safe, reliable, efficient and attractive bus operations must inform every designer's practice. This document is intended to support built environment professionals to that end.

The relevance of buses to sustainable development

Since the first edition of this guidance, the challenges of housing supply and affordability have if anything increased. There is a renewed cross-party recognition that over the next 20 years, more new homes need to be built than in the last 50. In parts of the UK where growth is being focused, many towns will see the most growth they have ever experienced, and several will double in size. There is also national and local recognition that ambitious development strategies are likely to demand entirely new settlements, including new towns.

It is especially important that this growth, in whatever form it takes, makes fullest possible use of the opportunities offered by integrated public transport provision, by "designing in" those features that support the efficient delivery of the highest-quality bus services.

Where buses are properly considered at the outset, in development location, master planning and detailed design, high levels of service adoption are achievable. Indeed, across a very wide variety of scenarios, appropriate development can help support improved bus services that achieve modal shift across a wider area. Properly considered design can help to offset the residual car-borne traffic from a development strategy or major proposal. Where buses are properly harnessed in support of the best development proposals, they can provide wider public betterment.

Urban design must respond to a number of important considerations. This document is intended to highlight the critical elements that are needed to ensure that buses can best serve residential developments, in non-metropolitan contexts; and play the fullest possible role in delivering high-quality, attractive and sustainable placemaking.

The role of this document

There is a national expectation that all new development will achieve the highest quality of design and place-making. A number of design tools are in place to achieve that goal.

This advice is focused on the design aspects that have an impact on bus operations. It is intended to supplement and assist designers in the interpretation of national and local guidance and policy, including that set out in Manual for Streets and the National Model Design Code. We should also highlight the expectations set out in Department for Transport Circular LTN01/24 "Bus User Priority", as well as the standards and principles set out in the best-practice document "Buses in Urban Developments" published in 2018 by the Chartered Institution of Highways and Transportation (CIHT)[1] which is especially relevant in the largest urban areas.

This advice is intended to be broadly relevant, particularly in England and Wales. However, in Scotland specific legislative differences may apply.

The focus of this advice is for streets within new residentially-led developments. It is not intended to guide design approaches for employment development, complex commercially-led mixed use schemes, or where "high frequency" bus corridors are anticipated in dense urban areas. Here, the National Bus Strategy indicates proposals should incorporate bus lanes and other bus priority measures. This will demand site-specific approaches, and will apply to a relatively small proportion of development proposals.

It is aimed at supporting all stakeholders in the development process from planning and site identification, to construction and handover. This including developers, their client teams, highways and planning authorities.

Go-Ahead Group and Stagecoach Group operating companies will always seek to assist as far as they can on a site-specific basis, and we greatly value the earliest possible dialogue with all parties involved, to ensure the best possible solutions are identified and incorporated in proposals.

We recognise that effective partnership endures over the long term. Stagecoach and Go-Ahead will aim to provide consistent ongoing support through the planning, detailed design, and delivery process; and over the lifetime of the scheme as residents continue to move in and are making travel choices.

Finally, the best outcomes can never be based merely on the formulaic application of a set of "rules". Partnership and communication is the most vital component, and this document is intended to open the door to ongoing dialogue with local bus operating companies. **Contact details for each of our local teams are provided at the back of this document.**

We look forward to talking to you.

[1] This is accessible at: https://www.ciht.org.uk/media/4459/buses_ua_tp_full_version_v5.pdf

1. HIGHWAYS DESIGN & SPECIFICATION

High quality bus services require roads that facilitate relatively large vehicles being able to make safe and relatively efficient progress, multiple times per hour, in two directions. In line with the National Model Design Code, such streets should therefore be designed as Primary Streets, giving a higher priority to its “movement” function through its design.

Streets intended for use by buses need to be identified at the start of the design process, with a logical rationale as to how the links provided will contribute to the rational evolution of the wider bus network. Introducing bus routes simply to achieve a nominal walking distance threshold to bus stops is not appropriate and is not supported by the National Bus Strategy.

While buses are often similarly sized to modern refuse collection vehicles, for which layouts are always tracked, they operate in a different manner. Where streets are intended to accommodate a bus service they should therefore be tracked for the appropriate vehicle type to comfortably operate in both directions, with consideration made for safe turning spaces as required.

1.1. Essential engineering requirements for roads acting as bus routes

- **Ideally, a clear carriageway width of 6.5m** should be consistently available, with any on-street parking provided off-carriageway in parallel dedicated bays, in line with CIHT guidance (fig. 1).
  - An **absolute minimum clear width of 6.1m** is necessary to allow reasonably safe and efficient bus operation.
  - Localised widening should be assumed on bends, in line with results of a realistic tracking exercise.
  - Within residential areas, **street widths wider than 6.5m** tend to attract a higher level of on-carriageway parking and **are not generally supported.**
  - Where spine roads have a greater strategic function, involving larger number of HGV movements, and/or faster design speeds than 30 mph, greater widths are more likely to be appropriate.
- Alignment of the street must avoid needless and excessive changes in direction or priority (fig. 2).
  - **Tracking should permit two buses to pass** in opposing directions without the corners of vehicles, or tyres, typically needing to remain less than 200mm from the kerb for extended distances.
  - Tracking should be performed for 12.2m Scania K230UB single deck buses, for which a general arrangement is attached at Appendix A.
  - The front offside corner of the bus should never normally need to perform an excursion over the marked carriageway centreline. This will require localised widening on bends with tight radii. (figs. 3, 4)
  - Inside kerb radii of 25m represent a good minimum to avoid tracking problems along mainline carriageways.
- Vertical deflection to achieve traffic calming should be avoided.
  - We strongly support other approaches, such as the use of changes in pavement colour and texture (including rumble strips, or cobbled margins and overruns to reduce perceived carriageway width) as an alternative to vertical deflection. (figs. 6, 8, 9 and 10 as a selection of examples)

Fig. 1
Charlton Boulevard, Charlton Hayes, South Gloucestershire.
The ideal solution for bus: a direct bus route with clear carriageways.
Bus gates are anticipated at the top and bottom of the street.

Fig. 2
Unnecessary deflection.
This street was intended for use by buses but this has proved impractical. Just two or three cars parked on-street, make tracking effectively impossible for buses.

Fig. 3
Tight bends and limited visibility, combined with 6m width and uncontrolled on street parking means this road is not suitable for bus operation.

Fig. 4
Appropriate road curvature reduces speed without an excessively tortuous alignment.

Fig. 5
Feature square accommodates casual parking without affecting the bus route.

Fig. 6
Mini-roundabout and overrun feature calms traffic by occasional introduction of a feature obstacle. These should be tracked for 12m buses.

Fig. 7
Parallel parking bays are provided continuously off-street. Street trees add a further buffer between the main street carriageway and both pedestrians and habitable rooms, in a high-density development featuring continuous frontages.

Fig. 8
Short single-track throttle at pedestrian crossing.
Note the gentle ramp transition and good cross-visibility.

1.2. Traffic calming on bus routes: alternative design approaches

Stagecoach and Go-Ahead recognise that in certain circumstances active traffic calming measures may be needed. This is more likely to be the case where straighter streets define development blocks within higher-density schemes of more urban character.

Where specific urban design conditions and opportunities warrant or permit, streets designed for bus operation could include:

- **Speed cushions -**
  These can be much more desirable than tables or ramps. However, a careful approach needs to be taken to their positioning and specification.
  - We support DfT guidance, advising a maximum cushion width of 1600mm.
  - To allow the bus to effectively straddle each feature without sudden steering movements, there should be a minimum 600mm offset between the kerb and the nearside edge of the cushion.
  - On-street parking needs to be prohibited, for at least 25m either side of each.
- **Full-width speed tables –**
  These can cause issues if they are too frequently included. Where their use is considered essential, these should be designed to present a ramp height of no more than 75mm, and a transition gradient of no more than 1:12.
  - Detailing of speed tables, especially when applied across primary streets, should clearly delineate the vehicular carriageway, typically featuring kerblines with a face of at least 25mm, or contrasting gutter channels.
  - Tracking of buses should ensure that there is no need for any portion of the vehicle to oversail the footway.
- **Throttles/narrowings** pose no problems if used sparingly.
  - The most appropriate sites are likely to be found where major pedestrian and cycle routes intersect the street.
  - **Symmetrical narrowing is preferred** over chicanes or offsets (fig. 8).
  - We consider 3.8m is the minimum appropriate width for single-track sections, which should be no longer than 6m in length.
  - Clear inter-visibility must be provided for on both approaches to such features, with suitable clear road length and width on both approaches to allow a bus to wait to allow an oncoming vehicle to pass.

Filtered permeability through use of bus gates, or offset contra-flow bus lanes, could offer a much better means of achieving traffic calming, and reducing inappropriate through traffic, while not disadvantaging buses (fig. 9) (see section 1.5 and case study 4 on page 18). Further details on designing and implementing these features can be found within DfT LTN 01/24.

Fig. 9
Andover, East Anton
Buses remain on a direct alignment on the primary street. Permeability remains for general traffic via a much more complex and circuitous route.

Fig. 10
Approach to surface treatment appears to narrow the carriageway, while allowing for tracking of larger vehicles.

Fig. 11
Telford Lawley phase 1 -
Careful use of offsets, changes in width and surface, and controlled on-street parking are used to create visual interest and reduce speeds while avoiding delay to buses.

1.3. Shared space on proposed bus routes

Thoughtfully-designed shared surfaces, can be incorporated on bus routes, perhaps at a Local Centre or a feature square. However special care is needed to permit safe and efficient bus operation in shared space areas. We strongly recommend that extensive lengths of shared surfaces on proposed bus routes are avoided.

Parking in shared-space areas should be accommodated in marked bays. Means must be found to effectively prevent casual parking.

We recommend shared surfaces should clearly delineate the main vehicular carriageway, to avoid buses straying into areas intended mainly for pedestrians, and vice versa.

The design of any bus stops to be provided within shared space areas is likely to need particular care (figs. 12, 13).

We very strongly recommend early consultation with the local bus operating company as well as the Local Highway Authority, especially where radical and extensive design approaches to shared space are being considered on a proposed bus route.

Fig. 12 Buda, Szent Haromsag Tere -
A particularly sensitive approach to a busy stop in a shared space area. The edge of the vehicular area is clearly defined, with a 25mm upstand and contrasting colour kerb. The bus stop boarder has a full height kerb, gentle transitions and proper use of tactile edge markings.

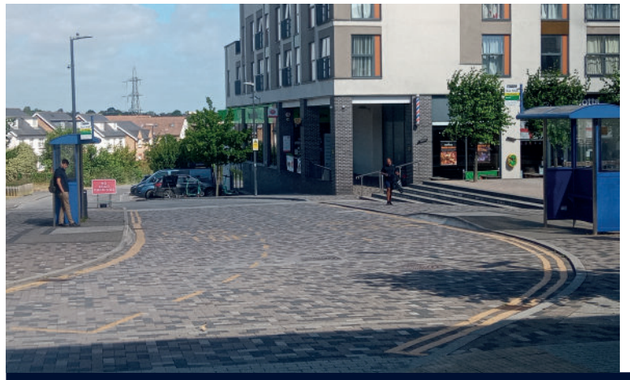


Fig. 13 Bristol Northern Fringe - Cheswick Village.
This pair of stops in a shared space local square presents significant hazards. A stopped bus is likely to block the vehicular carriageway entirely. Note the treatment of boarders which involves excessively steep transitions to a 180mm high boarder only 2m long. The vehicular carriageway, is demarcated, but the approach intentionally uses colour to add ambiguity and blend the carriageway visually with the wider public realm.

CASE STUDY 1

Barton Park, Winchester
This planned urban extension lies north East of Winchester beyond the A4174 Avon Ring Road. The development if the largest extension in the City for many years. Lying between the A34 and the centre, it will provide a new Park and Ride site and the existing radial route will be diverted through the site. As such, urban design takes great care to ensure buses can make unimpeded progress within an extensive development.

The primary street is 6.5m wide on a gently sinuous alignment featuring relaxed radii allowing buses to navigate smoothly.

There are no vertical traffic calming measures but changes in surface treatment are used, as well as more sophisticated visual cues such as the use of setts rather than white lining to demarcate shadow right turn lanes. Despite continuous block frontage and formal design at three-storeys along much of the route, properties intentionally stand back from the highway.

All dwellings facing the bus route have on-plot parking and are serviced from a parallel service road. Together these features balance urban design requirements with highway safety, without compromising efficiency of the bus circulation.

Fig. 14
The site of a future bus stop, with generous dimensions. This bridges a substantial swale feature. These must always be considered at the earliest stage of the s38 design and approval process.

Fig. 15
The generous scale of the primary boulevard accommodates planting, swales and two parallel shared space serviceways which act as quietways for cycling. While relatively unusual, this is entirely consistent with the National Model Design Code.

1.4. Master Planning for Bus Routes

Buses need to be able to reliably make good progress. Streets intended to act as bus routes of their essence perform an important wider vehicle movement function. Accordingly, in line with revised Government Guidance set out in LTN 01/2013 “Setting Local Speed Limits” (March 2024), a 30mph speed limit is most likely to be appropriate, where buses are intended to circulate through a development for any distance exceeding 800m. This is also likely to be necessary on shorter lengths of road on projects where an inter-urban route is required to operate through a development.

20mph limits can be accepted over shorter lengths of street, where it will credibly be self-enforcing by all traffic, and not unduly impede operation of through services – for example, where a route is intended to terminate within a development.

The National Bus Strategy makes clear that frequent diversions of bus routes are not supported. Where it is appropriate, it is essential that any diversion of existing bus services into proposed development is designed to minimise the amount of extra journey time or mileage involved, as far as possible. Within developments, any proposed bus route should therefore take a suitably direct and intuitively logical route. Further useful detail is found in the Guidance published by CIHT.

Large urban extensions offer both significant opportunities, and particular challenges. A variety of parameters influencing the master plan will have a significant bearing on the efficiency and effectiveness of the bus service/s provided. These include density, land use disposition, design idiom and the location of key nodes and facilities, such as schools.

It is especially important that we are able to engage with development promoters and their client teams early, while design is evolving, and before these matters are “frozen” in the form presented for planning approval. Where relevant, we are always happy to participate in wider discussions with a range of stakeholders, including the local planning and highways authorities.

CASE STUDY 2

Wokingham Southern Distributor Road

This road will act to help relieve a congested town centre, but also is the main vehicular access to a large development area, which ultimately will span both sides of a rail line. The tension between achieving efficient vehicular movement while maintaining a high quality of environment and amenity has meant that the road corridor has been designed holistically, making use of both urban form and planting. A relatively high density of development including apartments and town houses fronts the road to create a clearly urban impression, helping slow traffic.

However, there is no direct frontage access to the road. There are generous verges, and shared-used foot/cycleways, which together with small front gardens provide a buffer to the carriageway. A number of off-street parking bays are included, but the whole street will be designated an urban clearway.

Traffic calming is “designed in” by a large number of passive means, including central shadow islands, pedestrian refuges and central reserves, and changes in pavement surface treatment. Planting is also used as art of the highway design, to achieve multiple objectives, meaning that traffic engineering and the environment need not always conflict.

Fig. 16
The design approach involves significant frontage stand-off but both lateral and central island features create a strong sense of visual friction to reduce speeds passively. Note the 1.8m wide visitor/delivery bay at the margin.

Fig. 17
Railings accentuate the division between the highway and private defensible space. The footway alternates with planting next to the kerbside, reflecting a rich and layered approach to highway and public realm design, reflected in a Building for Life Award.

1.4.1. Access points

Access for buses should ideally be situated at either end of the proposed development area, to minimise the circuity of any diversion into the scheme. Where this is thought to raise the potential for rat-running, or presents other difficulties for the wider highway network, a bus gate or gates might be incorporated to preclude general traffic. The design approach may provide buses with considerable advantage in using a direct route while general traffic must take a longer and less intuitively obvious one (see Section 1.5).

1.4.2. Single Points of access for buses and "spur" working

Where only one point of vehicular access is provided into a development, it is less likely that a bus service will penetrate unless the proposal represents a major bus trip generator. The real and perceived delay introduced onto a service by entering and exiting a development en-route with a route "spur" (also known as a "double run"), is known to seriously reduce the wider attractiveness of the bus service concerned.

The likelihood that a single point of access for buses will prove to be feasible and agreeable, depends strongly on minimising the time taken to enter and leave the site, and serve a stop within it. Ideally this should be no longer than 2 minutes in total. (fig. 18).

This will generally involve the primary access being a short length of high-standard highway, with no frontage access or side turnings, linking a roundabout on the existing bus route, to a second sited a short distance into the scheme.

Fig. 18
Gloucester Business Park.
A short double run into a busy mixed use development.

1.4.3. Terminal loops

Creating or extending services to operate as very long or complex one-way loops is very undesirable. This is because, for many travellers, such loops involve the bus travelling for some minutes in the opposite direction to their intended destination, unacceptably penalising journey time. Terminal loops should be as short as possible, logical and tracked to allow efficient operation. Changes of priority should be minimised.

1.5. Bus Gates and Low-Traffic Neighbourhoods

National and local policy demands that sustainable modes, including public transport, are prioritised in terms of movement and circulation, where new development is being located and designed.

"Filtered permeability" refers to the principle that selected, more sustainable modes, are offered a more direct route on a key movement corridor, while general traffic has to take a more circuitous one. This is one of the most effective means of prioritising sustainable modes, and bus services in particular. It is one the foundational principles of low-traffic neighbourhoods, which can prove to be transformative in achieving a substantial rebalancing of transport choices towards a number of more sustainable options.

While pedestrian and cycle-only links can easily be designed to preclude abuse by motorists, for bus-only links, the approach to engineering and enforcement needs more care if the intent is to be achieved. Further guidance on this can be found at Section 8 of LTN 01/24.

Bus gates are generally designed to be short single carriageway stretches of road for use by buses only (fig. 19). Cycles can usually be easily accommodated. The guidance on use of carriageway narrowing set out in section 1.2 would also apply. Detailed design guidance should be sought from the applicable Highways Authority, and the likely enforcing authority as required.

Bus gates do present certain challenges for design, maintenance and enforcement. We share the broad concerns of adopting authorities that mechanical barrier devices in particular are excessively complex, prone to breakdown, or insufficiently effective as a solution. Developers and their consultants should therefore always engage at an early stage with the adoption team at the applicable Highways Authority.

In the experience of Go-Ahead and Stagecoach, these challenges are usually best resolved through the simplest possible carriageway engineering, with enforcement through CCTV by the appropriate local authority, under a decriminalised parking and traffic enforcement regime. There is now a good deal of experience of this. Government took steps in 2021 to streamline the process for local authorities to establish a decriminalised traffic penalty regime.

The measures should be designed and undertaken in line with the principles and specifications agreed with the DfT's Traffic Penalties Tribunal. These protocols have now been tested at the UK Court of Appeal. This involves bus gates being:

- Regulated as short stretches of "Bus Lane".
- Appropriately signed and marked in line with DfT Guidance set out in The Traffic Signs and Regulations General Directions 2015.
- CCTV enforcement being undertaken under a decriminalised regime by the applicable Local Authority.

In the few cases where CCTV enforcement is considered inappropriate, a "tank trap" design can be effective, in line with that developed and approved for adoption by Wokingham Council. This involves the bus straddling a raised central upstand, which creates a physical barrier for most cars. This has no moving parts, and involves no electronic controls, while being a suitably robust deterrent for most general traffic. It is accepted that this will not entirely prevent abuse by larger vehicles, including some SUVs. However, the great majority of restricted movements will be addressed, whilst also readily permitting emergency access for fire appliances.

Stagecoach and Go-Ahead ordinarily prefer not to operate through gates enforced by rising bollards, or other physical barrier devices. These require transponders and additional time to wait whilst bollards fall and can be prone to mechanical breakdown.

The exception would be exceptionally high-intensity operational situations such as city centres. In city centre contexts every vehicle in the local operating fleet would be transponder-equipped, and breakdown of the barrier is much more likely to be immediately addressed. Elsewhere, such devices risk damaging buses or other vehicles, or preventing buses being able to use a much longer section of road, with no notice, causing delivery of the bus service to fail without warning.

Many Highways Authorities will no longer accept such devices for adoption in any event.

CASE STUDY 3

Kingsway Bus Gates, Gloucester

Kingsway is a 3,300 dwelling urban extension on former MOD land alongside the A38 south of Gloucester, and adjoining the large pre-existing suburb of Lower Tuffley. Passive provision to connect to future development has been made when Lower Tuffley was designed. However, as Kingsway was conceived in the late 1990s, it was clear that general traffic needed to be directed out towards the A38 and the new South West Gloucester Bypass.

However bus services needed to benefit from a more direct routings, which also allowed the combination of existing demand with the new development, to provide the critical mass to support an attractive and high frequency services. Four bus gates have been provided at key access points to the development, and one within it, to this end.

This has permitted a virtual bus priority corridor to be realised from Waterwells Park and Ride, south of Kingsway, through the development to Gloucester City centre bypassing congestion on the parallel A38 route. Another link is provided to local services and employment in Quedgeley; while in the near future, another gate will allow seamless access to the next major urban extension taking place to the south at Hunts Grove.

Fig. 19
Gloucester, Kingsway bus gate - One of three all of which involve CCTV enforcement. This is simple, robust, and extremely cost effective, especially since decriminalisation of moving traffic offences is now straightforward for Local Authorities to secure. Private enforcement can be an option.

CASE STUDY 4

Hampton Hempsted A15 bus advantage, Peterborough

The old arterial A15 London Road bisects a neighbourhood of the major new township at Hampton, known as Hempsted. Through traffic had for some years been intended to use a high-standard replacement route.

The risk that traffic generated by future development elsewhere in the wider Hampton scheme reverted to use the old A15 required that its attractiveness to through traffic was significantly reduced.

However, it was essential that the main bus route to Hampton and settlements beyond, could take a direct and efficient route.

At the Hempsted Local Centre, general traffic is therefore routed off-line the old A15, around the back of development blocks, while buses continue straight on along a short stretch of bus lane. Signal control activated by on-bus transponders provides further bus advantage.

Fig. 20
Peterborough A15 London Road - Two alternating contra flow bus lanes.
Approaching general traffic is merging back in from the right, with the approaching bus lane section in the distance. Among other things this imaginative approach saved substantially on construction costs.

Fig. 21
Peterborough A15 London Road - Contraflow bus lane.
With-flow general traffic is made to divert substantially offline behind the frontage on the left side of this picture.

CASE STUDY 5

Winchester Pitt Park & Ride

Where limited-stop, longer-distance trunk inter-urban services are concerned, creating a hub for local inter-modal interchange is likely to offer an important element of the sustainable travel strategy. Such local interchange hubs should be located to offer immediate convenient access to the service, operating both directions. In this case the site, on Romsey Road, benefits from both frequent passing local services, and a dedicated established Park and Ride service from a pre-existing site further from town. At 200 spaces it is relatively small in scale but since opening in February 2016 it has consistently had very high occupancy.

The design approach allowing successful integration of the facility with surrounding housing is worthy of note.

Taking this approach further would offer high quality waiting facilities and dedicated provision for cycles and micro-mobility. This kind of local interchange hub would be provided at the focal point of the development as part of a local commercial centre which would be likely to incorporate a new adjoining primary school. This strategy facilitates mode change at the same place and time as other local trips.

Fig. 22
Pitt Park and Ride -
Permeable paving and generous planting help integrate the facility into a residential setting.

2. BUS STOPS & SUPPORTING INFRASTRUCTURE

The National Bus Strategy and LTN 01/24 both set very clear aspirations for the whole customer journey experience. This includes the information and facilities to be provided at bus stops. The design of streets intended to act as bus routes should at the outset incorporate high quality bus stop infrastructure at optimised locations consistent with the pedestrian and cycle movement strategy.

Bus stops are an important point of access to information about the services provided. They are essential to signal safe points to board and alight and need to be appropriately visible both to potential passengers, bus drivers, and other road users. They should also offer fully accessible access to buses for people with disabilities.

2.1. Walking distances to bus stops

Stagecoach and Go-Ahead endorses the advice set out by the Chartered Institution of Highways and Transportation (CIHT) in its 2018 publication. This replaces the previous frequently-quoted but unevidenced 400m threshold. **A 300m target is recommended as key threshold for high-density urban environments,** averaging over 70 dwgs/Ha, with the recognition that a flexible and context-appropriate approach is required. Exceeding 500m walking distance to stops in a highly-urbanised context should only be exceptional.

We strongly recommend that the distance of 400m to a bus stop for all affordable housing, and higher-density development is not exceeded, and preferably should be closer.

However, particularly outside the largest urban areas, to achieve the CIHT standard for all dwellings within a scheme may be impractical and could well result in an inefficient and contrived layout, greatly undermining the potential effectiveness of the proposed bus route.

In line with the National Bus Strategy, Go-Ahead and Stagecoach will always prefer an efficient bus routing strategy, serving the great majority of dwellings well, over one that serves all homes poorly with a low-frequency or indirect service. Thus, we strongly advocate some degree of flexibility on walking distances to bus stops in suburban settings and smaller settlements.

Where appropriate, a focus on excellent cycle access to bus stops where a significant number of homes lie over 500m from an existing service, may prove more appropriate than trying to achieve a circuitous diversion of an existing bus route, especially to smaller developments of fewer than 800 dwellings. This is especially true for longer distance or inter-urban bus routes.

On the largest developments, including planned new and expanded settlements, we would suggest that care should be taken to ensure all dwellings are located within 500m of stops if possible. 800m should be seen as an absolute maximum threshold.

CASE STUDY 6

Elsea Park, Local Bus Interchange Bourne, Lincolnshire

As a relatively small market town, Bourne does not support a town bus network. It does benefit from an established, direct inter-urban bus service to Peterborough, that now runs up to three times per hour.

Elsea Park is a very large strategic site designed to meet housing need across several Local Plan periods. Providing approximately 3000 dwellings it will take over 20 years to build out, commencing in 2002. It extends over a mile to the west of the main bus corridor, and it remains unlikely that these existing bus routes will ever be diverted.

While a bus spine is being provided within the scheme, it was intended that the development should rely on short local journeys being made to the existing bus route. A feature interchange stop was provided in the very first phase on the London Road, with covered waiting and cycle parking, as a separate kiss and change bay for drop off and pick up.

Fig. 23
Bourne Elsea Park feature stop and local intermodal point, on the main A15 bus route, includes a car and minibus drop off point and covered cycle racks.

Fig. 24
The stop has appropriate scale and presence.
Note that the building lies directly on a signalised crossing, and the incorporation of lay-bys. It should be expected that these stops will be busy at times, and buses need to be able to wait without blocking traffic on major circulation routes of this kind.

2.2. Bus Stop Location

Development proposals should seek, from the very outset, to create effective stop catchments from within surrounding and/or adjoining development.

The locations of new or relocated bus stops to serve development, whether on-site or adjacent, therefore need to be broadly identified at the earliest feasible stage. Ordinarily this should be within the Master Plan and/or parameters plans consented at Outline stage.

Subsequent design development at Design Code and Reserved Matters stages can then resolve any potential conflicts with detailed design requirements.

- Attractive walking routes can usually be provided to the bus stops, from all points within the development.
- In addition, it may well be appropriate and possible to create similar links from adjoining existing or proposed development. These pedestrian links should be logical and reasonably direct.
- All reasonable and deliverable opportunities to effectively combine potential demands from adjoining pre-existing development, should be identified and secured. With this in mind, the careful consideration of pedestrian permeability across the site boundary during master planning can make a very substantial difference to the quality of bus service that can be provided.

Where it is intended to incorporate hedge-lines and/or drainage swales adjoining streets to be used as bus routes, it will be particularly important to fix the position of bus stops such that all the relevant interfaces can be properly considered in a unified design process, that does not compromise the deliverability or attractiveness of the stops and wider passenger waiting environment. The approach should have regard to facilitating effective maintenance in the longer term.

CASE STUDY 7

Great Western Park, Didcot
This 3000 unit scheme west of Didcot sits either side of an existing bus service on Harwell Road, as well as providing a new one along a single spine road running through the centre of the development.

The Master Plan has paid careful attention to the location of bus stops as part of an overarching strategy that integrates walking and cycling routes. Clearly legible and direct pedestrian routes, that are mainly traffic-free, lead directly to stops, both on the existing Harwell Road, and the spine road, giving convenient access to bus services to a full range of destinations.

Fig. 25
A very direct and well-surveilled pedestrian corridor leads directly to bus stops.

Fig. 26
The legibility of the pedestrian and cycle network is an exceptionally strong feature here. Where they exist pre-existing direct Public Rights of Way can and should be leveraged as a “fix” in master planning. Stops should be placed where such routes intersect primary roads and streets.

2.3. Bus stop siting and spacing

Where a route enters a development, bus stops should be positively provided for, with a view to maximising the attractiveness of use. Actively seeking to minimise bus stop provision within developments, or to site them as far as possible from properties, directly undermines the value that an effective bus service ought to provide to the development.

Bus stops provided within developments should be:

- **Lit and appropriately overlooked,** and suitably prominent within the street scene, without being intrusive.
- Provided **between 280-320m apart** in normal circumstances, and generally no more than 400m apart, as signalled in LTN01/24 at Section 6.3, to maximise the number of dwellings within easy walking distance of stops, while avoiding stops being so close together that buses cannot make efficient progress.
- However, where bus routes cross large undeveloped areas, then bus stops are not likely to be needed on those stretches, and longer intervals would be appropriate between stops.
- Sited **downstream of side road junctions and pedestrian crossings** to avoid blocking sight lines.
- Located to effectively serve the widest possible hinterland.
- In most cases this will be at **significant nodes of pedestrian movement,** such as near major intersections, within urban squares, or where strategic green space corridors intersect the bus route. This may well need controlled crossing facilities to be provided. We would stress the importance of stops to be sited downstream of such features, a point made clear in the CIHT Guidance.

Stagecoach and Go-Ahead recognise that bus stops present real and perceived amenity issues where they are positioned directly adjacent to dwellings, on active frontages. Obviously, this needs to be avoided wherever possible (figs. 27, 28 and 29).

This is especially important where building lines come close to the carriageway. We recommend that frontage steps back from the kerb line where bus stops are sited within development parcels so that habitable windows are a minimum 10m from the kerb line and a stationary bus.

Where stops must be sited on active frontages, amenity conflicts can be greatly reduced by positioning stops where:

- Longer garden walls flank the footway.
- Garage blocks/flats over garages back onto the footway.
- The building line of plots adjoining the stop naturally “steps back” from the back edge of the footway, such as in feature squares.
- There is a small area of open space adjoining the route. However, it is undesirable for stops to be sited immediately next to equipped play areas.
- Shared private drives can offer an additional buffer between the street and dwelling frontages.

Agreement of optimal bus stop locations, before reserved matters applications are prepared, is essential if such conflicts are to be “designed out” as far as possible.

Fig. 27
Bus stops should never impinge directly on habitable windows. Even more care is needed where shelters are concerned adjacent to built frontage.

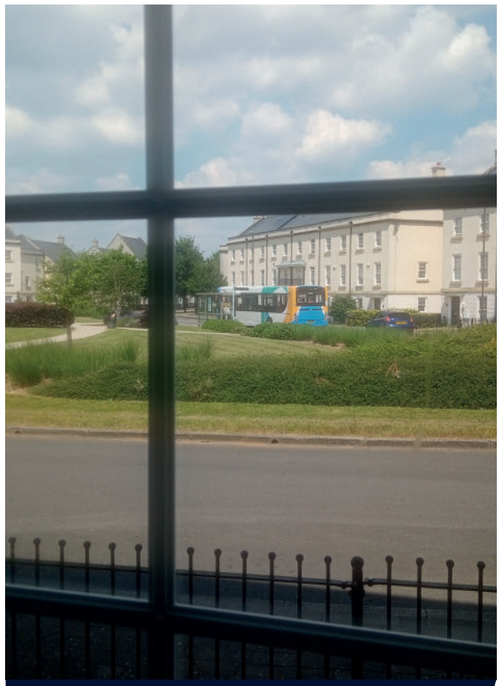


Fig. 28
Gloucester, Coopers Edge.
Designers should make full use of place-making features such as open space and feature squares, to make sure that bus stops are logically and optimally sited. This stop boasts excellent surveillance without impinging on habitable rooms.

Fig. 29
Bus stop and shelters sited an appropriate distance from residential frontages, avoiding amenity issues arising

2.4. Bus stop positioning within the adoptable highway

Most bus stops within residential contexts will be provided “on-line”, on the running carriageway. Lay-bys at bus stops within residential areas are generally not necessary or appropriate, unless specific circumstances apply. We offer specific guidance later in this section.

The location and design of bus stops should ensure that buses can safely and smoothly draw in to stop alongside the kerbline where the designated boarding area is positioned.

- Pulling into the stop, and pulling out, should never normally require the bus to cross over into the opposing carriageway; or need any part of the bus to oversail the kerbline or edge of the carriageway.
- Tight curves are places where bus stops are impractical, as a general rule.
- Bus stop clearway markings should be provided, 31m length, of which 6m should be downstream of the flag to allow buses to safely pull out around any stationary vehicle. Alternatively, a combination of cage markings and no parking/waiting restrictions should be applied to allow buses to approach and pull into the stop without being blocked by parked cars. (figs. 30 and 31).

Where new stops are being provided on existing highway, a sufficient pavement width should be available, or provided, to allow passengers to wait without obstructing other pedestrians, including those with pushchairs or wheelchairs.

- A pavement width of least 1.8m is realistically needed to allow for a bus stop.
- A greater minimum width of 2.0m should be provided, to allow for provision of a flag and other infrastructure including a shelter, without narrowing the usable footway width to less than 1.5m.

Bus stops should never be sited so near to pedestrian refuges or median islands, that the carriageway can be entirely blocked by a stationary bus picking up or setting down passengers, or where there is any temptation for motorists to pass a refuge, central island or bollard by utilising the opposing carriageway.

Fig. 30
Illegal and inconsiderate parking makes it impossible for bus stops to be used safely. Parking bays or a stop buildout would have been appropriate in this street.

Fig. 31
The results of inconsiderate parking at a bus stop. All road users are adversely affected, not just bus passengers. To meet Equalities Act 2010 requirements, bus stop clearways should offer a 13m lead in to the stand and 6m downstream to allow buses to pull around parked cars ahead: 31m in total.

2.4.1. Bus stop boarders

Bus passengers should always board or alight directly onto a paved footway surface of suitable width.

Where there is no footway provided adjoining the kerbline on the relevant side of the bus route, a dedicated hardened boarding area of no less than 4m in length and 2m in width is generally required, to provide sufficient safe waiting space to meet Equality Act standards. **A 6m boarder length and 2.5m width is strongly recommended.** This should be tied in with the required length of new footway to a pedestrian crossing with dropped kerbs, and where necessary, a pedestrian refuge, ideally provided “upstream” of the stop. Further advice should be sought from the Local Highways Authority.

Particular care needs to be taken when positioning stops and shelters on streets where an off-road cycleway is provided, whether dedicated, or shared with pedestrians.

- **Cycle provision that runs along the kerbline at bus stops - such that disembarking passengers alight into the path of a moving cyclist - is extremely hazardous. Electrically- assisted cycles and scooters can easily exceed 20mph. Cycle-and-pedestrian collisions can be extremely serious. All efforts should be made to avoid this scenario. Where unavoidable, a physical feature such as a bollard should be sited a minimum of 300mm back for the kerb face to create a protected strip at the boarder edge. Changes in level, or other visual and tactile cues, should also be employed, pursuant to Inclusive Mobility standards. (fig. 32, 33, 34, 35)**
- Shelters should generally be positioned on the kerbline with any cycle provision behind. This allows continuous cycle provision to be maintained.
  - However local circumstances and constraints are likely to mean a variety of approaches are appropriate.

Bus stop boarders should be paved at least to the binder course, and flags should be erected at the earliest reasonable opportunity, and as far as possible before adjacent properties are occupied, even if the service is not due to be provided for some time thereafter (fig. 32).

We would expect that raised boarders should be provided in most instances, complying with the specifications provided by the Local Highways Authority.

Where this is unavailable or unclear, Stagecoach and Go-Ahead recommend precast concrete raised kerb units supplied in sets, incorporating transition kerbs and integral anti-slip top faces, and with a raised boarder face with integral batter of 160mm above the carriageway. In line with the guidance set out in DfT's "Inclusive Mobility", tactile edge paving and clearly-contrasting colours should mark the boarder edge.

The faces of precast boarder kerbs should be smooth and not textured, and incorporate an integral batter, to avoid tyre scrub and damage. "Kassel" kerbs incorporating 180-200mm faces and gutter "nibs" are nevertheless acceptable.

Fig. 32
Andover, East Anton MDA - Preferred 160mm raised boarder detail.
DfT Inclusive Mobility guidance (Jan 2023) offers further important advice.

Fig. 33
Ideally, in line with National Model Design Code, boarders should be provided within the planted margin between footway/cycleway, and the kerb.

2.4.2. Bus stop build-outs

It is generally very important that a bus can stop on the carriageway, without having to negotiate parked cars to pull in. Therefore, Stagecoach and Go-Ahead strongly recommend incorporation of on-street parking in off-carriageway bays. This does require the kerb-line to be built out between parking bays, at bus stops.

- A minimum 4m boarder length is required, inclusive of transition kerbs, while 6m is strongly recommended.
- Build-outs should extend the full width of parking bays, generally 2m-2.5m wide.
- Build-outs should generally not project beyond the gully line into the carriageway.
- Shelters, where provided, should generally be located within the build-out to allow buses and waiting passengers to be inter-visible. This will also reduce conflict with building frontages. Further detail is presented in LTN01/24 at Section 6.4.

2.43. Segregated cycle provision and "Island" bus stops

Stagecoach and Go-Ahead note and support the intent of Department for Transport design guidance for cycling infrastructure LTN 01/20 issued in 2020 which seeks greatly higher standards of cycle infrastructure design. This includes a presumption for segregated cycle provision on busier streets. These streets are typically those on which bus routes and infrastructure are likely to be provided.

The provision of seamless segregated cycle provision reflects explicit policy recognition in LTN 01/20 that cycles are to be treated by highways designers as "vehicles". This means that bus passengers risk being isolated between two parallel streams of vehicular traffic. Continuous segregated cycle provision as well the emergence of new forms of micro-mobility including e-bikes and powered scooters, all encourage higher passing speeds. It is important that the real and perceived safety of bus passengers and pedestrians more broadly, is not undermined. Rigorous research undertaken by UCL and others, demonstrates that the nature of the interface between cycling infrastructure and bus stops has a serious potential impact on the experience of bus users, especially many groups with protected characteristics, including the blind and partially sighted.

Continuous segregated cycle provision, as well the emergence of new forms of micro-mobility including e-bikes and powered scooters, all encourage higher passing speeds. It is important that in managing the interface between cycles/micromobility and bus users, the real and perceived safety of bus passengers and pedestrians more broadly, is not undermined.

Off street cycle provision (including 3m shared pedestrian and cycle pavements) should not run through bus stop boarding/alighting areas under any circumstances. Shared Use Bus Boarders, where cycles ride through bus stops boarding and alighting areas, are inherently highly hazardous and do not generally meet the expectations of the Equalities Act 2010. Stop boarders and shelters should stand off-line of the cycle provision as far as possible (see fig.33), to avoid standing passengers or structure obstructing cycles. This might well be within a grassed or planted verge.

Where segregated cycle provision is anticipated alongside a bus route, “island” or “floating” bus stops are typically necessary. The following key considerations must govern the design of these features to avoid safety compromises and ensure the needs of all highway users - including those protected by the Equalities Act 2010 - are not jeopardised.

- Non-ambulant bus passengers need sufficient space to wait, and for a wheelchair ramp to be deployed. This demands that as an absolute minimum, the boarding area should be 2m wide and 6m long.
- All structures on the Island must be sited to ensure that non-ambulant users - including those with pushchairs - can safely and conveniently access and egress the island. The design and positioning of bus shelters needs particular care. Islands should always be of sufficient size to avoid the need for undue compromise.
- The risk of bus passengers inadvertently walking into the path of a moving cycle should be minimised. Level differences are highly recommended. Other treatment of the rear edge of the island to achieve this is highly advisable (see fig. 35). The use of the rear face of a shelter or railings to achieve physical segregation between the track and the boarding zone might be appropriate.
- The attractiveness of the cycle provision should not be unduly compromised. Horizontal transition should avoid cyclists having to make sudden movements or greatly decelerate (figs. 34, 35). Vertical deflection for crossings of the cycle provision to the island should be the minimum necessary to signal a pedestrian crossing. Structures must not impinge on the cycle provision.
- Sufficient width to accommodate a segregated cycle provision behind an island stop is necessary. In new-build situations, a shared use footway section behind an island bus stop is rarely if ever justified, as it directs cycles, potentially travelling at speed, into a severe collision risk with pedestrians, and it undermines the principle of continuous segregation.
- Given the highway width implied to run continuous segregated cycle provision along bus routes, master planning approaches that provide parallel segregation for cycles away from the bus route might prove to be more generally advantageous.

Fig. 34
Island Bus stop -
This boarder is smaller than the minimum dimensions in LTN 01/20, and deflection on a 1.5m wide track is excessive. There is inadequate room to deploy a ramp or position a shelter. If space does not permit cycle segregation then alternative high quality provision should be made parallel to the main street.

Fig. 35
Island bus stop -
Within the same LPA and locality, this island stop is much more generous, with LTN01/20 compliant dimensions. A cantilever shelter backing onto the track would allow disabled users to enter, and provide a level of protection on the back edge. Attention to detail is of the essence, putting the designer in the position of users.

Fig. 36
Physical protection of bus users from passing cycles and micro-mobility cannot legitimately be compromised. Where width does not permit fully compliant segregation, including boarders, then cyclists should be expected either to use the carriageway, or off-line high-quality segregated provision on a parallel route.

2.4.4. Bus lay-bys

On-carriageway bus stops are generally appropriate within new residential developments.

However, bays or lay-bys are required where it is anticipated that the stops might involve a bus being stationary for significant lengths of time.

This could be when the stop is:

- Ended to act as the terminus for a service or services;
- Anticipated to serve large numbers of passengers boarding or alighting on certain journeys (such as a secondary school or major district centre, or within retail or leisure developments).

Partial pull-ins (between 1.7m and 2m wide) with appropriate lead-in and exit tapers, might be appropriate to allow traffic to safely pass within or adjoining residential developments, while also allowing buses to easily pull away from the stop.(fig. 37)

Fig. 37
Amesbury, Stockport Way -
Partial pull-in at a bus stop on a major through route on the edge of a major urban extension, with a 40mph speed limit. While on residential streets on-carriageway stops are generally entirely acceptable, there is no “in-principle” operator objection to lay-bys. In fact, in certain cases they are necessary to support traffic flow and for safety.

Where lay-bys and pull-ins are provided, generally on rather busier streets of roads, advice should in the first instance be sought from the relevant Highways Authority.

- Bus stands and lay-bys should be tracked for 12.2m Scania K230UB buses, in line with the guidance above.
- It is especially important that tapers of sufficient length are provided on the approach to and departure from the stop, to avoid the need to perform sharp turns into and out of the stops.

2.4.5 Carriageway Specification

The need to decarbonise bus operations involves vehicles that are significantly heavier than the current diesel fleet. They also can exert higher torque forces on carriageway pavements, especially at bus stops. Consideration should be given to reinforced pavement build-ups at bus stops, to avoid premature deformation and failure of the carriageway pavement structure, which has a range of safety implications especially for cyclists, and to minimise future maintenance needs.

2.5. Street Furniture at bus stops

All street furniture at bus stops should be set back from the kerb face by at least 600mm to avoid them being hit by the external rear-view mirrors of buses using the stop, and to assist in encouraging passengers to stand a safe distance from the kerb.

Fig. 38
Minimum bus stop infrastructure should incorporate a level paved boarder of sufficient size to accommodate a wheelchair ramp, a dropped kerb, a quality flag and timetable case. This flag has been incorrectly installed with the case facing the carriageway: a mistake as common as it is foolish.

Bus stops should be provided with, as a minimum, a flag incorporating an integrated timetable case, to the standards set by the adopting authority, and in line with their guidelines for premium/core bus services (fig. 38). A consistent specification of bus stop flags and timetable cases along the whole route is desirable.

Shelters and real-time displays are very desirable depending on the context (fig.39). Separate advice on a site-by-site basis should be sought from the Highways Authority, and it is often worth additionally consulting with the Council likely to adopt the shelters in due course. There is a trend towards private maintenance on many larger developments. In other cases, most shelters within a local authority are provided and maintained by commercial advertising companies. The local bus operator may also be able to assist in identifying the likely maintaining party.

Litter bins can also help to manage the street scene at bus stops. The advice of the local highway authority should be sought..

Fig. 39
Crawley Kilnwood Vale -
Top quality infrastructure and bus service in place on phase 1, and highly visible at the point purchasers are making their buying decision.

3. FRONTAGES & PARKING PROVISION ON BUS ROUTES

Government's aspirations for placemaking expressed through the National Model Design Code are no lesser than they are for improving bus services. The treatment of frontages and parking on bus routes has a major bearing on the ability of buses to serve the site effectively, whatever the context and precise urban design approach. Buses are unavoidably large vehicles, and designers should positively seek to ensure that accommodating buses does not compromise either residential amenity or the wider experience of the place.

The interface between the built frontage and the street, is crucial to place-making. It offers important opportunities to incorporate features necessary to support much more sustainable built environments, including sustainable drainage systems and street trees.

Unregulated and inconsiderate on-street parking has a severe potential impact on bus operations, particularly where for other reasons, highway alignment and width is reduced to minimum standards.

Car parking presents one of the biggest challenges to urban design. Unplanned informal, incidental and inappropriate car parking on streets frequently and seriously impedes bus services. The impact of this on the efficiency and attractiveness of bus routes is probably the biggest single difficulty faced by bus operators serving recently-built developments.

There are now multiple cases of developments where restricted carriageway widths and on-street parking entirely precludes bus services from operating into them as intended.

Even where buses can proceed, vehicle operating speeds can become so low that sustaining even the most basic level of bus operations becomes very difficult.

It is clear that accommodating parking on bus routes demands an especially careful and well-informed design approach at all stages. We broadly welcome and endorse the detailed and considered guidance set out in the English Partnerships/HCA Guide: "Car Parking: what works where" (2006). Most of the "golden rules" on page 18 of that document remain appropriate and relevant. However, this is general guidance and makes no specific reference to how such strategies might affect bus operation, positively or negatively.

3.1 Frontage Stand-offs

The distance between the kerbline and habitable windows has a direct bearing on residential amenity, where streets are to also accommodate significant traffic volumes, and regular use by large and heavy vehicles, including buses. While there might be occasions where streets intended to host bus routes might be relatively lightly trafficked especially at or near terminals, on most occasions we would expect bus services to operate on logical through routes.

Stagecoach and Go-Ahead expect that in normal circumstances on any street where a bus route is to operate, an **absolute minimum of 6m standoff** will be provided on new streets between a kerbline and habitable rooms on ground or upper floors. This would be necessary in any event where segregated or part-segregated ("stepped") cycle provision is to be made.

As stated at Section 2.3, where bus stops are to be provided on active frontages, we recommend that 10m is provided between the kerb and the building line to ensure that infrastructure can be appropriately accommodated.

3.2 Sustainable Drainage Systems and Swales

Stagecoach and Go-Ahead support the incorporation of SuDS infrastructure within bus route corridors, as it can also often assist in achieving multiple beneficial outcomes, including suitable offsets between the carriageway and dwellings.

However, incorporation of continuous swales presents particular engineering challenges for bus stop design. This makes it essential that bus stop positions are agreed before detailed engineering design prior to Reserved Matters and Section 38 approvals being sought. Retrofit of bus stops after this stage is very challenging and time-consuming, requiring revisiting of multiple prior approvals.

Boarders that bridge the swales without compromising the SuDS function or public safety are typically quite achievable if they are properly considered at the outset (see fig. 40, and fig. 14 at Case Study 1, on page 11). These should meet the criteria set out at Section 2.4.1.

Fig. 40
The bus stop boarder needs to allow the swale to perform its drainage function effectively, while facilitating safe boarding and alighting for all users. Robustness and maintainability are key areas of concern.

3.3 Street Trees

Stagecoach and Go-Ahead are aware that Government has set a clear aspiration that street trees should be encouraged on key residential streets to achieve multiple objectives. Where bus routes are involved, designers and wider teams should ensure that siting and species selection ensure that growth does not impinge on moving buses, including the upper decks of double deck vehicles, which are generally at least 4.2m high. The effect of winds on upper canopies should be considered in this regard. A substantially wider verge of 4m would typically be expected to allow trees to flourish and achieve their intended purpose without adversely impinging on the bus route (fig. 41).

Trees and other planting should avoid screening bus passengers when viewed from the driver's cab, or creating a situation where waiting passengers can no longer benefit from an appropriate level of passive surveillance from nearby dwellings.

Fig. 41
Gloucester, Coopers Edge -
A generous planting margin incorporating swales allows street trees to mature without affecting passing buses.

3.4 Parking Standards

Go-Ahead and Stagecoach strongly support approaches that allow for adequate parking to be provided throughout residential developments. In line with the former HCA's guidance, wherever possible parking should be provided within the dwelling curtilage, and/or under its direct surveillance.

It is essential that sufficient and appropriately-sited parking is provided such that there is no great pressure to park on the carriageway of primary streets and certainly not on pavement areas, which greatly hinders walking routes and wider public safety.

If parking is to be restricted it is crucial that bus routes are not subject to informal or uncontrolled parking. Early establishment of management regimes and rigorous enforcement of clearways is expected in this scenario.

3.5. On-street Parking

On primary streets intended to be used by buses, the use of on-street parking to help control traffic speeds needs to be formally "designed in", and intentionally limited to particular marked bays. The use of defined on-street parking bays can achieve the intended purpose of speed reduction, while strictly controlling any wider proliferation of informal on-street parking.

3.6 Good practice for accommodating parking on bus routes

Successful design approaches to parking serving dwellings along proposed bus routes generally:

- Provides sufficient parking to accommodate likely residents' demands, off the carriageway.
- Limits or otherwise carefully considers the number of private vehicular accesses onto the street.
- Ensures that residents parking is immediately accessible to the plot.
- Provision is well within the surveillance of adjoining properties.
- Is easily accessed from the street.
- Where two spaces are provided on a drive, allows more than one car to be parked and used independently (figs. 43 and 44).
- Does not rely on garages being used as parking space for cars.
- Intentionally avoids lengths of "free" kerb-line directly backed by footway.
- Treats parking as an integral part of the street scene.
- "Designs out" opportunities for inappropriate parking.
- Ensures that under normal circumstances, vehicles enter the mainline carriageway in forward gear.
- Provides parking spaces between the building frontage and the carriageway edge by whatever means is most appropriate.

Fig. 42
Peterborough Hampton Hargate -
Shared private drives add an additional buffer between the dwelling and street, and reduce the need and attractiveness of the street to park.

Fig. 43
Bristol Lyde Green -
Generously sized drives allow two cars to be parked off-street in a relatively high density development.

Fig. 44
Preston Northern Distributor Road -
Appropriate provision of off-street parking in a more traditional suburban development at lower densities, equally allow buses to make good progress. In lower density development the need for higher bus productivity is even more essential to maintain service effectiveness and commerciality.

Formal parallel parking bays sited between the footway and the carriageway are by far the best solution to ensuring that parking is appropriately managed on bus routes, especially in higher-density contexts where continuous built frontage is desirable (also see fig. 7 at section 1.1).

The combination of parallel parking bays/2m verge, a footway of suitable width and a reasonable privacy strip of at least 1m between the back of the public highway and building lines should be sufficient to meet our recommended minimum stand-off of 6m between active frontages and the kerbline, where bus routes are intended to operate.

Fig. 45
On-street parking need not detract from the street scene. Generous planting can also be incorporated.

In lower density developments, use of generous height : width ratios across the principal roads allows for a variety of strategies to be employed. These include shared driveways with grouped crossovers (fig.42), double-width driveways (figs. 43 and 44) and service roads/parallel shared surface access ways (See also Case Study 1).

Fig. 46
Wokingham Northern Urban Extension -
This street achieves an excellent balance between multiple urban design requirements. Parking in front of plots, and lavish planting, can co-exist while keeping a carriageway largely free of parking.

3.8 Parking on bus routes: ***things to avoid***

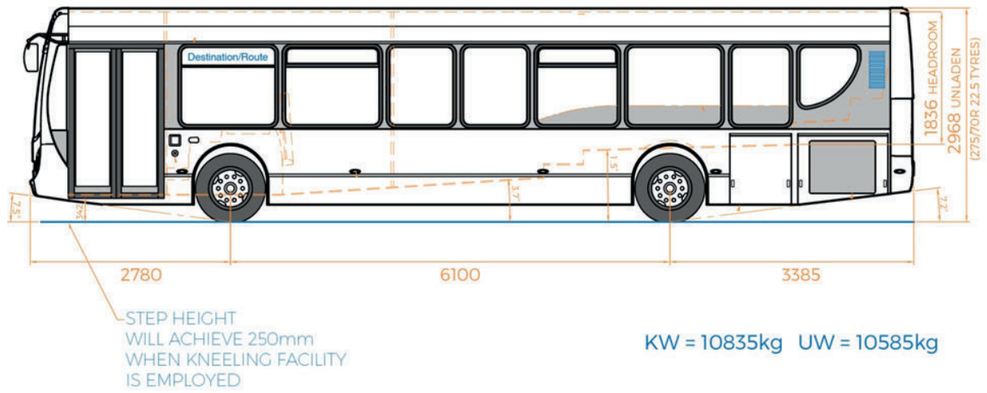
Problematic parking strategies will typically involve:

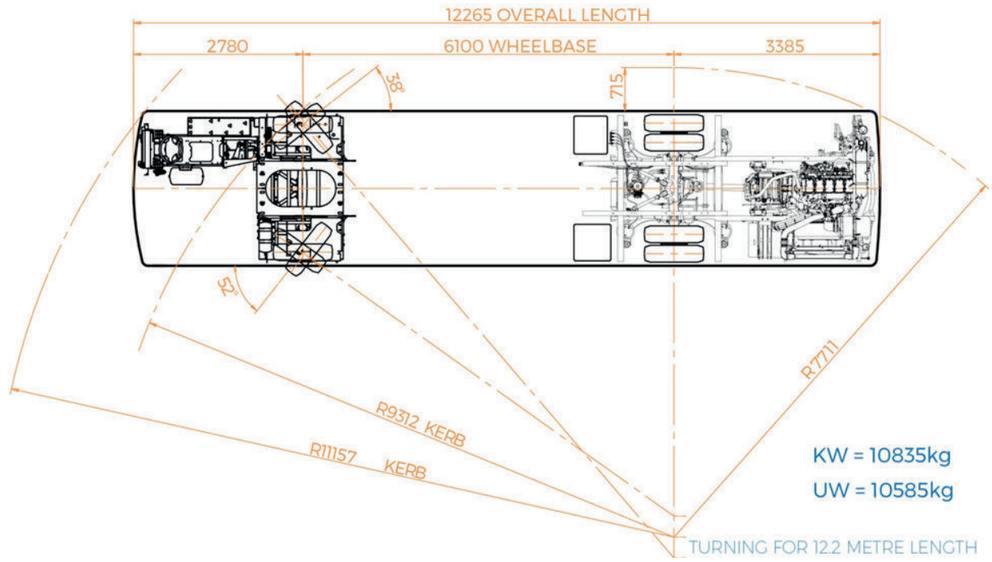
- The use of restrictive maximum parking ratios in residential areas, contrary to current national guidance.
- Proliferation of single width driveways, between individual dwellings, with individual crossovers.
- Long stretches of grass or planted verge margins between the carriageway and the footway, which encourage abuse.
- Wider carriageways than typical, but with insufficient parking provision on-plot, leading to parking on both sides of the street (fig 47).
- Excessive reliance on parking courts set behind built frontages, especially large ones where parking is not directly related to, or adjacent to, the applicable plot.

Fig. 47
This length of primary street, at 6.5m wide, permits parking on one side its whole length. High density and continuous frontage, with limited parking provision typically causes acute parking pressure on-street. After 5pm the street is effectively reduced to single carriageway for long distances.

4. BUS GENERAL ARRANGEMENTS

ENVIRO 300 12.2M body on a SCANIA 'KUB' CHASSIS





5. INVOLVING BUS OPERATORS IN THE PLANNING PROCESS

The following basic guidelines cannot fully cover the extremely wide range of locally-specific circumstances that will impact on a given development proposal.

Public transport strategies that are likely to require alteration to, or new bus services, should be discussed at the earliest possible opportunity with the local Stagecoach or Go-Ahead operating company, as well as the Local Authority, to ensure that the opportunities and constraints are identified and fully reflected in the proposals, and locally-agreed aspirations for bus service enhancement set in Bus Service Improvement Plans can be supported rather than undermined.

Outside the largest metropolitan areas, our commercial operating model allows us to offer developers and promoters a flexible approach in support of planning applications, where we can consider the inherent commercial risks involved in delivering the bus service as the development commences and builds out. Local operating companies can quickly mobilise the assets needed to support public transport improvements to new developments in a very wide range of locations and contexts.

5.1 Development Plan preparation

The best possible opportunities for sustainable development are in most cases likely to be realised through the Plan-led system. Stagecoach and Go-Ahead operating companies do engage with the planning process, in support of the goals of sustainable development and to highlight the opportunities where the fullest possible use can be made of existing or potential high quality bus services.

Both companies are keen to bring local knowledge and expertise to bear in assisting both Local Planning Authorities and Local Transport Authorities engaged in preparing planning and supporting transport policy; and development promoters seeking to bring development opportunities forward through an emerging Local Plan.

We are looking to further develop our local relationships with Local Planning Authorities in particular, and depending on the nature of the context, we can be involved both informally and more formally, through the statutory consultation process, and the preparation of public representations.

5.2 Site identification

We are happy to engage with promoters and local authorities at the earliest stage, on a strictly confidential basis, at the time sites are being evaluated for suitability, whether as part of the Strategic Housing and Employment Land Availability Assessment process, or on a site-by-site basis.

Many potential development sites while otherwise unconstrained, do not benefit from convenient access to any bus service which would offer a credible mode choice. Such sites are also often particularly hard to serve with a relevant public transport offer that could be sustained on a commercial basis in the long term. We can advise which existing bus routes are already commercial, and also where it sees future potential to develop or strengthen the commercial bus network.

5.3 Pre-application: scheme design and feasibility

Go-Ahead and Stagecoach are happy to engage with developers' client teams from the outset, again on a strictly confidential basis. Our input is likely to be most relevant where larger proposals are being brought forward, or where a promotion forms part of a wider area identified for development on a strategic scale.

We are able to offer commercially-focused specialist advice, where necessary bringing in our own expert resources across each of our wider UK Bus business, to support development scoping, master planning, and movement and access strategies. We can help ensure that on-site engineering costs are contained, and that robust public transport strategies and assumptions can be incorporated in Transport Assessments supporting an application.

We are particularly keen to explore opportunities for development to help deliver wider measures to assist in making bus services more attractive and relevant to a wider audience, such as new Park and Ride sites, or local inter-modal hubs/interchanges.

5.4 Public Transport Obligations: Section 106 Drafting

Both Go-Ahead and Stagecoach have a very strong track record in developing strong new commercial public transport operations. We are exceptionally well-positioned in many parts of the UK to ensure new developments are served as well as possible by bus. Generally, this will arise from our strong local network in the near vicinity.

Where this is the case, we can leverage network-level synergies to allow developments to benefit from, or catalyse, bus service improvements. We strongly recommend our early involvement in discussions with developers, Planning and Highway Authorities regarding public transport strategies in support of a proposal, and the associated planning obligations required to deliver these.

We can save all parties both time and money through:

- Early identification of network development synergies.
- Advising on the highest possible level of service likely to be commercially sustainable at development completion, and appropriately ambitious targets and stimulus measures to deliver bus mode share and mode shift.
- Prudent and rational phasing of developments, including triggers for bus service diversions or frequency improvements, not least to assist in ensuring compliance with the Community infrastructure Levy (CIL) Regulations 2010.
- Appropriate delivery and procurement models, having regard to all relevant legislation.
- Providing suitable drafting of language to incorporate within deeds made under Section 106 of the Town and Country Planning Act 1990 (and its equivalent in Scotland). This can also include mechanisms for direct procurement of the public transport package by the developer with the bus operator, achieving transparent best value.

5.5 *Reserved matters and implementation*

Resolution of detailed matters is material to the success of a development “as built”. For this reason, we strongly recommend that operating companies are consulted by all stakeholders in the development process, once an Outline Consent is issued and matters reserved by Planning Condition are being considered.

In particular, with larger schemes, we recommend that bus operators are consulted by stakeholders on the preparation of:

- Submissions under s38 and s278 of the Highways Act 1980, where appropriate, to ensure existing and new bus stops are appropriately accommodated;
- Design Codes steering overall detailed design principles, and establishing in more detail how the design approach set in the approved Indicative Master Plan will be interpreted and implemented;
- Designs for primary infrastructure, which we very strongly recommend should incorporate the provision for on-site bus stops intended to serve the development;
- Reserved matters layouts, especially where the development forms part of a committed or likely larger area of development, or where a relatively large scheme depends on existing bus services provided on adjacent or nearby roads, but cannot be directly served.

Go-Ahead and Stagecoach can also assist in the preparation and implementation of effective Travel Plans. We can discuss a range of highly effective approaches to inform and incentivise new residents to use the bus. These efforts can be further established by consulting us as site sales material is being prepared, to add detail as to what local bus services are and will be available at the site and close nearby, and ensure that sales particulars are compliant with the Consumer Protection Regulations 2015, in particular in regard to proposed bus services and bus stops.

Once sales have begun on site, our local teams can supply development outlets with a range of timetables and fares information, and supporting incentives as required.

6. GO-AHEAD GROUP UK REGIONAL BUS CONTACT DETAILS

Brighton and Hove Bus Company - Brighton and Hove; Metrobus

01273 886200 info@buses.co.uk

East Yorkshire

252 Anlaby Road, Hull, HU3 2RS

01482 327142 busline@eastyorkshirebuses.co.uk

Go East Anglia - Konectbus, Hedingham and Chambers

Norwich Bus Station, Surrey Street, Norwich NR1 3NX

03300 539358

Go North East

0191 420 5050

Go South Coast - Bluestar, Damory Coaches, Morebus, Salisbury Reds, Southern Vectis, Swindon's Bus Co.

Towngate House, 2-8 Parkstone Road Poole, Dorset BH15 2PR

01202 338420 customer.services@gosouthcoast.co.uk

Oxford Bus Group - Carousel Buses, Oxford Bus Co., Pulhams, Thames Travel

Oxford Bus Company, Cowley House, Watlington Road, Cowley, Oxford OX4 6GA

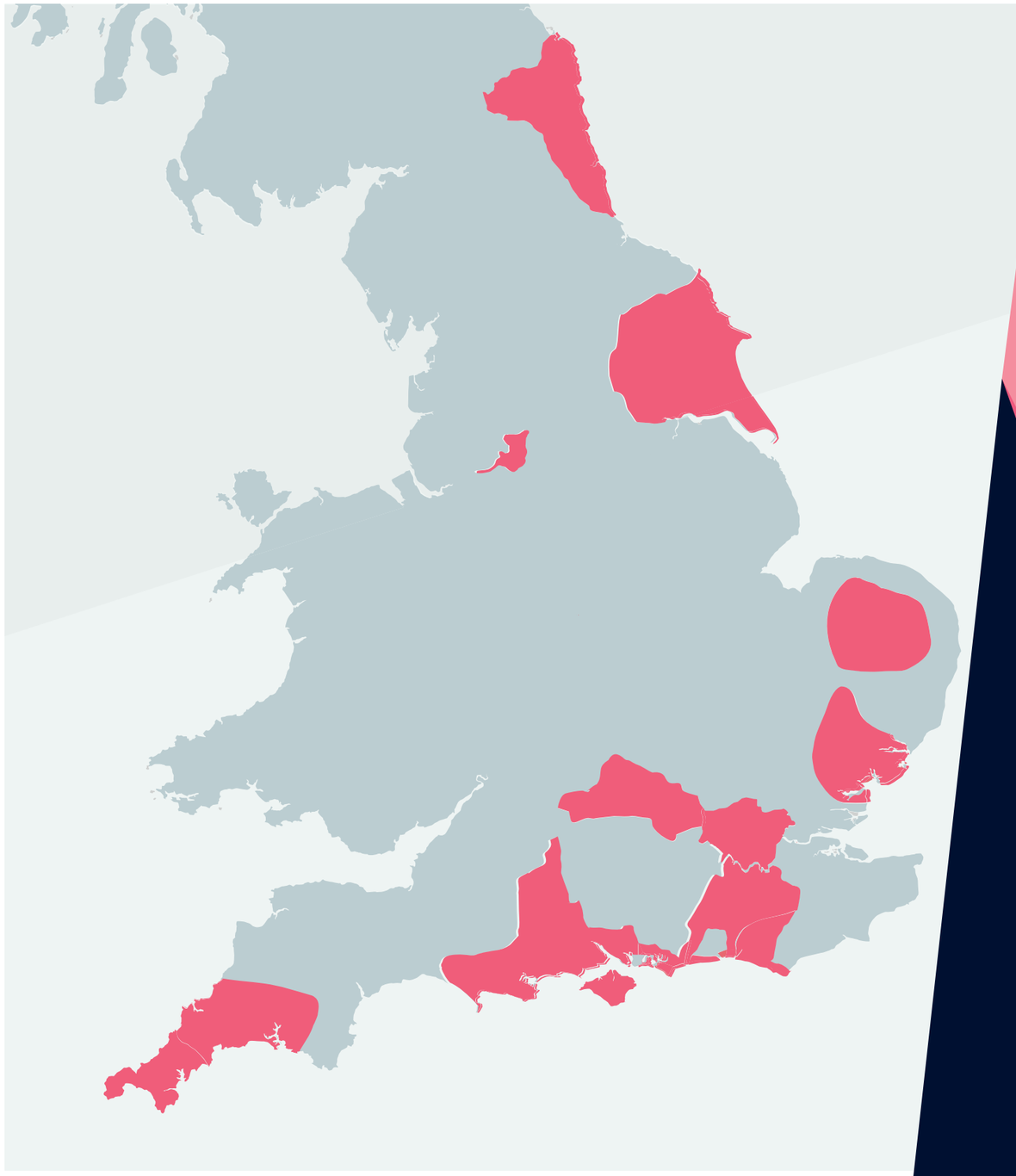
01865 785400 info@oxfordbus.co.uk

Go South West - Dartline, Go Cornwall, Plymouth Citybus

1 Milehouse Road, Milehouse, Plymouth, Devon PL3 4AA

01752 662271 customer.experience@plymouthbus.co.uk

Go-Ahead Operating Areas



7. STAGECOACH CONTACT DETAILS

Stagecoach Group Head Office
10 Dunkeld Road, Perth PH1 5TW
01738 442111

Stagecoach South West
Matford Park Depot, Matford Park Road,
Exeter EX2 8FD
01392 427711

Stagecoach South
The Bus Station, Southgate, Chichester,
West Sussex PO19 8DG
01243 528743

Stagecoach South East
Bus Station, St Georges Lane,
Canterbury, Kent CT1 2SY
03456 002299

Stagecoach in South Wales
1 St David's Road, Cwmbran, Torfaen
NP44 1PD
01633 485118

Stagecoach East
100 Cowley Road, Cambridge
CB4 0DN
01223 423578

Stagecoach West
3rd Floor, 65 London Road, Gloucester
GL1 3HF
01452 418635

Stagecoach Merseyside & South Lancashire
Gilmoss Bus Depot, East Lancashire Rd,
Liverpool L11 0BB
0151 545 2551

Stagecoach Midlands
Unit 7 Main Road, Far Cotton,
Northampton NN4 8ES
01604 662265

Stagecoach East Midlands
Warneford House, Runcorn Road,
LINCOLN LN6 3QP
01522 663500

Stagecoach Manchester
Queens Road Bus Depot, Boyle St,
Cheetham Hill, Manchester M8 8UT
0161 273 3377

Stagecoach in Yorkshire
Unit 4, Eldon Arcade, Barnsley,
South Yorkshire S70 2JP
01226 202555

Stagecoach North East
Head Office, Wheatsheaf, Sunderland
SR5 1AQ
0191 566 0231

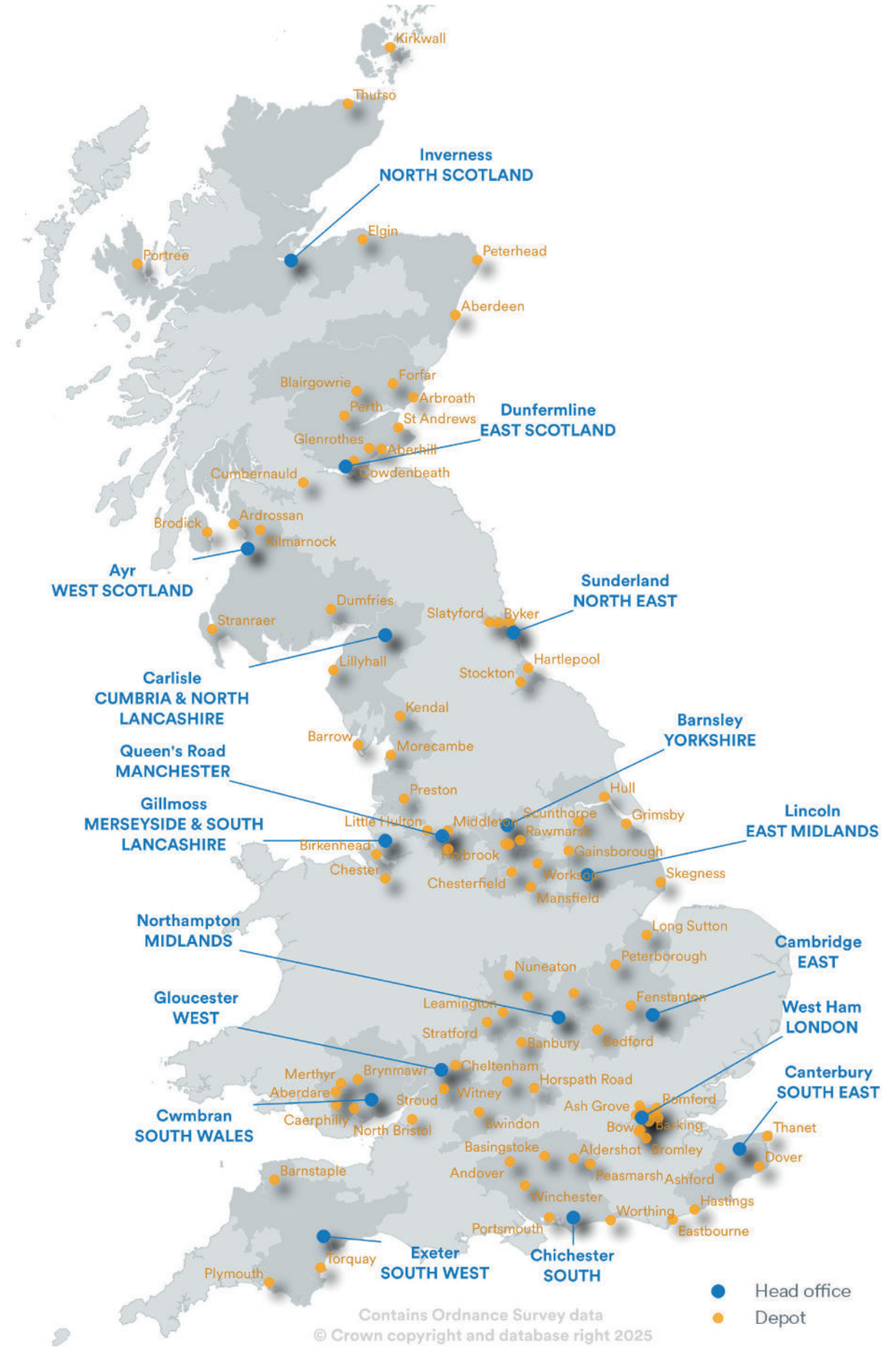
Stagecoach West Scotland
Sandgate, Ayr KA7 1DD

01292 613500

Stagecoach East Scotland
Unit 9 Upper Floor, Castle Business Centre,
Queensferry Rd, Dunfermline, Fife KY11 8NT
01383 660880

Stagecoach North Scotand
Inverness Bus Station, Farraline Park,
INVERNESS IV1 1LT
01463 233371

Stagecoach Operating Areas



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GoAhead

Stagecoach

Bus Centre of Excellence