APPROACH PRINCIPLES COLLABORATION DEVELOPMENT

the Kent design guide

making it happen - **public transport**

overview

This part of making it happen includes advice, guidance and information about public transport provision for residential and industrial developments.


public transport
MAIDSTONE
ARRIVA

General

The information in this section must be read in conjunction with the main guide and will help you produce good integrated transport links.

When we consider dealing with the effect of traffic from new developments on the highway network, we must consider all appropriate means of Public Transport and make the best use of rail and bus services.

Rail and bus services are important in helping to reduce car trips and must be promoted as positive alternatives to private vehicles from new developments.

New developments can give an important boost to local transport services by supporting existing ones and providing new ones. Early discussions with the development team at the local District Planning Authority and the Divisional Office are vital to assess the requirements for travel opportunities.

Transport Assessments will enable the impact of the development to be identified early on in the design process and appropriately managed through agreed measures.

For public transport to be an attractive option to residents moving into a new development, services should ideally be in place before or at the time of occupation to allow residents to make travel choices. The provision of a bus service should be marketed to potential buyers as an alternative means of travel.

Rail

The need for improvements to existing facilities like better access arrangements, better car parking, improved security and integration with other transport modes must be considered depending on the scale, location and impact of the development.

Rail offers a sustainable way of accessing key facilities such as employment, recreation, community services and health care.

For a major large development, a new rail station may be required and early discussions with all the key partners are important to fully explore this option.

Clearly timing of the discussions is important when considering major rail improvements. Early discussions wil help avoid missing the opportunity to encourage attractive, viable alternatives to private vehicle trips. This must be done in close liaison with the Train Operating Company.

Buses

We have published a Bus Strategy as part of our Local Transport Plan. The document, which can be viewed on www.kent.gov.uk/travelling., sets out our policies on buses, including the criteria for the support of socially required bus services and partnership working with operators to secure service improvements.

Bus services provide the main public transport alternative to the private car. It is therefore essential that public transport services and associated infrastructure are considered at an early stage when planning a development. The provision of new services, together with the upgrading of existing services, must be considered. On some bigger developments it may be necessary to subsidise the pump priming of a service during its early stages to assist economic viability.

In this section we outline the factors that need to be considered when funding improvements to bus services and associated infrastructure.

When designing the highway layout of an estate road, it is essential to consult with local bus operators to establish the potential for routing buses through the development. Our public transport section will be happy to provide advice and appropriate information for local bus operators in the area.

Public Transport Contributions - Section 106 Agreements Town and Country Planning Act 1990

Section106 of the Town and Country Planning Act 1990 permits the local District Planning Authority to enter into a legally binding agreement or planning obligation with you over a related issue.

Section 106 Agreements offer a mechanism for securing contributions towards public transport needs as part of a development proposal. You may be required to provide suitable public transport connections into a new site, in proportion to the size of the development, as part of a legally binding agreement.

Good public transport provision depends on proper planning and working in partnership. Facilities need to be designed for a range of users. This includes schemes that propose amendments to the existing highway network

Funding of Bus Services for New Developments

The main ways of achieving this are:

- where a development is located on or close to an existing commercially provided bus route and the bus operator is willing to divert the service, you may fund the extension or diversion of the existing service. In some cases it may also be appropriate to provide tickets to new residents where there is an existing comprehensive bus service; and
- where a service does not exist or where the bus operator is not willing to divert an existing commercial service, you may be asked to pay for a new service. Although this may be funded as a stand-alone service, it is important that it links into the local bus service network effectively.

We advice that before any service is planned, you need to contact our local bus team regarding the most appropriate method of serving the development and the costs involved. If a stand-alone service is agreed, you can then approach local bus operators for quotes.

What Size of Development Should Fund New or Extended Services?

You should discuss the requirements for a bus service with the Divisional Manager. A new service is likely to be required where a residential development exceeds 100 units, but may also be required for smaller schemes.

Current criteria requires that no property should be further than 400m from a bus stop, although it is desirable to give good access to all residential properties. It may be necessary to make payments to enhance the frequency of the existing service, extend the days and/or timetable of operation and provide improved bus stop infrastructure.

If a development is not linear in design, then once the number of units begins to exceed 100, it becomes more difficult to achieve the 400m rule as the development extends further from the main road.

A good bus corridor should be provided that affords an efficient passage for buses to and through a development, with access to the heart of the development.

You must consider the needs of residents and bus operators all all stages of the development. For example, it is important that road links are in place to serve all properties as they are constructed, so that residents can use services from the first day of occupation. If the road surface is unsuitable, the bus operator may be unwilling to serve the development because of possible damage to vehicles.

Trigger Points

For new developments isolated from the existing bus network, there has to be a balance between the point when the bus first enters the site and the total number of properties when completed.

You must ensure that at whatever point bus services enter a particular site, suitable arrangements are made to allow vehicles to turn safely, before the internal highway network is complete. This does raise the issue of ensuring that any new development is 'bus friendly' and does not require the bus to make lengthy, inconvenient detours. It is essential that operators are aware of potential site layouts at the earliest opportunity in order for them to carry out a bus audit of the routes.

You must be aware of the following issues, which will act as a checklist:

- how many units are planned?;
- is the development located on an existing bus route?; and
- are all properties within a minimum of 400m from existing bus stops?

If not, how many are outside? All properties should be located within convenient walking distance and no more than 400m from a bus stop. Services should be adjusted so that all properties have access to public transport, regardless of the size of the properties.

Design of New Bus Links

The physical design of the highway within a development must allow for the unhindered movement of buses along different routes. The geometry of the carriageway, parking controls, location of bus stops and any speed management measures should be designed with bus operation in mind. In some developments it may be appropriate to provide priority

movement for buses through bus only links (see Bus Gates), bus lanes or priority at traffic signals, but advice should be taken from the Divisonal Manager.

Buses should be able to enter and exit the development as easily and directly as possible. Where appropriate, bus-priority measures such as bus lanes and traffic signals should be used to help bus movement. You must discuss and agree provision for specific sites with the local District Planning Authority, the Divisional Office and bus operators.

All horizontal speed-control features, including 90-degree bends and traffic calming measures, for example chicanes, should normally be designed to accommodate the swept path of a 15m long rigid bus (the largest vehicle size now permissible).

You must discuss and agree design details jointly with the local District Planning Authority, the Divisional Office and bus operators. You will need to provide computer assessments of vehicle swept paths to demonstrate that your proposals will work in practice.

You must try to avoid using vertical traffic calming features on bus routes wherever possible. If you are considering using such features, you must consult with the bus operators at the earliest opportunity.

Speed cushions are more appropriate on bus routes as they provide a smooth ride for passengers and limit damage to buses, while reducing the speed of other vehicular traffic.

Bus stop facilities should be incorporated into new developments before the properties are occupied. Measures include raised kerbs at bus stops and coloured bay markings to discourage parking at bus stops and shelters.

Bus Gates

Links into new developments may provide access or priority for buses and emergency vehicles, while restricting other types of vehicular traffic.

For certain developments, particularly larger sites, providing bus-only links may be appropriate but should only be provided where:

- there is a clear need;
- they will save time over a more indirect route;
- they would benefit integration with neighbouring developments; or
- they would help to minimise the impact on an existing bus service.

You must agree requirements for specific sites jointly with the relevant authority and bus operators. You will be expected to pay for traffic regulation orders (TROs) required to restrict the link's lawful use.

New powers were granted to local authorities in Nov 2005 that could be used to provide enforcement of bus lanes and bus gates subject to agreement with us, once acceptable technology is developed.

You also need to consider the following:

- the link's design should be self-enforcing and not rely on the TRO's to control its use by other vehicles. Where it is likely that the link could be used by other traffic, it will normally need an appropriate control system; and
- there are a number of mechanisms that can be used to restrict traffic flow through bus-only links including rising bollards, roadside camera enforcement and physical design. The most appropriate solution must be used on a site-by-site basis following discussion with the relevant bus operator and ourselves.

How long will the funding last?

The funding should be sufficient for a minimum of 5 years in tranches.

Bus Stop Signage

A standard Kent bus stop sign must be used, which needs to include:

- a bus diagram;
- "Bus Stop" text;
- agreed name of the stop;
- Kent County Council logo;
- traveline phone number and logo; and
- SMS reference and text number.

Bus stop signs must be clearly visible to pedestrians and bus drivers. The bottom of the sign must be at least 2.5m above the ground. The sign face must be at least 450mm wide and 400mm high.

Posts and timetables

Bus stop infrastructure requirments are likely to differ in rural and urban areas. Whilst a simple pole and flag, often incorporating a timetable case, may be suitable in rural areas, there are a number of alternatives for urban areas. These include shelters with high quality timetable cases and electronic passenger information displays, or poles with timetable cases or real-time information displays built-in.

The following requirments must be considered when specifying timetable displays:

- display panels must be positioned between 1m and 1.7m above ground level;
- information must be visible at all times, whether illuminated by street lighting, or internal lighting and should be of a high quality. It must meet the requirements for roadside publicity, guidance set out by our public transport team; and
- electronic passenger information systems must be clear to read under all lighting conditions and easily understood

We will, following discussions with local operators, determine the location of bus stops. Footways on distributor roads in the vicinity of bus stops may need to be widened to 3 m and must be in place before any properties are occupied. Adequate lighting is essential for personal security.

Kerbing

An important measure to help pedestrians, mothers with prams and the disabled is to raise the height of kerbs at bus stops. This will minimise the vertical gap between the footing and bus platform and will help to reduce common forms of personal injury that are sustained during boarding and alighting.

The standard kerb height at bus stops is 180mm, however, it may be appropriate to reduce this to 150mm to avoid likely damage to vehicles. The length of raised kerbing should normally be 6m (plus 1m transition kerbs at either end) but must be no less than 3 m plus transition kerbs. The stop should be located and laid out so that a bus can stop parallel to and close to the raised kerbing.

The maximum height of road kerbs is normally 125mm above road level, although many older kerbs are substantially below this. In conjunction with many modern low floor buses, which can lower their step height at bus stops, raised kerbs can give almost level boarding for passengers and importantly, for pushchairs and wheelchairs.

Kerb heights of 180mm or 150mm would still offer significant advantages for passengers boarding or alighting from older buses that do not 'kneel', although low floor buses are being gradually rolled out across the County by bus operators when there is the opportunity to do so. Some bus entrances (on older vehicles) can be as much as 350mm above road level. Higher kerbs can reduce this difference to a more appropriate height which most passengers can negotiate safely.

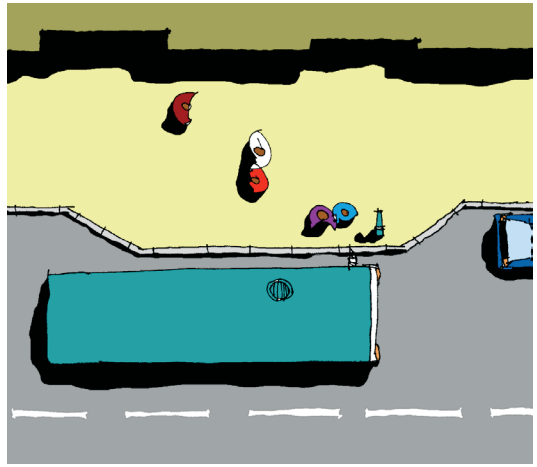
There are two basic designs for extending the footway:

- a bus pier (a short, wide extension); or
- a bus boarder (a long, narrow extension).

We, together with bus operators and other appropriate bodies, have considered these designs and there is a general consensus over such proposals. We now have practical experience of implementing the recommended standards and advice is available from the relevant Divisional Office.

Bus Pier

Bus Boarder



If they are to be well used, bus stops need to be located and designed so that they are convenient and practical. In particular all bus stops should be capable of accommodating modern bus designs.

Bus Stop Locations and Shelters

You must think carefully about the proposed road layout of the development in the immediate vicinity of a bus stop. The location should ensure that:

- bus drivers and passengers waiting at the stop have ample time to see each other;
- vehicles overtaking a stationary bus have satisfactory forward visibility;
- parked vehicles do not block bus stops;
- safety conflicts with road junctions, pedestrian or cycle crossings are avoided;
- interference with private accesses to properties is avoided;
- there is satisfactory drainage where raised kerbing is installed; and
- risks to personal safety and opportunities for crime are minimised.

You must not site bus stops within 30m of vertical traffic-calming features (including domed mini roundabouts). This will help minimise the risk of passengers waiting to get off the bus being thrown about inside, and to allow boarding passengers time to sit down.

Before erecting a new bus stop or relocating an existing one on the public highway, you need to get agreement from:

- the police;
- the local Parish Council (if appropriate);
- bus operators; and
- ourselves

Bus shelters are an important part of ensuring that bus passengers' overall journey experience is pleasant and enjoyable. In the design of shelters, the following points should be taken into consideration:

- shelters must be designed to offer maximum weather protection, and sited to account for prevailing winds;
- shelters must be fitted with suitable lighting that is adequately maintained to provide an improved perception of personal security;
- shelters must be designed so that real time information display signs can be either installed within the shelter or retrofitted where this is not possible. (we can provide a comprehensive specification if required);
- shelter design must ensure high visibility for drivers and passengers;
- shelter materials must be vandal resistant;
- shelters should ideally contain a waste bin;
- combining bus shelters with advertisements and/or real time passenger information displays can bring benefits. Advertisements provide additional lighting and real time displays provide a greater feeling of personal security. However, this must not be at the expense of lighting in the shelter;
- choice of shelter location must consider volume of usage particularly among vulnerable groups, and the degree of exposure to the elements;
- choice of shelter type must be governed by available footway space, exposure to weather conditions, status of area (e.g. conservation area) and level of passenger usage; and
- some form of seating must be provided in shelters, particularly where elderly or frail passengers are using the stop.

Bus shelters will usually be required at locations where there are likely to be higher passenger flows, for example, near:

- high-density housing estates;
- business parks;
- local shops, schools, hospitals or other significant community facilities; or
- in rural areas where public transport services are infrequent and people may have to wait some time for a bus.

A licence to erect a bus shelter is required from us. Where shelters are intended to display advertising material, you will also need planning permission from the local District Planning Authority. We will also need to be satisfied that appropriate arrangements are in place for the shelter's future maintenance.

Under the terms of the Transport Act 2000, we are required by law to produce and implement a Public Transport Information Strategy. We can provide you with advice on how bus service information should be provided at bus stops on a site-by-site basis.

Depending on the nature and size of the development, the information provided should consist of:

- a simple timetable;
- bus route diagrams;
- a public transport map of the area where space is available;
- a more comprehensive display including a plan showing pedestrian links to surrounding facilities; and
- real-time bus information.

You need to contact us for further advice about the provision of information at bus stops.

Bus Lay-bys

Lay-bys are normally only required at places where a large number of people will want to board a bus, such as local shops, schools or other locations where buses may have to wait for a time and could cause localised congestion or be a safety hazard.

Bus lay-bys are not suitable for roads with lower speed limits, but are more appropriate for distributor roads and rural areas, terminal points and school drop-off points.

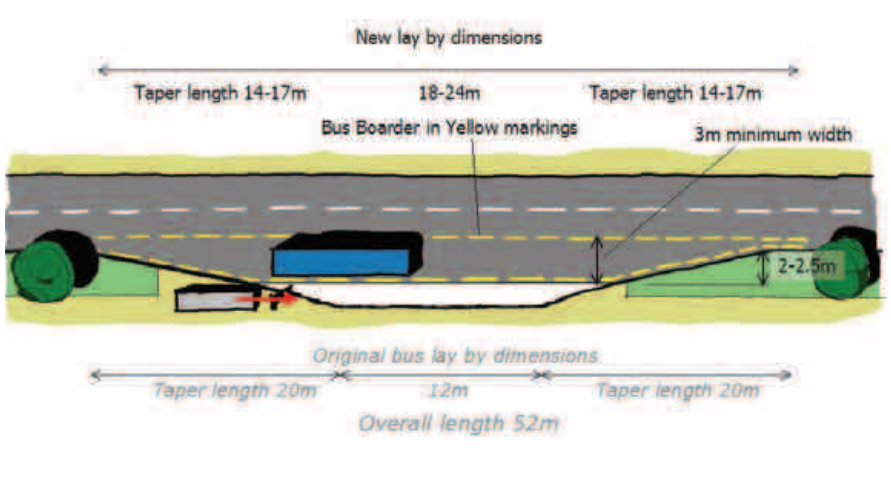
Where lay-bys are to be provided, they should normally be designed to accommodate 15m long buses.

There are three main problems associated with bus lay-bys that you must be aware of when considering the design of bus stops:

- some existing lay-bys are built to dimensions that do not accommodate modern bus types or allow buses to stop adjacent to the kerb;
- vehicles experience delays egressing into the traffic stream, particularly on routes with heavy traffic; and
- they attract inappropriate car parking.

Lay-by designs may include:

- a shallow saw tooth design used in locations where kerbspace is in exceptionally short supply; and
- half width lay-bys where site considerations dictate.



Bus Boarders

In areas where there are considerable parking problems and buses are unable to reach the kerb, it may be appropriate to build a "bus boarder". Dimensions for bus boarders are as follows:

- Boarder in car parking bay - 5m width;
- Boarder with shelter - 10m width;
- Full width bus boarder - 2m depth; and
- Half width bus boarder - 1m depth.

Public Transport Interchanges

It may be appropriate, for particularly large developments which generate high passenger numbers and which are located at key points on the road network, to provide a public-transport interchange with comprehensive facilities.

We will consider development proposals and maintenance responsibilities on a site-by-site basis.

Developments and locations that might require a interchange include:

- major retail parks;
- hospitals;
- business parks;
- very large housing estates;
- extensions to existing major developments where it will help to encourage greater use of public transport;
- developments at locations where bus routes intersect; and
- where major orbital and radial roads intersect.

Facilities likely to be required at the interchange might include:

- a waiting room or mini bus station;
- CCTV and additional lighting to enhance security;
- comprehensive timetable and route information, including real-time bus information and details of local taxi operators;
- secure facilities for leaving luggage;
- a public telephone;
- toilets;
- a waste bin;
- refreshment facilities; and
- secure cycle parking.

Real Time Information (RTI)

Good reliable information is an important aspect of the overall journey experience. We want to see bus stops fitted with real time information signs displaying the predicted time of arrival for buses, wherever possible.

There is an existing countywide automatic vehicle location & priority system for buses, and any equipment supplied for real time information provision must be fully compatible.

We must be consulted, prior to installation, over the location of all RTI displays in order that a radio coverage survey can be carried out. You must inform us when all shelters are powered and ready.

The approved supplier will only install displays once this confirmation has been received. Route, timetable and destination information will need to be provided, as requested, before the system can be activated.

Shelter Display with RTI

Each RTI electronic sign will be provided with the following features:

- an amber LED matrix with 3 lines of 30 characters; dimensions 1000mm x 200mm x 120mm; approximate weight 17kg;
- a stainless steel housing with a Perspex sheet protecting the front of the display and IP 65 rating;
- a circuit to adjust the display brightness automatically for the ambient lighting conditions;
- a radio modem and processor board compatible with the system used in Kent;
- a radio antenna or low profile aerial as appropriate for the location and expected radio coverage; and
- a painted finish to a Pantone or BS colour as specified by us.

Electrical Installation for RTI

In order that the RTI sign can be powered, it is your responsibility to ensure that the following are provided:

- a mains power supply (240 Volts, 6 Amps) at the shelter and a power cable within the shelter to the sign cable gland locations;
- a separate Residual Current Device (RCD) or Earth Leakage Circuit Breaker (ELCB) at the shelter for the display; and
- an electrical test certificate for the shelter from the installer, including details of the supply type and earthing arrangements (TT or TNCS).

Mounting Details for RTI

The shelter supplied must be suitable for the installation of RTI displays, and have the correct mounting points. Each RTI sign will be fixed to the shelter by brackets, the design of which is dependent upon the chosen shelter and usually provided by the shelter manufacturer.

The following features must be adhered with or supplied:

- holes for the brackets as appropriate to the display type and shelter design;
- a suitable antenna mounting point on the shelter roof, with cable conduit back to the display;
- a minimum headroom clerance of 2.1m once the displays are installed;
- the removal of water away from the display; and
- suitable access for the maintenance engineer to the debug port located on the left hand side of the LED sign.

Pedestrian Access to Bus Stops

It is essential that adequate and direct pedestrian links are provided from a development to potential public transport routes and in particular bus stop locations, including pedestrian crossings where appropriate.

Generally, walking distances to bus stops in urban areas must not be greater than 400m and desirably no more than 250m. In rural areas the walking distance should not be more than 800m.

You must provide direct pedestrian routes to bus stops, that are convenient and as safe as possible, to encourage use of public transport.

These routes should:

- have good natural observation from neighbouring buildings;
- be well lit; and
- be carefully designed to minimise opportunities for crime.

Bus stops on industrial and commercial developments should be sited near building entrances, but avoid locations where passing traffic speeds are high. In rural areas there should always be a footway from the development to the nearest bus stop.

Where there is a footway on the opposite side of the road, a pedestrian crossing point must be provided next to a bus stop. The crossing point must be located as close as is practically possible, bearing in mind safety considerations.

To ensure that your proposals meet with the needs of pedestrians we encourage you to read our walking strategy which can be viewed on our website: **www.kent.gov.uk/travelling**