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FOREWORD

It is acknowledged that increasing levels of traffic, nationally and locally, cannot be sustained and that a change to provide sustainable development is required. The location and nature of development affects the amount and method of travel and is itself influenced by the accessibility of transport infrastructure and transport policy.

The Local Transport Plan 2006-2011 for Warrington sets out the Council's policies, strategies and programmes for developing an integrated transport system in the borough. It identifies five transport priorities: Tackling Congestion; Delivering Accessibility, Safer Roads, Better Air Quality and Improving Quality of Life that will be targeted throughout the 5-year period of the plan and beyond. A key part in achieving these priorities is the development of an integrated transport system, with walking, cycling and public transport being the three key modes of transport that will be target for promotion and investment. It is therefore vitally important that new developments are designed with these five shared transport priorities in mind and that they are designed to be accessible on foot, cycle and public transport, thereby reducing the reliance on the private car.

This approach to mode of travel closely reflects the need to develop estate road layouts that put safety and accessibility for pedestrian and cyclists high in the design process.

Creating good estate layouts is important in that it shapes the environment in which we all live. It is important that a balanced approach is taken in designing layouts, which encourage creativity in design. Roads, best thought of as streets, should be seen as part of the overall urban design and their layout will play an important part in creating surroundings which are safe, convenient, nuisance free, visually attractive and economical to construct and maintain. They must not dominate the design process but safety for all road users remains of prime importance and therefore a need to provide certain minimum/maximum standards that will ensure that safety is not compromised. Other than providing for the minimum/maximum standards, the designer is not constrained to providing definitive or prescriptive types of layout and we actively wish to encourage the creation of innovative and individual layouts to suit particular sites.

There is never a perfect time to introduce new local design guidance as new advice and sharing of best practice constantly emerges which inevitably continually shapes and changes the emphasis on some aspects of the street layout. This revised design guide therefore takes on board the significant changes in approach brought about by policies which relate to sustainability, reduced reliance on the private motor car, and in turn, car parking provision. A key factor in encouraging more walking and cycling is improving road safety through the control of vehicle speeds. For this reason new estate roads are being designed to constrain speeds to 20mph or less, with the aim that they can be designated as 20mph Zones upon completion where considered appropriate.

The information in this Design Guide is aimed at successfully and sympathetically balancing the range of design elements in order to make the difference between a poor or mediocre, though functionally acceptable design and an environmentally successful one.

The document will be kept under review to ensure that it keeps pace with best practice, operational experiences, national research and policy initiatives and other relevant changes in circumstances.

1.0 INTRODUCTION

1.1 The guide reflects changes to government planning policy and guidance, particularly Planning Policy Statement 1: Delivering Sustainable Development (PPS1) & Planning Policy Statement 3: Housing PPS3). In addition, it also complements Planning Policy Guidance 13: Transport (PPG13), Guidance on Transport Assessment and Manual for Streets (MfS), all of which highlight the need to encourage maximum flexibility in creating sustainable and well designed residential, commercial and industrial areas. It is important to note that Manual for Streets published, March 2007 replaces Design Bulletin 32 and Places, Streets and Movement.

1.2 The guide describes the Council's planning policy framework and the process for obtaining planning permission. It provides a framework for detailed guidance at a local level, gives examples of successful design and useful checklists for inspiration and helps make sense of the many complex issues that have to be considered in preparing development proposals.

1.3 The design guide applies to all types of development, large or small, urban or rural, commercial or residential, private or public and concentrates on the transport and highway issues of planning applications and is only part of providing good design and should be read in conjunction with other planning guidance documents.

1.4 Safety for all road users remains of prime importance and therefore the need to provide certain minimum/maximum standards which will ensure that road safety is not compromised and that roads, footpaths and cycle tracks are fit for their intended purpose and can be maintained that way.

1.5 Greater emphasis has also been placed on provisions for pedestrians, cyclists and public transport. Speed control and the introduction of 20mph Zones feature more strongly, since the safety of all road users remains of paramount importance. It is only by reducing vehicle speeds that greater flexibility can be exercised in the application of highway design principles, and this can help with the aim of raising the overall standard of the layout.

1.6 There are a number of statutory procedures with which developers must be fully familiar, since they can affect both the cost and the programme of a development, as well as its eventual adoption. Part 3 covers these in detail, and particular attention needs to be paid to the sections on the Advance Payments Code, works required within the existing highway, Sections 38 and 278 Agreements, inspection procedures and 20mph Zones and the Traffic Regulation Orders require in connection with them.

2.0 POLICIES

2.1 The Design Guide supplements national and regional guidance, and aims to meet the transport and highways policy objectives in the Council's Local Transport Plan 2006-2011, Unitary Development Plan (Adopted January, 2006) and ultimately, Local Development Framework Plans.

2.2 In March 2006 the Council established through its Local Transport Plan for 2006 to 2011 its priorities for transport, based upon those agreed by the Department for Transport and the Local Government Association:

- Tackling Congestion;
- Delivering Accessibility;
- Safer Roads;
- Better Air Quality;
- Improving Quality of Life.

These five transport priorities will help deliver the Council's strategic vision for transport: "...we will develop an accessible, integrated, affordable, inclusive and safer transport network for Warrington, which will help deliver social inclusion, sustainable economic regeneration and environmental improvement within our community." It is developments that help to deliver on the strategic vision and the five priorities for transport that will be promoted by the Council, with the emphasis on the promotion of developments within urban areas.

2.3 The Council will not expect a rigid adherence to every guideline. Instead they will be used to assess if there are any significant design or planning disadvantages to a scheme and whether these are important individually or collectively to justify refusal of planning permission.

2.4 The Council will promote developments within urban areas in locations, which are highly accessible to public transport and other modes such as walking and cycling. Major developments which are high traffic generators will be required to assess its public transport accessibility and if necessary upgrade or provide public transport services to serve the development. Large commercial/industrial, school and hospital developments will also be required to produce their own Travel Plans, setting targets and measures to achieve modal shift for employees away from car borne travel. Provision for the pedestrian and cyclist needs to be considered and appropriately designed roads and routes provided where necessary. Links to existing cycle/ pedestrian networks should also normally be provided.

2.5 In instances where the additional traffic generated by development proposals would have an adverse impact on the highway network in the vicinity of the development or beyond, a planning obligation may be sought to negate the impact of such development. Planning obligations, in line with the Supplementary Planning Document, would only be sought in instances where improvements are seen to be of benefit to the general public and may take the form of road or public transport improvements and/or financial contributions. Any highway or transport infrastructure required to support the development must integrate with the existing infrastructure and be built in a way that enhances the quality of a development.

2.6 In all locations, appropriate mitigation measures/contributions may be sought to meet the requirements to improve accessibility to sites by enabling the development of measures that will assist public transport or walking and cycling. Full details are in the Council's Supplementary Planning Document; Planning Obligations Appendix 1.

2.7 In line with an integrated transport policy, the concept of road hierarchy has been adopted within residential and commercial/industrial estates, with new vehicular access to the most important high-standard routes (A and B class roads) severely restricted. Restrictions will normally apply on new vehicular accesses and the increased use of existing accesses on:

- roads with a speed limit above 40 mph or where the measured 85 percentile vehicle speed is above 40 mph;
- roads without street lighting;
- roads where the access would affect bus-corridor or bus-priority measures being put in place;
- roads that are at or near capacity and roads that are not suitable to carry the additional traffic and/or type of traffic from the development and links to congestion hotspots; and
- roads where there is a recognised road safety problem in accordance with nationally applied criteria.

2.8 Elsewhere, particularly in urban locations, a more flexible approach will be adopted. Where access is acceptable in principle, the layout should comply with the design guidance set out in Part 2. Any planning application that raises operational and/or road safety concerns will be subject to objection.

2.9 Where a number of developments are proposed along a section of road, the risk of accidents occurring will be reduced if they are accessed from a service road with a single point of access on the main road. It is also preferable for access to a development to be taken off a minor or side road with improvements provided, at the developers expense as necessary.

2.10 Upgrading of existing carriageway at entrances to a site should take account of the higher skidding resistance required for an event section that was formally a non event section.

3.0 DESIGN PRINCIPLES

3.1 The design of roads within residential developments should be made to fit around the desired form of the residential layout and must not dominate it. However, it is still important that a hierarchy of roads is developed which puts traffic on appropriate routes whilst avoiding the creation of attractive routes for non access traffic. Road safety and maintenance of the operational efficiency of the local highway network are fundamental to the design of all roads, therefore the design of residential roads should influence drivers to respond to their surroundings and be aware of the speed that they are travelling along it. This can be achieved by the use of different road types, which have different functions, characteristics and standards.

3.2 In developing a framework for new layouts, priorities for all movements need to be established. Priority should be given to walking, public transport and cycling before the single occupancy car. The needs of people with disabilities should also receive particular attention and by so doing making movement easier for everyone. Developments should be designed to emphasize a sense of place and community, with routes for the movement of people established which would enhance those qualities. It is essential to provide certain standards in the interests of road safety and future maintenance and the characteristics and specifications of residential roads with different functions reflect this. However, it is emphasised that innovative and imaginative design solutions are actively encouraged and will be given due consideration. To encourage maximum flexibility developers should follow the main changes in the approach to street design recommended by MfS, which are as follows:

- applying a user hierarchy to the design process with pedestrians at the top;
- emphasising a collaborative approach to the delivery of streets;
- recognising the importance of the community function of streets as spaces for social interaction;
- promoting an inclusive environment that recognises the needs of people of all ages and abilities;
- reflecting and supporting pedestrian desire lines in networks and detailed designs;
- developing masterplans and preparing design codes that implement them for larger-scale developments, and using design and access statements for all scales of development;
- creating networks of streets that provide permeability and connectivity to main destinations and a choice of routes;
- moving away from hierarchies of standard road types based on traffic flows and/or the number of buildings served;
- developing street character types on a location-specific basis with reference to both the place and movement functions for each street;
- encouraging innovation with a flexible approach to street layouts and the use of locally distinctive, durable and maintainable materials and street furniture;

- using quality audit systems that demonstrate how designs will meet key objectives for the local environment;
- designing to keep vehicle speeds at, or below, 20mph on residential streets unless there are overriding reasons for accepting higher speeds; and
- using the minimum of highway design features necessary to make the streets work properly.

4.0 ROAD DESIGN AND STANDARDS

4.1 The layout and design of roads and footpaths within any new residential and commercial/industrial development form an integral part of the overall design concept and therefore cannot be considered in isolation. In line with an integrated transport policy, the concept of road hierarchy has been adopted within residential and commercial/industrial estates, from a small-scale cul-de-sac where pedestrian movements are predominant and vehicle speeds are restricted, to distributor roads catering for the free flow of the largest of vehicles.

4.2 The design of the estate using this hierarchy should prevent areas where people live or work being intruded upon by traffic from outside their immediate area whilst maintaining ease of access for residents, visitors and service vehicles to their homes and workplaces. The Guide is not intended to present a rigid set of rules to be followed in the design of layouts or to present standard layouts that can be applied but gives guidance on flexibility of use and where in some cases, minimum or maximum standards must be met.

4.3 There are several issues to consider when designing a residential layout and amongst these are:

- Function;
- Street widths and components;
- Junctions;
- Features for controlling vehicle speeds;
- Forward visibility on links;
- Visibility splays at junctions;
- Servicing;
- Parking.

4.4 The road hierarchy for different types of roads require different road widths to accommodate its intended use and there are various factors that need to be considered in determining appropriate street widths. In most cases within residential areas, the road width will vary between 4.8m and 5.5m. Some of the factors to be considered are:

- The level of vehicular traffic and pedestrian activity;
- Whether parking is to be allowed on-street and its distribution, occupation and enforcement;
- The design speed for the road;
- Whether any traffic measures such as traffic calming are to be included.

4.5 In lightly trafficked streets, carriageways may be narrowed over short lengths to a single lane as a traffic calming feature. In such single working sections of the street measures should be taken to prevent parking with a maximum width of 3.5m between constraining vertical features such as bollards. In certain circumstances this may be reduced to a minimum of 2.75m, which will still allow for the occasional large vehicles. In most cases widths between 3.1m and 3.9m should be avoided since they could result in drivers trying to squeeze past cyclists.

Figure 1: Road Hierarchy

4.6 District Distributor Roads

Distributor roads provide for the movement of vehicles between the different districts of a town or urban area. They will normally be designed in accordance with the Design Manual for Roads and Bridges (DMRB) issued by the Highways Agency, an executive agency of the Department for Transport (D*f*T). They are beyond the scope of this design guide and reference should be made to the appropriate national standards and Technical Advice/Design Notes.

4.7 Local Distributor Roads

Local distributor roads form the links between residential access roads and the district distributor roads. The function of the distributor road is to distribute access traffic and provide bus routes to residential developments. Where a speed limit of 30mph applies, direct frontage access is permitted on the distributor road as long as the daily traffic flow is no more than 10,000 vehicles. The roads will normally be designed in accordance with DMRB after referring to the local parameters as follows:

Table 1: Local Distributor Road Summary Design Parameters

	Typical Parameter	**Notes**
Provides access to:	Major residential roads, Minor access roads, Shared surface roads	
Serves	Over 300 dwellings	
Anticipated vehicle types	HGVs and all other types (assessment of likelihood of HGVs should be made depending on type of development and context of area)	Mandatory parameter range is pantechnicon
Min carriageway width	6.75m	
Min centreline radius	40m	
Design Speed	30 mph	
Distance between speed restraint features	80m to 120m	
Frontage access	Yes	Direct access will not be permitted within 20m of its junction with a classified road.
Footway	Minimum width 2.0m	Provided on both sides
Segregated cycle track	Optimum width 3.0m. Minimum 3.5m if combined with footway (assuming facility open on both sides)	Required on both sides. Transition between on & off street treatment at side roads/junctions require careful design
Verge	Required on both sides between carriageway edge and cycleway/footway. Minimum 1.5m wide	
Min forward visibility	60m	
Junction visibility - x	4.5m	
Junction visibility - y	90m	May be reduced if it can be demonstrated that vehicle speeds will be less than 30 mph
Min junction spacing - adjacent	90m	

Table 1: Local Distributor Road Summary Design Parameters (cont'd)

	Typical Parameter	**Notes**
Min junction spacing - opposite	45m	
Max gradient	1 in 12 (8.33 %)	Gradient may only be increased due to local topography
Min gradient	1 in 150 (0.67 %)	
Vertical curve min K value	6.5	May be reduced subject to a minimum curve length of 30m
Kerb radius	10m	
Kerb height	125mm	

4.8 Major Residential Access Roads

Access roads form the major part of residential road networks and provide direct access to individual dwellings and parking spaces (for properties with direct frontage access in sensitive locations, on site turning areas may be requested) and often links several residential areas to a local distributor road. They may serve between 50 and 300 dwellings (or equivalent mixed uses) including those located on other access roads feeding onto it. It should preferably have two points of access or take the form of a loop road with a short connection to a single point of access and a secondary emergency access link. Any through route must be designed so as it discourages non-essential through traffic. Cul-de-sac may be permitted on sites, which are too small to accommodate a loop road, or on sites where existing allocated or consented land is involved. Any such roads should however serve no more than 150 dwellings. The design speed for this access road is 20mph.

Table 2: Major Residential Access Road Summary Design Parameters

	Typical Parameter	**Notes**
Provides access to:	Minor Residential Access roads Shared Surface roads Private drives	
Gains access from	Classified Roads & Local Distributor	
Serve	Between 50 and 300 dwellings	
Anticipated vehicle types	Low pantechnicon, refuse vehicle, fire tender, car	Recommended parameter range is pantechnicon
Turning head	Yes, if cul-de-sac	
Frontage access	Yes	Direct access will not be permitted within 20m of its junction with a classified or Distributor road
Min carriageway width	5.5m	(6.0m for Bus Routes)
Min centreline radius	20m	
Design Speed	20 mph	25mph may be considered where vehicles would have to travel over a kilometre (0.6 miles) by '20 mph' roads.
Distance between speed restraint features	Between 60m and 80m	See advice on speed restraint features
Footway	Minimum width 2.0m	Required on both sides
Segregated cycle track	Optimum width 3.0m. Minimum 3.5m if combined with footway (assuming facility open on both sides)	Required on at least one side or both sides where appropriate. May not be required if design speed is demonstrably 20mph and or a large no of side junctions/drives interrupt route

Table 2: Major Residential Access Road Summary Design Parameters (cont'd)

	Typical Parameter	**Notes**
Verge	Required on both sides between carriageway edge and cycleway/footway. Minimum 1.5m wide	
Min forward visibility	35m	
Junction visibility – x	4.5m	May be reduced to 2.4m if side road is minor access road or lower category
Junction visibility – y	70m	May be reduced if it can be demonstrated that vehicle speeds will be less than 20 mph
Min junction spacing – adjacent	60m	May be reduced to 30m dependent on vehicle speed
Min spacing – junction opposite R/L	15m	Cross roads should be avoided, unless other features such as a roundabout is provided
Min spacing – junction opposite L/R	30m	
Max gradient	1 in 12 (8.33 %)	Gradient may only be increased due to local topography
Min gradient	1 in 150 (0.67 %)	
Vertical curve min K value	4	May be reduced subject to a minimum curve length of 25m
Kerb radius	6m	
Kerb height	125mm	

4.9 Minor Residential Access Roads

Minor residential access roads generally serve up to 100 dwellings including those in other residential areas which feed onto it and give direct frontage access to dwellings. It can either be a through road or a Cul-de-sac. If a cul-de-sac it should serve not more than 50 dwellings and have a secondary link for pedestrians and cyclists, capable of being used by emergency vehicles. (See 4.19 for further details). The design speed of this access road is 20mph.

Table 3: Minor Residential Access Roads Summary Design Parameters

	Typical Parameter	**Notes**
Provides access to:	Shared Surface roads Private drives	
Serve	Up to 50 dwellings	
Turning head	Yes, if cul-de-sac	
Anticipated vehicle types	Low pantechnicon, refuse vehicle, fire tender, car	Recommended parameter range is refuse vehicle
Frontage access	Yes	Direct access will not be permitted within 20m of its junction with a classified or Distributor road
Min carriageway width	4.8m	
Min centreline radius	15m	
Design Speed	20 mph	
Distance between speed restraint features	40m to 60m	
Footway	Minimum width 2.0m	Required on both sides where there is frontage access
Cycleway	No separate provision	
Verge	Required on both sides if no footway provided. Min width 2m	
Min forward visibility	25m	
Junction visibility - x	2.4m	
Junction visibility - y	60m	May be reduced if it can be demonstrated that vehicle speeds will be less than 20 mph
Min junction spacing – adjacent	30m	
Min spacing – junction opposite R/L	15m	Cross roads should be avoided, unless other features such as a roundabout is provided
Min spacing – junction opposite L/R	15m	
Max gradient	1 in 12 (8.33 %)	
Min gradient	1 in 150 (0.67 %)	
Vertical curve min K value	2	May be reduced subject to a minimum curve length of 20m
Kerb radius	6m or 4m	
Kerb height	125mm	

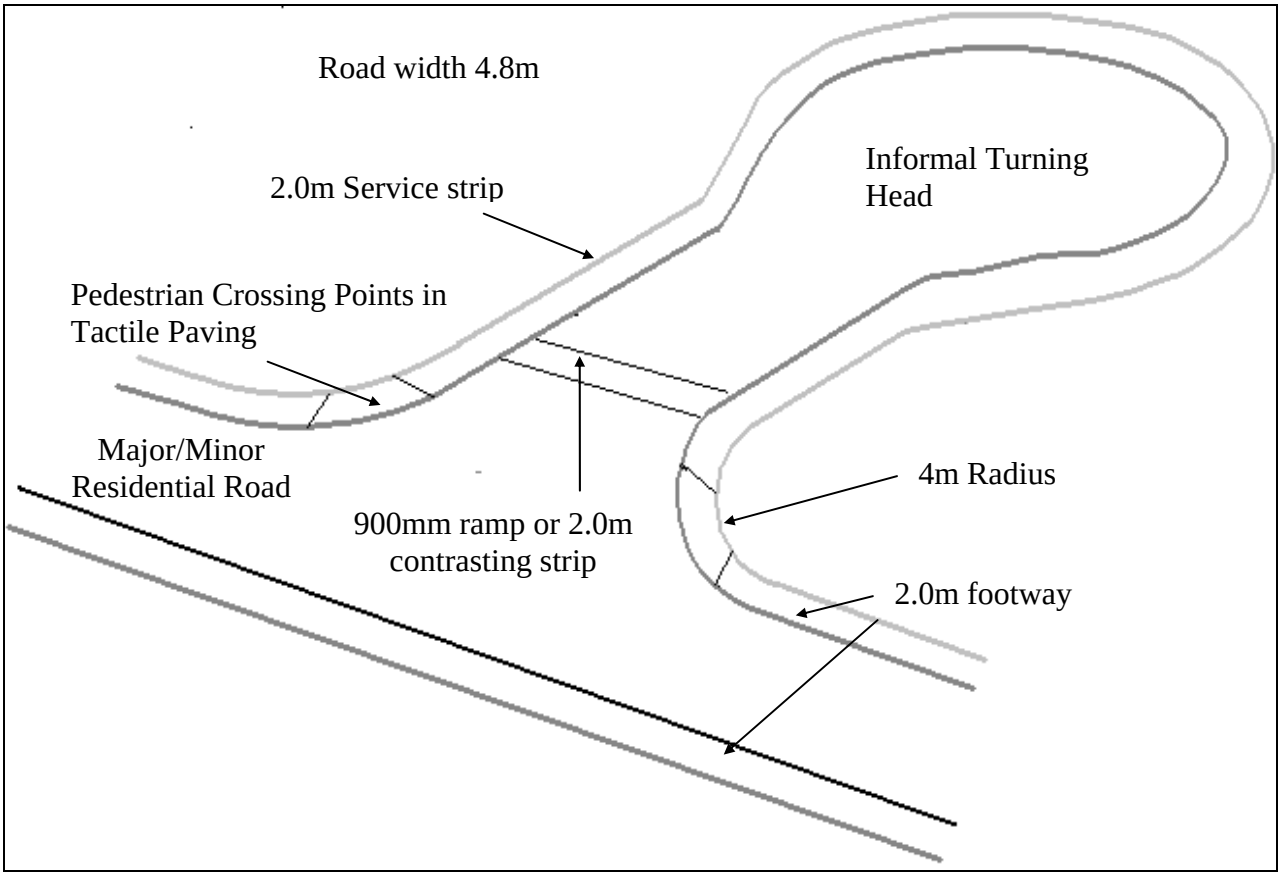
4.10 Shared Surface Roads

The primary purpose of these roads is to provide direct access to dwellings with shared use by vehicles and pedestrians. They are engineered with low traffic speeds and help create a sense of community. Since pedestrians and vehicles share the same surface it is most important that all road users are made aware of the separate and distinctive nature of these roads. The distinction between other residential estate roads must be made, not only by the presence of traffic calming measures, but also by the use of differing carriageway surfacing materials subject to the approval of the Local Highway Authority. It is not appropriate to provide formal footways adjacent to the shared surface road and therefore any road where footway links are required will need to be designed as Minor Access Road.

Table 4: Shared Surface Roads Summary Design Parameters

	Typical parameter	**Notes**
Provides access to:	Shared Surface roads Private drives	
Serve	Up to 50 dwellings if formed as a loop road	25 dwellings if formed as a cul-de-sac
Turning head	Yes, if cul-de-sac	
Anticipated vehicle types	Low pantechnicon, refuse vehicle, fire tender, car	Recommended parameter range is refuse vehicle
Frontage access	Yes	
Min carriageway width	4.8m total width	5.5m with frontage access
Min centreline radius	15m	
Design Speed	Below 20 mph	
Distance between speed restraint features	40m	
Footway	No separate provision	
cycleway	No separate provision	
Verge	Required on both sides. Min width 2m	
Min forward visibility	25m. Overrun widening on bend if required	
Junction visibility - x	2.4m	
Junction visibility - y	45m	
Min junction spacing – adjacent	30m	
Min spacing – junction opposite R/L	15m	Cross roads should be avoided, unless other features such as a roundabout is provided
Min spacing – junction opposite L/R	15m	
Max gradient	1 in 12 (8.33 %)	
Min gradient	1 in 150 (0.67 %)	
Kerb radius	6m or 4m	
Kerb height	25mm	

Figure 2: Shared Surface Road to Major/Minor Residential Access Road



Note:
900mm ramp or 2.0m contrasting strip required at tangent point to mark the change of surface. No private drive connections should take place 6m from the tangent point of the kerb radius.

4.11 Home Zones

A typical home zone would comprise of a street or group of streets where the living environment clearly predominates over the provision of traffic with people and vehicles sharing the whole of the road space safely and equally. The street would be informal where people can walk in safety and cars travel at very low speeds. Home Zones may consist of shared surfaces, indirect traffic routes, areas of planting and features such as seating to encourage people to use the street. Entry gateways and signing will be needed to mark the limits of the area. The objectives of a home zone are:

- a feeling of safety, because traffic is going slower and there are more people about;
- promote greater use of public space, diversity of activities and benefit children, the elderly and the less mobile;
- streets become visually more attractive with more space for landscaping and trees;
- to encourage other modes of travel because fast moving traffic is removed;
- encourage greater care of the street by residents;
- improve the quality of the environment and increase the attractiveness of urban living.

These objectives can be achieved by including:

- attractive 'gateway' treatment to advise all road users of a change in the environment;
- traffic calming such as, road narrowing, chicanes etc., to slow down traffic and provide areas for cycle and car parking;
- provide attractive landscaping;
- provide seating areas and meeting spots not necessarily confined to the highway.

4.12 No area of the Borough is specifically excluded in principle. However, Home Zones are likely to be most appropriate in more urban areas that are well served by public transport.

4.13 Home zones appear to work well in cul-de-sac not exceeding 300 metres in length and be a destination for traffic. Additional benefits can be achieved if they form part of a pedestrian/cycle network, a safe route to schools, or part of a 20mph zone. In themselves they cannot be a solution to traffic problems, or unruly driver behaviour, particularly by the young, but coupled with other features of traffic calming they can create a greater level of safety, be more efficient in the use of space and encourage their use for social activity as well as movement.

4.14 Under the Highways Act 1980, streets are provided for passage. However, Section 268 of the Transport Act 2000 provides the legal basis for establishing Home Zones in England and Wales. It permits local traffic authorities in England and Wales to designate any street or streets as a Home Zone.

4.15 In pursuance of Section 268(7) of the Transport Act 2000, the final legal framework for establishing Home Zones ‘Quiet Lane and Home Zones (England) Regulations 2006’ has been published by the Secretary of State for Transport.

Guidance is provided in Department of Transport Circular 02/2006 on the procedures for the making, variation and revocation of a designation of a road as a Quiet Lane or Home Zone, use orders and speed orders. (See Quiet Lane and Home Zones (England) Regulations 2006 and Home Zones Design Guidelines (2002) by IHIE for further details.)

4.16 Where developers are considering including Home Zone areas within their site, they must have an early discussions with the appropriate Council officers to establish the creation, extent and content of the Home Zone. Due to high maintenance costs normally associated with Home Zones, a commuted sum for future maintenance may be considered necessary.

4.17 Mews Court and Housing Square

Higher density developments on the shared surface road can lend themselves to a mews court or housing square configuration. They may serve up to 25 dwellings as a cul-de-sac. They are laid out around a central space, which allows a clear area for parking and turning. Developments of this type provide the designer with a real opportunity to create individual and attractive places to live. Either layout can be particularly appropriate in the urban context, conservation area or for infill sites off established roads. Standard house types are unlikely to be suitable and the proximity of dwellings to each other will require special attention to privacy, parking and dwelling curtilages. The transition from access roads to courts/squares must be made clear to drivers usually by the introduction of a shallow level change at the entrance to the shared surface road and by the use of distinctive surfacing. The entrance must be 4.5m wide.

4.18 Garage Courts

May be served from mews courts or housing squares; access to them may be beneath dwellings as long as there is sufficient headroom and road width with 0.5m margins provided. Garage courts are not normally adopted. The width of access will depend on the number of units served.

Figure 3: Parking Court

4.19 Emergency Accesses

It is essential that emergency vehicles can gain rapid access to any incident occurring in a housing development for obvious reasons. Generally, sites serving in excess of 100 dwellings should have more than one point of access to the existing highway network and this is desirable for all sites serving in excess of 50 dwellings. This is to ensure that there is a route for the emergency services, even if one access is blocked.

4.20 Emergency access may be provided via an emergency route from a point in the existing road network where normal access would be unacceptable. Such an emergency route can be treated as a public footpath or cyclepath and should be protected against non-emergency use.

4.21 The requirements for emergency vehicles are generally dictated by the fire service requirements. Therefore providing access for large fire appliances (including the need to operate the appliances) will cater for police vehicles and ambulances. Carriageway width of 3.7m is required for operating space at the scene of an incident. Simply to reach a fire, the access route could be reduced to 2.75m over short distance, provided the fire appliance can get to within 45m of dwelling entrances. It is recommended that early discussions be held with the Council and the emergency services to establish the necessary access route width.

4.22 Generally where a development requires an emergency access to the highway network the emergency access shall be constructed to adoptable standards and adopted by the Council. However, where there are valid reasons why this cannot be achieved, and where the development proposals are otherwise acceptable, the Council may be prepared to consider an emergency access as long as:

- highway safety is not compromised and the access is not likely to be a source of crime or anti-social behaviour problems;
- there are appropriate means of controlling its use;
- the Developer has fully consulted the emergency services and the proposals are acceptable to them (including consultations with the local Police);
- the access is designed to accommodate safely all vehicles likely to use it; and
- long-term maintenance responsibilities are clearly defined and secured.

Where suitable access arrangements cannot be achieved, the Council may refuse to adopt the development roads.

4.23 Private Drives (Shared Drives)

Private drives are private vehicular accesses, without public rights of way and are not adopted by the highway authority as publicly maintained roads. They may connect to Minor Access Roads and Shared Surface Roads. Private drives normally serve a single dwelling but can serve up to 5 dwellings by a shared driveway but with support for HGV (fire appliance, delivery vehicle) access and turning where the distance from the adopted highway is such that larger vehicles may need to use the drive. A maximum distance of 25m from the highway is recommended. The minimum width of a drive is 3.3m.

4.24 A shared drive should however have a carriageway width of 4.1m if accessed from an access road and 4.5m for the first 10m if accessed from a classified or a distributor road and should not be located within 20m of a junction with a classified or a distributor road.

4.25 To reduce the number of access points only one crossover will be permitted. Turning heads will not normally be required but vehicles should be able to exit or enter the highway in forward gear. A margin of 0.5m must be provided between the edge of the driveway and any boundary wall.

4.26 Where a garage is provided the length of driveway should be a minimum length of 6m to allow the garage door to open without cars overhanging the carriageway. A hardstanding requires a minimum length of 5.5m. Private drives must provide adequate visibility as given in Chapter 5.

4.27 In view of the ongoing maintenance liabilities for householders, the Highway Authority encourages developers to minimise the use of shared private drives and seek to extend adoptable areas wherever practical. It should only be considered where the site is too small or irregular for an adoptable road to be constructed.

4.28 Private Drives (Single Drives)

The minimum width of a single private drive shall be 3.3m, which may be reduced to 2.4 metres where a separate pedestrian path is provided. The width must also be sufficient to enable vehicles to manoeuvre satisfactorily into and out of parking spaces/garages.

4.29 Where a garage is provided the length of driveway should be a minimum length of 6m to allow the garage door to open without cars overhanging the carriageway. A hardstanding requires a minimum length of 5.5m. Private drives must provide adequate visibility as given in Chapter 5.

4.30 To enable a vehicle to exit or enter the highway in forward gear, turning spaces will need to be considered when the drive is directly from a classified or a distributor road, is more than 25m in length or exits onto a highway at a location considered hazardous and no driveway should be located within 20m of a junction with a classified or a distributor road. Driveway gradients shall not exceed 12.5% (1 in 8) fall towards or 8.5% fall away from the highway for a distance of a least 6m from the back edge of the footway.

Figure 4: Private drive (shared)

Figure 5: Private drive (single)

4.31 Archways and Headroom

The minimum vertical clearance for a residential garage court is 2.5m, which is suitable for cars and small service vehicles. Should an access be required for anything other than a residential garage court and fire access is necessary, a height of 4.0m applies and access should not be less than 4.0m wide to comply with Building Regulations. For structures over the public highway catering for all vehicles the minimum headroom is 5.3m. For footpaths the minimum headroom clearance required for structures and signs is 2.1m, for cycle tracks 2.4m. Archways would require a structural approval as well as a build over agreement.

Figure 6: Residential Archway

Table 5: Quick Reference Guide to Design Parameters

	Local Distributor Road	**Major Residential Access Road**	**Minor Residential Access Road**	**Shared Surface Road**	**Private Drive**
Access to	Major & Minor Res. Access Roads; Shared Surface Roads	Minor Res. Access & Shared Surface Roads Private Drives	Shared Surface Roads Private Drives	Mews Courts, Housing Squares and Private Drives	
Serves		50 - 300 Dwellings	up to 50 dwellings	up to 50 dwellings	up to 5 dwellings
Anticipated vehicle types					
Cul-de-sac	No	May be	May be	Normally	Yes

Table 5: Quick Reference Guide to Design Parameters (cont'd)

	Local Distributor Road	**Major Residential Access Road**	**Minor Residential Access Road**	**Shared Surface Road**	**Private Drive**
Turning Head	n/a	Yes, if Cul-de-sac	Yes, if Cul-de-sac	Yes, if Cul-de-sac	On plot turning provision required
Frontage Access	No, except in special circumstances	Yes	Yes	Yes	n/a
Min Carriageway Width	7.3m or 6.75m	5.5m (Minimum Carriageway width 6.0m for bus routes)	4.8m	4.8m total width	3.0m
Min centreline Radius	40m	20m	15m	12m Over run widening on bend if required	n/a
Design Speed	30mph in urban areas	20 mph (32km/h)	20mph (32km/h)	Below 20mph	Below 20mph
Footway	Required on both sides	Required on both sides	Required on both sides where there is frontage access	No separate provision	n/a
Segregated Cycleway	Required on at least one side or both sides where appropriate.	Required on at least one side or both sides where appropriate.	No separate provision	No separate provision	Not required
Verge	Required on both sides between carriageway edge and cycleway/footway. Minimum 1.5m wide		Both sides if no footway provided	Required both sides	n/a
Min forward Visibility	60m	35m	25m	25m	n/a
Junction visibility –x	4.5m	4.5m	2.4m	2.4m	2.4m
Junction visibility – y	90m	70m	60m	45m	33m

Table 5: Quick Reference Guide to Design Parameters (cont'd)

	Local Distributor Road	**Major Residential Access Road**	**Minor Residential Access Road**	**Shared Surface Road**	**Private Drive**
Min junction spacing – adjacent	90m	60m	30m	30m	n/a
Min spacing – junction opposite R/L	45m	15m	15m	15m	n/a
Min spacing – junction opposite L/R	45m	30m	15m	15m	n/a
Max gradient	1in 12 (8.33%)	1in 12 (8.33%)	1in 12 (8.33%)	1 in 15(6.7%), but 1 in 25 (4%) for first 12m	1 in 15 (6.7%)
Min gradient	1 in 150 (0.67%)	1 in 150 (0.67%)	1 in 150 (0.67%)	1 in 150 (0.67%)	1 in 150 (0.67%)
Vertical curve min K value and length (L) m	6.5 (30m)	4 (25m)	2 (20m)	2 (20m)	n/a
Kerb Radii	10m	6m	6m/4m	6m/4m	n/a
Kerb details	125mm	125mm	125mm	25mm (125mm where building protection required)	

5.0 JUNCTIONS

5.1 Junctions play an important part in the highway network as they provide a point of entry and are landmarks on a route through an area. Junction design should minimize the risk of accidents and must therefore be designed to encourage/accommodate low speeds whilst providing adequate capacity for the level of traffic that is expected to use them. They should also be pedestrian and cycle friendly including people who are visually or mobility impaired with tactile paving at crossing points (See Guidance on the use of Tactile Paving Surfaces D*f*T January 1999) and conveniently located to encourage proper use. Junctions should be situated where visibility in all directions is optimised in accordance with the Council's prevailing standards.

5.2 The frequency and location of junction will depend on the nature and status of the road to which it is being connected. Junctions should be spaced at regular intervals and the minimum spacing should exceed the stopping sight distance for the 85th percentile speed of the major road. In general, due to turning conflicts new junctions should be spaced away from existing junctions (Figure 7) and new priority junctions that create crossroads should be avoided. No private access drives must enter the kerb radii or be within 20m of the intersection of the junction centre line.

5.3 Junctions involving district distributor or residential local distributor roads shall be designed in accordance with the Design Manual for Roads and Bridges, published by the Department for Transport.

5.4 Junctions involving all other road types shall be simple 'T' or 'Y' type arrangements. Staggered junctions shall be designed in accordance with the spacing criteria detailed in Table 6 below. Where non-priority roads, including all connecting roads, serve more than 100 dwellings the junction with the priority road shall be at an angle of 90º and shall be straight for a length of at least twice the kerb radius. Non-priority roads, including all connecting roads, serving less than 100 dwellings can join priority roads at angles between 80º and 100 ^{o}. The use of swept path analysis to ensure that the junctions are negotiable by vehicles is recommended.

5.5 Some junctions will require the right turning movements of vehicles from the priority road to be controlled by various methods, which can include amongst other things ghost islands, roundabouts and signal controls.

5.6 Residential roads will require right turn lane facilities where the priority road is a district distributor or where the non-priority road, including all connecting roads, will generate in excess of 500 vehicle movements a day. It is recommended that early discussions regarding the type, design and location of right turn lanes and ghost islands be held with the Highway Authority.

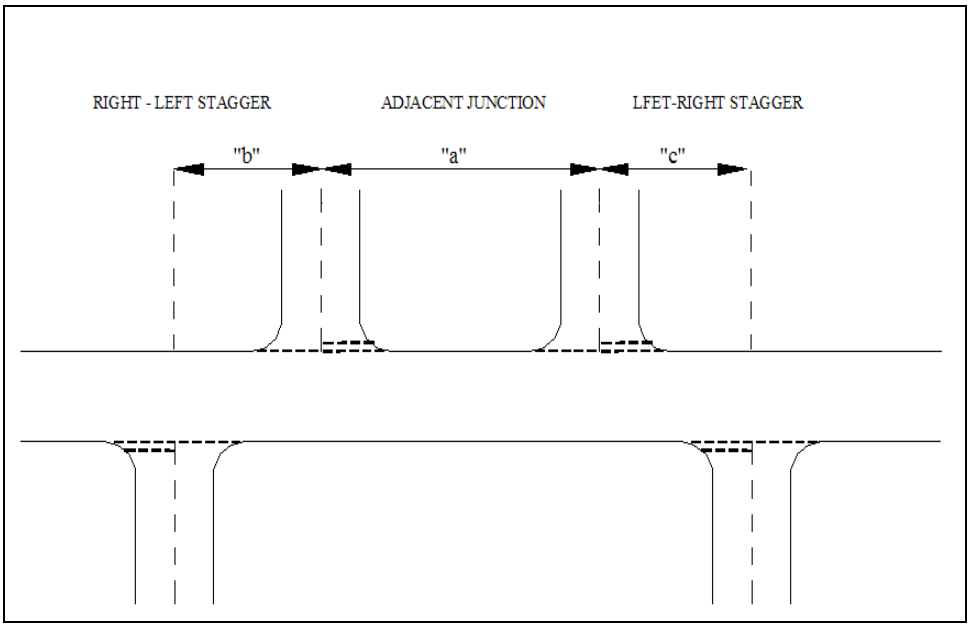
5.7 Junctions are places of interaction among road users and sometimes tend to present the highest degree of danger to pedestrians and cyclists, including where transition between on and off road cycle routes is needed. Careful consideration is therefore needed in such circumstances in order to maintain a level of acceptability for these modes.

Table 6: Junction Radius and Spacing Summary

Major Priority Road	**Minor Non-Priority Road**	**Radius**	**Min Junction Spacing (m)**		
			Adjacent (a)	**Opposite Right/left stagger (b)**	**Opposite Left/Right stagger (c)**
Classified Road Local Distributor	Any other road	10	90	45	45
Major or Minor Residential Access Road	Major or Minor Residential Access Road	6 or 4	60 (30)*	15	30
	Shared Surface Road	6 or 4	60 (30)*	15	15
	Private Drive	n/a	n/a	n/a	

*Dependent upon Major Road Vehicle Speeds

Figure 7: Junction Spacing



5.8 Visibility Requirements

The provision of adequate visibility at junctions is of vital importance for road safety. Two of the most fundamental and inseparably linked influences on road safety are speed and visibility. To enable drivers emerging at junctions to see and be seen by approaching drivers, unobstructed visibility is required. This takes the form of both horizontal and vertical visibility, and the standard of visibility to be provided will be assessed in the circumstances of each case. Whilst the location of junctions should normally be aimed at achieving the optimum visibility standards, the Local Highway Authority may, at its discretion, allow reduced sightlines where other over-riding factors appear relevant, for example in Conservation Areas or built-up areas. However, visibility should not be reduced to such a level that danger is likely to be caused. The design of sightlines is discussed in detail in the Design Manual for Roads and Bridges and the "Manual for Streets." The advice given here is based on those documents, as applied to the road and street types in Warrington.

5.9 Horizontal Visibility

Horizontal visibility is defined by X and Y distances and the requirements are as follows:

X distance (Minor Road Distance) is generally measured back along the centreline from the 'give way' line (or an imaginary 'give way' line if not provided). In some circumstances (for example where there is a wide splitter island on the minor arm) it will be more appropriate to measure it from the actual position of the driver.

2.4m: The minimum necessary for junctions within development to enable a driver at a junction to see down the major road without encroaching onto it. In some very lightly trafficked and slow speed situations, 2m may be considered. This will however mean the front of some vehicles protruding slightly into the running carriageway. The ability of drivers and cyclists to see the overhang from a reasonable distance and to manoeuvre around it without undue difficulty should be considered.

4.5m: For less busy minor roads and busy private access points

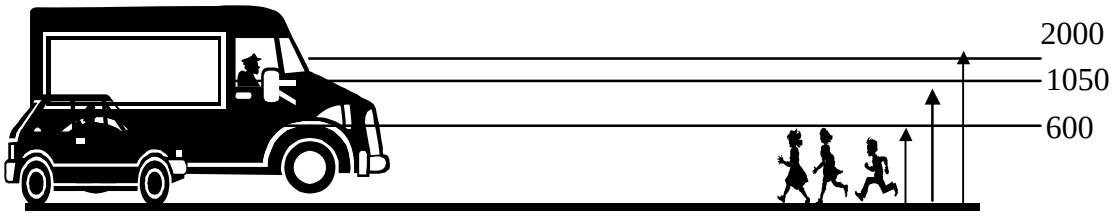
9.0m: The normal requirement for new major junctions and for the improvement of existing junctions between access roads and district or local distributor roads

Y distance (Major Road Distance) is determined by the 85th percentile wet weather speed of vehicles or if this is not known by the speed limit of the road. It must be sufficient to allow the driver to emerge safely and provide forward visibility for approaching vehicles to stop if necessary. The Y distance is normally measured along the nearside kerb line of the main arm. Where the main alignment is curved and the minor arm joins on the outside of a bend, another check is necessary to ensure that an approaching vehicle on the main arm is visible over the whole of the Y distance. This is done by drawing an additional sightline which meets the kerb line at a tangent. In some circumstances where opposing flows are prevented by features from crossing the centreline of the main arm, the visibility splay to the left can be measured to the centreline.

5.10 Vertical Visibility

The splay of visibility should be uninterrupted at drivers typical eye heights of 1.05m – 2m to see an object of 0.6m. Therefore, no obstruction to visibility in the splay should occur above 0.6m. Occasional vertical obstructions to visibility (such as lamp columns and trees) may be accepted within the splay, provided that in combination they do not create a solid visual barrier, and that any tree within the splay has a clear stem for the first 3m of height to allow visibility beneath the crown. The exceptions to these are splays or parts of splays formed by an X-distance of 2.4m or less, where no such obstructions are permitted.

Figure 8: Vertical Visibility



Clear horizontal sightlines should take account of both what the driver can see and what pedestrians (especially children) can see. Sightlines need to be determined from an eye height of 1.05m –2m to an object height of 0.6m – 2m

Table 7: Visibility distance based on 85th percentile speed

Table A								
Major road speed km/h 85%ile	120	100	85	70	60	**50**	**40**	**30**
Major road (y) distance (m)	295	215	160	120	90	**70**	**45**	**33**

Table 8: Visibility distance based on prevailing speed-limit

Table B						
Speed Limit mph	70	60	50	40	**30**	**20**
Major road distance m	295	215	160	120	**90***	**45***

***** *includes an allowance for vehicles travelling 10km/h above the speed limit.*

5.11 Obstacles to Visibility

Parking in visibility splays in built up areas is quite common and should be avoided by providing where possible defined parking bays outside visibility splays, although in circumstances where speeds are low some encroachment may be acceptable. The impact of other obstacles, such as trees and street lighting columns should be assessed in terms of their impact on the overall envelope of visibility. In general occasional obstacles to visibility that are not large enough to fully obscure a whole vehicle or pedestrian will not have a significant impact on road safety.

5.12 Visibility within Residential Areas

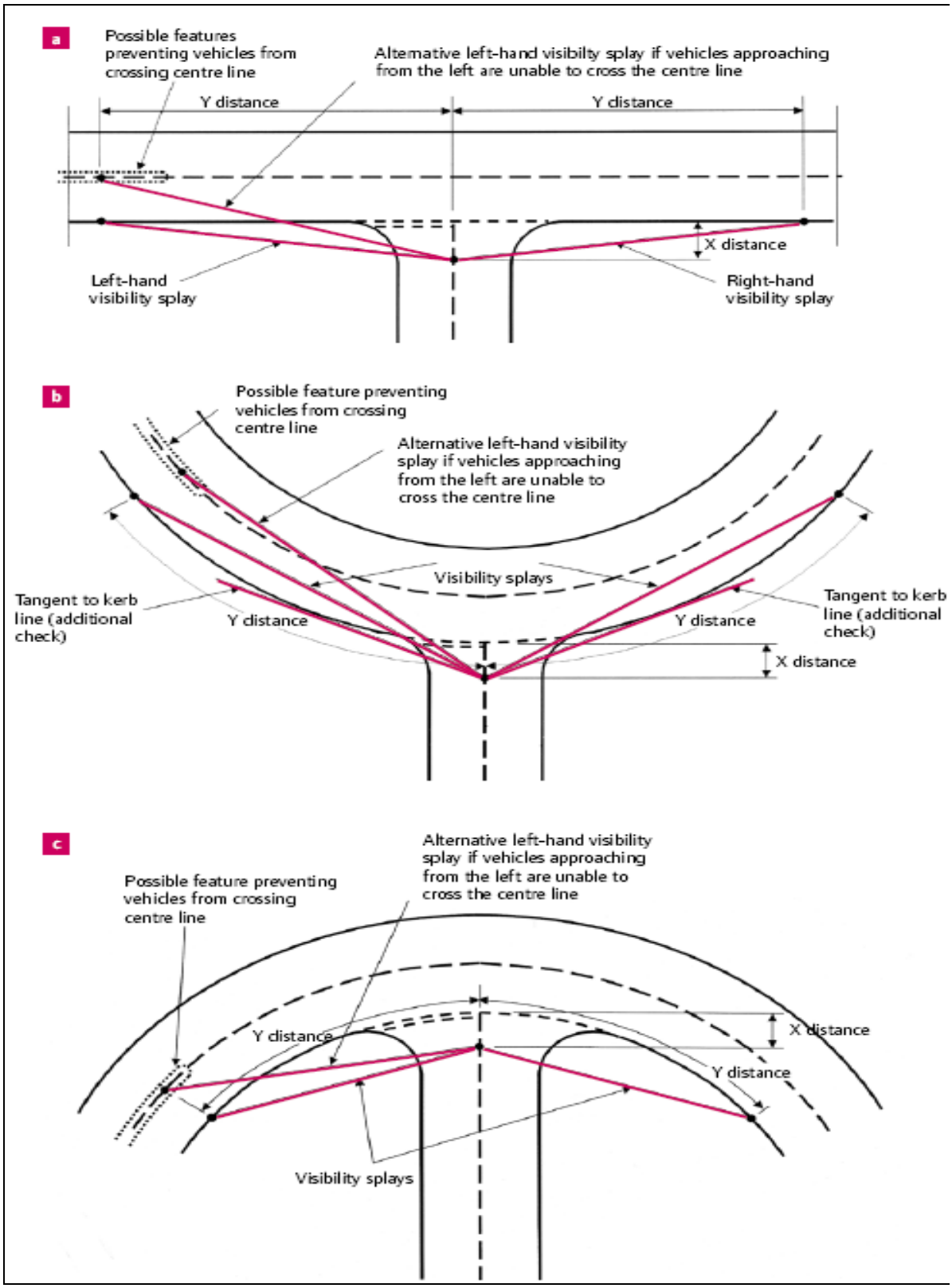
Speeds within residential areas are likely to be lower than that on classified roads and the stopping sight distances (SSDs). For streets where the 85th percentile speeds are up to 60km/h the Y distance should be based on values for SSD given in Table 9. An X distance of 2.4m should normally be used in most built up situations although 2m may be considered in some very lightly trafficked and slow speed situations.

Table 9: SSDs for Streets (figures rounded)

Speed	**Km/h**	16	20	24	25	30	32	40	45	48	50	60
	mph	10	12	15	16	19	20	25	28	30	31	37
SSD m		9	12	15	16	20	22	31	36	40	43	56
SSD adjusted for bonnet length		11	14	17	18	23	25	33	39	43	45	59

The SSD adjustment relates to an allowance for the driver to the front of the vehicle, 2.4m is added to the SSD.

Figure 9: Junction Visibility Splays (a) on a straight road (b) & (c) on bends



Source: MfS. The splay formed by the visibility splay will form part of the adopted public highway

5.13 Visibility at Entrances and Driveways

In addition to the above visibility splays, a splayed entrance is required for pedestrians at entrances and driveways that cross a footway or verge. In such cases the minimum X and Y distances provided should be 2.0m, the Y distance measured along the back of footway.

5.14 Visibility Zones.

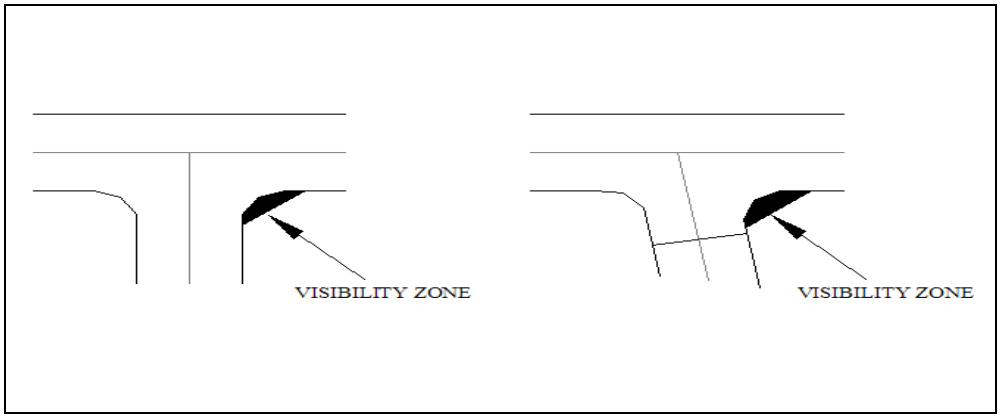
Visibility for drivers turning left into a minor road can be a problem and potentially hazardous for pedestrians and children playing, therefore visibility zones around the left hand entry radii may be required, and the following table gives a guide to providing a visibility radius, tangential to the kerb, for different junction angles and kerb radii.

Table 10: Visibility radius, tangential to the kerb

Junction deflection (degrees)	**Kerb radius (metres)**		
	4m	**6m**	**10m**
80	10	11	19
90	9	10	19
100	8	9	19

The Highway Authority reserves the right to relax these recommendations where other features are built into the road environment and road safety is not compromised.

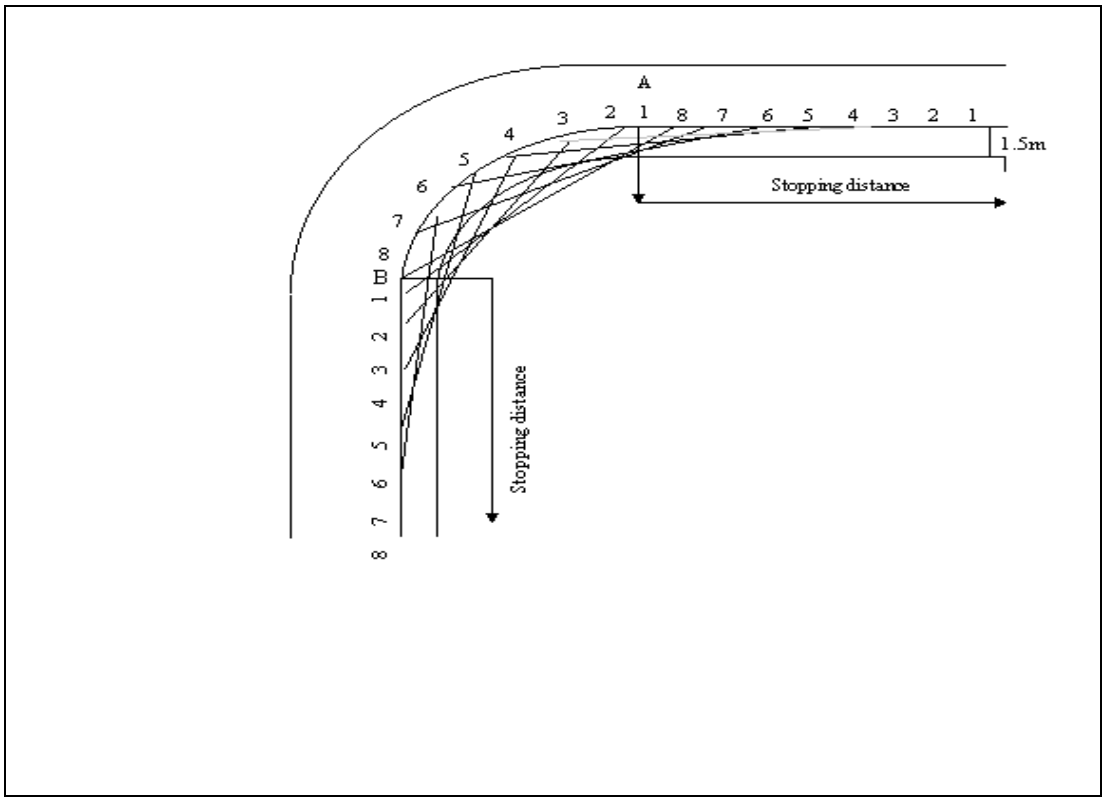
Figure 10: Visibility Zones



5.15 Forward Visibility On Bends

The visibility available on bends will influence and is influenced by the speed of vehicles and their stopping distances. The design speed of residential roads will be either 30mph or 20mph depending on the type of road. To enable drivers to see and stop on bends if required a forward visibility curve is required. The construction of a forward visibility curve is set out in figure 11.

Figure 11: Forward Visibility Splay



- a line should be drawn parallel to the inside kerb, 1.5m into the carriageway to represent the path of the vehicle;
- the required stopping distance commensurate with the expected speed of vehicle should be ascertained and measured back along the vehicle path from tangent point A;
- the stopping distance should then be divided into equal increments of approximately 3m and the increment points numbered in sequence;
- The same stopping distance with the same number of increments should then be repeated around the curve, finishing at a full stopping distance beyond the tangent point B;
- the area which has to be kept clear of obstruction should then be constructed by joining increments of the same number together, i.e. 1 to1, 2 to 2 etc.

5.16 Vertical Curves

Vertical curves are required at changes in gradients to ensure reasonable standards of comfort, to prevent vehicles grounding and to provide appropriate visibility and these are related to the design speed and category of the road. The visibility over the crest of the curve should be 600mm to ensure a clear view of children. Vertical curves should not be shorter than:

(a) indicated by the formula L = KA, where L is the curve length in metres, A is the algebraic difference in gradients [p-(-q)] (expressed as a percentage) and K has a value selected in Table 10 below; or

(b) the minimum curve lengths given in Table 11 below if longer than (a)

Curves designed using the K values given will ensure acceptable sight stopping distances at summits and a reasonable ride at both summits and valleys.

Figure 12: Vertical Curve length

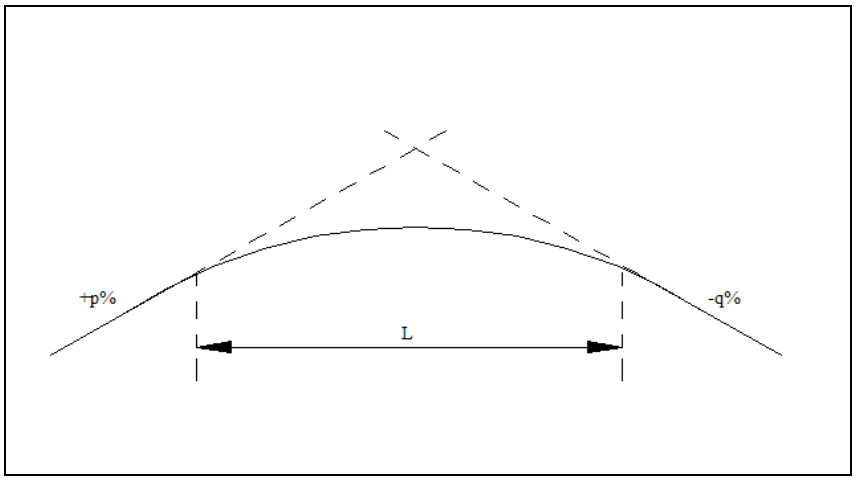


Table 11: Vertical Curve Length and K values

	Design Speeds mph	Min K Value	Minimum Curve length (m)
Local Distributor	30	6.5	30
Major access roads	20	4	25
Minor/shared surface roads	<20	2	20

5.17 Widening on Bends

Widening on bends is provided for safety reasons to accommodate large vehicles whose swept path is more than the width of the available carriageway and is particularly important on local distributor and major access roads. However on internal residential roads an assessment of the likelihood of two large vehicles actually meeting on a bend needs to be considered. Where vehicle speeds are controlled and large vehicles are only infrequent i.e. refuse vehicles etc., then the need for localised widening is reduced.

In such circumstances the larger vehicle can utilise the whole carriageway width available, and wait for any oncoming vehicle to clear the way ahead, however it is essential that there is adequate forward visibility to enable the drivers to give way in an ordered manner. Widening needs to be given particular consideration if the road is to be used as a bi-directional bus route where buses will potentially meet and need to pass. As a general guide, carriageway widening is normally needed on bends curving through more than 10 degrees along roads serving over 25 dwellings. Detailed design of bend widening will require computerised vehicle swept path assessments showing the necessary design changes to accommodate appropriate vehicles without danger to other road users, including pedestrians and cyclists.

Table 12: Carriageway widening on bends

Centre Line radius (m)	20	30	40	50	60
Minimum Widening (m)	0.60	0.40	0.35	0.25	0.20

6.0 SPEED RESTRAINT AND SAFETY

6.1 The control of vehicle speeds is a major factor in improving road safety and minimising the risk of potential accidents and the design of new developments should reflect this. There is a significant lowering of the severity of accidents involving pedestrians when the speed of the vehicle involved is less than 20mph. The designation of 20mph zones is also an important aspect of highway safety and the Council will actively promote 20mph zones. Vehicle speeds within new developments should be self-enforcing in keeping speeds to 20 mph or less by the design and layout of roads and the locations of buildings.

6.2 Speed restraint measures should be considered at the earliest stages of the design process not as an afterthought and must form an integral part of the design so as to ensure the creation of a safer and more pleasant overall environment.

6.3 The use of speed control measures can give the designer an added degree of flexibility, promoting greater variety in layouts and encouraging innovation. The impact on the local community should be considered in terms of noise, vibration and air quality. If it is likely that there will be a significant adverse impact due to any of these impacts, formal technical assessments are likely to be required.

6.4 Where physical speed restraint measures are necessary, horizontal measures should be considered first. Whilst certain types of vertical measures such as road humps can have potential road safety benefits, they can also adversely affect cycle, bus and emergency services vehicles and should be avoided on emergency services strategic routes as per the Council's area wide traffic calming policy.

6.5 The Council has adopted an area wide approach for traffic calming, as traffic calming measures on single routes tends to migrate traffic onto other nearby roads. Where new developments gain access off an existing road with high traffic speeds or where additional traffic generated by the new development travels through a road system, which has an unsatisfactory safety record and high traffic speeds, off site traffic calming measures funded by the developer may be required to reduce speeds to acceptable levels.

6.6 Speed Restraint Measures

The selection of speed restraint measures for different roads in the road hierarchy on larger developments, can, with landscaping, be employed to emphasis the different junctions and roads, and appropriate safe speeds for each. Typical examples of acceptable measures are given below. They are not exhaustive and variations, which reduce speeds and promote road safety, will be looked upon favourably.

Gateways – this can increase the drivers awareness that they are entering a road where different priority exists. This may be a formal feature using hard landscaping or a different type of surface treatment, or it may be more informal using planting. The use of a sign giving the location a specific identity can help reinforce the fact that the roads in the area are different.

Tight bends - Smaller corner radii at junctions force slower and more careful vehicular movement than wide sweeping curves but should allow for the turning/swept path of larger vehicles.

Chicanes – are used to provide deflection on an otherwise straight road by innovative use of horizontal alignment.

The changing alignment of buildings, walls, hedges and fences and changing road shape influences the drivers perception of a street. The width and forward visibility can appear to be narrowed which influences the speed at which the driver feels comfortable.

Carriageway narrowing - Localised narrowing can be used as an effective means of restraining traffic speed subject to the minimum carriageway width being retained. It can also be used as a way of preserving existing trees and features or as a useful method of introducing landscaping to the street scene as part of the overall design.

Junction Speed Tables - The use of raised junctions where appropriate can enhance the opportunity for pedestrians to cross but care needs to be taken to ensure that they do not appear to be part of the footway to children and the visually impaired by the use of contrasting materials

Flat Topped Humps - Vertical deflections are generally not encouraged on new design layouts although speed cushions are considered acceptable on bus routes as they only occupy part of a traffic lane and can be straddled by axles of buses and other wide vehicles. The use of flat topped humps however are particularly encouraged at locations where pedestrians cross.

Roundabouts - should have a central island with a desirable minimum width of 6 metres and be suitably landscaped. An overrun area is required for Heavy Commercial Vehicles. In considering the provision of roundabouts the designer should ensure safe design for cyclists is included. The amount of deflection on the approaches to the roundabout is an important consideration.

Central Islands - these features have the advantage that when landscaped they provide a variation to the street scene. They may be of varying shape and area and can significantly contribute to the landscape of the scheme. They must safely accommodate vehicular movements in all directions.

Further details can be found in the Traffic Advisory Leaflets published by the Department for Transport (D*f*T).

Figure 13: 20mph Zone and Raised Junction

7.0 CRIME PREVENTION AND SAFETY

7.1 The safety of people and the security of property and parked vehicles, are increasingly a matter of public awareness and concern. Crime and vandalism are major social problems that affect all areas. The design of the road and footpath layout within an estate can have a significant impact on the opportunities for crime, as well as the fear of being a victim of crime. Minimising the risk of crime should be a major consideration in assessing a layout.

7.2 A large proportion of crime is opportunistic rather than planned. The thoughtful design of residential areas, including the road and footpath system, can help to deter crime by excluding the environments which create opportunities for criminal activity.

7.3 The design of residential areas should encourage a sense of ownership and community among residents, by creating an environment where residents feel they have an influence on the area around their home, and where strangers or abnormalities are noticed. This concept has often been associated with Cul-de-sac developments but can equally be in a traditional street situation.

7.4 From a highway perspective, there are clear advantages in providing more than one vehicular access into an estate, and in maximising ease of movement for pedestrians by way of footpath links. Such a layout, however, may provide offenders with a choice of alternative escape routes plus a level of anonymity because they become indistinguishable from legitimate users. A balance therefore needs to be struck between security and the provision of links through a development to encourage walking and cycling, particularly for local trips to shops, schools and bus stops. There may be a tendency for cul-de-sacs to be extremely quiet, especially where most residents are away during the day. This lack of activity may discourage the development of a sense of community and its associated deterrent effect on crime and can result in some residents, particularly older ones becoming isolated.

7.5 Identifiable groups of houses such as courts or squares and the use of real or symbolic barriers such as ‘gateways’ or changes in road surface can generate a sense of community and imply the existence of a boundary which intruders may be reluctant to cross. Grouping of houses, particularly of a variety of household types likely to give a greater range of times of occupation, will encourage natural surveillance of the area by residents. Properties facing onto through routes or main roads are clearly visible and accessible, although are not necessarily more at risk than are unattended dwellings in a quiet cul-de-sac. Passing traffic provides a degree of surveillance, but natural surveillance may be discouraged if vehicle flows are high.

7.6 It is recognised that good levels of illumination and carefully designed lighting schemes will enhance a development and assist against crime prevention methods. It is the developers responsibility to provide appropriate lighting for the standard of road to be adopted. All lighting schemes must be submitted in detail for approval and should comply with current specifications and standards. Further details on Street Lighting are in Part 3 Chapter 21.

7.7 Secured by Design (SBD)

‘Secured by Design’ is a Police initiative, which encourages the adoption of crime prevention measures in development to reduce the opportunity for crime, fear of crime and anti-social behaviour thereby creating a safer, and more secure environment. Developments should incorporate sensible security measures in the design process to achieve a safe and secure environment for residents. It is important that areas and routes have natural surveillance, which are overlooked and busy. Clear and direct routes are desirable but should not undermine the defensible space of neighbourhoods.

7.8 Developers achieving the approved standards will be entitled and encouraged to use the official "Secured by Design" logo for marketing purposes. It is intended to create instant recognition by potential residents that the properties have been designed with security and safety in mind.

7.9 The Crime and Disorder Act 1988 Section 17 requires local authorities and police authorities to consider the community safety implications of development. Planning applications may be refused if consideration is not given to the principles of community safety through environmental design. The lack of crime prevention measures may be used as a material consideration in refusing planning permission, Circular 5/94: Planning Out Crime (DOE), 1994) and guidance is available from Warrington Borough Council in achieving Secured by Design status. There may be a requirement for a Transport Assessment.

7.10 It is recommended that developers carry out early consultation with the Police Architectural Liaison Officer to ensure that SBD certification is achieved.

8.0 TRANSPORT ASSESSMENTS (TA)

8.1 The Council is keen to encourage, support and promote high quality development in the Borough, which is accessible by all sections of the community and offer people the widest choice of travel options. Transport Assessments (TA) and Travel Plans (TP) are important tools to help identify measures needed to promote a wider choice of access, particularly by non-car modes, including: improvements or modifications to pedestrian access (including facilities for people with reduced mobility); improvements or modifications to cycle access; improvements to greenways; improvements or modifications to public transport services. Whilst a multi modal approach is necessary, the impact of the residual traffic generation of a development in many cases remains the significant factor in the transport impact of developments.

8.2 To enable the Council to consider the issue of accessibility, Transport Assessment will be required for development proposals above the thresholds set out in Table 13. The amount of work involved in preparing a Transport Assessment will depend on the scale and impact of the development on the surrounding highway network; for smaller schemes this could be little more than a Transport Statement (TS), for larger schemes this is likely to be a detailed report. There will also be instances where the transport issues relating to a development proposal are limited and no formal assessment is necessary.

8.3 As a guide, Table 13 sets out the gross floor area, (gfa) /Units and other thresholds above which the Council would expect a planning application to be supported by a Transport Assessment. The thresholds are not exhaustive and in some circumstances TA may be appropriate for a smaller development and in others TS may be appropriate for a larger development than suggested by the thresholds. The Council reserves the right to request a “Transport Assessment” in other instances; where the location and/or nature of the development are of a particularly sensitive nature for example, or where the network is congested at a particular location. The thresholds may not necessarily reflect the views of the neighbouring Highway Authorities. Developers should seek the requirements of the relevant Highway Authority, for any proposal that will have a material impact outside this Authority’s boundary, or on the Strategic Road Network (SRN).

Table 13: Indicative Thresholds for Transport Assessment

Use Class	Development	GFA/ UNITS/ OTHER	TS	TA/TP
A1 Food retail	Retail sale of food goods to the public – food superstores, supermarkets, convenience food stores.	GFA	>250 <800 sq. m	>800 sq. m
A1 Non-food retail	Retail sale of non-food goods to the public; but includes sandwich bars – sandwiches or other cold food purchased and consumed off the premises, internet cafés.	GFA	>800 <1500 sq. m	>1500 sq. m
A2 Financial and professional services	Financial services – banks, building societies and bureaux de change, professional services (other than health or medical services) – estate agents and employment agencies, other services – betting shops, principally where services are provided to visiting members of the public.	GFA	>1000 <2500 sq. m	>2500 sq. m
A3 Restaurants and cafés	Restaurants and cafés – use for the sale of food for consumption on the premises, excludes internet cafés (now A1).	GFA	>300 <2500 sq. m	>2500 sq. m
A4 Drinking establishments	Use as a public house, wine bar or other drinking establishment.	GFA	>300 <600 sq. m	>600 sq. m
A5 Hot food takeaway	Use for the sale of hot food for consumption on or off the premises	GFA	>250 <500 sq. m	>500 sq. m
B1 Business	(a) offices other than in use within Class A2 (financial and professional services) (b) research and development – laboratories, studios (c) light industry	GFA	>1500 <2500sq. m	>2,500 sq. m
B2 General industrial	General industry (other than classified as in B1)	GFA	>2500 <4000 sq. m	>4000 sq. m
B8 Storage or distribution	Storage or distribution centres – wholesale warehouses, distribution centres and repositories.	GFA	>3000 <5000 sq. m	>5000 sq. m

Table 13: Indicative Thresholds for Transport Assessment (cont'd)

Use Class	Development	GFA/ UNITS/ OTHER	TS	TA/TP
C1 Hotels	Hotels, boarding houses and guest houses, development falls within this class if 'no significant element of care is provided'.	Bedroom	>75 <100 bedrooms	>100 bedrooms
C2 Residential institutions - hospitals, nursing homes	Used for the provision of residential accommodation and care to people in need of care.	Beds	>30 <50 beds	>50 beds
C2 Residential institutions – residential education	Boarding schools and training centres.	Student	>50 <150 students	>150 students
C2 Residential institutions – institutional hostels	Homeless shelters, accommodation for people with learning difficulties and people on probation.	Resident	>250 <400 residents	>400 residents
C3 Dwelling houses	Dwellings for individuals, families or not more than six people living together as a single household. Not more than six people living together includes – students or young people sharing a dwelling and small group homes for disabled or handicapped people living together in the community.	Dwelling unit	>50 <80 units	>80 units
D1 Non-residential Institutions	Medical and health services – clinics and health centres, crèches, day nurseries, day centres and consulting rooms (not attached to the consultant's or doctor's house), museums, public libraries, art galleries, exhibition halls, non-residential education and training centres, places of worship, religious instruction and church halls.	GFA	>500 <1000 sq. m	>1000 sq. m

Table 13: Indicative Thresholds for Transport Assessment (cont'd)

Use Class	Development	GFA/ UNITS/ OTHER	TS	TA/TP
D2 Assembly and leisure	Cinemas, dance and concert halls, sports halls, swimming baths, skating rinks, gymnasiums, bingo halls and casinos. other indoor and outdoor sports and leisure uses not involving motorised vehicles or firearms.	GFA	>500 <1000 sq. m	>1000 sq. m
Others	For example: stadium, retail warehouse clubs, amusement arcades, launderettes, petrol filling stations, taxi businesses, car/vehicle hire businesses and the selling and displaying of motor vehicles, nightclubs, theatres, hostels, builders' yards, garden centres, POs, travel and ticket agencies, hairdressers, funeral directors, hire shops, dry cleaners.	TBD	Discuss with highway authority	Discuss with highway authority

8.4 Other considerations where a TA is required are:

- any development generating 30 or more two-way vehicle movements in an hour;
- any development generating 100 or more two-way vehicle movements per day;
- any development proposing 100 or more parking spaces;
- Any development that is likely to increase accidents or conflicts among motorised users and non-motorised users, particularly vulnerable road users such as children, disabled and elderly people;
- any development generating a significant freight of HGV movements per day or significant abnormal loads per year;
- Any development proposed in a location where the local transport infrastructure is inadequate. – for example, substandard roads, poor pedestrian/cyclist facilities and inadequate public transport provisions;
- Any development proposed in a location within or adjacent to an Air Quality Management Area (AQMA).

8.5 A Transport Statement is suitable for developments expected to generate relatively low numbers of trips or traffic flows with minor transport impact. TS should set out the transport issues relating to the existing and proposed development. The information provided should include amongst others:

- a description and functional classification of the highway network in the vicinity of the site;
- the existing/proposed site access arrangements including access constraints, where appropriate;
- any abnormal load uses of the current site;

- a qualitative and quantitative description of the existing/proposed development (based on recent site observations) of the travel characteristics of the existing site, including pedestrian and cyclist movements and facilities, where applicable;
- existing public transport provision, including provision/frequency of services, location of bus stops/train stations, park and ride facilities;
- the person trip generation of the proposed development and distribution of trips across mode;
- proposed improvements to site accessibility via sustainable modes of travel, such as provision/enhancement of footpath and cycle path linkages, public transport improvements, and servicing arrangements where appropriate;
- an analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent three year period, or five year period if the proposed site has been identified as within a high accident area;
- a proposed parking strategy and internal vehicular circulation (including number of spaces, parking accumulation, parking layout in relation to other site elements, ratio of operational to non operational spaces, method of car park operation, overspill parking considerations, disabled parking, motorcycle parking, cycle parking, taxi drop off points);
- residual vehicular trip impact;
- the transport impacts of site construction, including the requirements of abnormal loads in the construction, use and decommissioning the present development;
- the transport impacts of freight or service operations; and
- if the site of the proposed development has a current use or an extant planning permission with trip patterns/volumes, the net level of change that might arise out of the new proposals should be set out.

It is acknowledged that not all proposed developments that are considered to require TS would necessarily need all of the above matters to be considered. It is therefore important that the scope of the TS is agreed prior to making a formal application.

8.6 A Transport Assessment is expected to be an impartial report undertaken by an appropriately qualified professional employed by the developer. It describes the effects of a development on the local highway network, and considers its accessibility by all modes of transport. This includes outlining both the positive and negative implications of the development, on the existing and/or proposed highway infrastructure. In all cases it is recommended that a two-stage approach be adopted, since experience has shown that this can lead to a speedier acceptance of the Transport Assessment.

8.7 Stage one- Prior to the preparation of the TA, the scope of the study should be agreed with the appropriate officers of the Council. This will involve the basic assumptions, areas of the study, the methodology to be adopted, traffic growth factors, trip rates, generation, modal split and the years of assessment etc. This would ensure that work is not carried out unnecessarily and that resources are directed to the areas needing most attention. Larger developments, and/or those in more critical parts of the Borough, may also be required to investigate road links and junctions remote from the site that might be affected. In addition, developments, in sensitive or “relevant” locations for the purposes of air quality assessments and generating significant volumes of traffic, or schemes which will generate significant

volumes of heavy goods vehicles, the environmental impact of this traffic may also need to be considered, especially where the development is within or would affect Air Quality Management Areas (AQMA). The LPA would encourage pre-application discussions with Environmental Health / LPA regarding the need for any necessary Environmental Assessments.

8.8 Stage two - production of the Transport Assessment. The contents of any individual TA will be dependent on the size, nature, location and complexity of the development proposal, however it should be clear and concise and have logical structure containing an introductory section, section dealing with assumptions and analyses and end with conclusions and recommendations. As a guide the report should be presented in the format recommended in the *Guidance on Transport Assessment* (GTA) March 2007, jointly produced by the Department for Transport and the Department for Communities and Local Government.

8.9 The Council's Local Transport Plan 2006-2011 sets out clear policies, strategies and schemes for developing an integrated Local Transport Strategy. All developments that result in a net increase in trips can have a direct impact on the effectiveness of the transport network and are detrimental to the objective to reduce traffic growth. In such instances contributions will be sought to support the implementation of the Local Transport Strategy. The contributions will be in addition to any site specific mitigating measures identified in the TA.

8.10 The level of trips identified in the TA will determine the scale of impact on the wider transport network and the contributions will be based on the daily increase in trips over and above any existing movements. Consequently the cost of contributions to the Council's Transport Strategy will be directly related to the scale and impact of transport movements associated with a particular development proposal. Where development proposals provide significant transport infrastructure in connection with the development that fully mitigates the impact of additional trips, and contributes towards the objectives of the wider transport strategy, the contribution calculated may be reduced or waived. (See appendix 1 for further details). Such contributions will be agreed with the LPA.

8.11 For the public transport element of the TA, it should be noted that any development likely to generate significant additional journeys is most likely to be approved if it is located in the vicinity of important public transport routes. This is defined as having a public transport service operating at 10-minute frequencies no more than 400m from any part of the site. Where this is not the case, it is likely that the Council will place an obligation of the provision of a new or improved public transport service upon any grant of permission. An obligation may include meeting the costs of re-routing of an existing service and/or the provision of new facilities such as bus shelters and stops to improve public transport access within 400m of any part of a development site. (See Appendix 1 for further details).

Early discussion with the Council's Passenger Transport Co-ordinator is recommended to identify existing public transport links and any weaknesses of services to the development.

8.12 Travel Plans (TP)

In addition to a Transport Assessment, significant employment, residential, school and other leisure proposals should be supported by a Travel Plan, which is a means of minimising the car borne traffic generation of new developments and establishing long-term sustainable travel patterns. Travel planning is an important part of the planning process as well as the Local Transport Plan and a Travel Plan officer will be available to support the development and implementation of a Travel Plan prepared as part of the planning application process. A Travel Plan will have to be approved by the Planning Authority, which will consult with the Travel Plan officer. An annual report outlining progress of the Travel Plan initiatives will be required to be submitted.

8.13 Before submission of a planning application, developers are encouraged to consult with the relevant Council officers at an early stage to determine if a Travel Plan is required. Consultation is important as it may influence the design of any final scheme, and liaison with the Travel Plan officer will ensure developers are aware of what is expected. A Travel Plan may be applicable to the application site only, or for a wider initiative taking in other developments in the area. The same principles will apply to all developments, which meet the criteria, including business, residential, schools, colleges, hospitals and associated developments.

8.14 A School Travel Plan will be required for all new and expanding school facilities where the development will lead to new or increased traffic generation to the site. As a package of measures a School Travel Plan will identify the need for: the provision and promotion safe cycle and walking routes, the restriction of car parking and access at and around the site coupled with segregated pedestrian access and routes within the school grounds, include on-site changing and cycle storage facilities and particularly for secondary schools, include provision for Public Transport access.

8.15 When the end-users of a development are known a full Travel Management Plan will be required - to include travel patterns of the users, aims, commitments and timetabled action plans. For speculative developments, multi-occupation sites, and future occupiers, a staged travel plan development may be appropriate. In these cases an interim travel plan may be submitted which sets out all commitments which are not dependant on input from employees/visitors/end-users, and which can be implemented prior to occupation. This should include:

- Management of car parking;
- Plans for co-ordination of the plan; and
- A framework which includes a timetable of introduction of the final travel plan by the occupiers

8.16 Where a number of occupiers of a different nature will be at the site (e.g. an industrial site, business park, etc.) an all encompassing travel plan will be required. This should include all features outlined above. A site manager would be required to undertake co-ordination and administration of the entire travel plan. (See Appendix 2: Supplementary Planning Document: Travel Plans for further guidance on the form and content).

9.0 ROAD SAFETY AUDITS (RSAs)

9.1 Road safety is a continuing concern and is identified as a transport priority in the Local Transport Plan. Road Safety Audit is a formal procedure for assessing the accident potential and safety performance in the provision of new road schemes and the change/improvement of existing roads under Sections 38 or 278 of the Highways Act 1980.

9.2 Road safety auditors check to see that new roads will be safe for users. They look at the plans on paper and on-site to see if there are any potential hazards. Both council schemes and those carried out by developers are audited. They ensure that adequate levels of safety are maintained, and that problems identified at similar sites are avoided in new works.

9.3 Within the planning process, at the pre-planning application stage, the developer can discuss Road Safety issues with the Council as appropriate.

9.4 Process of RSAs

WBC procedure requires that Schemes shall be audited at Stages 1, 2, 3 and 4. Where no preliminary design is required, a combined Stage1/2 Audit may be carried out. Audit stages are as follows:
Stage 1: Completion of preliminary design
Stage 2: Completion of detailed design
Stage 3: Completion of construction
Stage 4: Monitoring

In the case of new roads to be adopted by the Highway Authority, it is expected that Safety Audit will be carried out as shown in Table 14 below.

Table 14: RSA Requirements and Stages

Development Stage	**Road Safety Audit**
Pre-planning application	Stage 1
Prior to completion of Section 38/278 Agreement	Stage 2
Developer request for Part 2 Maintenance Certificate	Stage 3

9.5 The auditor writes a report and gives it to those responsible for the scheme. The Scheme Designer must then explain what they will do about each point raised and confirm what action, if any, will be taken. WBC will make a decision if there is a difference.

9.6 Developers carrying out highway works will be required to pay all costs, including the Council's direct costs, for carrying out Road Safety Audits and ensure that any audit recommendations are implemented to the Council's satisfaction.

9.7 Standards applied to RSAs

The Design Manual for Roads and Bridges, Volume 5, Section 2, Part 2, HD19/03 is the national standard for safety audits. This guidance applies to Highways Agency Trunk roads although WBC procedure is based on this standard. Paragraph 1.5 says: "Road safety audits are intended to ensure that operational experience is applied during the design and construction process in order that the number and severity of accidents is kept to a minimum. Auditors identify and address problem areas using experienced gained from accident reduction schemes, accident investigation and research work." Safety audits are checks to ensure that a road is designed and operates as safely as is possible in order to keep collision numbers to a minimum. They must be carried out by people who are not involved with the design of the proposed works. They should only consider road safety matters – they are not a technical check that the design conforms to standards and they do not consider structural safety.

9.8 As per Warrington Borough Council procedure, all changes on the highway are subjected to the Road Safety Audit process. Any Departures from this process must be applied for, in writing, to the Accident Investigation and Road Safety Manager.

9.9 Stages of RSA

As per stated in paragraph 9.3 WBC procedure requires Highway improvement schemes to be audited at Stages 1,2,3 and 4. Developer lead changes to the highway will not be subjected to the Stage 4 'Monitoring' stage. However, should road safety related concerns become apparent during the maintenance period, the Council will negotiate with the Developer on the most appropriate solution prior to adoption. If for any reason, a Stage 1 RSA has not been carried out (for example, where a scheme is of such a scale that no preliminary design has been necessary and the scheme has progressed directly to detailed design with the agreement of the Project sponsor) Audit Stages 1 and 2 shall be combined at Stage 2 and should be referred to as a combined Stage 1 and 2 Audit.

Stage 1 RSA: Will be undertaken at the completion of preliminary design of the Highway Improvement Scheme before planning consent where possible. Stage 1 considers the feasibility of the project and its impact on highway safety based on an outline design. Where a Stage 1 safety audit is required, no technical approval for the works will be issued until the audits have been completed to the satisfaction of the Council.

Stage 2 RSA: Is concerned with the more detailed aspects of the Highway Improvement Scheme and will be undertaken on completion of Detailed Design. The Audit Team will be able to consider the layout of junctions, positions of signs, carriageway markings, lighting provision and other issues (see DMRB Vol 5 Section 2 Part 2 HD 19/03). The Stage 2 audit should include a review of the issues raised in the Stage 1 Audit Report. Any issues that have not been satisfactorily resolved from the Stage 1 Audit should be re-iterated in the Stage 2 Audit Report. Where a Stage 2 safety audit is required, no technical approval for the works will be issued until the audits have been completed to the satisfaction of the Council.

Stage 3 RSA: Will be undertaken when the Highway Improvement scheme is substantially complete and preferably before the works are opened to road users. Where this is not feasible, alternative arrangements should be agreed with the

Project Sponsor. This may result in the audit being carried out a short time after opening or in phases where a scheme is subject to phased completion and opening. However, all Highway Improvement Schemes should be subjected to a Stage 3 RSA within 1 month of opening. Each Safety Audit stage requires that the Designer respond to each of safety issues raised in the safety audit report. The 'Designers Response' report is subsequently considered by the Project Sponsor who will produce the 'Exceptions Report' to the Accident Investigation and Road Safety Manager. Any issues that cannot be resolved are referred to the Head of Transportation Service for arbitration.

9.10 When a developer enters into either a Section 38 or Section 278 agreement, the developer, will be required to;

- indemnify the Council (protect us from legal responsibility) against any claims arising from the works;
- The developer will also be responsible for paying for all safety audits and associated costs. Safety audits will only be undertaken by WBC officers or by WBC's preferred consultant;
- submitting the designers' response (the audit report will not be considered until the designers' response has been received); and
- ensuring any audit recommendations required to be implemented are completed to the satisfaction of the Council.

9.11 Timescales for RSAs

The Developer, in consultation with the Design team, and the Network Development and Control Manager should allow an adequate time period within the overall project plan for the Road Safety Audit process to take place. Additional time should be allowed for potential post Audit re-design.

10.0 PEDESTRIAN AND MOBILITY IMPAIRED MOVEMENTS

10.1 Walking, cycling and public transport are identified in the Council's Local Transport Plan 2006-2011 as the transport mode hierarchy and they form the basis of the Council's integrated transport strategy for the movement of people. These modes should therefore play a key role in designing accessible neighbourhoods. This hierarchy can only fully apply to larger scale development. Smaller developments may not be able to accommodate, physically/monetarily, public transport, but precedence in all cases should be given to pedestrians/mobility impaired and cyclists. Pedestrian and cycle links to existing bus stops, schools, shops, health centres and other facilities are essential for all sizes of development.

10.2 Developments can be improved by making specific provision for pedestrians, cyclists and people who are mobility impaired and can help to encourage reduced dependence on the car by making the alternatives as safe, convenient and attractive as possible. With the requirements of the Disability Discrimination Act and the Human Rights Act, it is important particular attention is given to the needs of the mobility impaired.

10.3 The developer must consider all forms of movement from the outset in the development process to ensure that routes for different forms of movement are safeguarded during the course of development.

10.4 Where large new developments are being considered a pedestrian and cycle master plan brief should be produced, identifying existing or proposed routes outside the boundary of the development to which links are integrated. The plan should also provide adequate pedestrian routes as not to isolate any part of the development.

10.5 Pedestrian Routes **–** These are classified as either footways, which are adjacent to the carriageway or footpaths, which are not related to the carriageway but may lead to properties/offices, other part of the estate, public rights of way, greenways or integrate to existing pedestrian network. The requirement to provide footways adjacent to carriageways of various importance is covered in Chapter 4.

10.6 Pedestrian routes must take account of the need for reasonable freedom of movement, safety and security. They should be carefully positioned and well designed in order to maximise their use. In order to accommodate the true desire lines of pedestrians to other parts of the estate, bus stops and other community facilities, it may be necessary to create footpaths away from the main carriageway. In all cases the following design considerations must be borne in mind:

- routes must be safe, convenient and well lit (to WBC Street Lighting Specification Standards);
- they should be short, direct and barrier free unless as a specific design feature, with each end intervisible;
- routes must be overlooked by buildings or passing traffic;
- measures that slow down vehicles help pedestrians feel safe;
- landscaping and layout should not create blind spots or hiding places;

- have easy gradients and provide adequate and suitable access and crossing points for wheelchair users and people with prams;
- be designed to minimise nuisance to nearby residents; and
- if possible provide maximum exposure to favourable environmental conditions (such as sunshine and views) and minimise exposure to inclement weather (such as wind and rain).

10.7 People prefer to walk along routes where they can be seen by drivers, residents and other pedestrians. Pedestrian routes must therefore be attractive and serve a purpose or a desire line. Poorly used routes provide easy access for criminals, a congregating place for vandals, and create untold nuisance for local residents.

10.8 Mobility Impaired

New developments must comply with DMRB, Vol 7 (Section 7), Part 5 HD 39/01 'Footway Design' and D*f*T, Inclusive Mobility, 'A Guide to best practice on access to Pedestrian and Transport Infrastructure' Whilst the general principles adopted for able-bodied pedestrians apply, particular attention should be paid to the following, which may prevent obstacles:

- Steps – they are permitted, but only where there is an alternative ramped access. Flights should not exceed 8 steps and should be separated by 1.5m long level landings and a maximum riser of 150mm with maximum tread of 280mm. Steps should be at least 1.2m wide, preferably 1.8m, have secure handrails on both sides and centrally where the width of the steps exceed 3.0m wide and permanently non-slip treads.
- Gradients - Gradients for footpath routes should not exceed 8% and ideally will be less than 5%. Where there are alternative facilities for wheelchairs and prams, a maximum gradient of 12.5% is acceptable.
- Kerbs - At all road junctions where pedestrians will be crossing residential roads, kerbs should be ramped to assist wheelchair users and those with prams and pushchairs. The gradient should be no more than 8% and the kerb dropped so that it is perfectly flush with the carriageway. Tactile surfaces laid in accordance with the Department for Transport advice should be provided at dropped kerbs to assist blind and partially sighted people.
- Street furniture - special attention should be given to the placing of items such as street name plates, bus stops, seats, litter bins, telephone boxes, post boxes and landscaping features to ensure that they do not create a hazard for disabled people.
- Construction - some materials which are considered attractive and functional may create a hazard for disabled people. Examples of materials, which need consideration, include grass planting grids, gully grates that can trap wheelchairs and decorative hard landscaping. Care in the design of the overall scheme should however result in their use in appropriate locations.

10.9 Where footpaths rejoin the main road network consideration should be given to the provision of staggered barriers, or landscaped verges to prevent pedestrians, particularly children running on to the road. Staggered barriers can also reduce irresponsible cycle behaviour, and prevent access by motorcyclists.

10.10 Footway Fundamentals

A standard 2.0m wide footway is required but may vary to enable wider areas at busy points. Footways serving non-residential uses may need to be widened within

the immediate vicinity of the development to accommodate increased pedestrian flow and waiting pedestrians and prams. This is especially the case at primary schools where parents often wait at the school to collect their children.

10.11 Footpaths and Cyclepaths Fundamentals

It may be necessary for a footpath or cyclepath to double as an emergency route for vehicles, especially for developments of 100 dwellings or more that have only one point of road access. In such cases the route should be protected against non-emergency use and should be a minimum of 3 metres wide. Footpaths and cyclepaths that link elements of the road system and link the road system to public facilities, such as bus stops, shops, schools and health centres, will be adoptable by the Highway Authority. It is a general requirement that all footpaths and cyclepaths should be appropriately signed, including surface markings, although this may be relaxed in conservation area after discussions with the Highway Authority. Footpaths and cyclepaths that cross roads serving 100 or more dwellings may need special arrangements to protect the safety of pedestrians and cyclists, such as the staggering of footpath ends or the provision of barrier rails. Crossing points on roads serving 300 or more dwellings may require a central refuge and barrier rails but the safety requirement for this needs to be balanced against the overall design concept for the development.

- Separate cyclepaths and footpaths: Minimum of 1.5 m wide for footpaths, 2.0m for cyclepaths with 1.8 m wide passing places for wheelchairs/pushchairs every 25m. Local narrowing to 1.2m is acceptable for short distances in order to retain existing features.
- Combined cyclepath/footpath and or Greenways: Minimum of 3m wide. Where flanked on both sides by walls or fences more than 900mm high, width should be at least 3.5m. Any exceptions should be discussed with the Highway Authority at the earliest opportunity.
- Adopted cyclepaths and footpaths need to be accessible for maintenance and should be within 25m carry distance of a maintenance vehicle. If this is not possible, the footpath must be within a 2.5m wide corridor and free of obstructions to allow a maintenance vehicle to follow its route.
- Footpaths and cyclepaths passing under structures should have headroom of 2.5m.

10.12 Pedestrian Crossing Points

Provision should be made at all road junctions and access points for pedestrians to continue along major roads with the minimum of inconvenience. Where the junction layout provides a pedestrian refuge, dropped kerbs must align with the refuge. At all other junctions the crossing point should normally be located at the desire line for pedestrian movement, but at wide junctions the crossing point should be located at the tangent point to the radius, ensuring a ‘See/See’ situation exists for all road users.

10.13 Tactile Paving

At controlled and uncontrolled crossing points tactile paving surfaces are required to convey important information to the visually impaired. The different types of tactile surface can be readily detected by the visually impaired, and each type of tactile paving surface should be exclusively reserved for its intended use. For controlled crossing points red tactile paving is required and for uncontrolled crossings buff

coloured or any other colour other than red can be used. there are numerous tactile layouts for use in different locations. Tactile paving must be provided in accordance with the D*f*T 'Guidance on the use of Tactile Paving Surfaces 1999'.

Figure 14: (Indented) Uncontrolled Crossing point at a Side Road

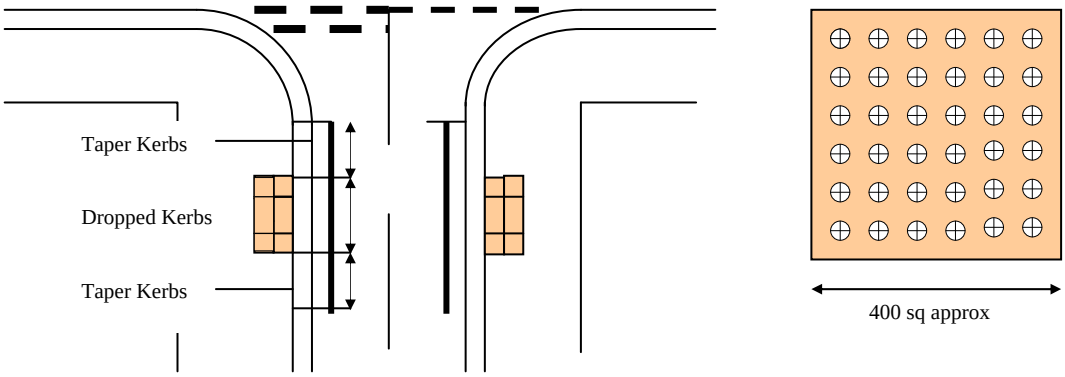
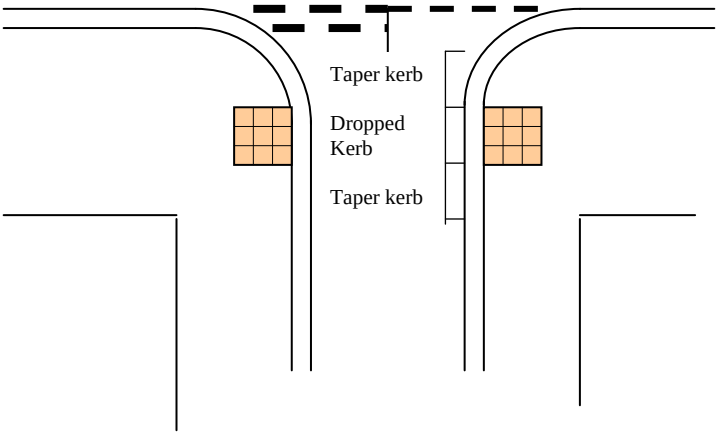


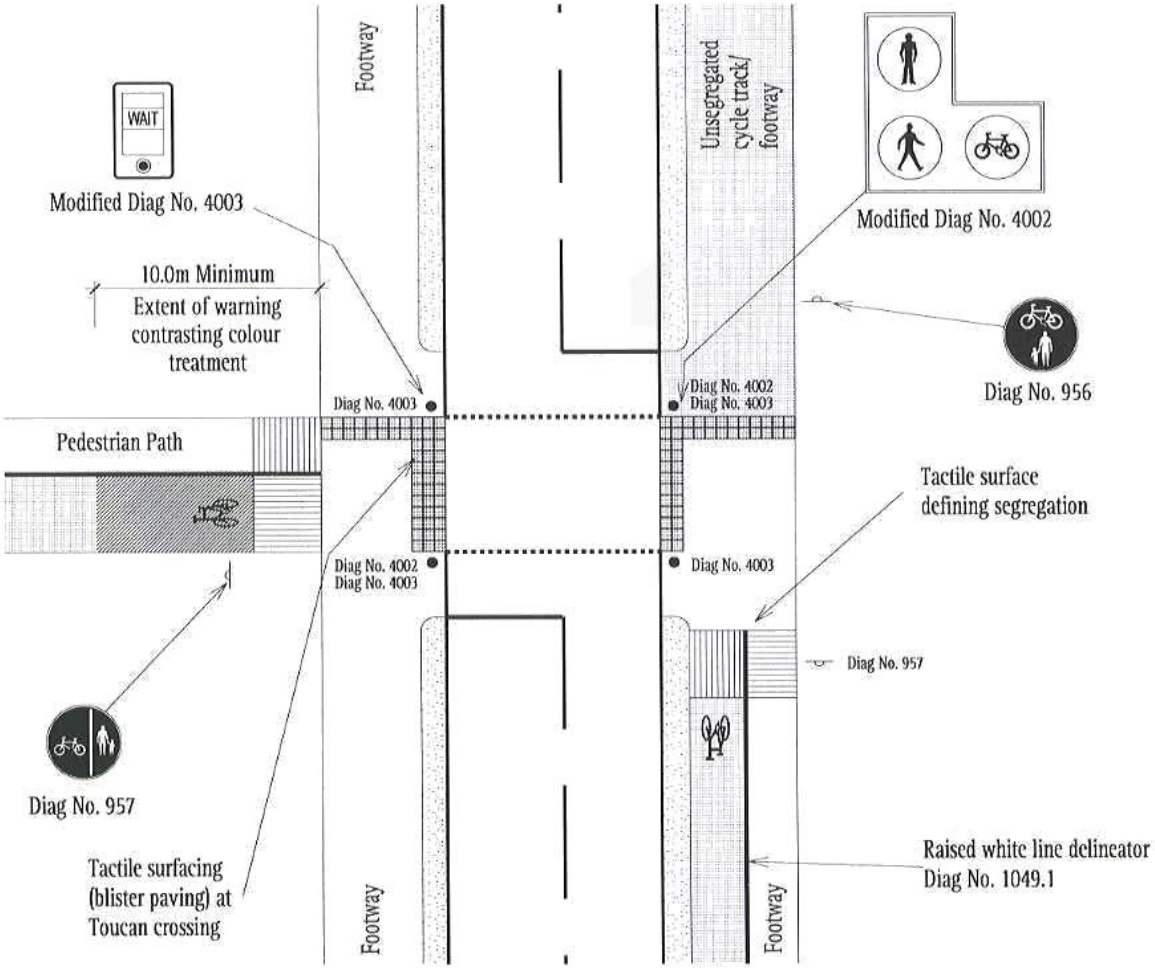
Figure 15: Tactile Paving at In-line Uncontrolled Crossing Point



The tactile paving should be buff or any other colour (other than red) for uncontrolled crossings.

Dropped kerbs should be laid flush to the carriageway surface

Figure 16: Layout of a Junction between a Shared Route and a Footway incorporating a Toucan Crossing



The 'L' pattern of tactile surfacing guides partially sighted users and is the design recommended for Toucan crossings. The depth of tactile surfacing at the dropped kerb is 1200mm when the pedestrian approach is straight on to the crossing. in other circumstances an 800mm depth of tactile surfacing at the dropped kerb is recommended.

10.14 Public Rights of Way (PROW)

Public Rights of Way are highways, which anybody may use at any time, the majority of which are highways maintainable at public expense. PROWs are recorded on a Definitive Map and Statement (a legal record of public rights of way). There are four categories of Public Right of Way intended for a variety of users:

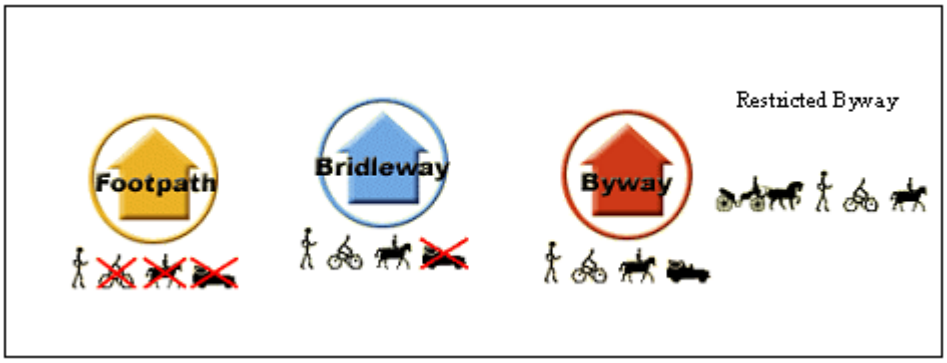
- **Public Footpath**: For walkers only. Pram, pushchair or wheelchairs are allowed along a public footpath but many routes may not be physically suitable for that purpose. Public Footpaths are mostly way marked with yellow arrows.

- **Public Bridleway**: For walkers, horse riders and pedal cyclists. Cyclists must give way to walkers and horse riders. Bridleways are mostly way marked with blue arrows.

  Byways Open to All Traffic (BOAT): Often just referred to as Byway, for vehicles, cyclists, horse riders and walkers. BOATs are mostly way marked with red arrows.

- **Restricted Byway:** For walkers, cyclists, horse riders and horse drawn vehicles Restricted Byways are mostly way marked with a plum arrow.

Figure 17: Categories of PROW intended for a variety of users:



10.15 It is essential that, at an early stage in the planning process, a prospective developer ascertains whether any public rights of way would be affected. Failure to do so could result in serious problems, delays and possibly even court proceedings. It is recommended that developers consult the Council's Public Rights of Way Officer and a search on the Definitive Map be undertaken at the earliest opportunity, as public rights may exist that are not obvious on the ground. Prospective developers are also advised that the public rights of way questions on a local land charge search are optional, and will only have been answered if their legal representatives asked for them.

10.16 Rights of way that cross new development sites must not be obstructed, and should provide direct, secure and visually attractive routes. Opportunities should be taken to extend the current network by the provision and/or improvement of links to the estate or the wider public rights of way network, with a specific emphasis on the provision of multi-user routes (pedestrians, cyclists and horse riders where appropriate).

10.17 If a public right of way is identified on a proposed development site the developer should endeavour to preserve it along its existing route, and preferable retain it as a route segregated from vehicular traffic (i.e. not form into the carriageway layout of the development). If this is impractical then the developer may elect instead to apply for it to be diverted, or in exceptional circumstances extinguished. This is done by an order under the Town and Country Planning Act 1990 or the Highways Act 1980. Developers are however, advised that such orders are open to public challenge, possibly leading to public inquiries, therefore the Council cannot guarantee the success of any application or subsequent Order. Legal Order proceedings may result in substantial delays to developments because until such a time as Orders are confirmed the original path must remain fully open, available and undisturbed. Failure to do so may result in criminal proceedings and/or development works being substantially delayed or even stopped. The Council's Public Rights of Way Officer will be pleased to offer help and advice.

10.18 Private Rights of Way

There is a difference between Public and Private Rights and the two should not be confused. Some properties may have private rights of access with vehicles over PROW for the benefit a particular individual or property. The Council does not hold records of private rights of access. Information may be obtained from the title deeds to the property or from the Land Registry if the land concerned is registered. Developers should seek their own legal advice on such matters.

10.19 Greenways

Greenway is a term used to describe a network of mainly off-road routes that are shared by pedestrians, cyclists, and where appropriate, horse riders for the purpose of commuting or leisure.). They can also be new routes created as highways or amenity paths. The term Greenway in its own right has no legal status. Many Greenways follow existing routes that already have their own status, such as footpaths, cycleways or bridleways, with the Greenway being created through the improvement of that route (e.g. through improved signing and provision of a suitable surface. The Council has identified a core orbital route around the town centre, together with a strategy to further develop the Greenways network. It is expected that developers will endeavour to preserve this network of Greenways or routes identified for improvement, and where appropriate, contribute towards the development and improvement of the network.

11.0 CYCLING

11.1 Promoting and encouraging cycling as a mode of travel is one of the main aims of the Council's Local Transport Plan 2006-2011 in terms of its contribution to the five transport priorities for the borough. The developer can do much to support this strategy by providing good secure and covered cycle storage (behind a locked door), and safe and direct routes both within the development and a link with the existing cycle network. See Supplementary Planning Guidance on Cycle Parking.

Routes where people can cycle are:

- Roads - on road (either with or without cycle lanes), where a slower design speed is critical to creating a cycle friendly environment;
- Off-Road - cycletrack adjacent to carriageway, either shared with or segregated from pedestrians;
- Cycleways/Greenways away from roads either shared with or segregated from pedestrians and where appropriate horse-riders.

11.2 As cyclists are one of the most vulnerable groups of road users, it is essential that the provision of safe and secure cycle network is considered from the outset in the design of a development likewise the provision of Safer Routes to Schools should be addressed early in the design process, and contact with the Council is strongly recommended. At low speeds and low flows, cyclists and motorists can share road space with no significant danger. On busier roads, conditions become increasingly difficult for cyclists and highway design should include consideration of measures to reduce speed. In situations where levels and speed of traffic cannot be restrained, segregated facilities should be provided. Consideration should be given to cyclists at junctions with facilities provided to give additional protection such as advanced priority for cyclist at junctions. Measures should minimize disruption to cycle movement through the elimination of the need to stop or dismount.

11.3 As stated in the IHT/DfT publication, 'Cycle-friendly Infrastructure – Guidelines for planning and design' the five main requirements of cycling infrastructure are:

Coherence – The cycling infrastructure should form a coherent entity, linking all trip origins and destinations; routes should be continuous and consistent in standard

Directness – Routes should be as direct as possible, based on desire lines, since detours and delays will deter use.

Attractiveness – Routes must be attractive to cyclists on subjective as well as objective criteria. Lighting, personal safety, aesthetics, noise and integration with the surrounding area are important.

Safety – Designs should minimize casualties and perceived danger for cyclists and other road users

Comfort – Cyclists need smooth, well-maintained surfaces, regular sweeping and gentle gradients. Routes must be convenient to use and avoid complicated manoeuvres and interruptions.

11.4 Where cyclists and cars share road space, measures should be introduced to reduce car speeds. Traffic calming measures should be designed with cyclists in mind and can be made more useful for cyclists through the provision of cycle by-pass lanes at facilities such as road humps and pinch points. At bus stops/shelters it is necessary to minimise conflict with waiting passengers and pedestrians.

11.5 On busier roads it maybe more appropriate to designate road space for the use of cyclists through the introduction of on-carriageway cycle lanes. A differential coloured surfacing should be used to emphasise the facility where appropriate, particularly crossing side roads and at junctions. Where parking is provided on the nearside and the cycle lane runs on the offside of this provision a dividing strip should be provided between the parking and the cycle lane.

11.6 In certain circumstances a segregated cycleway may be more appropriate. This could be to provide a more direct link for cyclists than using the existing road network or to allow cyclists the option of separation from busy road where measures to reduce the speed or volume of traffic are not practical.

11.7 The visually impaired and elderly are often apprehensive about combined facilities and wherever possible a segregated facility should be provided. However, a cycle track can be provided as a shared facility with pedestrians or as a segregated cycle/pedestrian facility. This segregation can be achieved through the use of a raised white line but where usage is expected to be intensive segregation should be by kerb (cycleway lower), by upstand or railings or central verge.

11.8 Cycle Audit

All changes and additions to the transport network involving cycle routes will be subject to a cycle audit which should be carried out in accordance with the IHT/D*f*T guidelines for cycle audit contained in the Publication 'Cycle Audit Review'. For major developments an audit will be required at feasibility, preliminary, detailed and post implementation stages. In certain circumstances such small developments an abridged audit may be acceptable at preliminary design stage. Cycle Audits must be carried out by suitably experienced professionals, Council Transport Planning staff or framework consultants.

11.9 Cycletrack and Cycleway Fundamentals

- A minimum 2.0m wide cycleway should be provided on at least one side or both sides where appropriate of the Local Distributor and Major Access Roads;
- Cycle lanes on the carriageway of a proposed adopted road, should be between 1.5m and 2.0m wide (1.2m absolute minimum);
- Shared Cycle/footpaths away from roads should be 3.0m wide, with a radius on links to a minimum of 6.0m (2.0m where cyclists are expected to give way;
- A desirable maximum gradient of 3% is recommended, but gradient up to 5% will be permitted for lengths up to 100 metres, and 6-7% for short lengths of up to 30 metres;
- Headroom of 2.4 m is required for up to 23 metres, and 2.7m for lengths over 23 metres;
- Signing should be provided at the start and finish of cycle tracks;
- Should usually be lit;

- Dropped kerbs should be provided at junctions of cycle tracks and carriageways with an entry angle of 90°and all dropped kerbs used by cyclists should be flush;
- Where positive drainage is required all gully gratings should be suitable for use in cycle areas;
- The forward visibility for cycles should be a minimum of 20 metres on gradient up to 2%, and 26 metres for gradients over 2%;
- Forward visibility along cycle tracks should be a minimum of 20m for gradients less than 2% and 26m for gradients over 2%;
- Particular consideration should be given to safe and convenient transition between on and off road provision;
- Where cycle paths intersect other routes the visibility splays in Table 15 will be required:

Table 15: Visibility Requirements for Cycle tracks/ways

	Pedestrian Route (metres)	**Cycleway (Metres)**
Pedestrian Route	2.0 x 2.0	2.0 x 2.0
Cycle Route	2.0 x 2.0	2.0 x 15.0 (min)
Vehicular	2.0 x 2.0*	2.0 x 30.0 (min)**

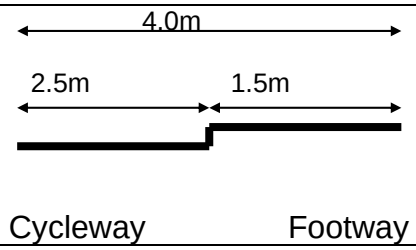
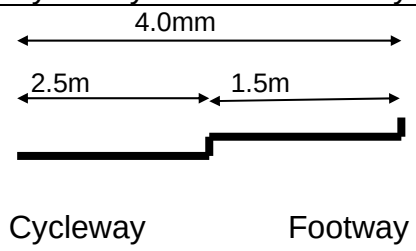
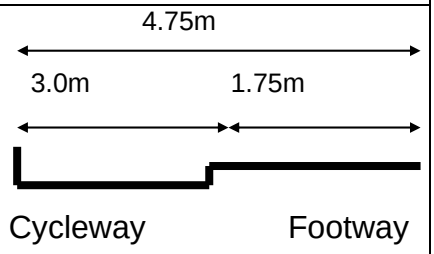
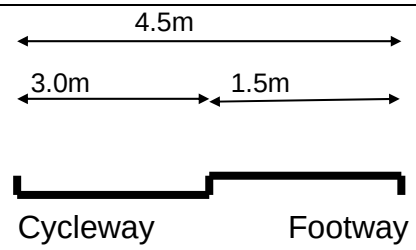
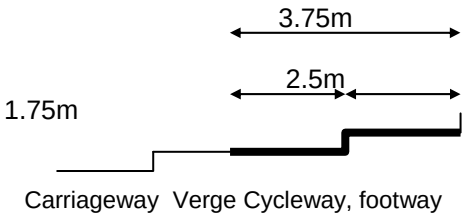
* *Barriers may be required, or a landscaped verge*

** *On Local Distributor and Major Access Roads, special crossing facilities may be required*.

11.10 Greenways should meet the same design criteria as Cyclepaths. In addition, consideration will be given to shared use provisions as follows;

- constructed to a minimum width of 3m, with 2m wide verges on either side; where flows are expected to be high, a wider construction up to 5m will be required;
- of tarmac construction to the minimum standard of vehicle crossings (see Table 27); and
- Suitably lit in accordance with current standards.

Table 16: Cycleway Minimum widths Fundamentals depending on Constraints

Constraint	Footway/Footpath	Cycleway	Total Width
None	1.5m	Optimum 3.0m Preferred 2.5m Minimum 2.0m	
Bounded on footway/footpath side	1.75m	Optimum 3.0m Preferred 2.5m Minimum 2.0m	
Bounded on cycleway side	1.75m	Optimum 3.5m Preferred 3.0m Minimum 2.5m (includes 0.5m for boundary	
Bounded on both sides	1.75m	Optimum 3.5m Preferred 3.0m Minimum 2.5m	
Bounded on footway side with 500m verge between cycleway and adjacent carriageway	1.75m	Optimum 3.0m Preferred 2.5m	

12.0 PUBLIC TRANSPORT

12.1 Public transport plays an essential transport role and forms an important element in the Council's Local Transport Plan 2006-2011 in promoting sustainable mode of transport that is accessible to all and the design of new developments should promote public transport as an attractive alternative to the car. The development of a higher density of dwellings will increase the viability of public transport. At the same time increasing densities where public transport is poor will increase car dependency. It is therefore particularly important that the initial movement appraisal of a development site should consider how the site would be linked to the public transport network.

12.2 Early discussions in the development process, with the Passenger Transport Unit of the Council, will help to identify the level of bus service provision appropriate for a development, and the facilities to support the services. These may take the form of bus service diversions, increases in service frequency, increases in the days or hours of operation, the provision of entirely new routes, or even the establishment of dedicated development bus services and other complimentary initiatives such as ticketing or fare offers.

12.3 A development of 100 or more houses may justify an extension to an existing service, 300 or more houses may justify a new route. The diversion of existing bus routes into new developments needs careful consideration to ensure that the needs of the existing passengers are taken into account. The use of Accessibility modelling assessments in Accession (or similar) will be required for larger developments to demonstrate the level of public transport accessibility.

12.4 The long-term support of bus services and the maintenance of any infrastructure are key issues. It is therefore important that as part of the design of a development infrastructure is protected. For example, ensuring that there is informal surveillance in place to reduce the risk of vandalism. Overall, maintenance and a long-term financial commitment to infrastructure and services should be in place before a development goes ahead. The Council may seek to secure a developer contribution to the provision of bus services through a Section 106 Agreement. (Please refer to Appendix 1 for further details).

12.5 The design of new residential and commercial developments should aim to provide access to Public Transport within walking distance. A formal bus stop should be provided on residential access and distributor roads so that the maximum walking distance from any new development should be 400m. Walking routes to public transport stops/services should be short, attractive, direct and safe. Ideally they should be well lit and be overlooked and they need to be an integral part of a layout linked to public transport stops rather than an afterthought. An un-lit or poorly lit route may give rise to a perceived or real security risk.

12.6 For public transport to be an attractive option to residents within a new development, services should ideally be in place soon after the first occupants move in.

This will ensure that public transport is available as an option for travel when journey patterns are first established, rather than later when it is often much more difficult to wean motorists away from their car. However, a balance has to be struck between providing bus services when the first occupant moves in, set against the realisation that the economic viability of services will increase as occupancy rises.

12.7 Where appropriate, developments should provide priority movement for buses. This can be through the provision of bus only movements, priority at traffic signals, bus only links etc. Roads where bus services are planned would require a minimum carriageway width of 6.0m.

12.8 The physical design of the highway within development must facilitate the unhindered movement of buses along bus routes. This relates not only to the geometry of the highway but also the location of bus stops, the control of parking and so forth. In particular, any traffic management and speed restraint measures should be given very careful consideration, especially those utilising changes in vertical alignment as they affect bus services.

12.9 Rail also has a role to play in widening travel choices in Warrington because the borough has an excellent rail network that serves all of the significant towns. Providing links between developments and the rail network by all modes is therefore important. It is recognised that larger developments may be better placed to facilitate infrastructure improvements due to the higher capital costs involved. Many developments can, however, facilitate various initiatives to enhance access to the rail network. Examples include: CCTV; improved pedestrian links and signing; improved infrastructure; provision of bus information at rail stations; better lighting and security enhancements; secure cycle storage; encouragement of the integration of bus and rail services; accessibility improvements and so on.

12.10 There is therefore a clear need to consider the requirements for efficient and effective public transport provision both in terms of services and infrastructure. This should be undertaken at the initial planning stage of any development proposal. When carried through properly, this should maximise the modal share of public transport.

12.11 Bus Stop Location and Design

A bus stop does not merely consist of a pole with a bus stop flag. The stops must be easily accessible to passengers and allow passengers to board and alight, safely and conveniently. A bus stop should provide shelter and protection from the elements, have seating within a paved area, afford easy access to the increasing number of low floor buses and be a source of information for the journey options available. The shelters themselves can be designed sympathetically to the surrounding environment and may also reflect the individual or distinctive characteristics of an area. Shelters may require planning permission – especially if they are to incorporate advertising.

12.12 To install a new bus stop or relocate an existing bus stop on an existing public highway, developers need to get agreement from the Council, the Police, the Local Parish Council if appropriate and bus operators.

12.13 The spacing of bus stops must be balanced to take into account maximum walking distances on the one hand and the need to avoid unnecessary delays to buses on the other. On average bus stops should be sited at between 0.3km and 0.5km spacing. Although stops should be sited in a highly visible location, care must be taken so as to avoid nuisance and loss of privacy of nearby dwellings.

12.14 Bus routes with common destinations should share the same stop and request stops to avoid the need for buses to pull up at every stop. Where services operate in both directions, stops should be provided in pairs and staggered tail to tail.

12.15 The area of pavement adjacent to bus stops should be kept clear of street furniture and other obstructions, apart from passenger shelters. The stop itself should not obstruct the boarding and alighting of passengers or any passing pedestrians. Bus stop flags shall be fixed as low as possible while remaining visible above road traffic, pedestrians and pavement furniture.

12.16 Most bus routes in urban areas will have conventional kerbside stops and lay-bys should only be provided where circumstances dictate their use. Lay-bys can offer protection of road space at bus stops, but this is an inefficient use of space and can create difficulties for buses wishing to rejoin the traffic stream. Where lay-bys are provided they should be designed to discourage parking or loading by other vehicles with the appropriate legal restrictions, coloured surfacing and road markings.

12.17 Buses should be able to approach and leave stops without delay or obstruction and therefore be carefully placed away from access points and locations where on-street parking occurs. At bus stops the height of the footway should be raised by the use of high kerbs and the most appropriate kerb height is 180mm. This allows buses to stop within a few millimetres of the kerb and provides a convenient height for passengers and most importantly for pushchair and wheelchair users boarding and alighting from buses.

12.18 Where kerbside parking is a problem near bus stops a bus boarder can be used. They are created by extending the footway about two metres into the carriageway in the location of the bus stop. They require less length than conventional bus stops and deter parking at the stop itself. Bus shelters should be positioned on the boarder but at least 0.5m from the kerb, the upstream end should be made clearly visible at night with illuminated or reflective bollards. Should there be no parking adjacent to the upstream end then hatch marking should be provided.

12.19 All bus stops should have a timetable with information on the current services using the stop as well as fare information to destinations. The Council provides real time information for passengers within many shelters and the provision of new shelters should be able to incorporate this technology.

13.0 PARKING AND SERVICING

13.1 The requirement for parking spaces is a significant determinant of the amount of land required for new housing and can influence whether or not developments are successful. Maximum standards have been introduced to encourage the use of other modes of transport and reduce car use. Whilst the parking standards set out a broad framework it is recognised that there will be circumstances where the Council will need to adopt variations to the standards to more accurately reflect local circumstances. Reduced standards will apply in town centres or urban corridors where public transport is being encouraged. Higher parking levels will be assessed on a site by site basis, and for any shortfall in parking provision the Council will need to be satisfied that this will not cause inconvenience and safety hazards. The Council's parking standards are contained within the adopted document set out in Appendix 3.

13.2 The location of spaces and the suitability of parking arrangements should be considered in the context of safety, convenience and security. Special consideration on the need to provide adequate facilities for disabled people and secure parking for cyclists will also be required.

13.3 Parking arrangements need to cater for residents, visitors and service vehicles, and on a long and short-term basis. If adequate provision is not made, it is likely to result in indiscriminate parking on the highway thereby causing obstruction, danger to other road users, particularly children, and damage to footways, landscaping and boundary treatment.

13.4 Residential Parking

It is accepted that the majority of residents still wish to own a car and use it for those journeys and visits for which other modes are not convenient or available. A balance needs to be struck between providing adequate parking provision for car owners and reducing parking to create better environments and contributing towards a sustainable transport policy. Parking spaces are either assigned or unassigned.

13.5 Assigned Parking

Assigned spaces are solely for the use of occupiers and their visitors. Each dwelling should provide for its own parking requirements and visitor provision within its curtilage. Where allocated spaces are unavailable within private curtilages, parking should be provided within 20m of the entrance to the property. Adequate space must be provided within the curtilage to accommodate the parking requirement without protruding or overhanging the footway or carriageway. Where driveways access onto shared surface roads, vehicles can be parked on the service strip but not extending into the shared surface. Ideally, each dwelling should provide its own turning space within the curtilage to allow vehicles to exit in forward gear. In circumstances where direct frontage access to distributor roads is permitted then off street turning space must be provided. Two spaces in tandem is acceptable however tandem parking will not count towards the required parking provision on long single width drives.

13.6 Courtyards and Squares

The parking provided within squares and courtyards should not dominate the surroundings and generally no more than ten spaces should be provided. The design

should ensure that they are overlooked by adjoining houses. In general private parking areas and garage courts are not adoptable.

13.7 Unassigned Parking Spaces

In circumstances where it may not be possible to provide parking within the curtilage of the dwelling, then unassigned spaces for general use on and off the carriageway. These may take the form of bays or lay-bys alongside the carriageway, which would be adopted as part of the site infrastructure. On street parking can be counted towards the parking provision of dwellings provided that the carriageway is of sufficient width and is designed specifically to accommodate parking and prevent obstruction. This can be achieved by localised widening of the kerb line in addition to the minimum carriageway width. Unassigned parking spaces should be close enough to dwellings to be used in preference to parking on footways, verges and carriageways. In deciding how much on-street parking is appropriate, the Council will consider the following factors:

- The overall level of car ownership in the immediate area;
- The amount of allocated parking provided;
- The speed and volume of traffic using the street; and
- The width and geometry of the street and its junctions.

13.8 Parking Space Sizes And Layout

Table17 gives the dimensions of the space required to park some typical vehicles, these are rectangular requirements the most common layout and often regarded as the most economical in terms of land use. Different layouts will produce slightly different space requirements such as parallel, herringbone and in-line parking and the dimensions for these types of parking are given in table 18 and figures 21 to 23.

Table 17: Parking Space Dimensions for some Typical Vehicles

Vehicle Type	Length (metres)	Width (metres)
Powered Two-Wheelers	2.5m	1.5
Car	4.8	2.4
Disabled Bay	4.8	3.6
Light Van	5.5	2.3
Light Goods Vehicle	7.5	3.5
Minibus	8.0	3.5
Coach (60 seater)	14.0	3.5
Rigid heavy Goods Vehicle	14.0	3.5
Articulated Heavy Goods Vehicle	18.5	3.5

13.9 Disabled parking bays should preferably be 3.6m wide or at least 3m wide where two adjacent bays share an unloading area as well as a 1.2m strip behind (figure 20) A similar provision should be made where spaces are allocated as ‘parent and child’ bays. Spaces for disabled people are generally located as close as possible to building entrances.

13.10 Where parking provision is at right angles to and contiguous with the carriageway the parking bays should be 4.8m long x 2.4m wide, and there should be 6m in front of the bays to allow for manoeuvrability and an additional 800mm strip at the back to allow for vehicle overhang. In general these types of bays are not recommended but if used, it should be limited to a maximum of 7 spaces/bank and should be clear of

the highway so as not to obstruct pedestrian movement. (Figure 19). For parallel parking which is contiguous with the carriageway the bays should be 6m long by 2.4m wide.

13.11 Dimensions for grouped parking and communal parking bays in different formations are given in Table 18 and Figures 18 to 23. The parking formation for communal parking areas should normally be 90^o which is the most common layout and often regarded as the most economical in terms of land use. Parking bays with 60^o, 45^o and 30^o formations are best suited to one way traffic movement. This enables a reduction in the width of aisles required to gain access to the parking bays. Manoeuvring into and out of the parking bays should be made easier, however it should not be used for cul-de-sac layouts. Where a one-way system for the car park is used, a clearly marked route for drivers should be provided using appropriate road markings and road signs.

3.12 Rectangular and angled parking can also be combined (Figure 22). Such a layout may be required to meet particular constraints of the development site. For example, a courtyard area surrounded on three sides by buildings may lend itself to rectangular parking adjacent to the buildings whilst allowing the flexibility to have angled parking in the central area. In combining different configurations of parking bays the developer must be careful to avoid producing a confusing layout to drivers and potential conflicts with other users of the parking area.

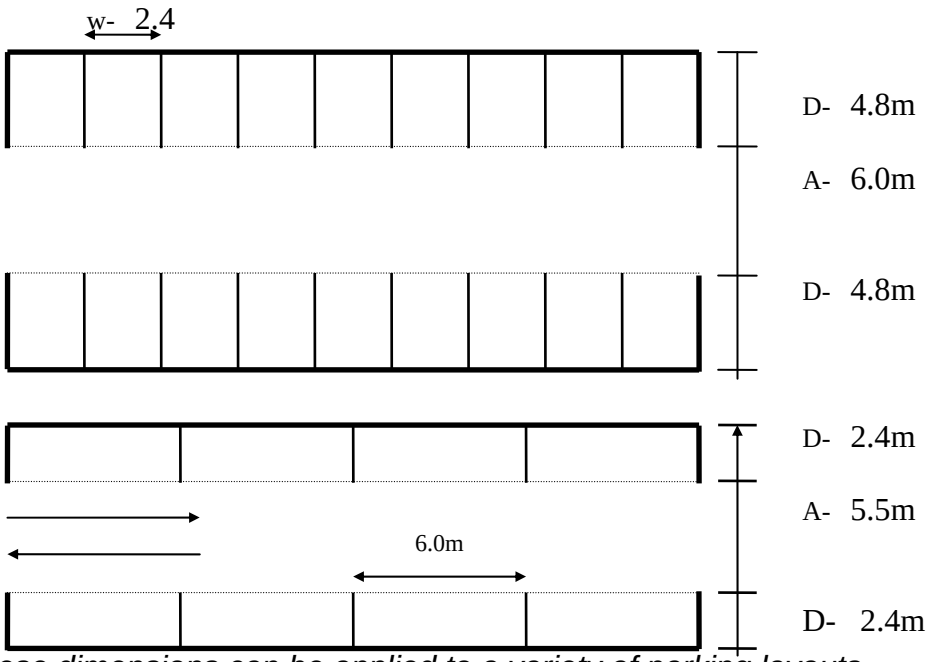
Table 18: Parking and Forecourt Depths for different formations

Formation	**Depth (D)**	**Aisle (A)**
90^o	4.8m	6.0m
60^o	5.4m	4.2m
45^o	5.1m	3.6m
30^o	4.5m	3.6m

13.13 For a parallel formation the parking bay depth (D) may be reduced from 2.4m to 2m where the bay is bounded by a footway or a verge with a minimum width of 400mm (800mm if the verge is to be used for pedestrian access to cars). The forecourt depth may be reduced to 3.6m for one-way traffic movement.

13.14 The forecourt depth (A) of 7.3m (Figure 19) between two rows of grouped garages may be reduced to 6.5m when 3m wide garages (and corresponding wider doors) are used. Additional length for turning at the end (C) should preferably be 3m or at least 1m.

Figure 18: Parking layouts



These dimensions can be applied to a variety of parking layouts

Figure 19: Parking layouts

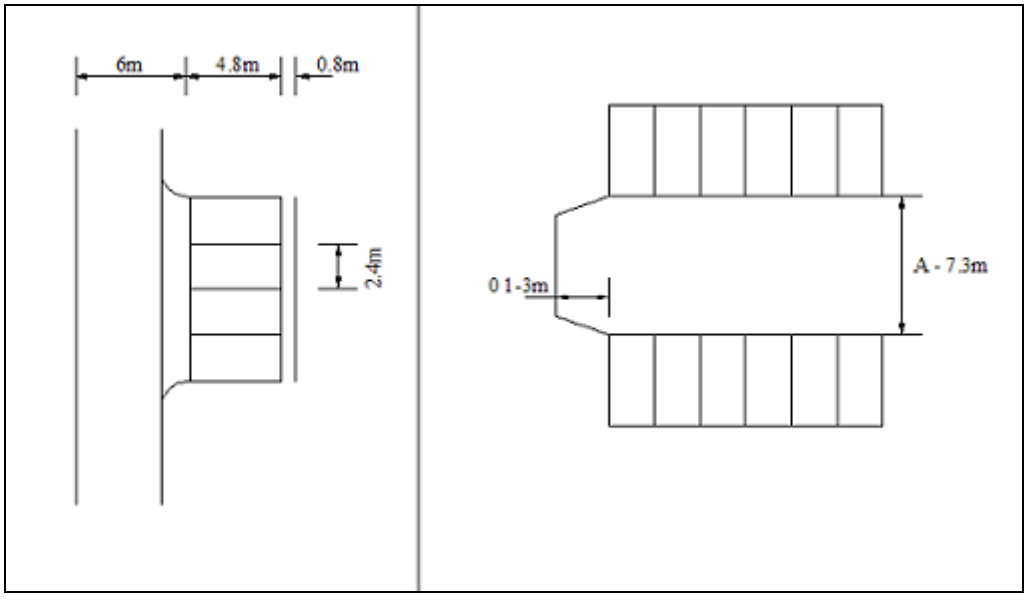


Figure 20: Disabled Parking Bay Layouts

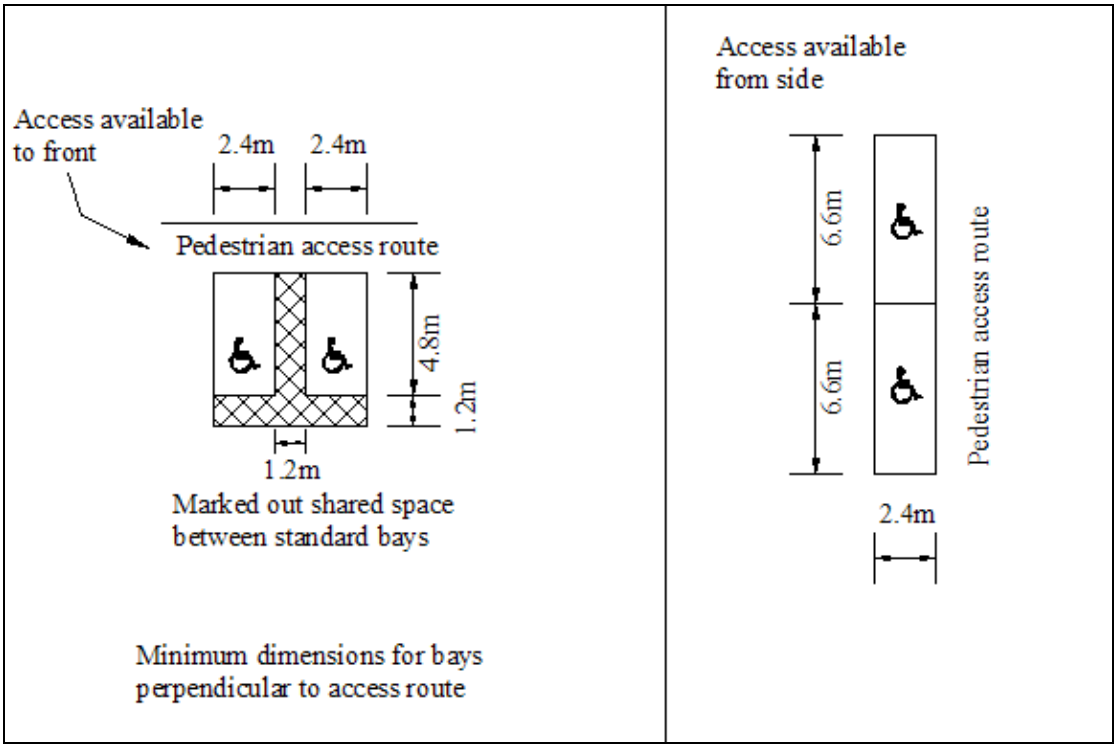


Figure 21: 45° Parking Layout

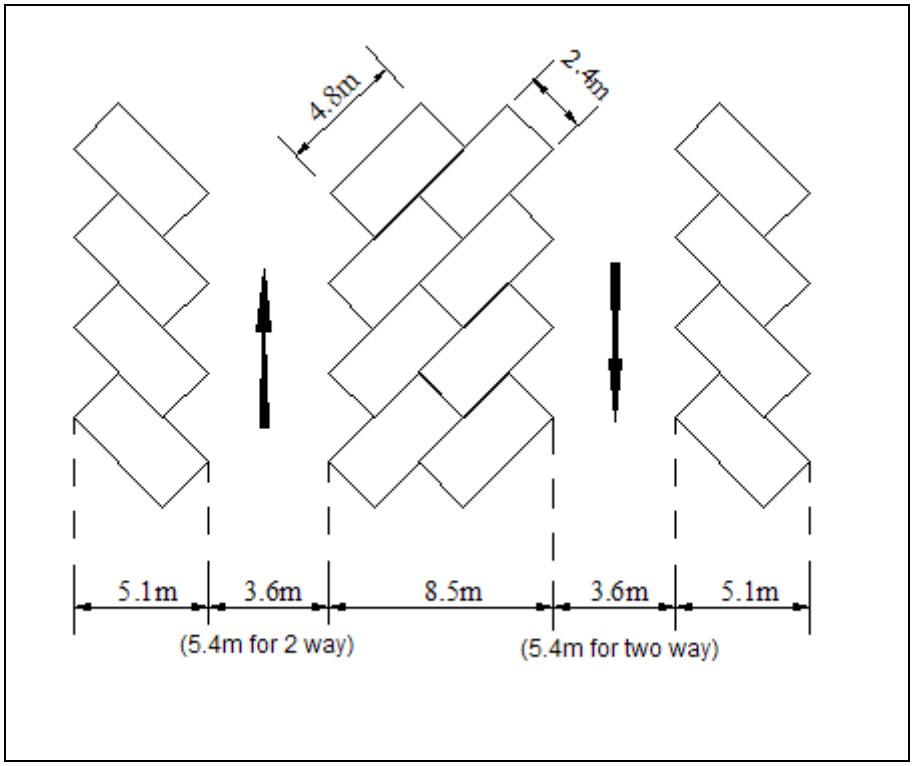


Figure 22: Combined 90° & 45° Parking Layout

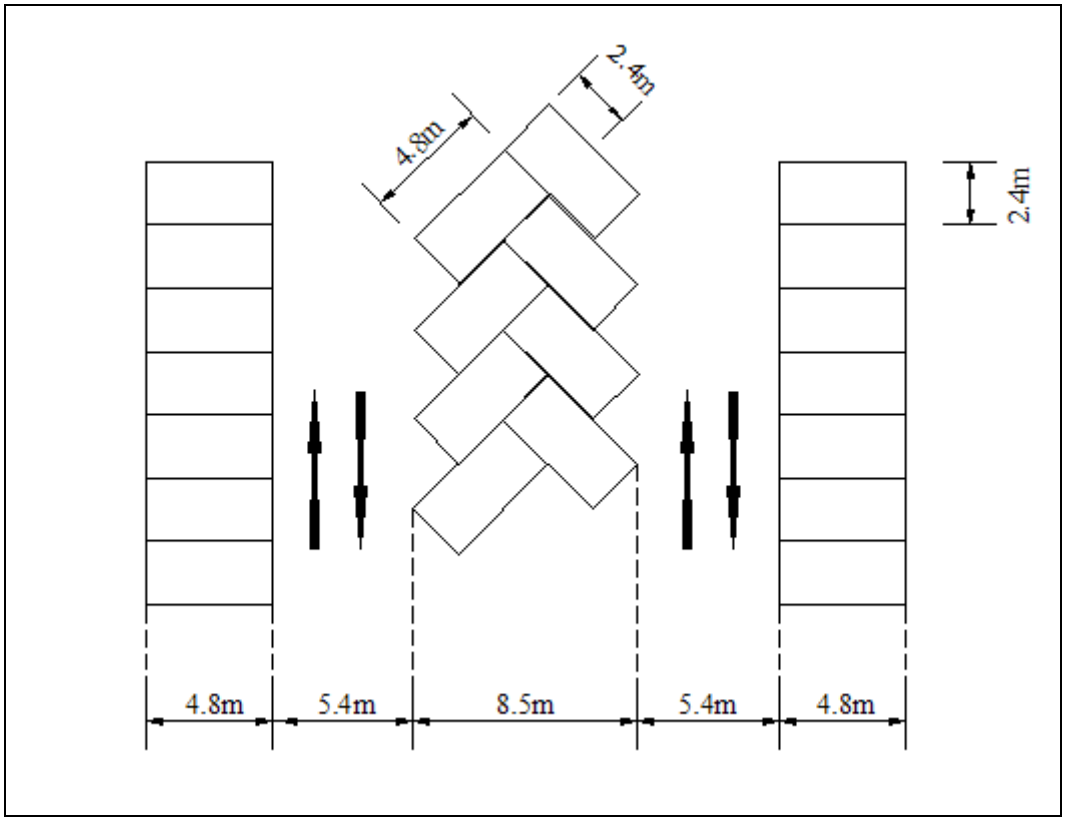
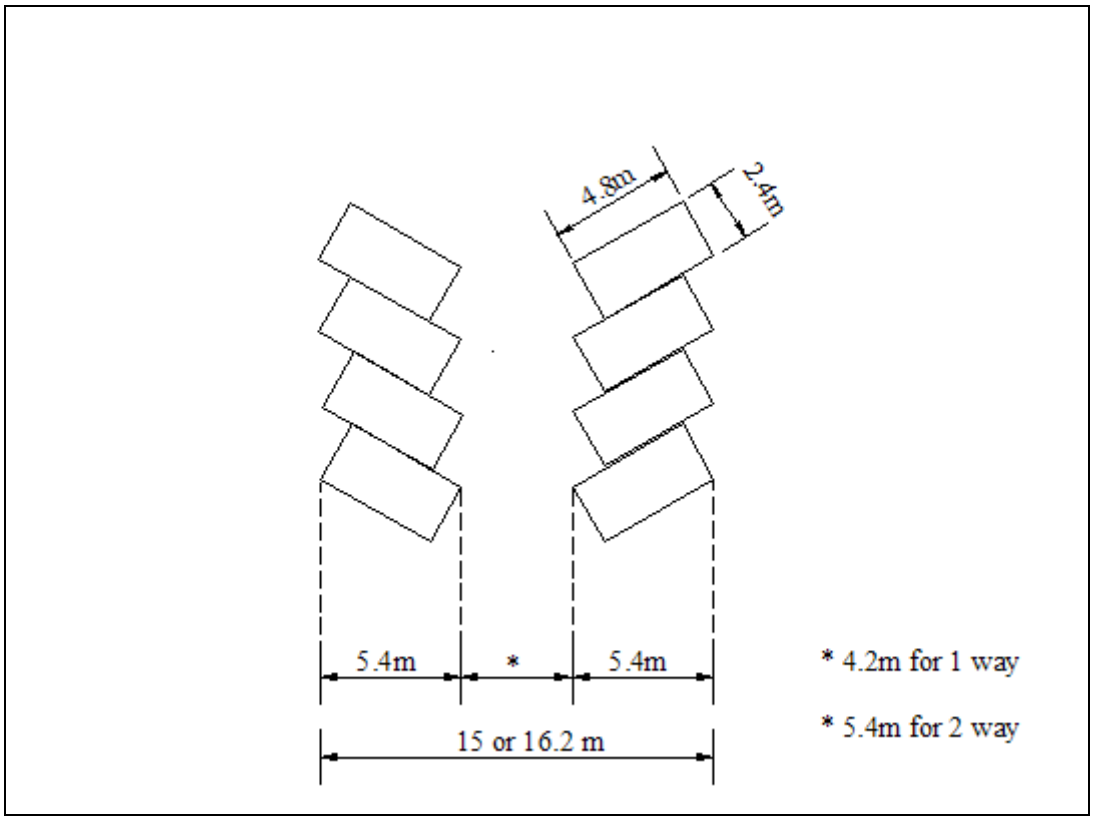


Figure 23: 60° Parking Layout

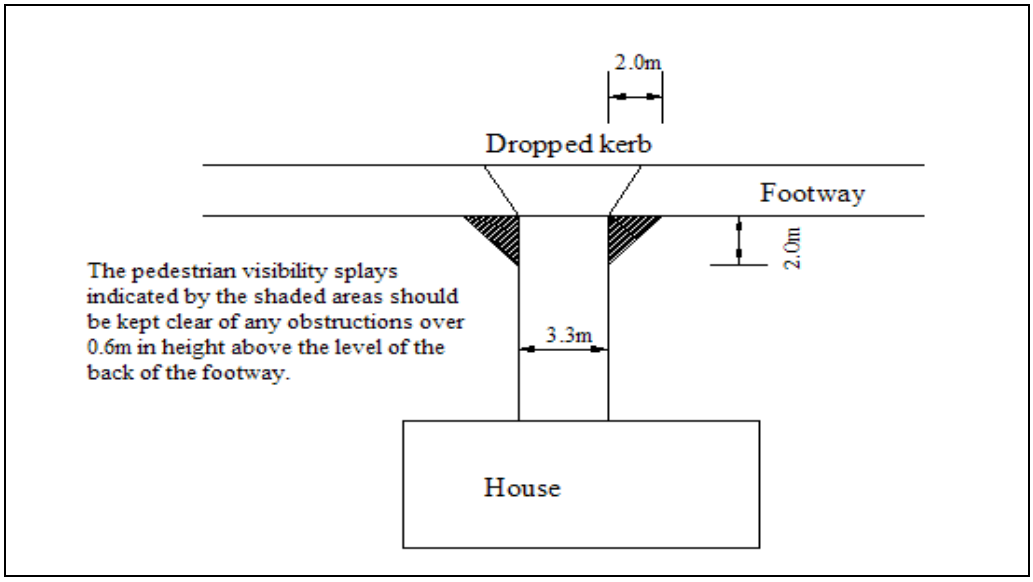


13.15 Driveways serving garages designed to accommodate a car parked in front of the garage and enable the garage door to be opened without the car having to project beyond the curtilage onto a footway or shared surface will require a length of at least 6m to be provided. The driveway should be no less than 3.3m in width to allow access to both sides of the parked car and on one side allow for a pathway to the house. If the driveway does not have to provide a pathway to the house a 2.75m width is acceptable. For properties designed to be fully accessible to disabled people, the drive width must be 3.6m. Typical garage set back distance from the highway boundary is 6m. Garages provided with new housing developments, whether detached, integral or part integral should have a clear unobstructed internal dimensions of 5.0m x 3.0m (preferably 5.0m x 3.5m) with minimum door width of 2.5m for a standard single garage and for double garages internal dimensions of 5.0m x 5.5m, (preferably 5.0m x 6.0m) with minimum door width of 5.0m. Garages will not normally be counted as a parking space for the purpose of calculating parking provision, unless the garage meets the minimum dimensions.

13.16 Any surface water run-off from the curtilage of private property should not discharge into the highway system of drainage as it can cause a safety hazard to road users particularly in the winter if it freezes. The developer must make separate connections to the public surface water system. Driveways should not be surfaced with gravel or other loose material, in order to reduce the possibility of bits of loose stone being deposited in the highway by repeated movement of traffic over the drives. Small stones are likely to exacerbate drainage problems and can be hazardous for pedestrians on footways as they can cause pedestrians to slip. The stones can also be propelled at relatively high speed (even by slow-moving traffic passing over them) and be a source of danger for road users.

13.17 In the interests of pedestrian safety, 2.0m x 2.0m visibility splays should be provided where a private drive joins the back of footway, as shown in Figure 24 and these should be kept clear of obstructions over 600mm in height.

Figure 24: Private Drive



13.18 Vertical clearances should suit the vehicles to be accommodated in the parking area. A clearance of 2.1m should be provided for areas intended only for cars. Other minimum clearances that may be relevant to the design of parking provision and access routes are detailed in table 19 below.

Table 19: Minimum Vertical Clearance for various vehicle types

Vehicle Type	Clearance (m)
Small service vehicle	2.5
Touring caravan	2.8
Motor caravan	3.3
Fire appliance	4.0
Most large Vehicles	4.1
The largest service vehicle	4.5

Greater clearances will be required at a change of slope.

13.19 Minimum headroom of 5.3m is recommended over public highways for new constructions, but maintained headroom should not be less than 5.03m and for footbridges over public highway headroom of 5.7m should be provided

13.20 Parking for the Mobility Impaired

Parking bays for the mobility impaired should be conveniently located and clearly signed. Their location should take into consideration the distances that potential users may be capable of walking to reach the facilities they desire. The generally accepted guidelines of walking distances for different degrees of mobility are: -

- Visually impaired and wheelchair users 150m
- Ambulatory impairment without a walking aid 100m
- Ambulatory impairment with a walking aid 50m

13.21 The bays should be designed so that drivers and passengers, either of whom may be impaired, can get in and out of the vehicle easily and safely. They need to be designed to encompass a wide range of mobility impairments. They should also ensure easy access to and from the side and rear of the vehicle and protect the mobility impaired from moving traffic.

13.22 Typical layouts of parking bays for the mobility impaired are shown in Figure 20. Off-street parking bays that are parallel to the access aisle making access available from the side should be at least 6.6m long and 2.4m wide. The additional length will allow access to the rear of the vehicle where wheelchairs are often stored. Access from the side should be unencumbered by street furniture. Off-street parking bays that are perpendicular to the access aisle should be at least 4.8m long and 2.4m wide with an additional width of at least 1.2m along one side and the back. This should allow sufficient width to allow wheelchair access between vehicles and allow vehicle doors to be fully opened. Where bays are adjacent to each other the 1.2m access area can be utilised to serve parking bays on either side.

13.23 Parking bays for the mobility impaired should be located as nears as possible to a suitably designed entrance/exit to the development. Access to and from the parking bays should also be free from steps, obstructions and steep slopes. Where changes in level between the car park and development have to be overcome a ramp should

be provided. This should be short, preferably with a gradient of 5% (1 in 20) or less but not exceeding 8% (1 in 12). Where steps are provided they should have edges with a strong colour contrast. Both ramps and steps should be provided with handrails on both sides and should be well lit.

13.24 Parking bays for the mobility impaired should be clearly signed both within and at the entrance to the car park. Using standard signs as set out in "Traffic Signs Regulations and General Directions" will provide a degree of consistency and are more likely to be widely understood by drivers.

13.25 Cycle Parking

The location of cycle parking provides a key role in persuading cyclists to use it. Cycle parking that is not convenient to the cyclist's ultimate destination or where security is perceived to be poor will often stand empty and be subject to vandalism. Depending on the purpose of the trip the following locational requirements should be considered: -

- Obvious and well signed;
- Near to the entrance of the premises being visited;
- Visible, attractive, good weather protection and well maintained;
- An appropriate level of surveillance and security and well lit;
- Off street location with good and safe access, separated from parking vehicles; and
- Situated close to well used thoroughfares.

13.26 Where a development provides more than one access to a building, or group of buildings, it may be preferable to have small groups of cycle parking facilities spread around the development rather than a single central location. The emphasis should be on providing the most convenient locations for the users.

13.27 The location of cycle parking facilities should not present a hazard to pedestrians, especially the mobility impaired. There are several measures that can be taken to minimise the conflict between pedestrians and cyclists: -

- Tactile surfaces around cycle parking;
- Raised plinths with a feathered edge in contrasting colours to the existing footway;
- Cycle parking placed on the median zone between the carriageway and the footway;
- Hoops to deflect pedestrian flow around cycle stands;
- Providing a tapping rail (with a maximum height above ground of 150mm) so that an empty rack cannot be walked into;
- Banks of three stands with the middle one carrying a sign at eye level; and
- Incorporating advertising and lighting with stands.

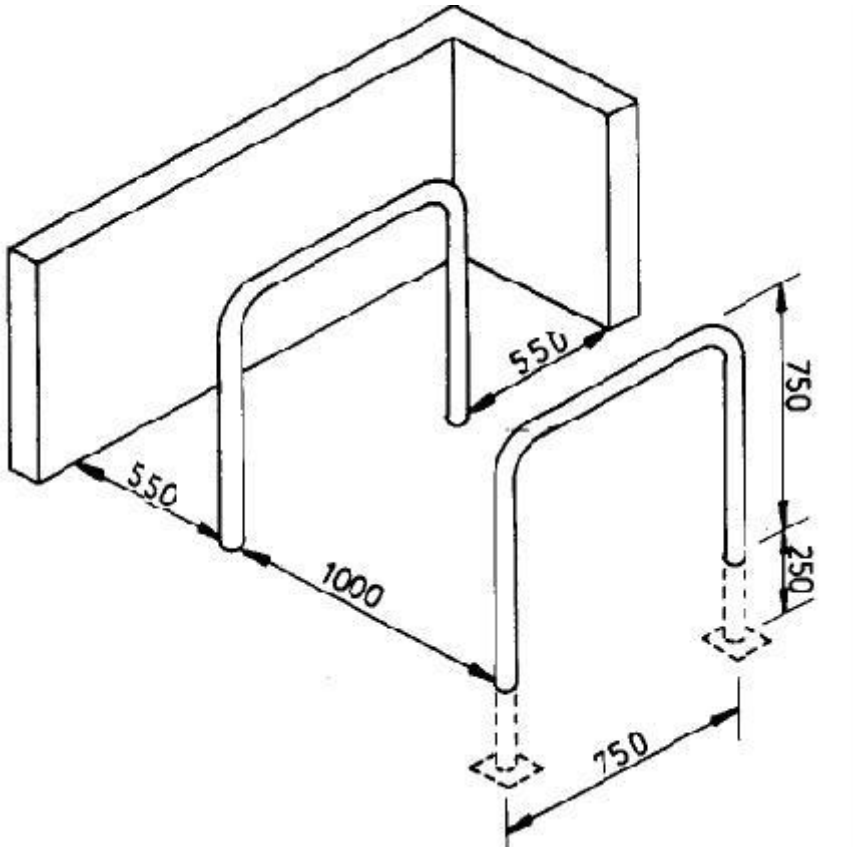
13.28 The provision of cycle parking facilities should fully complement cycle access opportunities to the development. This should include appropriate links to any local cycle network that either already exists or is proposed in an adopted local transport strategy.

13.29 Variety of devices and systems are currently available to meet the needs of cyclists. These vary in cost and have a variety of advantages and disadvantages. In general, however, the equipment used to provide secure cycle parking should have the following requirements: -

- Easy to use and vandal proof;
- Enable bicycles to be supported without being damaged;
- Have a good finish, clean and with no sharp edges;
- Allow use of cyclist's own locks where appropriate;
- Have the ability to secure the frame and both wheels; and
- Allow storage of helmet and other accessories where appropriate.

13.30 Sheffield Stands have the virtue of simplicity and value for money and are ideal for short- term parking. They are not always the best option for long term and/or high-density parking. Stands with heights over 800mm should be avoided, as they do not support smaller bicycles. A lower crossbar or panel can be provided to support smaller children's bicycles. Stands should be 900 – 1200mm long to support the bicycle at or near axle centres. Suitable space should be provided between stands to allow cyclists to get alongside the bicycle to lock it. When considering the location of cycle parking using this type of stand it is important to remember how far the bicycle will extend beyond the stand itself. The angling of stands can reduce their width as an obstacle. A typical layout for a Sheffield stand is shown in figure 25.

Figure 25: Typical Sheffield Stand Layout



13.31 Wall Loops are a simple, cheap and convenient alternative to stands, which can be used where there is limited space and a substantial length of wall. A relatively low level of maintenance is generally required. They should be set 700 – 750mm (650mm to allow for children's bicycles) from the ground, project no more than 50mm from the wall and set at a minimum pitch to park a bicycle every 1800mm.

13.32 Lockable Cycle Stands secure both the frame and wheels of a bike and generally have a lower parking density than Sheffield Stands. They offer greater levels of security and can be quicker to use.

13.33 Lockers combine speed of parking with weather protection and high levels of security. They require the greatest level of management commitment and opportunities for abuse can be greater. The liability for securing contents must be clearly defined. The most widely preferred system is a medium/long term hire regime, which requires an explicit agreement with users. A clearance under the units will help to make the locker unattractive for warehousing or sleeping, assist in cleaning operations and provide ventilation. (For further details, refer to the Council's Planning Advice Note on Cycle Parking).

13.34 Motorcycle Parking

Motorcycles are a good way to travel around and for many journeys they are quicker than the car, they cause less congestion, and can be less polluting than a car. Motorcycle parking takes up less space than car parking, and therefore is cheaper to provide both in terms of land and construction costs. It therefore makes commercial and environmental sense for businesses to provide motorcycle parking for their staff and customers. The term motorcycle is used here to include mopeds and scooters.

13.35 Motorcyclists are prone to the same personal security concerns as other transport users and if people are to be encouraged to use motorcycles the design of the parking facilities needs careful thought. Fear of theft is one of the biggest deterrents to motorcyclists. The availability of secure parking spaces is particularly important in areas such as public transport interchanges, workplaces and shopping and entertainment centres where medium to long-term parking may be anticipated. Motorcycle parking should therefore be located:-

- in areas with good lighting in the hours of darkness.
- where it has good all round visibility, ideally from office windows, local shops and passers-by.
- as close as possible to the main entrance(s) of buildings, but not so that it hinders or endangers pedestrians, especially the disabled. On larger sites this may mean that it is better to locate motorcycle parking in a number of areas.

13.36 It is often not possible to pass a lock through a motorcycle frame, therefore a well-designed motorcycle parking bay should include the two basic types of anchor points to which motorcycles can be secured to reduce the risk of theft. These are a ground anchor and raised anchor. The ground level anchor point remains below the surface often concealed by a hinged steel plate set flush with the surface. The plate is raised by the user allowing a loop to be lifted up and the users own lock passed through. Consideration should be given to the potential hazard that could be caused as a result of the anchor being left upstanding or jammed in the raised position. Anchor points of this type will require regular maintenance. Alternatively a horizontal bar can be provided at a height of approximately 400-600mm above ground. This type can represent a trip hazard or impediment if installed along the edge of footways. Preferably, they should be integral with pedestrian railings or protected by other means to safeguard pedestrians, particularly people with impaired vision. Where high density parking is closely associated with pedestrian guard railings, users may need to put their hand through the vertical railings in order to reach the horizontal bar to use their locking cables. In such situations the width between the vertical bars of the railings should be approximately 160mm and adequate room must also be provided to manoeuvre the motorbike into the space. Good lighting and clear signing are essential.

13.37 When motorcycles are likely to be parked for over 1 hour, then some form of weather protection is encouraged, this should include a roof and protection on 3 sides, and the side panels must be designed to deter theft.

13.38 For larger developments the provision of shower/changing/drying facilities and lockers (to enable the storage of clothing and equipment) are important to encouraging motorcycling.

13.39 The Council has not yet adopted specific motorcycle parking standards, but it is recommended that a minimum of 2 spaces be provided, or 1% of the maximum car parking standard, whichever is the larger.

Figure 26: Example of Ground Level/Raised Locking System

13.40 Servicing Facilities and Waste Collection

Turning facilities are required at the end of cul-de-sacs and shared private drives or wherever vehicles would have to reverse over 25m. This avoids the need for larger vehicles to reverse over long distances. The size of the turning space will depend on the vehicle normally expected to use it. Turning head layouts do not need to conform to standard patterns but should always meet the criteria of providing sufficient manoeuvring space and being safe to use. The layouts shown in Figure 28 indicate the minimum radii and dimensions required. Amorphous turning areas can allow cars to be parked on the adoptable surface without obstructing private driveways or encroaching on the turning area. The increased perimeter length may also allow additional drives to be served but there can be a tendency for space, which could be in private ownership, to be wasted and for a hard landscape to dominate. Unwanted parking in turning areas can be discouraged if the area provides direct access to private drives of adjacent dwellings.

13.41 The storage and collection of waste is an integral part of street design and government policy on local and regional waste management is set out in Planning Policy Statement 10: Planning for Sustainable Waste Management (PPS 10). The Council has produced a Planning Advice Note to assist developers on the provision of appropriate waste management facilities within developments. It provides advice on various policy issues relating to waste management in terms of local, national and European legislation and guidance. The Advice Note is also intended to act as a practical guide in the provision of minimum standards to planners, architects, developers and property mangers to assist in planning modern systems for the storage, recycling and collection of refuse in domestic and commercial developments. This will ensure that facilities conform to the Council's waste management strategies and collection arrangements.

13.42 One of the major causes of accidents in the waste/recycling industry is reversing of refuse vehicles. The recommended maximum reversing distance for refuse vehicles is 12m. Longer distances may be considered, but any reversing routes should be straight and free from obstacles or visual obstructions.

13.43 The design of new development layouts should provide facilities to store bins within the curtilage and not require waste bins to be left on the footway as they reduce its effective width. Bins left within the footway pose a safety hazard for blind or partially sighted people and may prevent wheelchair users from getting past.

13.44 Where waste cannot be collected directly from individual properties, developers may have to determine suitable collection points near to the highway. Roads with inadequate width or turning facilities would be inaccessible to refuse vehicles and collection points on a nearby highway or other locations would have to be arranged.

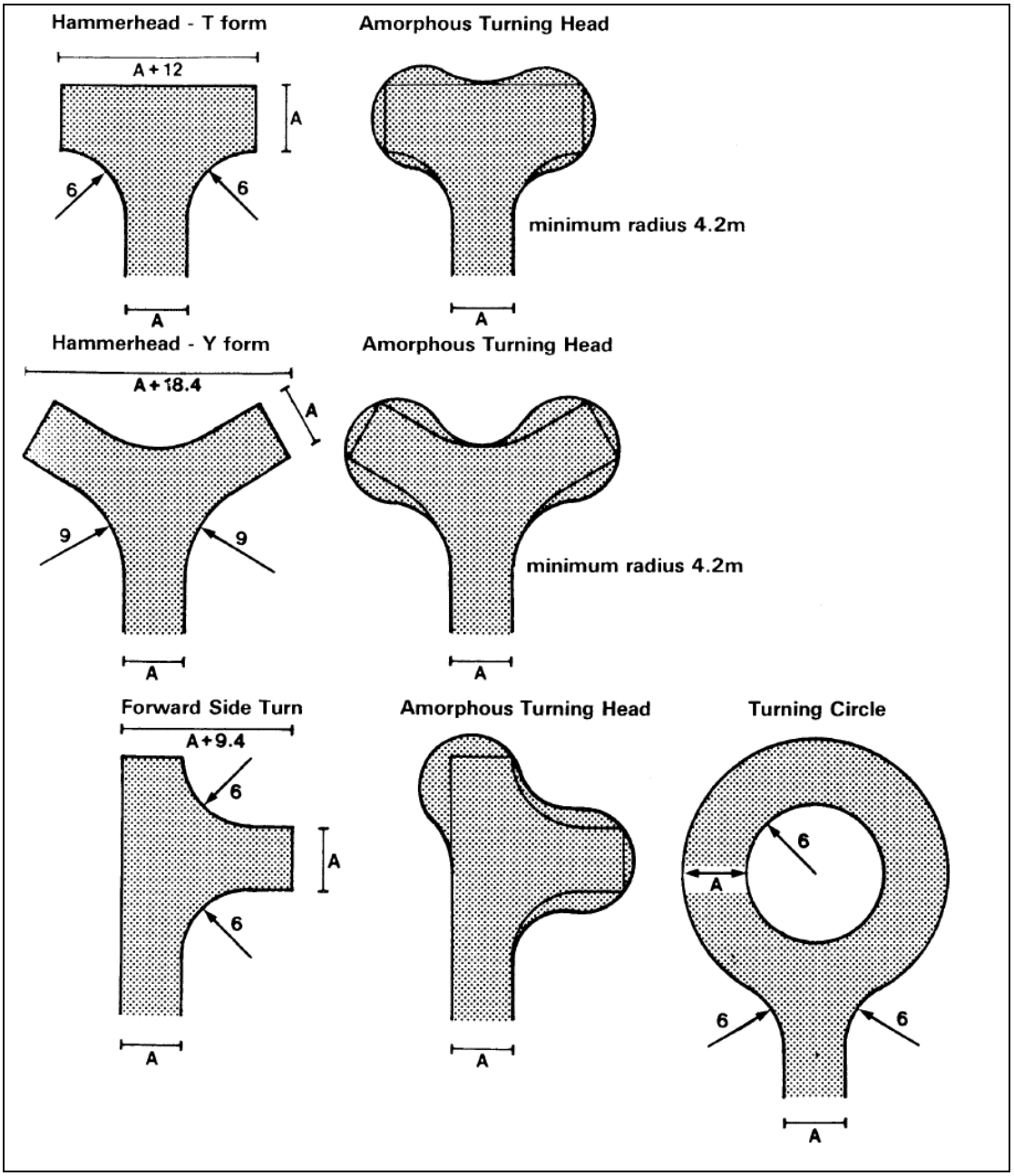
13.45 The key points that should be adhered to are:

- Residents should not carry waste more than 30m to any storage point
- Waste collection vehicles should be able to get to within 25m of the storage point.
- Where large containers are involved, there should be no vertical steps to negotiate.

For further details, refer to the Council's Planning Advice Note on the Provision of Waste Storage, Recycling and Collection Facilities.

Figure 27: Typical Cul-de-sac Turning Head

Figure 28: Typical Refuse Turning Heads



A = Minimum width for road type either 5.5m or 4.8m

14.0 INDUSTRIAL AND COMMERCIAL ROADS

14.1 In the same way as residential roads form part of the environment in which people live, industrial roads form part of the environment in which people work. Industrial roads should therefore be designed with the following key objectives in mind:

- optimising road safety;
- achieving a pleasant environment;
- reducing reliance on the private car;
- assisting the operational needs of the development, and
- minimising maintenance costs.

These objectives can be met by:

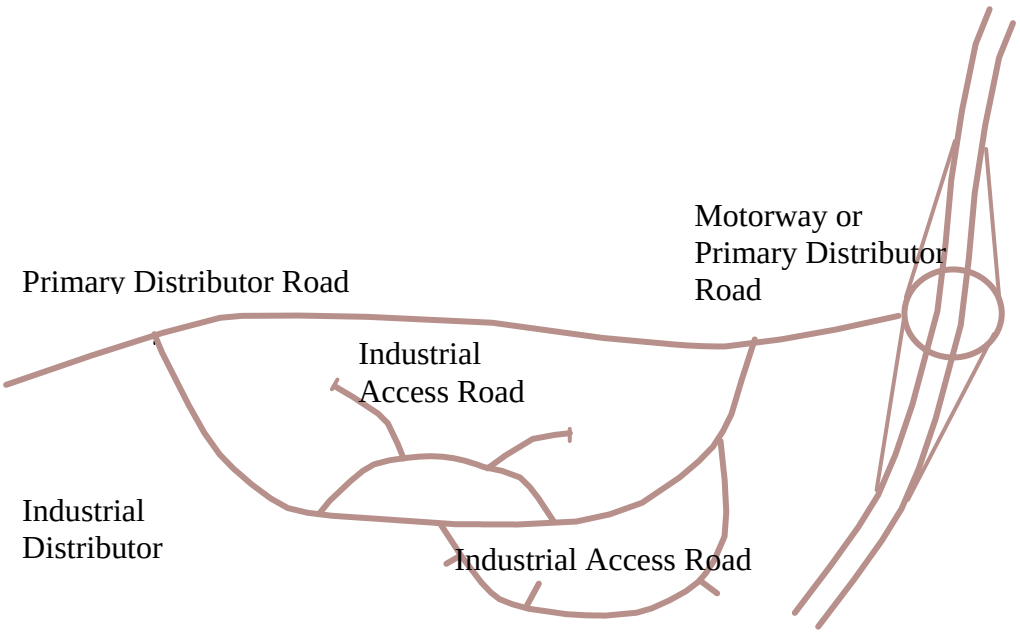
- minimising conflict between vehicles, pedestrians and cyclists, e.g. providing safe and convenient pedestrian and cycle routes;
- restraining traffic speeds within the development;
- providing adequate off-street parking and manoeuvring facilities and well-defined on-street parking facilities, and
- providing adequate off-site turning facilities.

14.2 The vast majority of industrial and commercial development is road based and access is a prime consideration. Due to the nature and scale of this type of development they should almost always be accessed from primary or district distributor roads, this will ensure that large traffic generations and large goods vehicles use appropriate routes and cause minimum inconvenience to surrounding residential areas. Industrial estate roads must be designed specifically to cater for use by large commercial vehicles. In this respect the Freight Transport Association (FTA) 'Designing for Deliveries' guide should be referred to regarding vehicle type, length, width, height, turning circles, manoeuvring capabilities and parking layouts. However, certain developments such as offices, may not generate significant number of lorry movements and in these cases the geometry of the estate road layout can be similar to that of residential estates.

14.3 Road Hierarchy

Industrial and commercial estates are served by two types of road; Industrial Distributor Road and Industrial Access Road. Additional information is provided regarding private access facilities to the highway network.

Figure 29: Typical Layout of Industrial and Commercial Roads



14.4 Industrial Distributor Road

It is a through road, which carries a high percentage of heavy goods vehicles. It links Industrial Access Roads to other Distributor Roads and avoids residential areas. It is a single carriageway road, normally with a footway on both sides and in many cases would be used as bus routes. It serves large industrial estates and business parks in excess of 125,000m^2 of gross floor area. The road will generally be designed to restrain vehicle speeds to a maximum of 50kph (30mph). In new developments, direct vehicular access to individual premises will not normally be permitted. Where direct access is permitted this would only be to large commercial premises, and subject to junction design and spacing and the provision of turning facilities for commercial vehicles within the site. Specific facilities for cyclists will normally be necessary. These facilities could take the form of cycle lanes within the carriageway. Where this is not practical separate cycleways may be appropriate. In many cases it will be necessary to install measures to assist pedestrians and cyclists to cross at busy junctions and close to bus stops.

Table 20: Industrial Distributor Road Summary Design Parameters

	Typical Parameter	**Notes**
Provides access to:	Industrial access roads	
Serves	Over 125,000 m^2 of gross floor area	
Anticipated vehicle types	HGVs and all other types	Mandatory parameter range is pantechnicon
Min carriageway width	7.3m	
Min centreline radius	60m	
Design Speed	30 mph	
Distance between speed restraint features	80m to 120m	
Footway	Minimum width 2.0m	Provided on both sides
Segregated cycle track	Minimum width 2.0m or 3.5m if combined with footway	Required on one side
Verge	Required on both sides between carriageway edge and cycleway/footway. Minimum 1.5m wide	
Min forward visibility	60m	
Junction visibility - x	4.5m	
Junction visibility - y	90m	May be reduced if it can be demonstrated that vehicle speeds will be less than 30 mph
Min junction spacing - adjacent	90m	
Min junction spacing - opposite	45m	
Max gradient	1 in 12 (8.33 %)	Gradient may only be increased due to local topography
Min gradient	1 in 150 (0.67 %)	
Vertical curve min K value	6.5	May be reduced subject to a minimum curve length of 30m
Kerb radius	15m	
Kerb height	125mm	

14.5 Industrial Access Road

A road giving direct vehicular and pedestrian access to industrial premises and linking them to Industrial Distributor Roads. It may serve small to medium sized industrial estates and business parks up to 125,000m^2 of gross floor area. It is a single carriageway road, normally with footways on both sides. It should provide two points of access in a loop arrangement however a cul-de-sac up to 250m in length may be acceptable subject to the provision of adequate turning facilities for commercial vehicles.

Buses will only enter commercial/industrial development sites if there are two points of access. If the access road is a cul-de-sac, the development should concentrate on providing suitable footway links to public transport services. Turning facilities for commercial vehicles should also be provided within all individual premises. The road will generally be designed to restrain vehicle speeds to a maximum of 50kph (30 mph). In larger developments a number of industrial access roads should feed to the main industrial distributor road.

Table 21: Industrial Access Road Summary Design Parameters

	Typical Parameter	**Notes**
Provides access to:	Industrial access roads	
Serves	Up to 125,000 m^2 of gross floor area	
Anticipated vehicle types	HGVs and all other types	Mandatory parameter range is pantechnicon
Min carriageway width	7.3m	
Min centreline radius	60m	
Design Speed	30 mph	
Distance between speed restraint features	80m to 100m	
Footway	Minimum width 2.0m	Provided on both sides
Segregated cycle track	Minimum width 2.0m or 3.5m if combined with footway	Required on one side
Verge	Required on both sides between carriageway edge and cycleway/footway. Minimum 1.0m wide	
Min forward visibility	60m	
Junction visibility - x	4.5m	
Junction visibility - y	90m	May be reduced if it can be demonstrated that vehicle speeds will be less than 30 mph
Min junction spacing - adjacent	60m	
Min junction spacing - opposite	30m	
Max gradient	1 in 12 (8.33 %)	Gradient may only be increased due to local topography
Min gradient	1 in 150 (0.67 %)	
Vertical curve min K value	6.5	May be reduced subject to a minimum curve length of 30m
Kerb radius	15m	
Kerb height	125mm	

14.6 Private Access Roads

All new build sites involving in-depth development shall be designed to local standards and built to an adoptable standard. However, consideration for adoption can only be given when the development directly abuts a public highway and where the site access road linking to the highway forms part of the development proposal. Generally the Highway Authority will seek to adopt all such roads, however, for small areas of light industrial units served by an enclosed courtyard type layout or single occupancy developments would not normally be considered for adoption.

14.7 Individual Development Sites

All individual development sites should have an access width of at least 6.1m with any entrance gates set 10m or 15m back from the carriageway edge depending on entrance radii. Any security gate check facility should be sited at least 20m from the highway boundary so that administrative formalities can be carried out without disrupting other vehicular or pedestrian traffic. At the entrance to the site junction radii shall be in the region of 7.5m to 15m depending upon the type of site development and the form and frequency of traffic movement. Visibility at junctions should comply with 'X' distance of 4.5m and 'Y' distance as per table 7.

14.8 Junction Layout

Junction arrangements involving industrial distributor roads and primary distributor roads will depend on traffic flow and turning proportions. They will normally be designed in accordance with the Design Manual for Roads and Bridges (DMRB) issued by the Highways Agency, an executive agency of the Department for Transport (D*f*T). Reference should be made to the appropriate national standards and technical Advice/Design Notes.

14.9 Junction arrangements between industrial access roads and industrial distributor roads or other vehicle dominated environments shall be simple 'T' junctions.

14.10 Visibility at Junctions

To ensure that drivers of vehicles can both see and be seen by other drivers at junctions, around bends and at entrances to premises, unobstructed visibility is required with 'X' distance of 4.5m and 'Y' distance as per table 7.

14.11 Footways & Cycle Tracks

A footway/ cycle track on one side minimum width 3.5m segregated by a 2.0m verge from the carriageway should be provided on all Industrial Distributor Roads and on large developments on the Industrial Estate Roads a 2.0m wide footway 2.0m on the other side should be provided. Developments, which are minor in nature, may not require the provision of two footways following consultation with the Highway Authority.

14.12 Industrial and Commercial Parking

The car parking standards relating to industrial and commercial developments are given in Appendix 3 the car parking requirement is the maximum that should be provided. For large developments the Council will seek to minimise the number of car parking spaces provided. In areas such as town centre locations which is well served by public transport only operational parking should be

provided. Should additional parking spaces be required by the developer above the site's operational use then a commuted sum payment should be provided based upon the number of car parking spaces above the operational maximum. The commuted sum will be used to increase the site's public transport accessibility and improve access to other modes of transport other than the private car.

Table 22: Parking Standards for HGV's

Land Use		Parking Requirement
General Industrial	Up to 1000 Sq.m GFA	1 space per 400 sq.m
B2	over 1000	1 space per 500 sq.m
Storage and distribution	Up to 1000 Sq.m GFA	1 space per 200 sq.m
B8	over 1000	1 space per 300 sq.m

14.13 Security and convenience are important factors for any firm where vehicles or trailers are likely to be left for long periods, therefore each individual unit should have sufficient curtilage parking and loading areas in order to prevent vehicles and trailers being left on the highway.

14.14 Parking requirements for Industrial/Commercial Developments need to reflect the close link between the provision of space for the moving vehicle and the provision of terminal facilities which will be needed including short and long term parking spaces, loading/off-loading facilities, turning facilities and space for service vehicles and fire appliances, etc. It is necessary to ensure that adequate and convenient provision has been made on site to prevent indiscriminate on-street parking.

14.15 Detailed guidance on vehicle dimensions and turning manoeuvres is given in the Freight Transport Association (FTA) publication 'Designing for Deliveries'. Table 23 gives the rectangular dimensions of the space required to park some typical vehicles.

Table 23: Parking Space Dimensions for some typical Vehicles

Vehicle Type	Length (metres)	Width (metres)
Light Goods Vehicle	7.5	3.5
Minibus	8.0	3.5
Coach (60 seater)	14.0	3.5
Rigid Heavy Goods Vehicle	14.0	3.5
Articulated Heavy Goods Vehicle	18.5	3.5

14.16 Turning Heads

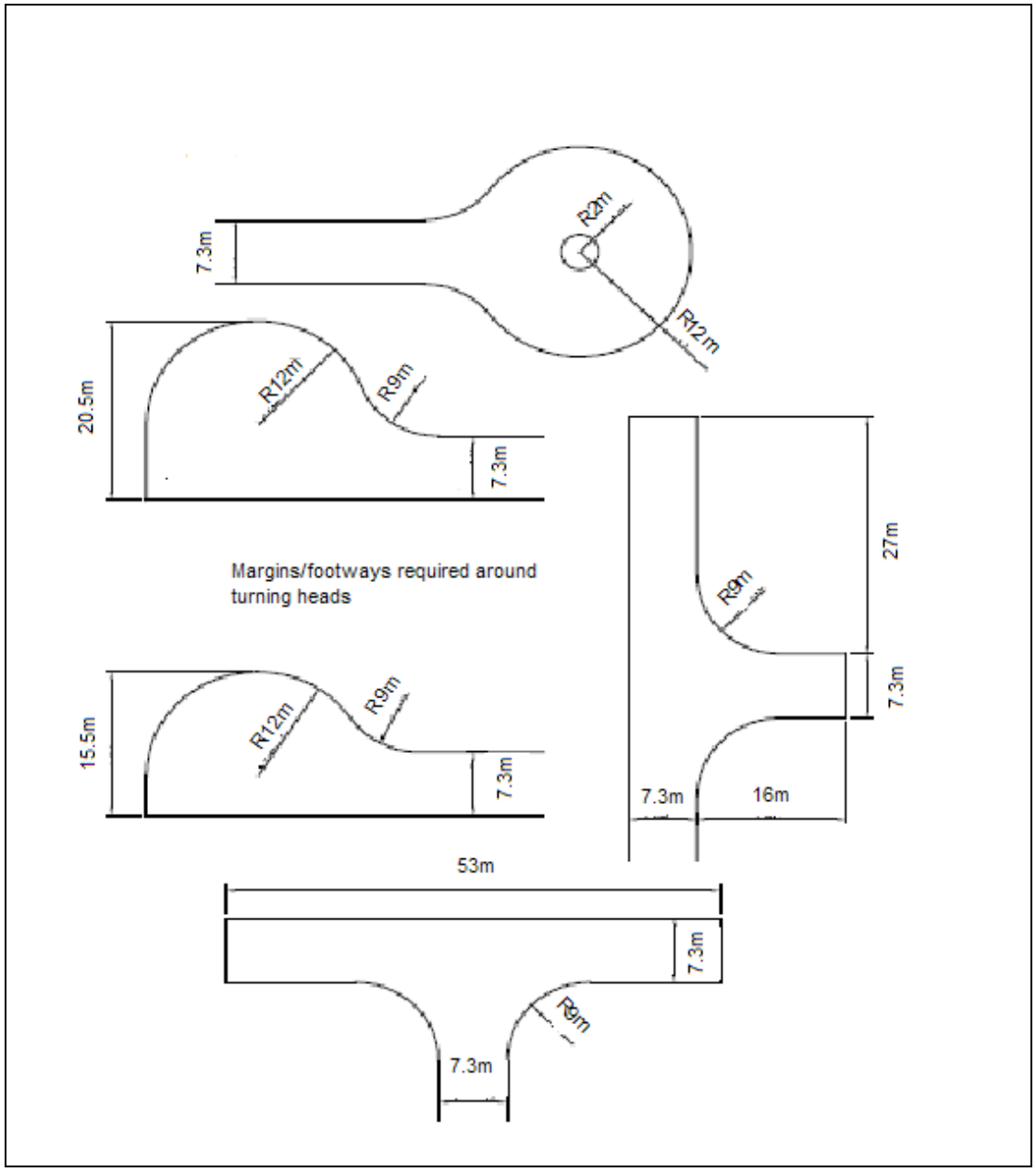
Industrial distributor and access roads that are not through roads or exceed 250m in length without a junction must always include a suitable turning facility. Industrial/commercial developments which attract significant numbers of heavy goods vehicles will require areas where they can be turned safely and conveniently parked securely when not in use. It is therefore important that

adequate loading and parking areas are provided within the curtilage of the premises, since many new estates with open plan layouts tend to encourage parking on roadways or turning areas which can interfere with normal traffic movement.

14.17 The manoeuvrability of large goods vehicles depends on their size, on whether they are rigid bodied or articulated, on the number of axles and on the skill and judgement of the driver. Some industrial and commercial estates may have to cater for a whole range of vehicle types and sizes, however in terms of sustainability it is both impractical and uneconomical to provide turning facilities to cope with the worst of all possible operating conditions, such as high numbers of the largest vehicles all requiring to visit a site in the same short space of time. Nevertheless, designs should take into account commonly occurring movements, recognising that a small number of larger vehicles will occasionally experience some difficulty in manoeuvring and that individual vehicle performance varies greatly with axle configuration and spacing.

14.18 Turning requirements can be checked using two methods. The first is to use standard templates, based on vehicle types expected to visit and use the site together with design techniques originally developed by the Freight Transport Association. The templates are included in the Freight Transport Association publication “Designing for Deliveries”. A second method is to use one of the computer software packages available, either to generate the swept path for a particular vehicle type or to superimpose it on a pre-drafted layout drawing. Figure 30 gives some typical industrial turning heads.

Figure 30: Typical Industrial Turning Heads



15.0 HIGHWAY ADOPTION AND OTHER STATUTORY PROCEDURES

15.1 Warrington Borough Council, as Highway Authority will adopt as highways maintainable at public expense, those carriageways, footways, footpaths and cycle routes which are necessary for public access or passage and which are designed and constructed to the current standards and specifications of the Authority. The adoption will also include all signs, lighting, highway drainage. Car parking bays, which are defined as being within the highway limits and are for general use, will be adopted. Private parking areas must be located and clearly defined outside the adoptable highway boundary. The ownership of areas that are to become public highway will be transferred to the Council by the developer. Developers must prove ownership of all land to be transferred prior to adoption by the Council. In situations where land is in "unknown ownership" the Council will require developers to provide adequate Defective Title Indemnity Insurance, which must be in place prior to the Section 38 Agreement being signed.

15.2 Alternative provision for maintenance for the lifetime of a development may take many forms ranging from setting up of management companies to dedicating land to the Parish/Town Councils, which have their own powers to accept dedication of non highway land. Most are inclined to do so if the land in question serves a public need for drainage, recreation or communal amenity but may require a commuted sum to be deposited for or towards the cost of its future maintenance.

15.3 Eligibility For Adoption As Highway

With the exception of footpaths, land will only be adopted as public highway if it is contiguous with, and has all-purpose access to, an existing publicly maintained highway, comprising at least a carriageway. The following are eligible for adoption if designed and constructed to the recommendations of this guide:

- carriageways, their containing edge restraint and associated footways if any;
- unassigned parking spaces when contiguous with the carriageway surface provided they are not mixed with assigned spaces;
- highway margins in shared surfaces and elsewhere;
- verges between footways and carriageways;
- street furniture (which is not the property of statutory undertakers) including lighting columns, traffic signs, bins, seats, planters etc.;
- footpaths and cyclepaths which link with public highway at both ends which could also be used for vehicular access in an emergency as described in Chapter 4;
- visibility zones at junctions and bends;
- highway structures associated with the support or protection of the highway; and
- highway drainage.

15.4 Areas considered to have no general highway utility, developments consisting of five dwellings or less, in multiple ownership, private developments or layouts that do not conform with the requirements set out in this document will not be eligible for adoption. Amongst these areas:

- entrance roads to garage or parking courts and paved areas within such courts;
- drives to flats and apartments;
- amenity areas designed as such within a development;
- footpaths serving only groups of dwellings and not serving as a through pedestrian route; and
- small areas of light industrial units served by an enclosed courtyard type layout or single occupancy developments.

15.5 Carriageways (See Also Chapter 4)

Carriageways that are intended primarily for use by all public vehicles and cycles will be eligible for adoption if they are constructed in accordance with the requirements of this document, except where local circumstances dictate variation and are agreed with the Highway Authority. Shared surface environments and Home Zones that provide direct access to dwellings will be adopted. Where carriageways abut private land and no footway is provided, a minimum 1.0m wide safety strip will be required for vehicle overhang. The safety strip will be adopted.

15.6 Parking Areas And Lay-Bys (See Also Chapter 13)

Only unassigned parking areas that form an integral part of the highway will be adopted. Generally the edge restraint for parking areas must be included for adoption. In Home Zone developments where low car parking standards are provided, it may be possible to provide all the required parking on-street, in which case the Council may be willing to adopt all.

Assigned spaces will not be adopted and must be located outside the adoptable highway limits.

15.7 Footways (See Also Chapter 10)

Footways, footpaths and cyclepaths constructed in accordance with this document will be adopted. Adoption will normally be to the back edge of a footway and will include its edge restraint.

15.8 Footpaths And Cyclepaths (See Also Chapters 10 & 11)

Footpaths and cyclepaths including greenways, will be adopted where they provide the principal means of access between public highways or are an essential part of the highway system/cycle network, whether separate or combined. Separate footpaths and/or cyclepaths will usually only be adopted where they connect with a public highway at each end, but there may be exceptions to this rule where a footpath or cyclepath connect with a public highway at one end and community facilities such as shops, schools, health centres at the other. The highway Authority will only adopt the paved surfaces of footpaths and their edge restraint. Individual footpaths on housing estates will not be adopted where they provide direct access to dwellings or secondary means of access such as to the rear of properties.

15.9 Verges, Service Strips And Visibility Splays (See Also Chapter 22)

Verges, service strips, areas required for visibility splays at junctions or on bends and landscape areas which are an integral part of the highway design, will be adopted. Highway verges should not be more extensive than is justified by the overall design. A constant adoption width of 2.0m is generally required for verges adjacent to the carriageway. This is to facilitate repair or maintenance work and to accommodate statutory undertakers' mains and plant. The back edge of this verge or service strip must be marked where it crosses paved surfaces. For example the adoption boundary may be identified by a row of granite setts or brick paviors across private drives and paths. Verges that are a design feature of a layout and can be considered to have a highway function may also be adopted. In such exceptional cases, suitable landscaping will be necessary to avoid costly maintenance.

15.10 There may be problems relating to adopted verges contiguous with private gardens. The rights of the Highway Authority and the statutory undertakers must be fully understood by the purchaser of the adjacent dwelling (it is incumbent upon the purchaser's solicitor, or developer, to make the purchaser aware of their rights). Normally, the owner of the adjacent dwelling would be encouraged to maintain to the kerb edge of the shared-surface. In some circumstances, this maybe achieved through licence or legal agreements. Whatever is done, the purchaser must be made aware by the developer in the title and other documents of the prohibition of buildings, walls or fences and planting of hedges or trees on the verge and that statutory undertakers may excavate their services at any time and reinstate the area only as a grass verge. All amenity planting will be subject to a separate Agreement for which there will be a commuted sum for future maintenance.

15.11 Highway Drainage (See Also Chapter 20)

The Highway Authority will adopt only those drains (pipe work, gullies and gully connections, manholes, catchpits and soakaways but excluding pumping stations) laid for the sole purpose of the discharge of surface water from the highway. Highway drainage will be laid within adoptable areas with the possible exception of soakaways, which must be subject to a deed of grant to enable access for future maintenance. The Council is fully committed to the implementation of sustainable drainage solutions and will therefore consider the use of sustainable urban drainage systems (SUDS) solutions in order to drain highways and new developments. Acceptability will depend on the circumstances of the development and will require full approval from the Authority. Adoption of such features is at the discretion of the Council and will depend on criteria relating to specific schemes.

15.12 Sewers for adoption will be considered separately by the Drainage Section of Warrington Borough Council who have responsibility for the design of all drainage works with the exception of sites that has purely highway drainage. In all cases written evidence of the Water Authority's satisfaction with the design of surface water sewers and of their agreement to adopt them will be required. Drainage outfalls to any watercourse must be negotiated with the owners or conservators of that watercourse and must be approved by them and the Environment Agency. The Highway Authority will require to be satisfied that the developer holds all necessary easements in this regard before completion of the

Section 38 Agreement. No gully connection or surface water drain, connecting to a sewer will be eligible for adoption by the Highway Authority unless that sewer is maintained by the Water Authority.

15.13 All Soakaways, including those that require 'consent to discharge' licences from the Environment Agency, will not be adopted until the developer has paid to the Council all commuted sums which are necessary to cover future maintenance. These sums will vary depending on the environmental circumstances and location of each soakway together with the actual type of soakaway constructed.

15.14 Street Lighting (See Also Chapter 21)

A system of street lighting is required for all new roads and adoptable areas. For further information on Street Lighting refer to chapter 21. The Council will only adopt road lighting situated within adoptable areas, except where specific alternative arrangements have been approved and these must be covered by a deed of grant. In some areas such as Home Zones, street lighting may be affixed to private property by way of agreement and license. In such cases the lighting may be adopted – types and styles may be a planning issue.

15.15 Public Open Spaces

Apart from structural planting, amenity areas, play space and landscaped areas, which have no highway function, will not normally be adopted. All amenity areas proposed for adoption by the developer, would be subject to a separate Agreement for which there will be a commuted sum for future maintenance.

15.16 Highway Structures (See Also Chapter 16)

The Council will only consider adopting Structures that either carry the highway or support it and where Technical Approval has been given (See Chp 16 for further details). Any structure spanning over a highway will not be adopted unless that structure itself carries a highway or forms an integral part of the highway such as a traffic sign gantry. Other structures will however need the approval of and be licensed by the Council. The Council will not adopt walls constructed to support the highway, except in agreed exceptional circumstances, as it is the authority's preference for the highway to be supported by embankment. Walls supporting private land adjacent to the highway will not be adopted and such walls must be totally founded on private land. All retaining structures situated within 3.66m of a highway, or which otherwise may structurally affect the highway or its support, whether adopted or not, will be subject to full approval procedure as determined by the Council. All unadopted structures or protrusions over the highway will need the approval of and be licensed by the Council. Highway structures will not be adopted until the developer has complied with the requirements set out in Chapter 16.

15.17 Powers Of Statutory Undertakers

Public utility apparatus on estate roads should be provided in the most economic manner consistent with consumer convenience, ease of maintenance and good appearance. The developer must consult with the statutory undertakers and co-ordinate the location of mains and services during the initial design process. The layout design must reconcile the sometimes conflicting requirements of the highway authority and public utilities, always bearing in mind that the main objective of these standards is to create a better environment. Statutory service providers have legal powers to lay and maintain apparatus in public highways and other public land.

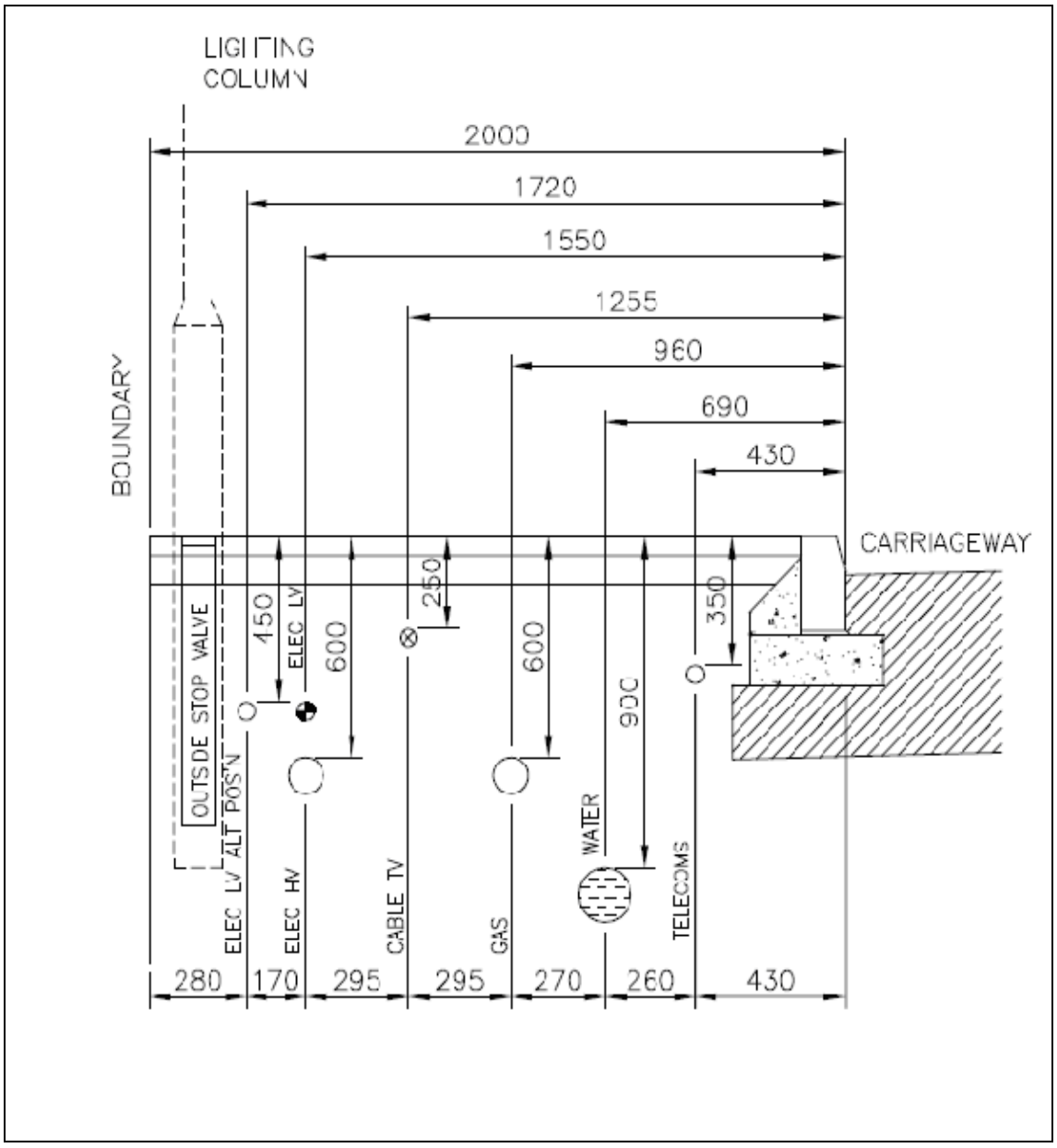
The New Road and Street Works Act 1991 and other specific enactments stipulate these powers to ensure that there are adequate facilities for immediate repair and maintenance.

15.18 Location of Statutory Undertakers' Services

The statutory undertakers prefer to establish routes for their apparatus within areas adoptable as public highway or in land to be maintained by local authorities. To minimise installation and maintenance costs and to avoid future disruption, apparatus will normally be laid beneath footways and verges adjacent to carriageways. Sewer manholes should not be placed in footways or service verges.

15.19 Installations such as sub-stations and gas governor houses requiring heavy vehicle access should be located on local distributor or major access roads outside the limits of the public highway. They should be provided with sufficient parking to accommodate service vehicles clear of the highway. The siting of water valve boxes, hydrants, post office mail boxes and telephone boxes requires special attention and must be co-ordinated with the Statutory Undertakers and the emergency services. For aesthetic reasons all surface boxes must be laid parallel to the line of footways/footpaths verges and paved margins.

Figure 31: Arrangement of Statutory Services in a 2m wide footway



15.20 Developers should take account that services are usually laid on the side of the road fronting the most properties, and that it will be their responsibility to provide cross-carriageway ducts at agreed locations and to establish means of readily locating the duct ends. In the event of the routes available in the adoptable highway being unsuitable, the developer must provide other land as necessary and arrange for satisfactory easements. The council does not have the resources to maintain land that is required solely, for public utilities. Where services are laid in land outside the control of the Council, any covenant required should be negotiated between the developer and the undertaker.

15.21 The developer should ascertain if a Cable Television Franchise has been entered into for the area. Should a franchise exist then the developer should ensure that all necessary ducts are accommodated.

15.22 Where practical, particularly on bends, plant access chambers should be provided in footways or verges; this will provide a safer environment for those who need to maintain them, and be less disruptive for users of the carriageway.

15.23 Developers are reminded that shared private drives will not be adopted, but dependent upon the position of the properties they serve, the statutory undertakers may require to lay main and cables, with their associated access boxes, within them. Proper and adequate protection will be required and they may also acquire a covenant in the conveyance to advise purchasers of their presence and need for access for future maintenance.

15.24 It will also be necessary to confirm that the following covenant has or will be included in the conveyances to draw attention to the rights of the Highway Authority and the Public Utilities under the Highways Act 1980 and the New Roads and Street Works Act 1991.

"the purchaser hereby covenants with the vendor that he the purchaser and his successors in title will not at any time hereafter erect or construct any building, wall or fence or plant any tree or shrub on the strip of land shown cross-hatched on the plan annexed hereto of suffer to be done therein or thereon any act matter or thing whereby the cover of soil over or the support of the pipes, wires and/or cables laid or to be laid in the said strip of land shall be altered or which may render access thereto more difficult or expensive and shall understand that the Highway Authority and statutory undertakers have unencumbered right of access to the said strip of land".

15.25 Advance Payments Code (APC) Procedure (Section 219 of The Highways Act 1980)

Section 203 of the Highways Act 1980 defines a private street, briefly, as a street not being a highway maintainable at the public expense The creation of more private streets is to be avoided and this can be achieved by the correct application of the APC procedure (as detailed in the Highways Act 1980). This is a statutory tool, which provides for the future making up of private streets. The required practice is for the rigorous application of the APC procedure for all developments consisting of more than five dwellings, to protect frontagers' interests. The only exception being for in-fill plots on existing private streets, developments off private streets or private gated communities that are to remain private.

15.26 Immediately a development receives Building Regulation approval or an Initial Notice (issued by the NHBC) being received, Warrington Borough Council requires a statutory guarantee that the roads and footpaths will be completed to the satisfaction of the Authority. Before any building work commences, the developer must either complete payment of the estimated cost of highway works as shown on the Schedule which will accompany the notice served by the Authority, in accordance with the Advance Payments Code (APC) of Section 220 of the Highways Act 1980, or make a Section 38 Agreement and provide a bond for due completion.

15.27 If a developer wishes to construct a residential area in distinct phases, the phasing should be clearly shown on his submission for approval and the Agreement can be phased accordingly. If an early start to the construction of a building is essential, developers should make an advance payment and replace this as soon as possible with a Section 38 Agreement, whereupon the APC payment is refunded.

15.28 Developers are required to notify the Highway Authority of the commencement of any work on prospectively adoptable highways so that the necessary inspection and approval can be arranged. This applies to work under both APC and Section 38 Agreements. Works not so inspected will not be adopted until proven at the developer's expense.

15.29 Section 38 Agreement (Highways Act 1980)

Section 38 of the Highways Act 1980 provides for the Council to take over and maintain at public expense (adopt) a road that is constructed by a person by way of agreement. The adoption process is covered by a Section 38 agreement. Section 38(6) of the Act says: "*An agreement under this section may contain such provisions as to the dedication as a highway of any road or way to which the agreement relates, the bearing of the expenses of the construction, maintenance or improvement of any highway, road, bridge or viaduct to which the agreement relates and other related matters as the authority making the agreement think fit*." This section of the Act entitles the Council to seek expenses for maintenance and the Council intends to do this through commuted sums where necessary. Commuted sums allow the Council greater flexibility to adopt non-standard layouts and materials without placing undue burdens on the Council's maintenance budget or council taxpayers. However, even where a commuted sum payment is offered, the Council may still resist adoption if it considers the layout or proposals to be inappropriate or unacceptable on highway safety grounds. (Please refer to 15.43 for further details on commuted sums.)

15.30 Section 38 Agreement Procedures

Where a Developer wishes to complete an Agreement for the development site under Section 38 of the Highways Act 1980, and where detailed planning consent has been granted under the Town & Country Planning Act 1990, as amended, applications should be made to the to the Council.

15.31 A Developer will need to prove title to all land that is to be subject of a Section 38 Agreement, or provide Defective Title Indemnity Insurance as determined by the Council. The developer shall demonstrate a right to discharge surface water from the highway, either by way of a Sustainable Urban Drainage Solution or an existing or proposed public sewer. Where it is proposed to drain the new highway into a sewer, which is to be the subject of a Section 104 Agreement of the Water Industry Act 1991, then that Agreement must be completed with the Drainage Undertaker prior to the completion of the Section 38 Agreement. A Sustainable Urban Drainage Solution (SUDS) will require approval by the Council.

15.32 In the development of some sites, it will be necessary to alter the existing public highway and these works may be the subject of a separate Agreement under the provisions of Section 278 of the Highways Act 1980 (for further details refer to S.278 Agreement procedures)

15.33 The Section 38 Agreement will cover neither foul sewers nor any landscape areas, outside agreed highway limits to be adopted by the Highway Authority.

15.34 The Developer should be aware that before the Final Certificate (Adoption) is issued, the Council will require an exclusive drainage easements to be entered into in respect of any highway drainage apparatus situated outside the highway boundary. The Developer is advised to make specific provision for this in the transfers of the affected plots if highway drainage is situated outside the highway boundary.

15.35 Any development, which will involve the construction of the whole or, part of a building or structure over a proposed highway will require the Section 38 Agreement to have an additional clause incorporated into it, in order that the Developer covenants to maintain the building/structure. If any development includes or has structures or foundations constructed beneath a proposed highway, the Section 38 Agreement will have to have an additional clause incorporated into it, in order that the Developer covenants to maintain the retaining wall/structure.

15.36 Areas of proposed visibility splays must always be included within the land to be transferred to the Council. The Council may, in appropriate situations following adoption, grant a licence under Section 142 of the Highways Act 1980, to the owner of the land adjoining the visibility splay. The licence will permit a person or persons to cultivate or plant small shrubs and landscaping items in the highway visibility areas. The Council will exercise caution and may not issue a licence where the safety of the highway user is compromised. In exceptional circumstances where visibility areas cannot be transferred to the Council, it may be possible for these areas to remain in private ownership. It will be necessary to include an additional clause in the Section 38 Agreement ensuring that the developer or successors in title with the Council to maintain the visibility areas and to restrict all planting below 0.6m in height.

15.36 Any proposals that include or impact on highway structures, or include any other structure likely to have an impact on the highway, should be discussed with the Council. The Section 38 Agreement will stipulate that a full Technical Appraisal (Technical Assessment and Safety Audit) is carried out on the scheme. The Council should be contacted in the first instance regarding the requirements of the Technical Appraisal.

15.38 Fees Payable To The Council

The Council makes a charge for the work involved in:

- preparing, executing and managing the Section 38 Agreement;
- checking the design of the scheme, including any associated structures ;
- highway drainage and
- inspecting the works on site.

15.38 The charge for administration, design checking and site inspection (excluding specialist services such as Street Lighting – refer to the Council's Street Lighting Design Guide for their fees) is normally a fixed percentage of the estimated cost of the total road works, as calculated by the Council, excluding any associated structures, SUDS and non-standard drainage systems. On submission of all designs/drawings for Section 38 Technical Approval, a fixed percentage of the total charge should be paid. Additional charges will be made for design checking and site inspection of highway structures. The Council will also charge additional fees for checking the design and supervision of all SUDs and 'non-standard' drainage systems. There is also an additional fixed fee for each agreement plus disbursements, which is payable to the Council's Legal Services to cover legal costs. This fee is fixed by the Council's Legal Services and is reviewed annually. The Council will also charge for the checking of any revisions to the proposed design/drawings and an additional fixed fee for any supplemental agreement that is required, to cover extra administration work.

15.39 If the road works are still not complete after the time limit specified in the agreement, the Council may offer an extension. However the Council will re-assess the estimated road works costs and charge a further 3% for inspection fees based on an assessment of the cost of the outstanding works. There is a three-year limitation (i.e. from date of approval of design) on any Lighting Design approval to completion of the Part 2 Street lighting Adoption Procedure. Any scheme falling outside this time period will be subject to additional design checks, which will be chargeable, and developer will be responsible for ensuring designs/installations meet specifications and standards pertaining at that time. Large developments may have phased approval periods of, say, three years for each phase.

15.40 If a period of two years or more has elapsed since Part 1 Certificate was issued and the final certificate (Part 3 Certificate or Part 2 in case of Street Lighting) has not yet been issued, the Council will charge a further fixed fee for additional administration and inspection work.

15.41 Technical Approval Checks

Where there is a clear intention to enter into a Section 38 Agreement, and before any construction of the road works commences, the Council will require all relevant information to be submitted before all the necessary design checks are carried out. Where required the Stage 1 and Stage 2 Safety Audit process must be completed and approved.

15.42 The Council will only issue technical approval when:

- all design checks have been completed – this procedure will be enforced by ensuring all designs have been approved prior to any agreement being signed.;
- Stages 1 and 2 Safety Audit where required has been approved; and
- any additional or amended details required have been submitted.

However, the issuing of technical approval alone does not mean that a developer can start constructing the works. Construction of any roadworks on site should not commence until the conditions described in construction works procedure have been met.

15.43 Commuted Sums (for Section 38 Works)

The Council will charge commuted sums to cover maintenance in certain circumstances. Commuted sums allow the Council greater flexibility to adopt 'innovative' layouts and 'non-standard' materials without placing undue burdens either on our maintenance budgets or on council taxpayers. Therefore, where the Council is prepared to adopt them, the developer will normally also have to pay commuted sums on:

- structures;
- soakaways (those considered non-structures);
- traffic signals;
- additional areas exceeding usual highway design standards and which are not required for the safe functioning of the highway;
- materials outside our usual Specification;
- non-standard or additional street furniture;
- landscaping within the proposed highway, including trees; and
- sustainable drainage systems (SUDS), for example, flow-attenuation devices, swales and storage areas).

Where a Developer proposes a SUDS solution, they must hold discussions with all relevant parties at an early stage (and certainly before they submit their planning application) to agree ownership and responsibility for the facility.
The agreement should state the total amount of commuted sums and include a cost breakdown, by service.

The Street Lighting Approval (Adoption) at Part 2 will include a check that a commuted sum has been paid and that all information identified in the design guide has been passed and approved.

15.44 Notification Of Start

Where works are being carried out under a Section 38 agreement, you must not begin construction unless and until the developer gives the Council at least three weeks notice in writing of their intention to begin construction works.

15.45 Construction Works Procedures (see 15.42)

Construction (of any work to be included in the Section 38 Agreement) on site should not commence until the following conditions have been met:

- technical assessment and safety audit approval has been granted;
- a Section 38 Agreement has been signed, or Surety is secured in accordance with the Advance Payments Code notice;
- the legal and technical fees together with any commuted sums, have been paid to the Council; and
- the clerk of works has approved drawings to carry out site supervision.

If construction (of any work to be included in the Section 38 Agreement) commences before all of the above conditions are met, the works will not be supervised by the Council's Clerk of Works. The developer shall install temporary column numbers on all street lighting columns with their contact telephone number to allow residents to report faults. The developer shall be responsible for all repairs, maintenance and energy in relation to illuminated assets until the point of adoption when responsibility will pass to the authority.

15.46 Occupation of Dwelling

No dwelling erected by the developer or on his behalf fronting, adjoining or abutting on the road shall be occupied until:

- Part 1 Certificate has been issued in respect of the road/roads or such part of the road / roads as will provide the occupier with access to a vehicular highway and where applicable a base course pedestrian access to such highway has been approved; and
- the road/roads or such parts of the road/roads have columns erected ready for lighting in accordance with the drawings and specifications and the developer has arranged with the electricity board for an electricity supply thereto by giving at least six weeks' prior notice in writing or as may be otherwise agreed in writing by the proper officer.
- Any Distribution Network Operators (DNO) shall have been stated and approved by the authority in the developers design submission.

15.47 Health And Safety

The developer is responsible for health and safety on site must comply with all the relevant aspects of the Construction (Design and Management) Regulations 2007 (CDM 2007). The Health and Safety File, required under CDM 2007 shall be provided to the Engineer by the developer prior to the issue of the Final Certificate of Completion. The developer must ensure that the site is safe and easily accessible for residents, those in the service industries and emergency services, especially prior to Part 2 Certificate being issued and the roads being open to the public.

15.48 Contractor Approval

All road works must be constructed by a competent contractor (including any subcontractor) who has relevant experience and capabilities of this kind of work and who must be approved by the Council. Where the Council has no previous experience of a contractor's work, it will be necessary for the contractor to submit satisfactory references and also examples of their work which have been successfully completed to the satisfaction of another highway authority. Where this is not possible, or where the Council have previously experienced problems with a contractor (for example with quality of workmanship), the Developer may be asked to use an alternative contractor.

15.49 Site Inspection

The Developer is responsible for the day-to-day supervision of the road works construction. The Council will only inspect the works to check that they are being constructed in accordance with the approved drawings and its requirements. The Developer must grant the Council access to the works in progress at all times. If problems arise the Council will be happy to discuss possible solutions, but it will still be the Developer's responsibility to instruct its contractor and make sure that the works are satisfactorily completed in accordance with the Council's requirements. Inspection visits do not absolve the Developer from any responsibility for supervising the work and making sure that it is carried out in a proper and safe manner, and in line with the specification.

15.50 Public Liability Insurance

The Developer must indemnify the Council (protect it from legal responsibility) against any claims by third parties arising from of any work to be included in the Section 38 Agreement. Before the Council approves the contractor the Developer must provide the Council with written evidence that the contractor has, as a minimum, £5 million public liability insurance with no limit on the number of claims.

15.51 Commencement Of Works

The Developer must arrange a 'pre-start' meeting with the Council to establish and emphasise the following:

- approving and issuing drawings;
- testing procedures;
- inspecting works;
- traffic control; and
- agreed start dates.

The meeting should be attended by the developer's representative, the consultant (if necessary), the contractor's representative, the Council's clerk of works and Engineer. The Council's clerk of works will take photographs of the site prior to commencement of the works, so that any damage to the existing highway can be assessed where necessary.

15.52 Timescale For Completing The Road Works

As soon as the work on site has begun it is the Developer's responsibility to complete any work to be included in the Section 38 Agreement, to the satisfaction of the Council. The Developer must also make sure the adoption takes place within a 'reasonable' period to minimise any potential risks or inconvenience to residents. The Council will impose a time limit on completing any work to be included in the Section 38 Agreement. In order to safeguard the interests of the frontagers and road users, the Council recommends that the works must be completed, either:

- within six months of all buildings fronting or served by the road works being completed; or
- within two years of the date of signing of the Section 38 agreement whichever is soonest.

15.53 Where the Developer does not complete any work to be included in the Section 38 Agreement within the specified time limit, and the Council have not agreed an extension of time, the Developer will be charged extra fees towards additional administrative and inspection costs. The Council also reserves the right to call on the surety to complete the works or determine the agreement, where the developer does not conclude any work to be included in the Section 38 Agreement satisfactorily.

15.54 Drawings/Information Required

The developer should submit the following drawings/information with Section 38 Agreement requests. For large developments, it is recommended that the layout be divided into stages and that separate Agreements be completed for each stage.

- 1:1250 scale site location plan with a north point
- A ground condition survey including CBR tests or bore logs undertaken by a UKAS accredited laboratory;
- Detailed carriageway design including 1:500 scale plans, longitudinal sections, cross sections, typical construction details, statutory undertakers services
- Highway drainage design, including 1:500 scale plans, longitudinal sections, typical construction details and drainage calculations
- Details of proposed road markings and traffic signs
- Details of proposed street lighting installation (refer to WBC Street Lighting Design Guide)
- Details of proposed structures including plans, details of calculations and technical approval certificates

15.55 Sealing Of The Section 38 Agreement

Following Technical Approval the developer will be required to submit 9 additional copies of the approved layout plan with the site boundary marked in red and the area for adoption marked in ‘burnt sienna’ for inclusion in the Section 38 Agreement document. The plans will be passed to the appropriate Legal Officer who will prepare a draft Agreement which will be passed to the Developer's solicitor for approval. Once the draft has been approved the engrossment will be prepared and dispatched for execution by the parties to the agreement. It may be modified by mutual agreement during construction until on completion they become the adoption plans.

15.56 Only when the developer and their surety have executed and returned the engrossment to the appropriate Legal Officer may building works commence on the dwellings unless a deposit or security has been made. The Agreement will not be revealed on Local Searches until it has been executed by all parties and completed. Developers are advised to ensure that any road works undertaken comply with the plan/s approved by the appropriate Highway Authority and that they are inspected by the Authority's representative

15.57 The developer is also required to enter into a Deed of Dedication or transfer to the Council in respect of any land to be used for amenity purposes or as open space. Where title to any of the land forming the site of the estate road/s and/or visibility splay areas to be adopted cannot be proved to the satisfaction of the Council’s Legal Services, a defective title indemnity insurance policy will be required. The Council will determine the total amount of cover required.

15.58 Where a Developer is required to carry out works under a Section 278 Agreement, the Section 278 Agreement must be completed before the Section 38 Agreement is signed. The Section 38 Agreement will not be revealed on Local Searches until it has been executed by all parties and completed. Developers are advised to ensure that any road works undertaken comply with the plan/s approved by the Council. Guidance notes for developers and consultants on the Section 278 Agreement process are available from the Highway Authority.

15.59 Where it is proposed to drain the highway into a sewer, which will be the subject of a S.104 Agreement under the Water Industry Act 1991, then that Agreement must be completed with the Drainage Undertaker prior to the completion of the S.38 Agreement. Any feasibility study undertaken by or on behalf of the Council in this respect will be at the Developer's expense. A schedule attached to the Road Agreement will detail the road works in two parts.

15.60 Completion Certificates And Surety

Three Certificates will be issued under the Agreement.

Part 1 Certificate- On completion of all works comprised in Part 1 of the Schedule to the Agreement.

Part 2 Certificate -On completion of all remaining works comprised in Part 2 of the Schedule to the Agreement.

Part 3 Certificate - On completion of any remedial works at the end of the maintenance period specified in the Section 38 Agreement.

15.61 Part 1 Certificate will be issued following satisfactory completion of the works detailed in Part I of the Schedule to the Section 38 Agreement and after the street lighting installation has been satisfactorily checked. The 12 months maintenance period for street lighting commences following the issue of Part 1 Certificate. During this period the developer is responsible for the whole of the installation and the payment of energy consumed. After the maintenance period, or upon the issue of Part 2 Certificate (whichever is the shorter), a joint inspection of the street lighting installation will be made. If the Council is satisfied with the condition of the street lighting installation and all supporting documentation has been submitted and approved, the Council will then accept full responsibility for the installation. The Surety's obligations will be reduced by 50% of the original surety value upon the issue of Part 1 Certificate.

15.62 Part 2 Certificate will be issued following satisfactory completion of the works detailed in Part 2 of the Schedule to the Section 38 Agreement, the Council will hold a joint inspection with the developer in order to provide a definitive list, in writing, of any remedial works. Where highway structures are involved, separate technical approval from the Council's Design Consultancy would be required. The Council will carry out a Stage 3 As-Built Safety Audit to ensure compliance with this document. A further check on the street lighting installation will also be carried out. Within six weeks of the joint inspection the Council will send the developer, in writing, a list of all necessary remedial works required to be completed. If the works are also the subject of a Section 104 Agreement under the Water Industry Act 1991 - and the sewer is situated within the highway or is an integral part of the highway drainage system - then Part 2 Certificate will only be issued after a 'Provisional Certificate' has been issued by the drainage undertaker for the works that are subject of a Section 104 Agreement.

15.63 Landscaping areas to be adopted under the Section 38 Agreement must be completed before the Part 2 Certificate is issued and the areas shall be maintained free of weed by the developer during the maintenance period and until the Final Certificate is issued. Following satisfactory completion of any identified remedial works, the Council will issue Part 2 Certificate and the Council's legal officer will initiate work on the Transfer, Deeds of Grant and any other related legal work. The maintenance period commences on the issue of Part 2 Certificate. All roads and footpaths become highways open for use by the public at large and consequently highway safety inspections will be carried out by the Council in accordance with the Council's Maintenance Plan.

15.64 During the maintenance period (which only commences when Part 1 has been issued) the developer is responsible for the whole of the street lighting installation, including energy and maintenance. The Developer shall remain the Street Manager for the purposes of Section 49(4) of the New Roads and Street Works Act 1991. The developer is responsible for the maintenance of any work included in the Section 38 Agreement, including grassed and planted areas and shall carry out road sweeping and gully emptying until Part 3 Certificate is issued. The Developer is responsible for the removal of all abandoned vehicles, rubbish or other unauthorised materials as may be necessary in order to facilitate use of the roads and footpaths by all users. The Council will be responsible for routine maintenance of street lights and illuminated traffic signs during the maintenance period and will also be responsible for arranging payment of energy charges. The Council will carry out site inspections during wet weather conditions to check that there are no problems with the drainage of the site and that ponding does not occur in the channel of the roads. The Developer must ensure that the roads and footways are maintained to a high standard during the maintenance period and if necessary clear snow and ice from pedestrian routes and ensure that all footways are not hazardous. The Surety's obligations will be reduced by 75% of the original surety value upon the issue of Certificate 2.

15.65 Prior to the expiration of the maintenance period, the Council will hold a joint inspection with the Developer in order that a definitive list of maintenance repairs can be agreed. Within six weeks of the joint inspection the Council will send the developer a list of all necessary maintenance repairs to be completed before the issue of Part 3 Certificate or part 2 in the case of Street Lighting. The final certificate will only be issued when:

- The Developer has paid all amounts due under the agreement including any necessary commuted sums.
- The transfer of the highway land has been completed at no cost to the Council. The highway land is the land colour-washed pink on the approved Section 38 drawings.
- Any necessary Deeds of Grant have been completed at no cost to the Council.
- Landscaping areas that are to be adopted are fully established and planted in accordance with the specification. If the developer defaults on the maintenance aspect and there is a need to re-plant, adoption will be delayed until the landscaping is fully established or alternatively the developer pays a commuted sum to the Council so that adequate maintenance can be given in

the early years. If more than 20% of planting has to be replaced before final adoption, then the Developer will be

required to extend his liability for maintenance for a further period to be agreed with the Council.

- The Health and Safety File, as required by the Construction (Design & Management) Regulations 2007, has been delivered to the Council. It must include “as constructed” drawings and appropriate data for Highway Inventory and Structure Database Input.
- Two sets of the as-built plans (indicating the adoption areas shown coloured burnt sienna) and highway drainage, including any drainage situated outside the highway limits have been delivered to the Council. All new works or alterations to the existing highway must be identified.
- The street lighting installation has been inspected and approved (Maintenance Part 1 and Adoption of Street Lighting Part 2) and all information has been provided by the developer and approved, including Gazetteer references added to the street lighting columns and illuminated bollards.
- The Stage 3 As-Built Safety Audit has been carried out and approved.
- All commuted sums required have been paid to the Council.
  Any work carried out under a Section 278 Agreement (in conjunction with the S.38 Agreement) has been completed and the Final Certificate has been issued for those works including street lighting.

15.66 Following satisfactory completion of all of the above requirements, the Council will issue Part 3 Certificate. The Surety will be released from all liability in accordance with the Section 38 Agreement. If the developer fails to perform the obligations under the agreement or go into bankruptcy, the works will be executed in default by either the Surety or the Council. On the issue of Certificate 3, the roads will become highways maintainable at the public expense.

15.67 Audit

The Council may at any time inspect the development or carry out a Safety Audit of any specific part of the development to ensure compliance with this document and/or the Section 38 Agreement and adoption procedures.

16.0 HIGHWAY STRUCTURES

16.1 When a development requires the provision or alteration of a highway structure, the design proposals for that structure shall be submitted to the Council for Technical Approval in accordance with the procedure detailed below. Structures that are classified as 'highway structures' are;

- any structure or building built in, under, or over, the highway where the span dimension at any point is equal to, or exceeds 1.0m. This includes amongst others, bridges, footbridges, culverts, pipes, subways, chambers, cellars, shafts, manholes;
- Retaining walls where the height of retained fill measured between lower and upper ground levels is 1.37 metres or more, and
- Miscellaneous structures which includes amongst others
    - Reinforced earth embankments 1.37 metres or more in height, where the angle of the side slopes is greater than the angle of internal friction of the embankment material.
    - High mast lighting columns 20 metres or more in height
    - Structural aspects of sign and signal gantries as defined in the Design Manual for Roads and Bridges (DMRB) issued by the Department for Transport (D*f*T)
    - Structural aspects of traffic signal mast arm assemblies as defined by the DMRB

16.2 All structures associated with the highway (whether adopted or not) such as build over flats will be required to be designed in accordance with the latest relevant Standards, Codes of Practice, and the Technical Memoranda contained in the DMRB.

16.3 Because of the important design, safety, inspection and maintenance considerations involved, a technical approval procedure must be adhered to for highway structures. Full details of the approval procedure including a schedule of all the relevant design documents is available on request from the Highway Authority.

16.4 Technical Approval Procedure

Technical Approval is the submission of design proposals for acceptance by the Technical Approval Authority and the subsequent provision and acceptance of appropriate Certificates, confirming that the design complies with the standards listed in the agreed Technical Approval Schedule. Technical approval from the Council is required for the design, detailing and construction of all structures associated with the highway (whether adopted or not). This applies without exception and regardless of who the promoter is, and could be Network Rail or other Transport Authority, District Council, Parish Council, a private individual or private company (including Statutory Undertakers under the NRSWA) etc. Where a structure is to be adopted by the Council this must be specifically written into the Section 38 or 278 Agreement (Highways Act 1980), together with the agreed commuted sum for future maintenance that the developer is to pay to the Council. Where the structure is not to be adopted and does not belong to a statutory undertaker, a Maintenance Agreement or Licence may be required.

16.5 The Council is the Technical Approval Authority (TAA) for all highway structures within Warrington, with the exception of those owned by either Railtrack or the Highways Agency (i.e. those associated with motorways and trunk roads).

16.6 Approval in Principle (AIP) is a proforma that records the standards to be used for the design, together with other pertinent details. Blank versions of an AIP are supplied by the TAA for completion by the designer, who shall return the completed form to the TAA for acceptance.

16.7 Technical Approval Schedule (TAS) is a schedule of documents that are relevant to the design of the highway structure. It is included within the Approval in Principle as an appendix.

16.8 The Council requires the procedures described below to be applied to the design of all new, or alterations to existing, highway structures as defined in this section, all alternative designs and to temporary structures that support or protect the public highway.

16.9 Technical Approval is a continuing process and the period required for consideration will vary according to the size and complexity of the structure, and if any aspects of the design are a departure from current design standards. Designers should therefore liaise as early as possible with the TAA prior to making a formal submission on the appropriate AIP and TAS, blank versions of which are available from the TAA.

16.10 A formal AIP submission shall include a location plan, a General Arrangement drawing, relevant parts of the soil investigation factual and interpretation reports, and completed copies of TAS and AIP and no design should commence until approval of the AIP has been obtained from the Highway Authority. Endorsement of an AIP in no way infers acceptance of any of the details. These are accepted by the endorsement of the design and check certificates and maintenance audit.

16.11 On completion of the design and independent check the appropriate Design and Check Certificates or Design/Check Certificate shall be completed, signed by the designer and/or checker and forwarded to the TAA for acceptance. This certificate confirms that the design complies with the agreed standards recorded in the AIP.

16.12 Once the signed copies of the design and check certificates have been submitted, a Maintenance Audit is carried out by the TAA. This is to ensure that aspects affecting the on going inspection and maintenance of the structure are to the TAA's approval. Where the proposed works are subject to the provisions of either section 167, 169,176 & 177 of the Highways Act 1980 a licence or consent as appropriate will be required prior to the start of works. The developer will be advised of the need for a licence or consent during the AIP approval process. Should a licence or consent be required for the works it will not be issued until both the AIP and Design Certificate have been accepted by the TAA.

16.13 The construction work may not commence until any required legal agreements are signed, the Consultant is in receipt of the TAA endorsed Design and Check Certificates and the developer's site supervision arrangements are agreed by the TAA. The Developer must notify the TAA of the programmed start and completion dates, prior to any works commencing on site. Supervision of the works shall be the responsibility of the developer but must be carried out by a competent consultant independent of the Contractor and approved by the TAA. In addition the TAA is to be permitted access to the works at any time during construction for audit supervision checking.

16.14 On completion of the works the designer shall sign a Certificate of Construction Compliance to confirm that the works have been completed in accordance with the approved design and drawings. If any aspect of the works deviates from the approved design this shall be stated on the certificate and recorded on a set of as-built drawings to accompany the certificate. Approval for adoption will not be given until the Certificate of Construction Compliance has been endorsed by the TAA.

17.0 SPECSIFICATION OF CONSTRUCTION MATERIALS

17.1 Highway materials, pavement construction and the overall quality of work requirements shall comply with the edition current, at the time of the development design submission and contract, of the Manual of Contract Documents for Highway Works, Volume 1: Specification for Highway Works (SHW), Volume 2: Notes for Guidance on the SHW and the British Standards Institution Specification except where stated. Where Development Plan policy requires, or where the development is within an existing conservation area, specific materials, surfacing types, and/or finishes other than those set out may be used in line with the requirements of the Local Planning Authority and subject to the agreement of the Local Highway Authority. Unless otherwise stated, the definition of terms used in this General Specification shall be that in the Glossary of Highway Engineering Terms and BS 6100. The Engineer, for the purposes of this Specification, shall be the representative of the Highway Authority (HA).

17.2 Testing Of Materials

Representative samples of all materials to be used in the works shall be submitted for the Engineers approval not less than three weeks before they are to be used in the works. All materials and workmanship shall be in accordance with the appropriate standard specifications mentioned in the above paragraph. The developer shall supply upon the Engineers request any materials for testing and where necessary, permit the HA's representative, access to carry out in situ tests of road materials and checks on finished construction to verify compliance with the specification. Material testing is to be undertaken by a UKAS accredited laboratory. Failure of materials to meet the appropriate specifications and requirements can result in the material being rejected and thereby removed at the developers expense.

17.3 Ground Investigation

The investigation should gather all data needed to assess a number of design issues including the following:

- General suitability of the site and neighbourhood for the proposed development works
- Physical characteristics of the ground e.g. presence of In-ground obstacles, services, buried conduits, sumps soft spots, cellars etc.
- Physical characteristics of contaminated matrices e.g. mineralogy, moisture content, permeability, chemical composition, particle size distribution
- Geotechnical characteristics e.g. strength, compressibility, stability of slopes, existing structures, potential for subsidence etc.
- The need for design requirements of any foundations, earthworks, temporary works and specialist geotechnical processes associated with the development strategy, taking into account the effect of any previous uses of the site.
- Any factors arising from the soil or groundwater conditions that might constrain the construction or implementation of development works including temporary works, excavation, traffickability and drainage.

- The quantity, quality and ease of extraction of construction materials (e.g. concrete foundations) suitable for inclusion in the works
- Changes in the stability, drainage or other geotechnical aspects of the site and the surrounding ground and buildings, which might be initiated by the development works.

17.4 All investigation works shall be carried out in accordance with BS 5930 and BS EN ISO 14688-2:2004. Specialist geotechnical processes shall be carried out in accordance with the Association of Geotechnical Specialists (AGS) – Guideline for Good Practice in Site Investigation.

17.5 Earthworks

All earthworks are to be carried out in accordance with the latest requirements of Series 600 of the Specification For Highway Works (SHW). Drawings showing earthworks details together with appropriate schedules and appendices shall be submitted to the Engineer prior to commencement of the works.

17.6 All topsoil shall be removed from the area required for highway construction and wherever practicable be used immediately after its stripping and if not shall be stored in stockpiles of heights not exceeding 2m to prevent deterioration and contamination with sub-soil etc and shall not be stockpiled for more than two years. The area of carriageway shall be excavated or filled to the correct lines, levels and contours.

17.7 Earthworks materials fall into two general classifications as follows;

- Acceptable material- material excavated from within the site or imported on to the site which meets the requirements as defined in the Specification of Highway Works Table 6/1 and Appendix 6/1 for acceptability for use in the Permanent Works; and
- Unacceptable materials Class U1A, Class U1B and Class U2 as defined in the Specification of Highway Works.

17.8 Use Of Fill Materials

The material used for construction fill shall be granular and selected according to the required purpose, which can be obtained from the site or imported to the site. In addition to any grading requirements the maximum particle size of any fill material shall be no more than two-thirds of the compacted layer thickness except that cobbles having an equivalent diameter of more than 150 mm shall not be deposited beneath verges or central reserves within 1.30m of the finished surface.

17.9 Material shall not be deposited within 500mm, or other distances described in SHW Appendix 6/3, of concrete, cement bound materials, other cementitious materials or stabilised capping forming part of the Permanent Works.

17.10 Geotextiles

The use of geotextiles for ground stabilisation can be permitted at the discretion of the Engineer, the grade of membrane to be used must be approved and must comply with clause 609 of SHW.

17.11 Formation

Preparation and surface treatment of the formation shall be carried out only after completion of all sub-grade drainage. Trenches formed in the construction of ducts, gully connections and public utilities shall be filled with Type 1 sub-base material. The material is to be compacted in accordance with compaction methods for earthworks in Series 600 of SHW**.**

17.12 Capping Layer

Where a capping layer is required as a result of poor sub-grade conditions it shall consist of the following materials:

- Crushed non-argillaceous rock or crushed concrete, crushed cobbles and gravel.
- The material shall not exceed 500mm and not more than 10% shall pass a 125mm sieve.
- The 10% fines value (BS.812) shall not be less than 100KN.

The capping layer thickness will depend on the CBR of sub-soils, values below 2% will normally require a capping layer to be provided. Should any local depression occur, this should be excavated and filled. Granular Materials (including capping and sub-base layers) are to be compacted in accordance with compaction methods for earthworks in Series 600 of SHW.

17.13 Bituminous Sprays

Bituminous sprays used to facilitate sealing and curing shall consist of bitumen emulsion to BS 434 and shall be produced in plants that are registered to BS EN ISO 9001 ‘Sector Scheme for the Supply of Paving Grade Binders’ or modified bituminous products with a British Board of Agrément HAPAS Roads and Bridges Certificate. In the event that no such certificates have been issued, modified bituminous products shall not be used without the approval of the Engineer.

17.14 The bitumen emulsion shall be applied to the binder course at the rate of 0.35 to 0.55 l/m^2 and allowed to “break” (turn from brown to black) unless applied by integral spray bar on the paver, before laying the surface course. The emulsion shall not be allowed to accumulate in hollows but shall be dispersed by brushing.

18.0 CARRIAGEWAY CONSTRUCTION

18.1 All road pavements are to be built in accordance with the latest requirements of the following Series 700,800, 900 and 1100 of the Specification For Highway Works.

18.2 Sub-Base

Sub-base shall be granular sub-base material Type 1 in accordance with Clause 803 of SHW. The sub-base material should be laid at moisture content within the range + 1% to - 2% of the optimum percentage, determined by the vibrating hammer method (BS.1377) and without drying out on segregation. Where specific problems exist, other materials submitted to the Engineer will be considered for sub-base use. Sub-base thickness is dependent upon CBR value, minimum thickness 150mm.

18.3 Calculating The CBR Value

To determine the CBR for a soil the designer has two options, they can either use the California Bearing Ratio (CBR) test equipment to be carried out by (UKAS) accredited lab) or subject to the Engineers approval, trial holes can be dug to a depth of 0.5m below carriageway formation level to ascertain the sub-soil type. The CBR value adopted can be read from Table 24.

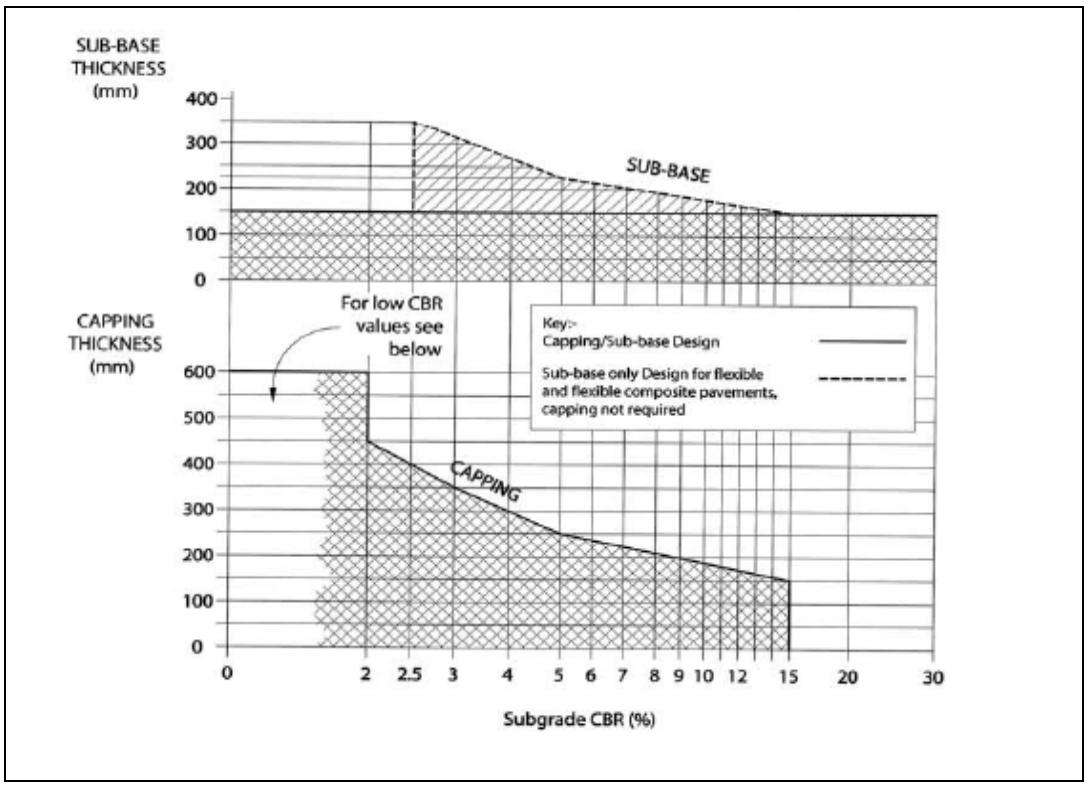


Table 24: Estimated CBR Values

Soil Type	Plasticity Index	Equilibrium CBR Value%	
		Low Water Table	High Water Table*
Silty Clay	40	2.5	2.0+
Silty sandy clay	30	3	2.5+
Sandy clay	20	3	2.5+
Very sandy clay	10	2.5	1.5*
Silt	-	1.0 – 2.0	1.0
Uniform sand	-	20ϕ	15ϕ
Well-graded sand	-	40ϕ	30ϕ
Well-graded sand & gravel	-	60ϕ	45ϕ
Marl	-	5ϕ	3.0ϕ
Weathered sandstone	-	20ϕ	10ϕ

\+ *Soils and rock liable to frost heave must have at least 450mm of non-susceptible cover*

ϕ *Acceptable embankment fill compacted in accordance with the specification can be assumed to have the CBR value quoted for the particular soil type and location of the water table.*

* *A high water table is one 300mm or less below formation level and is consistent with ineffective sub-soil drainage. A low water table is 1.0m below formation level*.

18.5 Base Course

Dense macadam base course to SHW Clause 903 and BS EN 13108-1. The aggregate size for all bituminous base course material shall be 28 mm nominal size laid in layers compatible with the aggregate in the range 70 to 120 mm. The use of gravel aggregate is not permitted.

18.6 Binder Course

Dense bitumen macadam binder course to SHW Clause 906 and BS EN 13108-1 The aggregate size for all bituminous binder course material shall be 20 mm nominal size, laid as 60mm layer. The use of gravel aggregate is not permitted

18.7 Where the binder course is to be trafficked during the construction stage and the area is available to public vehicles the aggregate shall have a minimum polished stone value (PSV) of at least 55 and have bituminous spray applied before laying of surfacing course.

18.8 Surfacing Course (Local Distributor and Transition Roads)

Rolled asphalt surfacing course design mix to SHW Clause 911 and BS EN 13108-4

18.9 Surfacing Course (Residential Access Roads)

Rolled surfacing course design mix to SHW Clause 910 and BS EN 13108-4, binder grade 50pen bitumen. Thickness of layer 50mm.

18.10 Pre-Coated Chippings to Surfacing Courses

Pre-coated chippings shall be applied to rolled asphalt surfacing courses and shall be 20mm nominal size BS EN 13108-4

18.11 Transportation, Laying and Compaction Of Hot Bituminous Materials

The transportation, laying and compaction of hot bituminous materials shall be in accordance with the requirements and recommendations in BS EN 13108-1 or BS EN 13108-4 as appropriate.

Table 25: Flexible Carriageway Construction Materials and Thicknesses (Residential Estate)

Layer	Material	Local Distributor Road	Residential Access Road	Shared surface road
sub-grade improvement layer (capping)	Class 6F2	Thickness dependent upon CBR value of the subsoil see Table 26		
Sub-base	Granular Sub-base Type1	Thickness dependent upon CBR value minimum thickness 180mm & increased to give total construction thickness of 450mm on frost susceptible sub-grades		
Base Course	Dense Macadam	120mm	120mm	70mm
	Rolled Asphalt	120mm	120mm	70mm
Binder Course	Dense Macadam	60mm	60mm	60mm
	Rolled Asphalt	60mm	60mm	60mm
Surfacing Course	Rolled Asphalt (design mix) BS EN 13108-4	50mm	45mm	n/a
	Rolled Asphalt (recipe mix) BS EN 13108-1	n/a	40mm	40mm
Thin Surfacing Course	Thin surfacing course systems may be used where appropriate however they must comply with SHW Clause 942 and Appendix 7/1. They must have British Board of Agreement HAPAS Roads and Bridges Certificate.			

18.12 Block Paving

Block paved areas are particularly suited to residential developments as they can be reinstated quickly if disturbed or damaged and can be used for Shared Surface Roads. Block paving shall be laid in accordance with the requirements and recommendations in BS 7533 and SHW Clause 1107 except where it is varied by the project specification.

18.13 Unless specifically agreed with the Engineer only rectangular blocks manufactured with nominal dimensions of 200 mm length, 100 mm width and 80 mm thickness shall be used and a minimum PSV of 50. A PSV of higher value are required at junctions and crossing points. The block paving should normally be laid in a 45° herringbone pattern to the kerb with a proprietary starter block system used in conjunction with either a single or double stretcher course. Natural Stone Surfacing may be used, particularly, in conservation areas where matching of aggregate and or coloured natural stone may be a requirement.

18.14 The laying course sand and jointing sand shall comply with BS 7533. The use of a sealant to deter jointing sand wash out is encouraged for areas that may be scoured or have large surface water movement.

18.15 The use of an unbound road base beneath block work or clay paver construction will not be permitted in any area of carriageway construction or highway put forward for adoption. This includes all carriageways, parking areas, bus stops and any other paved area within the adoption envelope.

18.16 The drainage of a block paved surface shall be in accordance with the following details;

- The sub-grade shall be drained and protected against flooding and ground water by piped or channelled storm water drainage and subsoil drainage.
- To prevent loss of the course material into the drainage, a geotextile membrane shall be placed beneath the laying course.
- For block paving with a road base layer, provision shall be made to excavate 300mm x 300mm square openings at 10m centres in the road base in each channel. A 100mm perforated pipe connected to the surface water system should be placed in these voids and surrounded with no fines concrete. The Engineer may consider an alternative system of drainage.

18.17 Industrial And Commercial Carriageway Construction

The Specification is based on a flexible carriageway construction using either dense bitumen macadam or hot rolled asphalt materials. The Highway Authority should be consulted regarding the use and specification of alternative materials for rigid or composite pavements, or reference should be made to the Design Manual for Roads and Bridges, (Volume 7, Section 2, Parts 1 and 2). The table below gives the materials and thicknesses required for Industrial and Commercial carriageway construction.

Table 26: Flexible Carriageway Construction Materials and Thicknesses (Industrial)

Layer	**Material**	**Industrial Distributor Road**	**Industrial Estate Road**
sub-grade improvement layer (capping)	Class 6F2	Thickness dependent upon CBR value of the subsoil see Table 25	
Sub-base	Granular Sub-base Type1	Thickness dependent upon CBR value minimum thickness 180mm & increased to give total construction thickness of 450mm on frost susceptible sub-grades	
Base course	Dense Bitumen Macadam - SWH clause 903, 125 pen	235mm	200mm
	Rolled Asphalt SWH clause 904, 50 pen	235mm	200mm
Binder Course	Dense Macadam SWH clause 906, 125 pen	60mm	60mm
	Rolled Asphalt- SWH clause 905, 50 pen	60mm	60mm
Surfacing Course	Rolled Asphalt (design mix) – SWH 911,BS EN 13108-4	50mm	50mm

19.0 KERBS FOOTWAYS AND PAVED AREAS

19.1 All works for kerbs, footways and paved areas shall be carried out in accordance with the latest requirements and recommendations of Series 1100 of the Specification for Highway Works (SHW).

19.2 Kerbs, Channels And Edgings

Kerbing is required to protect pedestrians on footways and verges from vehicle overrun and provide a channel against which water can run to the gulleys. In addition kerbs define the inside edge on bends and at other locations where inadvertent vehicle over run could damage the verge. It should be provided only where necessary. Channels not only provide a means of taking water to gulleys, they also provide linear features in the construction. Precast concrete kerbs, channels and edgings shall comply with the requirements of Clause 1101 of SHW and BS EN 1340. Typical sections with details of foundation and backing are shown in Standard Details.

19.3 Footways And Other Paved Areas

The requirements for footways, footpaths, cycleways and greenways for particular road types are given in Part 2 of the Design Guide. All footways and other paved areas shall be in accordance with the requirements and recommendations of Series 1100 of the SHW.

19.4 Sub Base

After the formation has been inspected and approved by the Engineer, the required Type 1 granular sub base material to SHW Clause 803 and dependent upon CBR value shall have a minimum thickness of 150mm. The completed surface shall be free from irregularities and loose material and be true to cross section line and level.

19.5 Binder Course

Dense macadam binder course to SHW Clause 906 (DBM 100 pen) or C54 tar binder - BS EN 13108-1 and crushed rock aggregate with 20mm nominal size and laid as 60mm layer.

19.6 Surfacing Course

Dense surfacing course material to BS EN 13108-1 and shall 6mm nominal size. The material must not be fluxed and limestone aggregate shall not be used. Alternatively, concrete or clay block paviors, 65mm thickness increased to 80mm at vehicular crossing points to BS EN 1338: 2003 with min PSV value 50. The block paviors shall be to a colour or colours previously agreed with the Engineer and shall be laid in herringbone pattern on 30mm compacted sand bed as specified in BS 7533-3:2005.

19.7 Footway Gradients

Footways must have a crossfall of at least 1 in 40 (2.5%). The fall of the footway should be towards the carriageway, should a fall towards the boundary be unavoidable a positive drainage system must be provided, approved by the Engineer. The maximum gradient of a footway should not exceed 1 in 12.

Table27: Construction Materials and Thicknesses –Flexible Construction (footways, footpaths cycleways & vehicle crossovers)

Layer	Material	Thickness of Layer	
		Residential, Commercial & Industrial	**Vehicular Crossings & corners where over-run is possible**
Foundation	Granular sub base material	150mm	200mm
Binder Course	Dense bitumen macadam binder course	60mm	60mm
Surfacing Course	6mm dense surfacing course	20mm	20mm

Figure 32: Typical Cross Section of Pavement

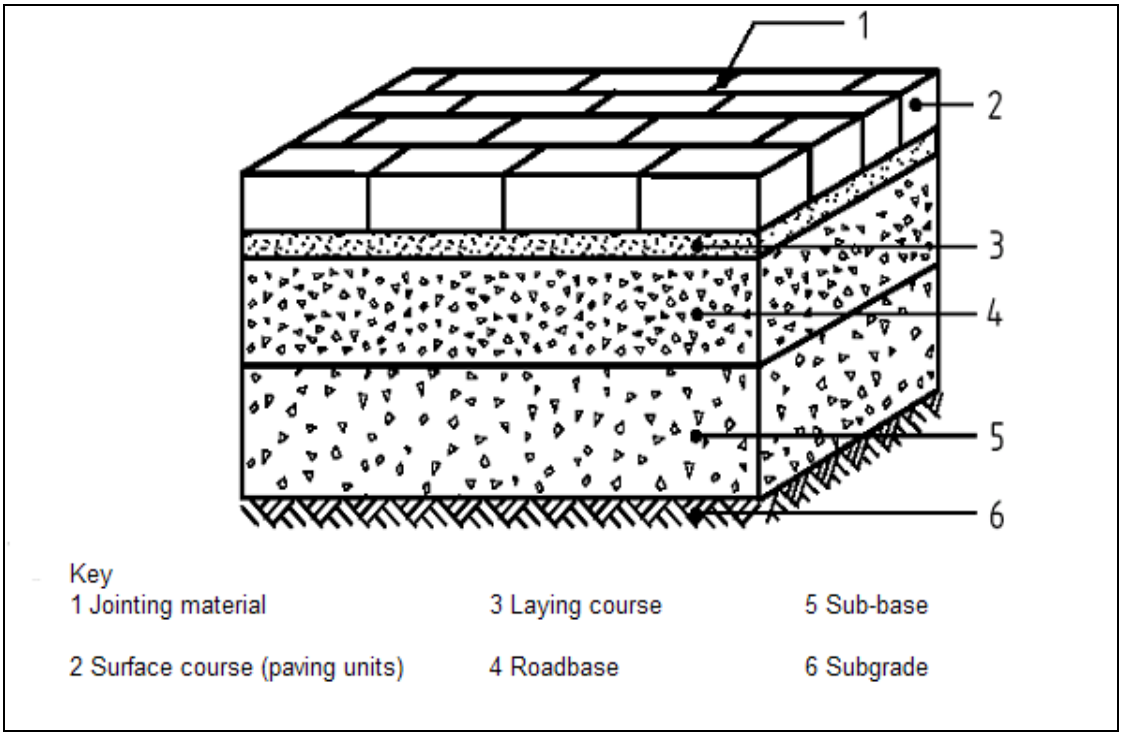
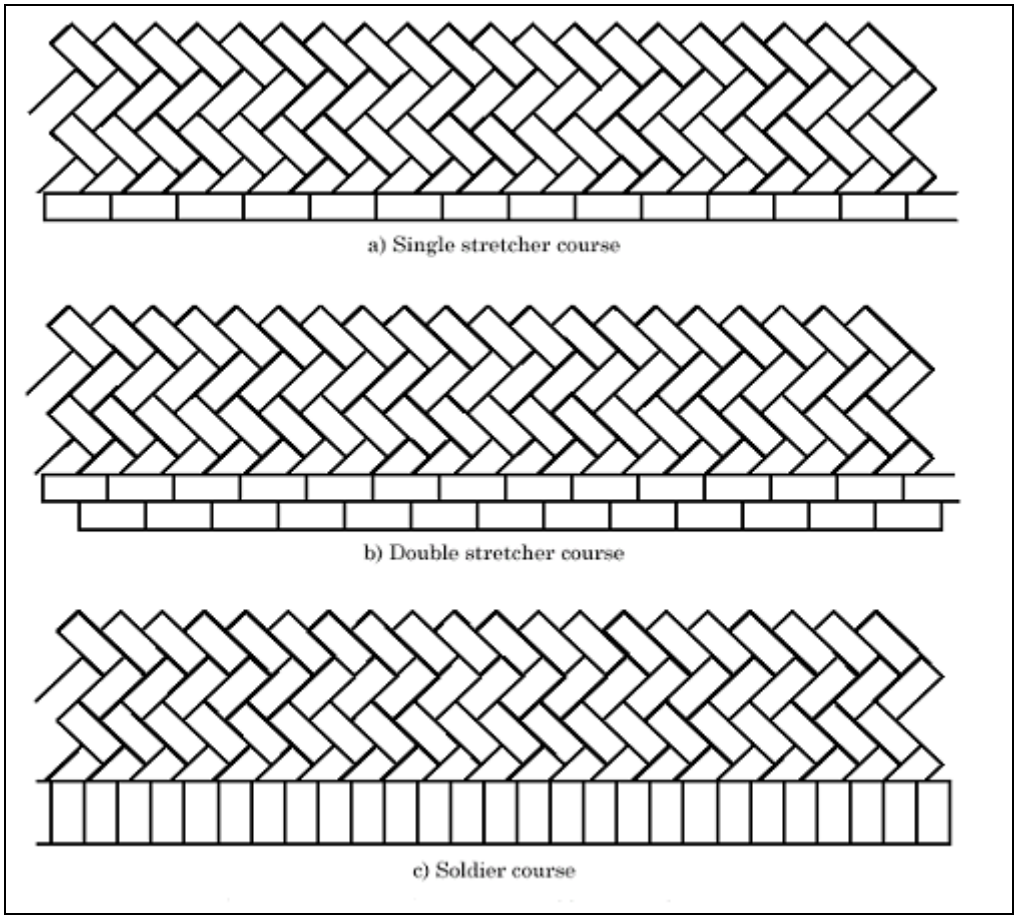


Figure 33: Laying Patterns at Edges



20.0 HIGHWAY DRAINAGE

20.1 Highway drains shall be laid in straight lengths and located within the limits of existing or proposed highway. In cases where they are located in privately owned land they will not be adopted unless an acceptable easement is provided. All drainage works are to be in accordance with series 500 of the SHW, the relevant British Standards, Sewer for Adoption 6th Edition, Civil Engineering Specification for the Water Industry and subsequent revisions. The minimum diameter of highway surface water drain shall be 225mm except for gully connections which shall be 150mm diameter, with the pipes laid to provide self cleansing velocity of not less than 1.0m per second. The 'Rational (Lloyd Davies)' method shall be used for the design of highway drainage system as set out in Road Note 35 'A Guide for Engineers to the Design of Storm Sewer Systems' published by HMSO. To assist in the checking of the drainage calculations, a design sheet based on Table 1 of Road Note 35 should be used and submitted to the Engineer prior to construction.

20.2 Manhole - Spacing, Covers And Frames

Manholes shall normally be constructed using precast concrete sections manufactured to BS 5911 and constructed in accordance with the Standard Details. They shall have a minimum diameter of 1200mm and be provided at every change of alignment and at the head of all pipelines, every pipeline junction (except gully connections) and change in pipe size. The spacing of manholes shall not in any case exceed 100m.

20.3 All manhole covers and frames located within the adoptable carriageway must comply with SHW and with BS EN 124. All products must be kite ductile cast iron. For use in carriageways, all manhole tops shall be Class D400 except where trafficking by commercial vehicles will be minimal and/or where the adoptable roads do not form a bus route. In these exceptional circumstances Class C250 may be used.

20.4 Sustainable Urban Drainage Systems (Suds)

There is a move towards SUDS that control the retention of surface water run off as close to its origin as possible before entering a watercourse or aquifer. This involves moving away from the traditional piped drainage systems to engineering solutions that imitate the natural drainage processes. The suitability of the drainage system will depend on the topography and geology of the site, the capacity of receiving drainage system, watercourse or aquifer and the outflow rates applied to the whole development site. At present, not all SUDS are permitted in highway construction will need to be approved by the Highway Authority on a site by site basis and the designer should seek clarification from the Highway Authority, before commencing design of these evolving techniques.

20.5 Soakaways

Where surface water connections to positive drainage systems cannot be made, consideration will be given to the provision of soakaways for surface water drainage. The developer will be required to provide a commuted sum payment per soakaway for future maintenance.

20.6 Types Of Surface Water Pipe

Pipe work material for drainage to be adopted by the Council shall be as follows;

- Vitrified Clay pipes to in accordance with BS.65 or BS EN 295 with flexible joints or plain ended with sleeve couplings.
- Concrete pipes to BS.5911 having spigot and socket joints, which may be flexible, but self aligning.
- PVC pipes (UPVC) to BS 4660:2000, BS EN 13598-1: 2003 and BS EN 1401-1: 1998.

20.7 Gully Chambers, Covers, Gratings And Frames

Gully chambers for carriageways shall have a minimum internal diameter of 450mm and a minimum depth of 750mm with a trap and rodding eye and a 150mm diameter outlet. Chambers shall accord with Series 500 of the SHW and manufactured in accordance with BS 5911, BS 65 or BS EN 295. The use of PVC material will require the approval of the Engineer. All gullies shall be surrounded with 150mm minimum thickness of Grade ST4 concrete to BS EN 206 and the complementary BS 8500. Gully tops shall be kite marked ductile iron complying with the relevant requirements of BS EN 124.

21.0 STREET LIGHTING

21.1 Street lighting encompasses the lighting of all types of highways and public thoroughfares, assisting traffic safety and ease of passage for all users. It also has a wider social role, helping to reduce crime and the fear of crime, and can contribute to commercial and social use at night of town centres and tourist locations. Street lighting should reveal all the features of the road and traffic that are important to the different types of road user, including pedestrians. In some cases lighting design location may be an issue covered in a planning permission as any new development or alterations to an existing may have an effect on the adopted highway, without the development actual being on it. For this reason developers are requested to contact the street lighting department for advice.

21.2 Lighting, which fulfils a highway function, will be adopted regardless of the source of finance for installation. The design will be normally be undertaken by the Highway Authority but can be undertaken by the developer. Schemes prepared by developers shall be submitted for approval for which a design fee for checking will be incurred for each submission as decided by the Council. Lighting design shall generally be in accordance with the authorities latest edition of its design guide. Where the Street Lighting Design Guide, British Standards or other Codes or Guides do not provide adequate design criteria for a particular special need the Street Lighting Engineer should be consulted. A specification and/or list of acceptable equipment is available on request. Developers deviating from this list must have the equipment approved by the Highway Authority.

Developers are advised to consult the Authorities Street Lighting Design Guide and contact the lighting department at an early stage.

22.0 LANDSCAPING

22.1 A fundamental component of the design of the residential, and other, environments is the provision of plants, ranging from simple grass planting to retaining trees. It is therefore important to seek professional landscape expertise at the early concept stage of a development to give advice on initial surveys, appropriate design, the practical implications of planting, and long-term landscape management. For the most part, the landscaping of a development will lie outside the highway and general landscape guidance is outside the scope of this guide. However, there are a wide range of landscaping opportunities within the highway, which may be exploited both to enhance the highway and to complement the overall design of the development. Attention to planting and the use of interesting surface materials can make the highway environment pleasant to look at and use. All grassed and planted areas are to be built in accordance with the latest requirements of SHW Series 3000. Potentially, it can be assessed as part of the planning process.

22.2 The particular functions of landscaping within the highway are to:

- give the overall design natural scale and form
- emphasise the character of the chosen highway layout
- provide contrast to hard surfaces and visual amenity
- reinforce enclosure and narrowing
- direct pedestrian flow
- complement wider landscape design
- preserve existing site features and
- reduce noise, air pollutants and provide natural shade

22.3 Poor design and choice of plant species can produce security problems both for parked cars and also personal security, therefore, landscaping should avoid creating high-risk areas of shade and screening. Co-ordination between the landscape design and street lighting layout, car parking zones and footpath/cycleway alignment is therefore essential. To this end, planting should be limited to ground cover species, clear stemmed trees (up to 1.8 metres, non dripping and no heavy fruiting) climbers and grass. No trees or shrub species may be planted where at their matured height, they will obstruct streetlights or road signs.

22.3 The Highway Authority has limited facilities for the maintenance of soft landscape and will not accept within the highway adoption boundaries planting, which requires complex or specialised treatment. Large car parking areas and their associated landscape features are unlikely to be adopted by the Highway Authority. However, their design is of interest to the highway authority, as an insecure and thereby unattractive parking area inevitably leads to indiscriminate parking on the highway, where the natural surveillance is better, but to the detriment of highway safety.

22.5 Service Verges And Visibility Splays

These areas should be grassed or planted with approved shrubs. All grassed and planted areas are to be built in accordance with the latest requirements of SHW Series 3000, BS 3969, BS 4428 and the National Joint Utilities Group (NJUG) Publication No: 10. Shrubs are particularly suitable where grass cannot readily be looked after by residents, for example where a verge joins a screen wall. Adopted service verges must be clearly defined on the ground. Where there is no identifiable boundary between the service verge and a private curtilage (for example, in an "open plan" layout) markers of a design acceptable to the Council should be used. Measures should be taken to ensure that service boxes can be easily identified in planted verges. Dense or thorny species adjacent pedestrian/cycle routes are not acceptable.

22.6 No trees may be planted in service verges within areas, which will be adopted highway, nor within 3m of a route for major underground services or sewers. Care must be taken when choosing species of shrubs for planting within service verges to ensure a shallow root system shrubs are used thus avoiding potential danger to services.

22.7 Visibility splays at road junctions, roundabouts or bends, which would form part of the adopted highway, should be grassed or planted with approved shrubs. Any such planting must not exceed a mature height of 0.6m above the channel on all residential roads. The planting of trees within a 2.4m setback visibility splay will not be permitted. Plant species, which produce suckers and trees, which produce shoots from the base and trunk, would not be accepted close to visibility splays. At greater setbacks, trees may be permitted for example to retain mature trees or to continue avenue style planting where the species has a narrow girth and a minimum clear stem of 3m to the crown.

22.8 Trees

Trees are of particular important in enhancing housing and road layouts but should be located with nearby buildings and highway infrastructure in mind. All tree planting must comply with SHW Series 3000 and the recommendations of the relevant BS 5837, BS 3936, BS 3998, BS 4428 and the National Joint Utilities Group (NJUG) Publication No: 10. Certain characteristics of trees need to be recognised and the ultimate mature height and form of a tree or shrub are extremely important in deciding on its suitability for planting in any position. Trees must therefore be chosen on the following basis: -

- design requirements i.e. growth of roots and branches
- soil types, site drainage and other site considerations
- their seasonal habits (dropping leaves or fruit, providing shade)
- maintenance requirements

22.9 Tree pit construction should ideally have root barrier material or root directors included to help prevent physical lifting of the surrounding surfaces. Their design should prevent surface water run-off draining into the tree pit. A tree pit should be excavated to be 100mm bigger than the root ball of the tree, the sides and base of the pit should be thoroughly forked to break up compaction. The pit should be back filled with premium grade topsoil. A list of trees that are generally suitable for roadside planting is set out in Table 28 below.

The trees are categorised by suitability for narrow verges (over 3.0 metres) and wider verges (over 6.0 metres). The list is not exclusive and Developers are advised to discuss any proposal with Officers of the Council.

Table 28: Recommended Highway Tree Plantings

Tree Type	Description
Tilia "Green Spire"	Rather columnar variety, less prone to aphid attack. One off replacements on avenues such as Poplars etc. and where Limes are to be put on new avenues.
Sorbus aucuparia "Sheerwater Seedling"	Usually placed in confined areas where the tree stock has been rowan, such as Frederick Street, Rock Road. The crown is semi-fastigiate.
Sorbus intermedia	Open crown, mid-sized tree, favoured for its form and the crown is not too dense and does not get too high. Little or no trouble with root heave, windthrow etc.
Carpinus betulus "Fastigiate"	Normally used as a replacement for locations that have had Lombardy Poplar or similar columnar variety removed, e.g. Queens Drive and Summerville Gardens. Slow growing, albeit with a dense crown. Establishes well. Can look a little manicured and is difficult to shape the crown.
Fagus sylvatica "Fastigiate"	The other replacement for Lombardy Poplar where space laterally is limited or light levels are likely to be affected. Can be difficult to establish but once settled, appears to be trouble free, e.g. Thornton Road and Roughlea Avenue.
Pyrus "Chanticleer"	Performs a similar function to the Carpinus or Dawyck beech but on a smaller height scale. Planted for its form. Sterile therefore little problem with fruits causing a trip hazard. Crown weight can cause problems during establishment, causing the tree to lean. Formative pruning can remedy this, however, e.g. Newchurch Lane.
Malus tschinosskii	Similar role to Pyrus above, e.g. York Avenue, Culcheth. Malus trilobata can also be used.
Corylus colurna	Replacements for Alders, especially grey or Italian Alders which are prone to suckering. The virtually guaranteed dominant leader ensures a uniform avenue effect.

Table 28: Recommended Highway Tree Plantings (cont.d)

Crataegus prunifolia/ crus-gali	Small ornamental on narrow road side verges near properties. Is virtually used as a green bollard to deter verge parking. Slow growth and low crown ensure that light levels to properties are not seriously impinged upon, e.g. Knutsford Road. Others would include Prunus avium "plena" or "kanzan" within existing Cherry tree lined streets such as Grosvenor Avenue, Hallows Avenue. Tilia platyphyllos, Grange Avenue, Platanus acerifolia for such as Kingsway and very rarely Quercus coccinea for colour. In the right circumstances, consider Acer platanoides for its autumn colour, especially on wide areas such as Cedarways or Farrell Street to offset the loss of a number of London Planes, regularly failing in high winds.

22.10 Shrub Planting

Shrub planting generally sits with in the structure planting and works at a more local level. Shrub species vary enormously from large almost tree like species to small ground cover varieties. Shrubs in the vicinity of statutory utilities and visibility splays must have root systems that do not interfere with underground services or adjoining surfaces and restricted growth with a height not exceeding 600mm within visibility splays. The table below contains shrubs, which are suitable for planting within the adoptable highway boundaries. Whilst these are low growing there may be opportunity to plant large shrubs outside visibility splays and service verges where it is desirable to create a sense of enclosure.

Table 29: Shrubs suitable for planting within the adoptable highway boundaries

Shrubs	Ultimate Height (mm)
Berberis candidula	450
Cornus alba “Kelseyi”	450
Cornus canadensis	300
Cotoneaster dammeri “Coral Beauty”	300
Cotoneaster microphyllus	450
Euonymus “Emerald Gaiety”	450
Genista Lydia	450
Hebe x franciscana “Variegata”	500
Hebe “Red Edge”	500
Hypericum x moserianum	500
Lonicera pileata “Maigreen”	500
Potentilla nana argentea	450
Rosa “Rutland”	300
Rosa “Hampshire”	300
Rosa “Kent”	450
Rosa “Norfolk”	450
Rosa “Suffolk”	450
Spiraea “Goldmound”	500
Spiraea “Little Princess”	500
Vinca major “Variegata”	400
Vinca minor	400

The table is not exhaustive

22.11 Turfing

Turfing must be carried out in accordance with BS 3969 and BS 4428. Turf shall be laid on topsoil that is moist but not frozen or waterlogged. Turf shall not be laid during periods of drought or onto soil that is excessively dry, or during heavy rainfall. The depth of topsoil should be cleared free of weeds, rubbish and stones and brought to a fine even surface. The surface should be lightly and uniformly firmed. The turfs should be laid with half lapped joints well butted up and evenly beaten with wooden turf beaters, any inequalities in finished levels shall be adjusted to obtain an even surface. After settlement, finished level to be 10mm above adjacent concrete edging/kerb.

22.12 Grass Seeding

Grass seed shall comply with BS 4428. The correct selection of seed is important to ensure that the grass species will suite the type of soil, function and maintenance requirements of the area. Low maintenance good quality seed mix should be used within the adoptable highway boundaries. A suitable mix of grass seed species for these areas will typically contain Perennial Ryegrass, Creeping Red Fescue and Highland Browntop Bent.

22.13 Sowing must only be carried out at the appropriate times of the year and when weather and soil conditions are suitable. Sowing shall be carried out by evenly distributing the seed at a rate of not less than 20 g/m2 for side slopes of embankments and cuttings and not less than 15 g/m2 elsewhere. Sowing shall be

immediately followed by lightly raking the surface of the soil to cover the seeds, by use of a chain harrow or other suitable plant.

22.14 Grass should not be laid hard up against vertical structures, as mowing against them is impracticable. A mowing strip (minimum width 225mm) should be provided to obviate the need for additional expensive edging operations. In addition potential obstructions such as fence posts, signposts and lampposts should be sited in areas of paving or be surrounded by mowing strips.

22.15 Topsoil

Topsoil is the fundamental basis of all planting and should be supplied or retained on site in accordance with BS 3882. A typical topsoil specification is to premium quality free from large stones (over 50mm in any dimension) and at a depth of 100mm for grass areas and 300mm for planted areas. These depths are after settlement and can only be regarded as a guide. The effectiveness of topsoil depths are totally dependent on the nature of the material below. If this is a naturally occurring sub soil, which has not been compacted through construction processes then the depths stated above will suffice. In situations where there may be construction layers or hard compacted material then the situation should be reviewed by a landscape professional and advice taken.

23.0 MISCELLANEOUS

23.1 This section provides general guidance on miscellaneous information which do not fit logically within the previous sections and must be read in conjunction with the advice given in part two of this document.

23.2 Street Furniture

Street furniture must be carefully sited so as not to obstruct the passage of pedestrians generally or present a hazard to the visually impaired. Where there is a high level of pedestrian movement, the footway shall be widened where necessary to accommodate, public telephone call boxes, utility service cabinets, litter bins etc. Where people are likely to congregate i.e. at shops, community centres or bus stops etc., these make an ideal opportunity to combine street furniture such as telephone kiosks, post boxes and litter bins in a structured way.

23.3 Wherever possible street nameplates should be fixed to walls, or property, where they are less likely to suffer from vandalism and generally make for less clutter. However where this is not practical they may be placed against walls or landscape areas, so that they do not occupy a prominent position in an open plan estate.

23.4 Street Naming

Street naming will need to be agreed with the Highway Authority. Developers are required to apply to the Highway Authority as the street naming authority for names to be given to any new lengths of road. The Highway Authority will specify the details that they require, and developers may offer suggestions for street names to the Highway Authority and reasons for the choice would be helpful in reaching a decision.

23.5 The Highway Authority will advise developers of the names chosen, following the necessary consultations. It is the developer's responsibility to erect the street nameplates, which the Highway Authority has chosen. All street name plates on 'private drives' and 'private roads' should clearly state that the drive or road is private.

23.6 The Developer will need to provide and install road and footpath nameplates to the requirements of the Highway Authority before any dwellings are occupied. They are usually required on both sides of the junction and facing the exit from the connecting road. Where a street is a cul-de-sac, this should be indicated appropriately on the street nameplate and only the side of the minor road facing the oncoming traffic will require a street nameplate. Where nameplates are to be sited in landscape areas the top of the plate should not be less than 600mm or more than 1m above the footway level. They shall not obstruct sightline visibility splays, and should be reflective. 'No-Through Road' signs may be incorporated into the street name plate where appropriate.

23.7 Traffic Signs, Road Markings And Traffic Signals

Developers will normally be required to provide road markings and traffic signs as approved by the Highway Authority both on the internal development roads and on the surrounding road network where necessary. Occasionally, this may involve signing at some distance from the development.

23.8 All traffic signs (including bollards, retroreflecting road studs and road markings), whether permanent or temporary, must be to the size, shape, colour and type prescribed in The Traffic Signs Regulations and General Directions 2002 (Statutory Instrument 2002 No. 3113) (TSRGD) and the Traffic Signs Manual or any amendments thereto.

23.9 The Council will design traffic-signal equipment based on detailed road-layout drawings supplied by the developer. Council will normally specify and procure the supply and the installation all permanent traffic-control equipment, which forms part of the highway works. The Developer will be required to pay the costs of supplying and installing the equipment to the Council. The Developer will also be required to pay the Council a commuted sum towards the future maintenance of the traffic-signal equipment.

23.10 Temporary Traffic Management

Prior to any works being carried out within the public highway the developer shall be responsible for submitting the traffic management proposals for the works. Should a traffic order be required the Council should be informed as early as possible. No works shall be commenced on the public highway until the approved traffic safety and management measures necessitated by the works are fully in place. The developer's traffic safety and management proposals shall comply with Chapter 8 of the Traffic Signs Manual or any amendments thereto. Any variation to the approved programme shall be submitted to and have the approval of the Engineer in advance of implementation.

23.11 The developer shall maintain access to and along all existing footways, private drives, public rights of way and proposed crossings of the works throughout the construction phase. Single line traffic operation will be required when the undivided clear width of carriageway available is less than 5.5m (6.75m on a bus route). When single line traffic operation is required, the developer shall provide a width of at least 3.5m or wider as necessary at curves and junctions to a maximum of 3.7m and the length of single line operation at one time shall not exceed 200m unless otherwise directed by the Engineer. Traffic control for single line operation shall be carried out using manually operated Stop/Go boards with radio communication, or traffic signals either manually operated or vehicle actuated supplied by the developer.

23.12 The developer is expected to liaise fully with the Police before and during the work and to agree with both the Police and the Engineer all traffic management procedures as described in the Traffic Signs Manual Chapter 8. All traffic signals including temporary signals used at road works must be type approved before they can be installed on the public highway and must be radar controlled approved by the Engineer.

23.13 Advance notice signing to the road works must be erected at least two weeks prior to the commencement of the works, the wording to be agreed with the Engineer.

23.14 The developer must obtain a permit from the Highway Authority to provide the access/crossover prior to work commencing.

23.15 Temporary & Permanent Traffic Regulation Orders (TRO)

The management of traffic can be achieved through a variety of measures. In certain circumstances, the introduction of TRO may be required to facilitate a development. Some of these are;

- amendments to or suspension of existing traffic TRO
- waiting restrictions;
- speed limits;
- one-way streets;
- prohibitions of vehicles;
- weight limits; and
- residents preference parking schemes.

These forms of traffic management require a legal process of consultation and advertisement so that the views of all interested parties and the needs of different users can be taken into consideration. The developer will be required to pay all costs associated with this. This can be a very lengthy process and a successful outcome is not guaranteed. It is therefore recommended that developers seek advice on the likely time scale and take this into account when they programme their proposals.

23.16 Responsibility For Traffic Management

Prior to the commencement of the works the Engineer will be provided with the name and address and telephone number of the agent/developer who will be responsible for the traffic safety and management of the works 24 hrs a day. Additionally, the name and telephone number of the planning supervisor for the works.

23.17 Stopping Up And /Or Diversion Of Public Highway

Where a development involves the stopping-up, downgrading or diversion of any existing highway, or any part thereof, the required Order should be obtained by the developer. *Highways Act 1980 - Section 116* gives the Highway Authority power to apply to Magistrates Court on the grounds that the highway is either unnecessary or can be diverted to a more commodious route to the public. Section 117 allows persons who desire closure to apply to the Highway Authority to pursue the closure and for the Highway Authority to redeem reasonable costs. Notice is served on interested parties and any objectors have the right to be heard at the Magistrates Court and they also have the right to appeal to the Crown Court if an Order is made. This procedure is more involving and generally more time consuming.

23.18 Alternatively, using planning powers under *Town & Country Planning Act 1990 Section 247* the Secretary of State can authorise stopping up or diversion of a highway if satisfied that it is necessary to enable a development to be carried out in accordance with a planning permission. The power under this section is exercisable solely by the Secretary of State (SOS). The procedure is initiated by the developer and not by the Highway Authority, which is only a consultee in the process. Applications should be made to the Government Office for the North West (GONW). The developer will need to demonstrate that the development for which a permission has been granted cannot be carried out unless the highway in question is stopped up or diverted. GONW will carry out the necessary advertising procedures and serving of notice. If objections are received there may be a local before the Secretary of State makes the Order. Its important to note that a Stopping Up Order must be made before the development commences, as the SOS has no powers to make an Order once the development has been commenced.

23.19 Using *Town and Country Planning Act 1990 Section 257,* the Local Planning Authority can make an Order to stop-up any footpath or bridleway, if it is satisfied that this is necessary for development to occur. Removal of vehicular rights only can be carried out under Section 249 of the Town and Country Planning Act 1990. The procedures are the same as that followed by the Secretary of State. This procedure is less time consuming than using Section 116 of the Highways Act

23.20 Equestrians

Equestrians are entitled to use bridleways, byways, some greenways and all-purpose roads. Designers should consider them in the design and safety audit of all developments which either affect an existing or future bridleway or affect an existing or future all-purpose road that permits horse riders. Where a new junction is formed between a bridleway and a road, there should be sufficient standing space for a horse and adequate visibility for the rider. Designers must include bridleway signs in any design. See DMRB TA57/87 for further details.

23.21 Fire Brigade Requirements

To fight fires effectively the Fire Brigade needs to be able to manoeuvre its equipment and appliances to suitable positions adjacent to any premises. Therefore it is essential that adequate access provision is provided and maintained for fire fighting purposes. Access for fire appliances should be provided to within 45m of each dwelling, however the Council's Building Regulation Section and Cheshire Fire Brigade should be consulted over the exact requirements.

23.22 Damage To Existing Highways

The Developer shall be responsible for any damage to any existing roads, footways, footpaths, public rights of way, verges, drains and apparatus, whether forming part of the site of the works or not, caused by traffic conditions which have arisen from the transport of workers, materials or plant to or from the works, or because of the diversion of normal or extraordinary traffic from their customary routes as a result of the development.

23.23 The Developer shall temporarily sign and guard and or repair and make good without delay all resulting damage to the satisfaction of the Engineer or shall pay for the signing and guarding and or works to be carried out on the instructions of the Engineer.

23.24 The Developer shall bring to the Engineer's attention any damage existing prior to the start of the works and may request a joint survey. The cost of any joint survey of a route to be used for a Temporary Traffic Diversion Order shall be borne by the Developer.

23.25 Cleaning Of Vehicles Leaving The Site And Site Maintenance

The Developer shall ensure that the site is maintained in a clean and safe condition and that all roads, footways etc. used by the public or for access to occupied dwellings are free from mud and filth and materials, equipment and excavations are adequately guarded.

23.26 The Developer must keep highways, including drains and ditches, in the vicinity of the works free from mud, debris and dust arising from the works at all times. He shall ensure that vehicles leaving the site do not carry out and deposit mud or debris onto the highway and shall provide such materials labour and equipment as necessary to ensure compliance with this requirement. Should the Developer default in his responsibilities in this matter, the Engineer will arrange for any necessary warning signs to be erected and cleansing to be carried out at the Developer's expense.

23.27 Road Opening Permit

If you want to carry out work or place anything that could cause obstruction or danger on the highway, you will almost certainly need a permit or licence. In certain cases you need to use a Warrington Borough Council approved contractor, and they will automatically apply for whatever permit is required as part of their service. When you hire a skip to place outside your house, for example, the council approved skip hire company will have applied for the permit before they supply the skip. In other cases, you will need to apply to us for a permit or licence yourself. In Warrington, permits or licences are needed to:

- place a skip on the highway
- plant a verge (with flowers, trees, and so on)
- put up scaffolding or hoarding
- laying, repairing or replacing apparatus on the highway
- putting in a dropped kerb (Light vehicle crossover)
- open a road to connect a sewer
- place temporary traffic signals on the public highway
- place apparatus or materials on the public highway
- put up a banner over the public highway
- place tables and chairs on the highway
- hold an event on or off the public highway
- film on the public highway
- put up a temporary sign for an event or housing development
- put up a tourist sign (brown sign)

23.28 The private road opening permit process provides a service that allows entry into the highway to connect to a foul sewer or replace apparatus already existing in the highway. Without this process Warrington Borough Council would be unable to ensure the quality of work taking place within the public highway or identify the location of apparatus within it. This could lead to future Contractors working within the highway being placed at risk and could result in injury or damage to plant.

23.29 How to make a Road Opening Permit application

You will be granted permission to enter into the public highway providing that details are provided in accordance with the requirements of the New Roads and Street Works Act 1991 (NRSWA):

- An accurate location plan providing the details of the apparatus and extent of works within the public highway.
- Payment of the road opening permit fee.
- Name and address of Contractor carrying out the works.
- Valid Supervisor and Operative Accreditation details as per NRSWA requirement.
- Evidence of valid Public Liability Insurance to a minimum of 2 million pounds.
- Proposed start of works date and duration of works.
- Name, address and signature of the Applicant.

Warrington Borough Council

Supplementary Planning Document

Planning Obligations

Approved By Executive Board
17th September 2007

September 2007

Status of the SPD

The Planning and Compulsory Purchase Act 2004 introduced a new system of Local Development Frameworks intended to replace Unitary Development Plans.

Local Development Frameworks are made up of a number of Local Development Documents including:

- Development Plan Documents
- Supplementary Planning Documents
- Other Documents (including the Statement of Community Involvement and the Local Development Scheme)

Development Plan Documents (such as a Core Strategy, Area Action Plan or site allocations document) are part of the statutory Development Plan and are subject to independent examination. These documents provide policies for assessing proposals against and may in some cases allocate land for development.

Supplementary Planning Documents are documents that expand upon policy or provide further detail to policies in contained in Development Plan Documents. These documents are not subject to independent examination and do not have development plan status, but are a material consideration in decision making.

WARRINGTON BOROUGH COUNCIL

Adopted Supplementary Planning Document Planning Obligations. September 2007

WARRINGTON BOROUGH COUNCIL

Adopted Supplementary Planning Document: Planning Obligations

1. Introduction

1.1 This Supplementary Planning Document (SPD) sets out the Council's approach to the use of planning obligations. It has been prepared following the adoption of the Unitary Development Plan (UDP) and takes account of government guidance contained in Circular 05/2005 on 'Planning Obligations'. The document supplements and is consistent with policy DCS2 of the UDP.

DCS2 PLANNING OBLIGATIONS
Where necessary to the grant of planning permission, and when the use of a planning condition would not be appropriate, the Council will negotiate with developers to secure agreements under Section 106 of the 1990 Act to meet needs arising directly from the development in question. Provision to meet the need, commensurate with the scale and nature of the development, will be sought through negotiation based on the provisions of the development plan. Provision may be made on-site, or a contribution may be made to the provision or improvement of facilities elsewhere, provided their location would adequately serve the development site.

The need for a planning agreement will be considered in the following circumstances:

1. **where the proposed development gives rise to transport impacts that are unacceptable unless the developer provides or contributes to additional transport infrastructure or services in line with the Council's transport priorities;**
2. **where the proposed development gives rise to the need for the provision or enhancement of local public services or community facilities, including schools and health care facilities, outdoor and indoor recreation facilities, community meeting places and other essential amenities where existing facilities are inadequate to cope with additional demand likely to arise from the development proposed**
3. **where the proposed development is not serviced by foul sewers and treatment works of adequate capacity and design, or adequate water supplies;**
4. **where it is necessary to ensure an appropriate mix of uses in a development scheme and to agree the balance of uses, including the safeguarding of land required for public purposes;**
5. **where it is necessary to secure an appropriate density and mix of dwellings by type, size, and affordability, to ensure that the development provides for identified local needs, and the continued availability of affordable housing in perpetuity;**
6. **where it is necessary to ensure that an edge-of-centre or out-of-centre retail development does not change in nature or character by virtue of the type of goods offered for sale or the number of occupiers, to an extent that would harm the vitality and viability of town centres;**
7. **where it is necessary to secure the provision or retention and enhancement, and future management of, a site of importance for nature conservation, threatened habitat, or important landscape feature, including woodland planting as part of the Mersey Forest initiative;**
8. **where it is necessary to secure satisfactory provision for aftercare and maintenance of open space and landscaping provided in the development;**
9. **where it is necessary for the developer to carry out flood protection and mitigation measures, or measures to mitigate other adverse impacts of surface water run-off on the environment;**
10. **in pursuance of the need to secure the conservation of heritage assets.**

1.2 New development can create a need for new services and facilities, and in some cases can have a detrimental effect on local amenity and the quality of the environment. Planning obligations agreed between the Council and developers can be used to secure improvements to development proposals, or contributions from developers towards new services or facilities. The use of planning obligations can help to enhance the quality of new development, and enable proposals to proceed that might otherwise have been refused for being unacceptable in planning terms.

1.3 Whilst the primary objective of the SPD is to facilitate decision making and introduce clarity in relation to adopted policies, recognition of the many wider benefits of planning obligations have resulted in the additional key objectives:

- Ensure an appropriate provision of good quality affordable housing
- Ensure adequate provision of local education facilities
- Aim to secure local employment and training schemes
- Ensure adequate provision of local health facilities
- Ensure adequate provision of community facilities
- Ensure appropriate environmental and biodiversity protection and enhancement and mitigation measures where appropriate
- Ensure that there is not harmful impact on the transport network as a result of development and secure appropriate improvements and travel plans
- Ensure no detrimental impacts on amenity (visual, residential, noise, flood risk, landscape)
- Ensure adequate provision of services (water / sewage) and encourage provision of renewable energy, waste and recycling facilities
- Ensure conservation of heritage assets and mitigation where appropriate.

1.4 This SPD will be reviewed as and when any new good practice guidance or legislation relating to planning obligations is published.

1.5 All documents referred to in this Document are listed in the Appendix along with details of where to obtain them.

1.6 The following associated Draft Supplementary Planning Documents should specifically be read alongside this document:

- ***Open Space and Recreation Provision***
- ***Travel Plans***
- ***Affordable Housing***

2. What is a Planning Obligation?

2.1 Anyone with an interest in land may enter into a planning obligation enforceable by the Local Planning Authority. A planning obligation is a legally binding agreement under Section 106 of the Town and Country

Planning Act 1990 (as amended by the Planning and Compensation Act 1991). It can generally:

(i) **Prescribe** the nature of the development (e.g. by requiring that a given proportion of housing is affordable);
(ii) Secure a contribution from a developer to **compensate** for loss or damage created by a development (e.g. loss of open space); or
(iii) **Mitigate** a development's impact (e.g. through increased public transport provision).

2.2 The obligation will generally be necessary to ensure that development proposals are compliant with UDP policies and enable a developer and the Council to overcome obstacles that can not be dealt with by planning conditions and that would otherwise result in the refusal of planning permission. A planning obligation runs with the land, so may be enforced against the original person who entered into the agreement and anyone acquiring an interest in the land from them.

2.3 A planning obligation can be secured either by means of unilateral undertaking by a developer or through negotiation between a developer and the Council. In either case, the Council will only normally enter into a planning obligation with a developer when it meets the key tests as set out in Circular 05/2005, that a planning obligation should be:

(i) relevant to planning;
(ii) necessary to make a proposal acceptable in planning terms;
(iii) directly related to the proposed development;
(iv) fairly and reasonably related in scale and kind to the proposed development; and
(v) reasonable in all other respects.

2.4 Unilateral undertakings or planning obligations which do not meet the tests are not necessarily unlawful, but where they are offered by a developer they should be given very limited weight when deciding an application. The Council upholds the fundamental principle contained in Circular 05/2005 that **"planning permission my not be bought or sold"**. Planning obligations should also never be used as a means of securing a share of the profits of development for the local community, i.e. a means of securing a "betterment levy".

2.5 There may be situations when either a planning obligation or a planning condition could be used to overcome an objection to a development proposal. Circular 05/2005 advises that in such situations it is better for local authorities to impose a condition, rather than dealing with the matter by using a planning obligation. A "grampian condition" can be used in certain circumstances. These conditions preclude the implementation of development permitted by planning permission in whole or in part, until agreed works or schemes have taken place. Such a condition can be used to secure benefits across the whole spectrum of

environmental and infrastructure improvements. **Grampian conditions will be used wherever possible requiring specified works or schemes to be agreed and/or brought into use prior to occupation of any development.** However, there are a number of general circumstances in which planning obligations may be more appropriate; for example, where a developer is to make a financial contribution.

2.6 The Council will need to be satisfied that appropriate arrangements are made for the maintenance of a new facility. In some cases this may involve the negotiation of a commuted sum for a limited period to assist the on-going costs of a new facility. Where facilities are predominantly for the benefit of the users of the associated development, it may be appropriate for the developer to make provision for subsequent maintenance in perpetuity.

2.7 The Council's performance in the speed of determining major applications is under close scrutiny. The Government has set a national target of 60% of major applications to be determined within 13 weeks (National Best Value Performance Indicator 109a). Consequently, the Council expects that the pre-application discussions with a developer will identify the likely need to make any contributions or enter into any obligations. During pre-application discussions the Council will also set out its requirements for any supporting information to be submitted so it will be able to assess an application. Where it is considered that an obligation is needed, the requirements for supporting information will include draft Heads of Terms or a statement setting out the issues to be covered by a Section 106 agreement. If the information set out by the Council is not received with an application, it may not be registered. This approach will be supported by the introduction of the Planning Application Requirements (local) list.

2.8 The Council recognises that in certain cases it may not be feasible for the proposed development to meet all planning obligations and still be economically viable. The impacts of a development that may lead to the need for a planning obligation must be weighed together with all other material considerations, including any positive benefits of the development, in determining whether planning permission should be granted. Where a developer raises concerns over the financial viability of a development proposal the Council will exceptionally consider whether the benefits from the development so outweigh the need to provide infrastructure or services that the level of contributions normally expected may be prioritised, reduced or waived. This consideration will be based on negotiation and any financial information provided by the developer on a strictly confidential basis.

2.9 **Developers and landowners will be expected to take full account of the potential total cost of utility capacity investment as well as obligations, including the cost of affordable housing and open space provision, when considering the value of land available for development.**

3. Site size thresholds and range of obligations

3.1 Certain types of obligations will normally only be sought by the Council where development sites exceed a certain size. Unless otherwise specified the definition of Major developments will be taken as a development of 10 or more dwellings or 1000 sq.m gross floor area. The Council is concerned that development sites should not be subdivided or developed in phases to create separate development schemes which fall below site size thresholds where obligations may be sought. Where this is the case the Council will consider sites in their totality. This principle will apply even where applications are not submitted at the same time**.** The potential for a number of developers to contribute jointly or pool contributions to secure a new or improved facility will be taken into account where major redevelopment is proposed, or where the combined impact of a number of developments creates the need for new infrastructure.

3.2 In some cases where outline planning permission for residential development is applied for, it may not be clear whether the thresholds will be exceeded. In these cases obligations will be negotiated on the presumption that the site exceeds the relevant threshold. However, conditions and legal agreements will be worded to allow an alternative approach if it later turns out that less than the threshold number of units are proposed.

3.3 The exact type and range of works or contributions likely to be considered for an individual site will depend upon the particular development proposed, and its impact upon local services and facilities. Although developers will not be required to rectify existing shortfalls of provision or resolve existing problems, obligations will be sought relative to the scale of impact of the proposed development where an existing constraint is materially exacerbated by a proposal.

3.4 Table 3.1 sets out examples of different obligations that may be sought from developers in the Borough. These are referred to in policies in the Revised Warrington UDP.

Table 3.1 - Summary of potential obligations

Development Impact	Examples	Type of Development
Community Facilities and Infrastructure	Education provision and Health Care facilities.	Residential
Transport and Travel	Public & community transport, Cycling facilities, Pedestrian facilities, Highway improvements, Travel Plans, improvements to bridleways and greenways	Residential and non-residential
Recreation and Environment	Amenity open space, Sports facilities, Environmental improvement, Protection of listed buildings, nature conservation.	Residential and non-residential
Housing	Affordable housing	Residential
Social Progress	Increased employment opportunities for the disadvantaged and economically inactive.	All development types
Utility Infrastructure	Foul sewage and water drainage	All development types

3.5 Some of the potential obligations that will be sought to overcome identified adverse impacts of development may be calculated by an estimated formula. The formulas set out in this SPD are intended to provide certainty and transparency as to the level of some of the obligations that will be sought from developers. Although formulas give an indication of the level of obligation that will be sought in certain areas and form a basis for negotiation, the use of formulae is not always appropriate. In some cases the need for and scope of an obligation may only be assessed and negotiated on a site by site basis taking account of the specific nature and impact of the proposed development such as measures identified through a transport impact assessment.

3.6 Part 2 of this SPD provides more detail on the scope of potential obligations and sets out those elements of a potential obligation where a formula approach may be applied. Any costs quoted should be taken as being correct at 1 April 2005 updated as appropriate and will be subject to review.

4. Negotiating and Securing Planning Obligations

4.1 The Council will assess the need for planning obligations in negotiation with developers. Informal discussion with developers will be undertaken at pre-application stage, with the clear intention to identify potential impacts of the proposed development that would require compensation or mitigation and agree the nature and scope of obligations prior to submission of any application. A record of key point discussed relating to potential obligations will be agreed with developers and maintained by the Council.

4.2 All negotiations will involve close consultation between the Council's Planning and Legal Departments, other Departments, and external organisations where relevant; for example, where affordable housing is to be sought, the involvement of the Council's Housing Officers and a Registered Social Landlord approved by the Council will be required.

4.3 The issues that negotiations between the Council and developers will seek to resolve include:

- the range of impacts to be addressed
- whether provision will be required on-site, off-site, or through financial contributions
- amount of provision or financial contribution required
- location of provision within the site
- agreed points by which provision should be completed or when financial, when payments are required
- details of how financial contributions will be used
- time limits by which the Council must use financial contributions.

4.4 As a minimum, the heads of terms of Section 106 Agreements will be identified and referred to in Committee Reports where applications are to be determined by Development Control Committee, and specifically recorded when an application is approved under delegated powers. This information enables a proposal to be approved subject to the Agreements being legally drawn up and signed. In the interests of speeding up the process of securing planning obligations, the aim should be that a draft agreement is prepared by the time a resolution to determine the application is made.

4.5 If the Council and developer are unable to reach an agreement on the need, scale and content of any obligation, then legislation allows a planning obligation to be created through an undertaking by the developer. Undertakings are mainly used in appeal cases as part of a package of measures to be considered by a Planning Inspector or Secretary of State. In some cases it may be appropriate to refer differences to a mediation process.

4.6 Section 106 agreements may be drawn up by legal representatives from either the developer or the Council's Legal Department. These legal

documents should include reference to the points, where relevant, listed in paragraph 4.3 above. The developer will meet the costs of drawing up the agreement.

5. Pooled Contributions

5.1 Where the combined impact of a number of developments creates the need for infrastructure, the Council may pool the associated developers contributions to allow the infrastructure to be secured in a fair and equitable way.

5.2 The need for joint supporting infrastructure will be set out in advance evidenced by assessments of the impacts of the developments involved and estimated costs of mitigating them.

6. Monitoring of Planning Obligations

6.1 Two levels of monitoring of planning obligations are considered necessary. Firstly, the Council will produce a schedule of planning applications and developments where either a unilateral undertaking has been offered or planning obligations have been negotiated between the Council and a developer. For each example, details will be collected on what improvements or facilities have been secured. The contribution the obligation makes to delivering plan policies contained in the Unitary Development Plan will also be recorded.

6.2 In the interests of transparency an annual report will be prepared for Development Control Committee into the use and contents of Section 106's in the Development Control Process.

6.3 Secondly, in many cases it will be necessary to monitor the progress of development in order to identify trigger events, which should prompt actions by the developer identified in an obligation. In cases where obligations provide additional or improved transport facilities or infrastructure it may be necessary to monitor annual trip rates. Where obligations involve the payment of financial contributions monitoring will be required to ensure payments are made in line with trigger events.

6.4 In order to ensure adequate monitoring the Council will consider, on a case by case basis, the need for developer contributions to cover the Council's costs in monitoring the provisions of the obligation.

6.5 Prior to the introduction of any requirement for any such funding the Council will produce a schedule detailing how monitoring fees will be calculated.

6.6 Where contributions are made towards specific infrastructure improvements and the infrastructure is not provided within the agreed timescales, arrangements will be made for contributions to be returned to the developer or person who entered into the agreement.

PART 2

POTENTIAL OBLIGATIONS

COMMUNITY FACILITIES AND INFRASTRUCTURE

Where there is clear evidence that the proposed development would give rise to the need for provision or enhancement of utility infrastructure capacity, local public services or community facilities, the Council will enter into negotiations with a developer to secure a reasonable contribution towards those improvements. This approach is set out in Part 2 of Policy DCS2 'Planning Obligations'.

Education

E.1 Developers will be required to contribute towards extra school places required as a result of housing development, where the proposed development will create a sustained shortage of school places.

E.2 The availability of school places will be determined by reference to the Council's approved School Organisation Plan (SOP) and Schools Admissions Policy (SAP) current at the date a planning application is registered by the Council. A pupil generation rate of 0.35 primary and 0.25 secondary pupils per family dwelling will be applied. A family dwelling is considered to be any property with 2 or more bedrooms. The need for a contribution towards primary and secondary school places will be calculated separately.

E.3 The amount of contributions sought from developers will be calculated on the basis that one classroom is required for every 30 pupils at a construction cost of £292,500 (or £9,750 per pupil) for a primary classroom and £446,910 (or £14,897 per pupil) for a secondary classroom, based on DfES current construction cost indicators (source: *www.teachernet.gov.uk/management/resourcesfinanceandbuilding/schoolbuildings/designguidance/costinformation/)*. The DfES cost indicator relevant at the time an application is registered will be used to estimate the amount of any contribution. Pupil generation rates have been obtained from WBC Childrens Services Directorate.

Table E.1 - Education Obligations

Development	Threshold	Sought
Housing including: Redevelopment Mixed use schemes Changes of use Applications to extend the duration of a planning permission where no contribution previously secured.	Major developments of 10 or more dwellings.	Where there is no capacity to accommodate further schoolchildren in local school(s), a contribution of: 1. £9,750 per pupil at a ratio of 0.35 pupils per family dwelling (£3,413/dwelling) towards the cost of improving primary school

		facilities within 3.2km of the site, and 2. £14,897 per pupil at a ratio of 0.25 pupils per family dwelling (£3,724/dwelling) towards the cost of improving secondary school facilities within 4.9km of the site
Developments incorporating 500 or more family dwellings where existing schools are physically unable to be extended and which may therefore generate sufficient demand for a new 1 form entry primary school to be constructed.		In addition to the requirements above, provision of land and site infrastructure to enable construction of new educational facilities to serve residents' needs. Site area defined in accordance with DfES standard requirements.

NB: A family dwelling is defined as any residential unit with 2 or more bedrooms. Account will be taken of whether the proposed development includes sheltered housing, student accommodation and other specialist accommodation that would not give rise to additional demands on schools.

Health Care Facilities

H.1 Contributions toward the capital costs of providing additional primary care accommodation will be negotiated with developers of proposals that provide additional dwellings in areas where:

a) The primary care facility serving the catchment area within which new housing developments would fall is already full; or
b) new developments would result in the total number of patients exceeding the capacity of the primary care facility; and
c) spare capacity in adjacent primary care facilities cannot be used to meet the deficiency of patient places; and
d) there are no existing proposals for financing the additional places which are required.

H.2 Primary Care Centres are an essential community facility that must be provided for housing developments. They should be provided within reasonable travelling distance. Where there is no suitable provision locally and there are no existing proposals for financing additional places required by a housing development, this could be sufficient grounds for refusing planning permission. If a local Primary Care Centre is full it may be possible to use surplus capacity in adjacent areas. Where this is not appropriate, the capacity of the local Primary Care Centre will have to be increased.

H.3 The Primary Care Trust (PCT) is given limited resources by Central Government (DOH) to improve local Primary Care provision and health

in general. Most importantly, the resources relate to historical population numbers recorded by Census and mid-Census Estimates. It is, therefore, very appropriate for developers to contribute to the cost of community facilities when new developments seek planning permission.

H.4 The PCT compiles a rolling assessment of health needs and publishes an Annual Report, available on their website..

H.5 The provision of health facilities will require Staff and Premises. Based on the National GP Contract each GP should serve 1800 patients on average. The Primary Care Trust preference is for GP services to be provided as health centres with a minimum of 4 GP's plus support services. This equates to a surgery serving 7,200 patients. Similarly each General Dental Practitioner should serve between 1,300 and 1,500 patients on average. Consequently 5 GDP's will service an equivalent patient population as 4 GP's. The indicative capital cost for a health centre of sufficient size to meet PCT requirements is estimated to be between £725,270 and £884,410 based on the Primary and Social Care Premises Planning and Design Guidance Financial Model published by NHS Estates.

H.6 Based on this estimate and using a household population figure of 2.4 people per dwelling the estimated capital cost per dwelling is:

Table H.3 - Health Care Obligation

Population served by surgery	7,200
Equivalent number of dwellings (calculated at an average of 2.4 persons per dwelling)	3,000
Total cost of providing a health centre (which equates to 4 GP's and 5 GDP's)	£725,270 - £884,410
Cost per dwelling	**£268**

Depending on the scale of development this contribution may be made towards either the provision of new facilities or the extension of existing facilities. This obligation will be sought on any proposal for 10 or more dwellings.

PART 2

TRANSPORT AND TRAVEL

Impact on the Local Transport Strategy

T.1 Policy LUT2 sets out the priorities for modes of travel and transport across the Borough. Where new development or redevelopment is proposed, the developer will be required to work together with the Borough Council, and where necessary the Highways Agency, to consider the adequacy of existing transport facilities and services and to assess any emerging need. The Borough Council as the Local Highways Authority, will be a key source of information and advice on local transport and highway matters, having particular regard to the Unitary Development Plan and the Local Transport Plan. The Highways Agency is responsible for operating, maintaining and improving the strategic road network in England. They will be able to give information and advice if any proposed development connects onto, or might generate a material traffic impact on the trunk road network and the likely connection or enhancement works that would be required as a result of traffic generated by a proposed development.

T.2 There are two elements to planning obligations relating to transport and travel. Firstly the impact, either directly or cumulatively, that new and changed patterns of travel related to development will have on the Borough wide transport network. Secondly the impact of the development in the area local to the site, and works required to achieve acceptable access to the development site in particular.

T.3 All development that results in a net increase in trips will have a direct impact on the effectiveness of the transport network and will be detrimental to the objective to reduce traffic growth. Where, unusually, due to a developments scale or nature it does not result in a net increase in trips, it will be considered that there is no direct impact of the development on the transport network. Where there is an identified impact contributions will be sought to support implementation of the Local Transport Strategy in the Council's Local Transport Plan 2 (2006 – 2011), which was submitted to Government in March 2006. The LTP only brings in limited capital funding for transport improvements, and these resources must be directed towards dealing with existing transport problems and demands. The money sought from developers will be to cover costs of mitigating the problems brought about by the additional strain future development will place on transport networks. The UDP does not allocate land for specific purposes and it is therefore difficult to identify specific infrastructure or improvements that will be needed to accommodate development that will come forward in the plan period. Contributions towards the implementation of the Local Transport Strategy are therefore considered appropriate. The purpose of LTP2 is to set transport in the wider context and clearly set out the authority's plans and policies for improving transport over a five-year period. Unlike LTP1, which was more of a bidding document, funding allocations for LTP2 were already set by the Government using a formula approach.

PART 2

T.4 The funding secured for LTP2 is, in total, less than that secured for LTP1 as it does not include any funding for major schemes. Transport pressures will, however, continue to grow due to the additional travel generated by forecast development growth. It is therefore vital that developer contributions cover at least some of the costs of mitigating the problems brought about by the additional strain future development will place on transport networks. This is particularly important, as tackling urban traffic congestion has been identified in the Community Strategy as the top transport priority.

T.5 The Council's approach to transport planning includes the identification of a range of complementary measures and policies across the borough. The range of measures and initiatives link to delivery tools identified in the LTP including:

- Providing alternatives to the car
- Encouraging smarter travel
- Better Demand Management
- Making the best use of the existing network
- Better integration of land use and transport planning
- Providing new infrastructure.

The Council will make clear where contributions secured through planning obligations will be pooled to secure improvements needed as a result of the impact, either directly or cumulatively of the proposed development on the Borough-wide transport network.

T.6 The planned development growth set out in the UDP aims for a net increase of 380 dwellings per year and allows for 15.5 ha employment development per year (totalling 7,600 dwellings and 310 ha employment land over the 20 year plan period 1996-2016). The actual level of development permitted will inevitably vary from these values from year to year. The TRICS database generates general North West trip rate averages for each land use of 7.5 trips per dwelling per day and 15.5 trips per 100 sqm employment floorspace per day (based on 40% gross floors area per ha of employment development). Using these general averages, the planned growth in the UDP would equate to:

Dwellings:
380 per year x 7.5 trips per dwelling per day = 2,850 trips per year.
Employment:
15.5 ha gross x 0.4 = 6.2 ha net
620 sqm x 15.5 trips per 100 sqm = 9,610 trips per year.

Total additional trips per year (2,850 + 9,610) = 12,460
Total additional trips over the plan period (1996 to 2016) = 249,200

T.7 The cost of measures and initiatives for the wider transport network to manage this growth in trips is based on the average annual expenditure in LTP2 of £5.15 million. This equates to an average cost of £413 per

daily trip (£5,150,000 / 12,460).A Transport Impact Assessment as required under policy LUT 12 must address and identify measures to achieve sustainable accessibility for any major development proposed. Guidance on Transport Assessments including trip generation is provided by the DfT in their document "*Guidance on Transport Assessments*" (March 2007), It will be the level of trips identified in the Assessment that will determine the scale of impact on the wider transport network. The level of trips identified should be based on the specific land use proposed and it will be influenced by the characteristics of the surrounding area (i.e. its sustainability) as well as the proposed implementation of any travel plan initiatives. **The obligation sought will be based on the daily increase in trips over and above any existing movements multiplied by £413**.As set out above, where there is considered to be no increase in the daily trip generated by a development, a contribution towards the Local Transport Strategy will not be sought. Consequently the cost of contributions to the Councils Transport Strategy will be directly related to the scale and impact of transport movements associated with a particular development proposal.

T.8 Where development proposals provide significant transport infrastructure in connection with the development that fully mitigates the impact of additional trips, and contributes towards the objectives of the wider transport strategy the contribution calculated under T.8 above may be reduced or waived.

Site Specific Requirements

In addition to any contributions to the Local Transport Strategy, site specific requirements to provide safe and satisfactory access arrangements will need to be identified as part of the Transport Impact Assessment.

Public Transport

T.9 In accordance with Policy LUT7, The Council is committed to promoting the use of public transport, and will seek to ensure that all major development proposals are accessible by public transport. Any development that is likely to create a requirement for significant additional journeys is most likely to be approved if it is located in the near vicinity of important public transport routes(for the purposes of assessment this could be defined as having a public transport service operating at 10 minute frequencies no more than 400m from any part of the site). Where this is not the case, it is likely that the Council will place an obligation of the provision of a new or improved public transport service upon any grant of permission.

T.10 Subject to local circumstances and existing services, an obligation may include meeting the costs of re-routing of an existing service and/or the provision of new facilities such as bus shelters and stops to improve public transport access within 400m of any part of a development site.

T.11 Where there is no existing provision nearby, and it is not viable to re-route an existing service, an obligation will be sought to provide a new public transport service. An obligation will be required to meet the costs of providing the service (It is estimated that the average annual cost of providing a bus service is £90,000 but any obligation sought should be based on a negotiated figure taking into account local circumstances)for a maximum five-year period. The payment of a one-off sum or a yearly payment would fulfil an obligation. In either case, the annual income from fares from the service will be reimbursed to the developer. Where such an obligation is required, the new public transport service should be introduced on full occupation of the first property within the development.

Cycling, walking and other Highway Improvements

T.12 As set out in Policies LUT3 to LUT5, new development proposals may create a need for improved cycle and pedestrian access, improvements to bridleways and greenways or other highway improvements that would ensure the safe and efficient flow of traffic. Planning obligations will be used to secure the provision of, or financial contributions towards, off-site works required as identified through Transport Impact Assessments. This may include the provision of controlled pedestrian and cycle crossings, upgrading of roads through reconstruction and resurfacing(though not continued maintenance if the facility is for the wider public benefit), or the provision of traffic management features to control traffic.

(NB: If highways are to be adopted for public maintenance on completion, then the developer will be required to enter into a Section 278 agreement under the Highways Act (1980). This will include an administration and supervision fee and an indemnity.)

Travel Plans

T.13 Travel Plans are one of a number of ways of Influencing Travel Behaviour (ITB). They are plans produced by a developer or an organisation to manage the transportation needs of users of a site in accordance with Policies LUT10 and LUT11. They aim to reduce car usage, increase the use of public transport, cycling and walking, and deliver sustainable transport objectives. Travel Plans submitted in conjunction with a planning application can be made binding through the use of a planning obligation. More detailed guidance on the form and content of Travel Plans is set out in **"Draft Supplementary Planning Document: Travel Plans**".

PART 2

RECREATION AND ENVIRONMENT

Open Space, Recreation and Playing Pitch Provision

R.1 In accordance with Policy HOU4, in new Housing Developments the developer will be required to provide sufficient recreation and amenity open space to meet the recreational needs of people living in the proposed development. This may involve the provision of formal open space, sports pitches, informal amenity space (including, for example, dog walking areas), children's play areas or improvements to the public realm.

R.2 Planning obligations can be used to secure the provision of recreation and amenity open space, or to secure financial contributions towards the provision of, or improvement of, off-site facilities, where appropriate. Subject to the provisions of Circular 05/2005, the Council may seek payment from the developer of a commuted sum.

R.3 Residential development can place a strain on existing sports facilities or can be proposed in an area where there is an identified local shortage of sports facilities. In these situations the Council may seek to enter into a planning obligation with developers to secure the provision of, or contributions towards, the provision or improvement of such facilities. This will generally relate to outdoor sports and recreation facilities.

R.4 More detailed guidance on the form, content and cost of obligations is set out in **"Draft Supplementary Planning Document: Open Space and Recreation Provision".**

Environmental protection / enhancement

EP.1 Under Policies GRN19-25 the protection of habitats such as hedgerows, trees and ponds are of importance for wildlife flora and fauna, and should be retained. Certain species of animals and plants receive additional special protection under Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended). If development proposals are likely to affect sites important to wildlife habitat, landscaping and / or protected species then the Council will attach a condition to any permission to achieve implementation of mitigation measures. This may involve the creation of other sites of at least equal nature conservation value, or the creation of adequate alternative habitats for the protected species. The management of mitigation features and the implementation of any other compensatory enhancement works and their subsequent management will be secured through obligations.

EP.2 Other areas that, as a result of development, may require mitigation or compensation secured through negotiated planning obligations include: water quality improvements; river corridor restoration; access to water bodies; contaminated land remediation and monitoring; air quality monitoring and the provision of waste management facilities.

EP.3 Where a site-specific Flood Risk Assessment is required to be carried out at the planning application stage it will have to demonstrate how flood risk from all sources of flooding to the development itself and flood risk to others will be managed now, taking climate change into account.

EP.4 For new development it may be necessary to provide surface water storage and infiltration or other Sustainable Drainage Systems (SuDS) to limit and reduce both the peak rate of discharge from the site and the total volume discharged from the site. The responsibility and maintenance of systems provided solely to serve any particular development as well as the provision of some off-site attenuation storage should be funded by the developer, and a Section 106 agreement may be appropriate to secure this.

Mersey Community Forest

MF.1 The Borough of Warrington is an active partner in the Mersey Community Forest initiative established in 1992 as part of a national programme established with the Countryside Agency and the Forestry Commission. The vision of the partnership is to use trees and woodlands as a focus for involving people in regenerating the land around towns and cities to provide a healthy and productive environment in which to live and work.

MF.2 The Council will expect any major development to contribute to the implementation of the Mersey Community Forest in accordance with UDP policies GRN28 and GRN29. An obligation may be required to secure on-site management of or off-site contributions to tree or woodland planting schemes where appropriate.

Heritage Assets

HA.1 Where development is proposed within or directly affecting a Conservation Area, Listed Building, Archaeological site or other heritage feature and it is considered it would have a detrimental impact on those features, the Council will seek to negotiate a planning obligation to secure appropriate mitigation or compensation where the use of conditions have been deemed to be inappropriate.

HA.2 The costs associated with such obligations will need to be individually assessed for each project or development. This could include securing monies for or undertaking a specific programme of work, an

appropriate legal agreement in order to safeguard a site or feature in the public interest or costs for site management and / or on or off-site management, research or interpretation schemes appropriate to the proposed development.

Waste

W.1 Regard should be had to UDP Policy MWA6 and the Council's Planning Advice Note: "Provision of Waste Storage, Recycling and Collection Facilities" when considering proposed development and the provision of waste containers.

W.2 The Planning Advice Note sets out that it is WBC policy that developers have responsibility to ensure that all properties are provided with the appropriate refuse storage receptacles compatible with those used by the Council. Currently the process does not allow the Council to identify and charge developers prior to the properties being occupied. It is therefore important to raise this issue at the earliest opportunity to try and ensure that a developer pays for the residual (black) containers prior to, or during the development.

HOUSING

Affordable Housing

HO.1 Policy HOU15 outlines that there is an identified shortfall of affordable housing in the Borough to meet local needs. The Council, in accordance with PPS3 will seek to enter into planning obligations with developers to provide an element of affordable housing on residential development sites with 1o5 or more dwellings. In developments of this size or above, affordable housing can be delivered by transferring completed units (built, as a minimum, to meet the Housing Corporation's 'Scheme Development Standards') to the Council or a Registered Social Landlord nominated by the Council.

HO.2 More detailed guidance on the form and content of obligations is set out in **"Draft Supplementary Planning Document: Affordable Housing".**

SOCIAL PROGRESS

Increasing local employment opportunities

SP.1 One of the aims of Policy SOC1 is to ensure that development proposals are socially inclusive. Whilst Warrington has a relatively low unemployment rate (ie. People claiming job seekers allowance [JSA]) there are currently around 1,900 lone parents and 8,200 people receiving incapacity benefit. Recent studies have suggested a minimum of 30% of these beneficiaries may be willing to move towards a working environment. In addition some areas of the Borough fall

within the worst 20% most deprived areas in England and it is essential to maximise opportunities for the disadvantaged and economically inactive. Support packages to enable this are extremely limited. Equally there is a shortage of support packages to enable disabled people into sustained work. Unless positively addressed, the impact of development can be to reduce or even remove employment opportunities for these disadvantaged groups, whether the opportunities are related to the construction of major projects or the end use in the case of any form of commercial development.

SP.2 The impact that major development proposals may have on employment opportunities will be assessed during pre-application discussions by the Councils Regeneration Officer in partnership with Job Centre Plus and the Warrington Partnership. Where a development could provide sustainable opportunities for those disadvantaged groups referred to in SP1 living nearby to move towards a working environment, the Council will seek to negotiate a planning obligation to secure training or opportunities for those groups through a package of supported employment schemes such as job guarantee schemes. This will help to reduce the need for longer, more unsustainable journeys to work, which may be considered unacceptable in planning terms.

SP.4 In addition to the support package for moving towards employment, development proposals that are not readily accessible by Public Transport will be expected to contribute towards the introduction or enhancement of public transport to ensure the secured employment opportunities are accessible to the disadvantaged and economically inactive.

PART 2

APPENDIX 1

SUMMARY OF INDICATIVE POTENTIAL OBLIGATIONS

AREA OF NEED	RUDP POLICY	COST	PERIOD
EDUCATION - Primary	DCS2	£3,413/dwelling	Single payment
EDUCATION - Secondary	DCS2	£3,724/dwelling	Single payment
HEALTH - Primary Care Provision	DCS2	£268/dwelling	Single payment
LOCAL TRANSPORT STRATEGY	DCS2; LUT1	£413/daily trip	Single Payment
PUBLIC TRANSPORT	DCS2; LUT7	£90,000 per year/site	5 years
OTHER OBLIGATION AREAS TO BE ASSESSED			
PUBLIC OPEN SPACE, CHILDRENS PLAY & SPORTS PITCH PROVISION	DCS2; HOU3; DCS8; EMP6	Refer to SPD: Open Space and Recreation Provision	
AFFORDABLE HOUSING	HOU15	Refer to SPD: Affordable Housing	
HIGHWAY IMPROVEMENTS	DCS2; LUT12	Dependent on Transport Impact Assessment	
MERSEY FOREST PLANTING	DCS2; GRN28; GRN29	Dependent on site location and assessment	
ENVIRONMENTAL PROTECTION / ENHANCEMENT	DCS2; GRN25; REP4	Dependent on site location and assessment	
SOCIAL PROGRESS	SOC1	Dependent on scale of employment opportunities.	

PART 2

APPENDIX 2

List of documents referred to in this Supplementary Planning Guidance:

Name of Document	Produced by	Where to Obtain
Planning Obligations: Practice Guidance	DCLG	DCLG publications or online at the DCLG website: www.communities.gov.uk
Guidance on Transport Assessment	DfT & DCLG	TSO PO Box 29, Norwich NR3 1GN Tel: 0870 600 5533 Or online: www.dft.gov.uk
Circular 05/2005 'Planning Obligations'	DETR	TSO (as above) Or online: www.communities.gov.uk
Planning Policy Guidance Note 13 'Transport' (1994)	DETR	TSO (as above) Or online: www.communities.gov.uk
Planning Policy Statement 3 'Housing' (2006)	DETR	TSO (as above) Or online: www.communities.gov.uk
Warrington Unitary Development Plan: 2006	Warrington Borough Council	WBC Planning Policy Unit
Warrington Local Transport Plan 2: 2006	Warrington Borough Council	WBC Strategic Transport Planning Unit
Warrington Borough Council Cultural Strategy	Warrington Borough Council	WBC Cultural Services
SPD Affordable Housing.	Warrington Borough Council	WBC Planning Policy Unit
SPD Open Space and Recreation Provision	Warrington Borough Council	WBC Planning Policy Unit
SPD Travel Plans	Warrington Borough Council	WBC Planning Policy Unit
Draft School Organisation Plan 2003 - 2008	Warrington Borough Council	WBC Children Services Directorate
School Admissions Policy	Warrington Borough Council	WBC Children Services Directorate
DfES Construction Cost Indicator	DfES	www.teachernet.gov.uk/management/resourcesfinanceandbuilding/schoolbuildings/designguidance/costinformation/
Warrington PCT Annual Report	Warrington PCT	http://www.warrington-health.nhs.uk/publications.htm
Primary & Social Care: Premises Planning and	NHS estates	www.primarycare.nhsestates.gov.uk

PART 2

Design Guidance Financial Model		

The Planning Policy Team, Environment Services Directorate,
New Town House, Buttermarket Street, Warrington, WA1 2NH

Tel : 01925 442839

If you need help in communicating with us, require this document in Braille or large print or would like a summary of it in your language, please telephone or contact us at the address above.

[illegible]

Arabic

[illegible]

Bengali

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或者希望獲得您所用語言的該文概要，
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Pokud potřebujete pomoct při komunikaci s námi nebo potřebujete-li shrnutí tohoto dokumentu ve vašem jazyce, zatelefonujte nám, prosím, nebo nám napište na shora/níže uvedenou adresu.

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如您在与我们进行交流的过程中需要帮助，或希望得到以您的母语而印制的该文件的摘要，请拨打上面的电话或按以上/以下的地址来联系我们。

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Jeśli potrzebujesz pomocy w porozumieniu się z nami lub chcesz otrzymać podsumowanie tego dokumentu w swoim języku, proszę o kontakt telefoniczny lub listowny na adres podany powyżej/poniżej.

Polish

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Punjabi

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Urdu

Supplementary Planning Document

Travel Plans

Approved Executive Board

12th September 2005

9

Warrington Borough Council

Status of the SPD

The new planning system provides for SPDs to be prepared in support of policies contained in an adopted development plan document that forms part of the Local Development Framework. While the Warrington UDP is at an advanced stage of preparation it has not yet been adopted. When it has been adopted, policies from the UDP will be ‘saved’ into the Local Development Framework, and it is only then that SPDs can be formally adopted.

It is proposed that for the interim period pending adoption of the UDP, this SPD should be used as informal guidance.

WARRINGTON BOROUGH COUNCIL
Draft Supplementary Planning Document
Travel Plans

CONTENTS

WARRINGTON BOROUGH COUNCIL
Draft Supplementary Planning Document
Travel Plans

1. Introduction

1.1. This advice sets out Warrington Borough Council's requirements for Travel Plans and identifies where they are required in support of a planning application. This document should be read alongside Supplementary Planning Document – Planning Obligations.

1.2. Travel Plans are an integral part of the Government's policies on sustainable transport. The implementation of travel plans in Warrington will help to achieve national and local targets to reduce congestion, improve air quality and promote healthier travel. School Travel Plans, to help reduce the 'school run', are required in certain circumstances to support planning applications from educational establishments. These are managed differently from developer travel plans and support should be sought by contacting the School Travel Adviser in the Transport Planning Unit.

1.3. Planning Policy Guidance Note 13 (PPG13) published by the Government in March 2001, requires submission of Travel Plans alongside planning applications for development that will have significant transport implications. Regional Planning Guidance (RPG) and Warrington's Revised Unitary Development Plan (RUDP) give more local guidance and requirements. The document supplements and is consistent with policy LUT10 and LUT11 of the RUDP. Formal adoption of this SPD can only take place when the UDP, which is now at an advanced stage of preparation, has been fully adopted. In the short-term therefore, pending adoption of the UDP, the intention of this document is to provide informal guidance. When adopted under transitional arrangements by reference to 'saved' adopted UDP policies, the SPD will be afforded maximum weight as a material consideration in determining whether development proposals comply with the relevant policies.

2. What is a Travel Plan?

2.1. A Travel Plan is a package of measures to assist in managing the transport needs of an organisation. A successful Travel Plan will offer users of a business or organisation a choice of travel modes to and from the site and encourage more sustainable patterns of movement. Local Authorities are encouraged to promote the use of Travel Plans to assist in wider aims of reducing pollution, congestion and improving health.

2.2. A Travel Plan should contain an **action plan** detailing which measures will be promoted as alternative modes of travel for commuting, school journeys (if applicable) and business trips. These may include bus, train, cycling, walking,

motorcycling or car sharing. This applies equally to journeys made during the course of work or to visitors and customers to a development.

2.3. Travel Plans consist of two stages; development and implementation. The development stage involves discussion of and consultation on site-specific issues, determining which measures are required, and the production of an action plan. The implementation stage is an ongoing process, ensuring the actions are put into operation, monitoring their effectiveness, and revising where necessary.

3. Objectives of a Travel Plan

3.1. The main objective of a Travel Plan is to enable and encourage users of a development to reduce the need to travel alone by car to a site.

3.2. Travel Plans are better viewed in terms of an ongoing process rather than a one-off document. A successful Travel Plan will benefit from continual monitoring (e.g. staff surveys), review and adjustment over time. It requires integration into other management procedures and demonstration of high-level management commitment.

4. The Benefits of Travel Plans

4.1. Whilst Travel Plans will clearly help to reduce congestion and traffic related pollution for residents in the Borough, there are also benefits to organisations, namely:

- producing cash savings, particularly where there is a constrained or congested site, car parking costs are high, or parking areas could be put to higher value use;

- competitive advantage, they can help employee recruitment and retention, create a better image and improve public relations, reduce employee stress through healthier forms of travel, encourage flexible working practices and produce a fair approach to travel subsidy; and

- widen choice of travel mode for all those travelling to and from the site.

5. Local Policy on Travel Plans

5.1. The promotion and implementation of Travel Plans is a policy objective in the Local Transport Plan (LTP) for Warrington. The LTP quotes that 'the Council is concerned that proposals for new building developments take full account of the need to encourage more sustainable transport solutions' Local and national initiatives and targets to reduce road traffic, promote public transport, walking and cycling are also set out.

5.2. Policy LUT10 of Warrington's Revised Unitary Development Plan (RUDP) states:

Applications for major developments that consist of employment, shopping, leisure, and service uses, either singly or in combination, must be accompanied by a Travel Plan, including provisions for implementation and monitoring. This requirement also extends to smaller development proposals that may give rise to significant amounts of travel in locations where:

- *congestion already occurs, or*
- *congestion will occur as a direct consequence of the proposal, or*
- *local transport initiatives are in place or are proposed*

5.3. LUT11 of the above document states:

Proposals for new or expanded schools, which will enable an increase in pupil numbers, should be accompanied by a school travel plan. This will target areas for Safer Routes to School funding, promote safer walking and cycling routes, restrict parking and car access at and around the school, and include cycle changing and storage facilities.

6. When is a Travel Plan Required Through a Planning Application?

6.1. In addition to the guidance in 5.2 above, developers are encouraged to consult with the Council at an early stage, before submission of an outline or detailed planning application, as to whether a Travel Plan is required. Consultation is important as it may influence the design of any final scheme.

6.2. As a guide, the following table indicates the threshold over which a Travel Plan is required. However, in certain cases local conditions may warrant a Travel Plan for smaller developments.

Development type	Threshold
Residential	over 10 dwellings – transport welcome pack
Residential	Over 50 dwellings – formal Travel Plan
Retail	1000sqm (gross floorspace)
General employment and offices	2500sqm (gross floorspace)
Warehousing	5000sqm (gross floorspace)
Schools, higher and further education	any new build or increase in space which will allow increased no. of students
Cinemas and conference facilities	1000sqm (gross floorspace)
Stadia	1500 seats

6.3. A Travel Plan required as a condition of planning consent can be monitored and enforced by the Planning Authority.

6.4. Speculative developments – whilst it is recognised that many of the actions cannot be undertaken within unoccupied sites, it is important to ensure that the Travel Plan will be implemented by the end users. To this end, an Interim Travel Plan should be drawn up by the developer, incorporating all the necessary measures to ensure its effectiveness when implemented, and will remain the responsibility of the developer until it is legally passed on to the occupier within a legal lease or sale agreement. The physical measures to enable sustainable travel and reduce car use, such as cycle routes and parking, pedestrian accesses, public transport access and car park management, should be incorporated at design stage.

7. Section 106 Agreement

7.1. The developer may be required to enter into an Agreement with the Council made under Section 106 of the Town and Country Planning Act 1990. This may typically include:

- A financial contribution
- A requirement to produce a Travel Plan
- Monitoring requirements

An s106 is a legal agreement and will be monitored and enforced if not complied with.

Formulation of a Travel Plan

8. Producing a Travel Plan

8.1. Appointment of Travel Plan Co-ordinator

The Developer must supply to the Council the name of the appointed person from within the organisation responsible for the success and running of the Travel Plan, known as the Travel Plan Co-ordinator. The post needs to be of sufficient seniority to undertake tasks associated with the post such as chairing steering groups. The appointment need not necessarily be a new one but instead a case of extending the job profile of an existing employee (this will depend on the scale of the development and size of the organisation). In the case of a speculative development, where the developer will not have a presence on site once the units are leased/sold, the lease/sale contract must have a paragraph legally passing over the responsibility of travel plan implementation to the new occupiers.

The role of the Travel Plan Co-ordinator will be to manage the Travel Plan, liaise with the Council and provide monitoring information when agreed. The job description should also include: -

- to promote, publicise and encourage the availability and use of travel modes other than the car
- ensure that all relevant information is provided to all new members of staff/visitors/pupils and that up to date information is clearly displayed on the notice-boards or via the intranet (if applicable)
- arrange and record surveys of car park usage as required by WBC
- co-ordinate car sharing arrangements in whatever manner the organisation has decided upon
- arrange for either full or snapshot travel surveys to be undertaken of all people on the site, at intervals agreed with the Council
- liaise with public transport operators and Officers of the Planning and Highway authorities and arrange regular meetings with all interested parties
- organise workshops and induction seminars to educate existing and new staff

NOTE: *Support and advice will be available from relevant WBC officers throughout.*

8.2. The following are suggested steps to be taken when developing a Travel Plan. For ease of assessment it is recommended that the applicant sets out the Travel Plan as shown above. Best practice suggests that a working/steering group be set up to advance travel plan development. This should consist of the travel plan co-ordinator, decision-makers and interested parties.

STEP 1 – Site Audit

This is an essential part of preparing a Travel Plan. It is a tool for methodically assessing transport facilities on the site and transport links to it. In the process of carrying out a site audit, a list of actions to make it easier and more attractive to travel to the site on foot, by public transport and bicycle is drawn up for use in a

Travel Plan.

STEP 2 – Survey

A survey of travel modes of users of the site (usually staff but may include others such as patients/students/pupils depending on type of development) should be undertaken. The aim of the survey is to collect data on current transport methods and find out which incentives to adopt alternative modes would be acceptable and likely to be most effective. The survey of the transport modes should cover: -

- *home post codes*
- *main method of travel*
- *where the individual's car is usually parked*
- *whether the individual shares their car/how many occupants*
- *incentives staff might consider to change to transport methods other than single car occupancy*
- *any other aspect of travel the organisation might require information on.*

The method of conducting the survey is up to the Developer; however an attempt should be made to ensure maximum return by offering for example ***entry into a prize draw*** *for participants*

STEP 3 – Drafting a Travel Plan

The Travel Plan should then be drawn up and relevant measures included, based on the survey data collected. Components required in a Travel Plan are outlined below.

STEP 4 – Submission and Evaluation of a Travel Plan

The Travel Plan will be evaluated by the Council's Travel Plan Co-ordinator, using the DfT's Travel Plan Evaluation Tool. The Council will use this tool to help assess whether the proposed travel plan is likely to be ***acceptable and successful****. The final score will give an indication of its* ***quality and comprehensiveness****. All submitted Travel Plans should reach* ***a minimum score of 50%****; however this may be raised for developments which are likely to have a greater impact on the surrounding road network. This tool, along with a substantial amount of useful information can be found on the TransportEnergy BestPractice Programme's Travel Plan Resource Pack for Employers CD.*

When approved the Travel Plan will be passed to the Planning Case Officer for discharge of the planning condition.

9. Components of a Travel Plan

It is recognised that a Travel Plan will be **unique to any site** and a variety of initiatives may be adopted. However the following list gives an idea of what should be included in a **quality** plan to enable it to be **effective**.

9.1. Background

Explaining site, location, numbers of people, measures already in place, current share of travel methods, and reason for producing the plan.

9.2. Scope

Identifying the travel elements of the organisation's activity, (commuter journeys, business travel, customer access, deliveries, fleet management and/or other issues).

9.3. Objectives

Stating what the plan is trying to achieve (e.g. reduction in single car users, increase in public transport use).

9.4. Measures/Actions

Detailing the proposed actions and measures for achieving the stated objectives.

9.5. Targets

Identifying targets against which the effectiveness of each measure will be reviewed. (Including short, medium and long term milestones).

9.6. Monitoring

Setting out arrangements for the review and monitoring of the plan on an ongoing basis to determine whether objectives are being met in line with any Section 106 Agreement.

9.7. Promotion

Noting how the plan and measures will be promoted to staff and customers.

9.8. Dissemination

A communications strategy noting the process by which the benefits of a Travel Plan, successes and progress will be communicated, (e.g. internally via newsletter, email, intranet, department or team briefings, notice boards and externally via the press or other media).

Of the above, **Measures/Actions**, **Targets** and **Monitoring** require particular attention:

Ideal Measures to be included in the Travel Plan

It is important that measures to meet stated objectives are set out as fully as possible, because these will determine the potential of the plan to bring about modal shift. Assessment of the Travel Plan will be based upon its potential to lessen the transport implications of the development and bring about a change in modal share. Depending on the local circumstances, ***all*** *of the following measures will assist in achieving a successful plan, some more than others depending on the location of the site.*

Note: The choice of elements must work together as a package – some elements and the way they are structured could undermine or increase the success of others. Some may be more effective than others in certain situations. Many of these measures have been supported by the Government by having a reduced or zero tax liability. See Inland Revenue booklet IR176.

Measures to promote and facilitate public transport use, including:

- *Negotiating with operators to achieve service/route improvements, discounts on tickets, bulk ticket purchase and on-site promotion;*
- *Shuttle buses to stations/other key destinations (free, dedicated). Could include a lunch time service 'into town' depending on location of development;*
- *Works buses;*
- **Physical works to provide routes, bus lanes, convenient bus stops, stations etc;*
- *Financial incentives (e.g. interest free loans);*
- *Real time information displays in prominent egress or congregating points in the development;*

Measures to reduce car use

- *Car parking restraint, charges and *management (e.g. allocation of parking spaces through limited permits);*
- *Restraint on off-site parking where necessary;*
- *Promotion of car sharing (e.g. matching services, guaranteed ride home in emergency, priority parking for sharers and car share groups for staff);*
- *Use of pooled company vehicles and bicycles in order that staff do not need to bring their own vehicles to work;*
- *Financial incentives (e.g. for not driving, for giving up a parking space);*
- *Altering eligibility for relocation allowances to encourage new staff to move nearer to the workplace and on public transport routes;*

Measures to promote and facilitate cycling and powered two wheelers

- *Secure, convenient, accessible, prominent and covered cycle parking;*
- **Safe cycle routes onto and through the site;*
- *Bicycle user groups (BUGs);*
- *Pool bikes/powered two wheelers;*
- **Changing facilities/showers and drying area;*
- *Financial incentive (e.g. mileage allowance).*

Measures to promote and facilitate walking

- *Improved walking access;*
- *Walkers group;*
- **On-site security and pedestrian route improvements;*
- **Changing facilities/showers and drying area.*

Promotion of practices/facilities that reduce the need for travel

- *Flexible working practices e.g. teleworking/home working;*
- *Local recruitment;*
- *The existence of and benefits of the Travel Plan should be highlighted to employees/ students at interview/recruitment stage;*
- *Teleconferencing;*
- *Compressed working week;*
- *On-site facilities for eating, shopping etc.*

Monitoring and review mechanisms

- *Clarify indicators i.e. the elements that will be monitored to assess whether targets have been achieved;*
- *Clarify monitoring and review arrangements.*

Travel Plan Co-ordinators and associated support

- *Steering groups;*
- *Working groups;*
- *Links to other (e.g. umbrella) Travel Plans/travel plan forums /Travelwise.*

Provision of travel information

- *Dedicated web site;*
- *Travel notice board with leaflets, site-specific travel information, displays, simplified timetables;*
- *Target promotion;*
- *Personalised journey planners.*

Marketing

- *Communication with staff;*
- *Focus groups;*
- *Branding/slogans;*
- *Events.*

** Some physical measures (e.g. new bus shelters and cycle routes) will often be negotiated in conjunction with submission of the planning application through a Section 278 agreement.*
Note that financial incentives to individuals cannot be included in a planning agreement for legal reasons – but can be used in a Travel Plan to ensure targets are met.

Targets

The setting of targets will only be possible after a baseline survey has been undertaken. When an Occupier is known, and the development is an extension on a current site or a new location in the Borough the setting of targets will be possible after current travel patterns of existing staff are surveyed to provide baseline data. A general target is to keep single occupancy car use to the lowest levels possible and the number of cars used to commute should not exceed the number of dedicated car parking spaces. ***Targets*** *should be* ***measurable****, achievable, realistic and* ***time-related****. They can be "aim" type (e.g. increase percentage using non-car modes by...) and/or "action" type targets (e.g. appoint a Travel Plan Co-ordinator, readjust to one tier mileage rates, interest free loans for public transport).*

Monitoring the Travel Plan

The Occupier will monitor and review the workings of the Travel Plan annually from its implementation either with full or snap shot surveys, and submit a written

report to the Council, at a mutually agreed date after the monitoring. The organisation must also do a full survey at least one month before its agreed interim and final target dates (e.g. Target: to reduce single car occupancy by 15% by the end of May 2008). Any revision to the Travel Plan required as a result of monitoring should be done in conjunction with the Council's Travel Plan Co-ordinator.

The Council may also request to monitor on site, using snap shot surveys on one day during a previously mutually agreed week. These snap shot surveys could be annual and negotiations for a suitable survey date will begin no less than one month before the proposed date. These statistics, plus those supplied by companies will be incorporated into the Annual Progress Report of the Local Transport Plan, which is sent to central Government annually in July.

Monitoring is necessary to assure the Council that the aims and actions in the Travel Plan continue to be realised at the target dates. If this is not the case a revised plan will need to be submitted for approval and it shall be open to the Council to suggest reasonable ways of improving the effectiveness of the plan.

10. Implementation

10.1. The implementation of initiatives within Travel Plans is the most essential part of the process. Travel Plans, without effective implementation of initiatives, prove to be a paper **exercise** which serves only to pay **lip service** to sustainable transport objectives.

10.2. In the case of a speculative development, where the developer will not have a presence on site once the units are leased/sold, the lease/sale contract must have a paragraph legally passing over the responsibility of travel plan implementation to the new occupiers.

11. Assessment Criteria

The Travel Plan will be assessed by the Council based upon the potential to lessen the transport implications of the development and bring about a change in modal share. Research suggests that the most successful plans incorporate a comprehensive range of measures, both 'carrots' and 'sticks' with incentives introduced first. We are looking for evidence of commitment to the Travel Plan by the occupier of the site. This should include a signed statement by the CEO, a ring-fenced budget to promote sustainable travel and implement the Travel Plan initiatives, senior management statement of commitment to the Travel Plan in the organisation's corporate/promotional literature.

APPENDIX 1

Summary of Steps for an Effective Travel Plan

Once it has been determined that a Travel Plan will be required the following are the steps needed to produce one. *Speculative developers may decide to buy in the services of a Transport Consultant to produce their interim travel plan - please note it is important to ensure that it reaches the standard required by the Council to avoid being returned for enhancement.*

- **Secure senior management support**
  It is essential to secure budget allocations for travel plan activities, secure staff time for work concerned with the travel plan, and take high-level decisions which may be required.

- **Identify roles and responsibilities**
  A Travel Action Group will require to be set up to develop the travel plan. This will require a Travel Co-ordinator and representatives from various sections of the organisation who will be responsible for taking the travel plan forward. *Speculative developers should write a Travel Co-ordinator's job description in the Travel Plan and ensure that future occupiers of the site understand their responsibility to appoint.*

- **Undertake a site assessment**
  To determine the present situation and enable improvements to be made.

- **Undertake a staff travel survey**
  To identify current travel patterns and to discover what would be required for these to change. A baseline is also needed to enable future monitoring.

- **Undertake travel audits**
  It is useful to know all elements of travel to and from the site, mileages, routes, costs, and times, to enable improvements to be made.

- **Identify objectives, targets and indicators**
  Objectives - to give the plan direction and provide focus.
  Targets - measurable goals to assess whether the objectives are being met.
  Indicators - the elements to be monitored to measure the targets.

- **Identify measures**
  Select the transport alternatives employees will be prepared to use, and make these measures more attractive than driving alone. Both hard measures (infrastructure) and soft measures (promotion) will be required.

- **Implementation**
  It is essential that the selected measures are put into action.

- **Monitoring and review**

  The plan is an on-going process, not just a one-off event. Once in place it will need monitoring regularly to check its impact, and review or prioritisation of measures depending on the results. Dates for this process should be included.

CAR PARKING STANDARDS

The current parking standards for the borough of Warrington are derived from the following current national and regional policies on parking for new developments;

- The Regional Spatial Strategy for the North West (RPG13)
- PPG13: Transport
- PPS3: Housing

General Requirements

1. This appendix sets out parking standards together with guidance for their application within the Borough, in the context of the emerging policies of the UDP and in particular policy LUT20.

2. Maximum Standards

Car Parking standards have traditionally been minimum standards to ensure that adequate off-street parking has been available to cater for the expected use. Maximum standards are being introduced to encourage the use of other modes of transport and reduce car use, and their application will limit development sites to operational levels of car parking. Developers will not be permitted to provide more spaces than the specified maxima or required to provide more spaces that they themselves wish, other than in exceptional circumstances for example where there are significant implications for road safety which cannot be resolved through the introduction or enforcement of on street parking controls.

The maximum car parking standards are consistent with the standards contained in the public consultation draft PPG13: Transport, draft Regional Planning Guidance for the North West and PPS 3: Housing.

3. Town Centre, District, Local and Neighbourhood Centres

The maximum standards will apply not only in town centres but in all areas of the Borough. This will provide a consistent approach and not encourage development in peripheral locations. The shared use of parking and the availability of existing public car parking will normally be required to be taken into account in town and other centres so as to reduce the total space taken up by parking in new developments. It is expected that these areas will be served by a good level of public transport and parking provision well within the maximum standard will normally be expected.

4. Residential Developments

It is considered appropriate to clearly state the level of car parking that will normally be required for residential development, rather than a simple maximum, as it is recognised that dwellings require some degree of off street parking to keep on street parking to an acceptable level. The standards will still apply to all residential development although in areas such as the Town Centres, District, Local and Neighbourhood centres or along public transport corridors, parking for residential development may not be required. Additionally, should alternative availability of parking exist both on and off street in the locality of the development, these factors can be taken into account in the assessment of any particular scheme.

5. Changes of Use

Where applications are received for changes of use or extensions to existing developments, the required parking provision should be calculated to include all the existing on site provision. It is expected that in many instances this could result in no extra parking spaces being required as a result of the change of use.

6. Disabled Parking

In order to ensure an adequate supply of disabled parking the required provision will normally be 5% of the maximum standards for a development, regardless of the actual total provision within the site.

7. Parking For Service Vehicles.

Other than for B2 and B8 uses for which the required level of parking for Heavy Goods Vehicles is set out below, the provision of spaces for goods vehicles to load and unload will be assessed for each development proposal on its merits. It is essential to make adequate provision to ensure that servicing can be accommodated without detriment to the safety of other road users, or the free flow of all-modes of transport on main transport routes. Car Sales/Showrooms will normally be expected to ensure that deliveries by car transporters can be accommodated within the site, clear of the public highway.

Land Use	Gross Floor Area	Parking Requirement
al Industrial B2-B7	Up to 1000 Sq.m GFA over 1000	1 space per 400 sq.m 1 space per 500 sq.m
Storage and distribution B8	Up to 1000 Sq.m GFA over 1000	1 space per 200 sq.m 1 space per 300 sq.m

8. Other Complementary Measures

The provision of parking for new developments, or change in use, is only one element of managing travel demand. Complementary measures including improvements to pedestrian, cycle and public transport provision, implementing traffic management measures and developing Travel Plans for significant developments will also need to be considered. Developers will be encouraged for example to reserve 10% of parking spaces for car sharers as part of a Travel Plan.

Use Class and Development Type	Maximum Parking Standard
A1 Food Retail	1 space per 16 sq.m
A1 Non-Food Retail**	1 space per 22 sq.m
A2 Financial & Professional Services	1 space per 25 sq.m
A3, A4, A5 Public Houses, Restaurants, Cafes & Takeaways	1 space per 7 sq.m of public floorspace
A3 Fast Food – Drive Through	1 space per 8.5 sq.m of gross floor area
B1 Offices	1 space per 35 sq.m (stand alone 1 space per 40 sq.m (Business parks)
B2 General Industry	1 space per 60 sq.m
B8 Storage and Distribution	1 space per 45 sq.m
C1 Hotels/Guest Houses	1 space per bedroom including staff
C2 Hospitals	1 space per 4 staff + 1 space per 3 bedspaces
C2 Nursing homes	1 space per 4 staff + 1 space per 4 bedspaces
C2 Residential Schools and Colleges	1 space per 4 staff + 1 space per 4 bedspaces over driving age over driving age.
C3 – Dwelling Houses	In general car parking spaces for residential properties should not exceed 2 spaces and will be limited on average to no more than 1.5 spaces within developments.
C3 Houses with 2 bedrooms and above	2 spaces per dwelling
C3 Houses and Flats with communal parking (incl all conversions and changes of use	1.5 spaces per dwelling
C3 Car Free Residential Development	No requirement subject to pool car facilities and covenanted occupation to prevent car ownership
C3 Sheltered Housing	No maximum standards
C3 Community Homes	No maximum standards
D1 Medical or Health Facilities	1 space per 2 staff + 3 per consulting room
D1 Higher and Further Education**	1 space per 2 staff + 1 space per 15 students
D1 Crèches, Day Nurseries and Day Centres	1 space per 2 staff + 1 space for every 10 children places

Use Class and Development Type	Maximum Parking Standard
D1 Primary Schools and Secondary Schools	1 space per 2 staff + 1 additional space per 3 members of staff
D1 Colleges of Further education	1 space per 2 staff + 1 additional space per 10 students
D1 Museums and Art Galleries, Libraries and Reading Rooms	1 space per 2 staff + 1 space per 40sqm for visitors
D1 Public or Exhibition Hall, Places of Worship or Religious Instruction	1 space per 2 staff + 1 space per 10 sq.m of public floorspace
D2 Cinema, Concert Hall, Bingo, Casino, Dance Halls	1 space per 8 seats
D2 Indoor Sports Centres	1 space per 25 sq.m
D2 Stadia	1 space per 18 seats
Hostel	1 space per 2 staff + 1 space per 6 occupants
Car Sales , car 7 van Hire Booking offices	No maximum standards
Amusement Arcades	As for Non Food Retail
Petrol Filling Station	1 space per 2 staff
Sunbed Centre	1 space per 2 staff + 1 space per 2 beds
Cattery & Kennels	1 space per 4 pens

Minimum Cycle Parking Provision*

Land Use	Threshold	Minimum Parking Provision
Business (B1)	up to 1000 Sq.m GFA over 1000 Sq.m GFA	3 stands per 500 Sq.m 12 stands
Industry (B2)	up to 500 Sq.m GFA 500 - 1000 Sq.m 1000 - 5000 Sq.m	3 stands 5 stands 12 stands
Warehouses (B8)	up to 500 Sq.m GFA 500 - 1000 Sq.m 1000 - 5000 Sq.m	3 stands 5 stands 12 stands
Shops, Services (A1/A2)	100 Sq.m Over 100 Sq.m Staff	1 stand 3 stands 1 stand per 5 staff
Restaurants, Cafes, Public houses (A3)	(bar area) 50 Sq.m (dining area) 50 Sq.m Staff	1 stand per 50 sq.m 1 stands per 50 sq.m 1 stand per 4 staff
Hospitals, Nursing Homes (C2)	Staff	1 stand per 4 staff
Clinics, Heath Centres (D1)	treatment/consulting room Staff	2 stands per room 1 stand per 4 staff
Sports, Leisure Centres (D2)	 Staff	20 stands 1 stand per 4 staff
Theatres, Cinemas (D2)	100 seats Staff	3 stands per 100 seats 1 stand per 4 staff
Libraries, Museums	Staff	1 stand per 4 staff
Colleges, Universities	for every student	0.5 stands per student
Secondary Schools	for every student	0.5 stands per student

* Cycle parking must be convenient and secure and the provision of changing facilities within the development must be identified.