



Streetscape Design Guide



Transport Planning Unit



Contents

1.	Introduction	5
2.	The Design Process	8
3.	Layout and Connectivity	14
4.	Planning for Parking	33
5.	Planning for Passenger Transport	36
6.	Planning for an Adoptable Public Streetscape	38

Appendices

A	Useful contacts	45
B	Highway Network GIS link and Highways England note	46
C	Biodiversity Legislative Framework And Best Practice Guidance	47
D	Development Management Flow Chart	51

Foreword

Welcome By Councillor Alan Amos and Councillor Dr. Ken Pollock



Worcestershire is an attractive and ambitious county, with a focus on development and growth. In the coming years, many of Worcestershire's urban areas are set to grow, in response to an increased need for new dwellings, and commercial and industrial opportunities.

Our streets are a precious resource, providing the social setting for public life, and access to a wide range of services and facilities. It is essential that new streets are designed with thought and care.

A successful streetscape should be durable, attractive and provide for the needs of all users. This guide is intended to offer a policy framework to achieve just that, giving those engaged with designing new streetscapes a clear framework, guidance and support to achieve success in Worcestershire.

1. Introduction

1.1 Background

Worcestershire has it all; each era of history from the prehistory to the present day has left a lasting mark on the county, leaving a rich mix of attractive landscapes and streetscapes. It is the quality of both the natural and historic built environments which supports (in part) Worcestershire's vibrant visitor-focussed economy, whilst providing a cherished environment in which to live and work.

In the 1930s, 40s and 50s, historic urban areas grew to cater for the aspirations of residents, resulting in a number of larger housing estates, often with attractive green infrastructure and services to support a higher quality of life.

However, in the latter half of the twentieth century, there have been several examples of poorly planned development, which has resulted in relatively isolated, car-dominated estates with limited identity and ugly modernist buildings in central areas, as well as gradual attrition of green space in our urban areas, which detracts from the quality of the historic built environment.

These aspects provide both a unique and exciting opportunity to prospective developers, to integrate new development into the existing built environment in a way which respects heritage assets and learns from the mistakes of the past. Worcestershire County Council recognises the importance that new highways can make to the wider role of place making and that design concepts should not be constrained to just the functional spaces.

Worcestershire challenges prospective developers to create attractive, accessible communities which deliver a high quality of life; places where people want to live, work and invest. To achieve this, the following aims for the consideration of transport infrastructure and services in new development:

- Ensure that new development relates to its context, with transport links integrating seamlessly within the built and natural environment to the benefit of new residents, adjacent occupiers and existing communities alike;
- Ensure that transport infrastructure is designed to encourage alternatives to car use by providing convenient, safe and attractive provision for pedestrians, cyclists and passenger transport users to key trip attractors, permeating both new developments and existing communities;
- Ensure the design of streets within new developments continues to accommodate necessary vehicle movement, and facilitate car parking, but seeks to encourage traffic speeds of 20mph or less;
- Ensure new development is intuitive in its approach, providing easy and safe access between highways, car parking areas and dwellings for everyone, including those with visual and mobility impairment;
- Ensure that new developments are designed to provide a safe, secure and sustainable environment, including embracing sustainable green infrastructure throughout the design process, recognising the central role that such infrastructure plays in delivering liveable, attractive communities;
- Secure a movement network which is adoptable with an extensive design life and is easily maintainable.

1.2 The Streetscape Design Guide in Context

The Streetscape Design Guide is written to provide necessary local detail, and should be considered in conjunction with national guidance including the Manuals for Streets 1 and 2 (referred to in this document as Manual for Streets), the Design Manual for Roads and Bridges, as well as a wide range of best practice documents covering different aspects of development design and protection of valuable natural resources. The SDG seeks to strike the right balance between allowing designers the flexibility needed to create distinctive high quality developments, whilst also ensuring that planned transport infrastructure is resilient, stands the test of time and is cost-effective to maintain.

The Manual for Streets reinforces the message that a coordinated design process is essential for successful development. Worcestershire County Council strongly advocates this approach and supports the early establishment of development teams to promote proactive joint working, as such it is encouraged that the Local Planning Authority's Development Management team is engaged at an early stage to ensure a holistic approach to development is provided.

1.3 Management of the Transport Network

Worcestershire County Council is the Local Highway Authority for Worcestershire, as set out in statute law. It is responsible for managing the following aspects of the transport network:

- All public highways with the exception of the Trunk Road network, which is managed by Highways England (see below);
- Public Rights of Way;
- On-street car parking;
- Some public off-street car parking (where associated with Council-run facilities such as Country Parks);
- Some bus services;
- Community Transport schemes.

Worcestershire County Council's

Development Management Team is responsible for coordinating the Local Highway Authority's response to consultations received for new development proposals in respect to highways and transport issues. The Development Management Team can advise designers on a variety of matters, including responsibilities for transport infrastructure.

Worcestershire County Council's Sec. 38/278 Development Control Team is responsible for managing the delivery of developer led schemes for the creation of new highways and improvements to the existing highway network, involving technical checking and approval of submissions and inspection of the site works. The Sec. 38/278 Team can advise designers on a variety of detailed highway design matters.

1.4 Application of Design Standards

The Manual for Streets 2 and the Design Manual for Roads and Bridges provide a framework for the design of new transport infrastructure and are the default resources for priority junctions and accesses.

The Design Manual for Roads and Bridges sets out design standards for the carriageway and this should be used as the starting point, however, a road will always be situated within an existing environment. As a result, it is not enough to consider the carriageway in isolation. There are many more guidance documents to support designers and land owners to produce highway infrastructure plans which respond positively to the surrounding environment and to the users of the space. This SDG provides the signposting to these documents.

In the event of confusion, Developers are encouraged to make contact with Worcestershire County Council, as the Local Highway Authority, to obtain clarification in writing.

1.5 Philosophy

Worcestershire County Council encourages creativity in the approach to designing highway infrastructure. Innovative designs which challenge the status quo whilst still meeting requirements set out in relevant statutory legislation and non-statutory guidance will be considered on a case by case basis. However, it is strongly advised that any proposals are discussed at an early stage with the County Council Development Management Team, to avoid prolonged inefficient dialogue later in the planning process. Any such designs will need to be supported by evidence to show how these designs meet relevant guidance and consider the safety of users, and any maintenance implications.

New highways and modification to existing infrastructure can cause major impacts to protected and declining species via severance and destruction of valuable habitats. Early engagement with an Ecological Consultant is key to reducing costly delays by incorporating mitigation into highway design and ensuring developments comply with the necessary legislation and best practice (reference Appendix C). National policy requires that all proposals should aim to achieve a “net gain” in biodiversity and be integral to the scheme. Schemes that cannot achieve this will need to demonstrate why it has not been possible.

In addition to allowing people and goods to travel from one location to another, the transport network caters for a much wider range of activities, particularly in urban areas. At any one time in a typical urban street, it is quite possible to see a mixture of people using the route on foot, cycling, or driving a mobility scooter, a car, a van, or a lorry, in going about their daily business. All such users are using the street as a link; a means of getting from one place to another. Similarly, wildlife may use the hedgerows, trees and grassland in verges along the carriageway as undisturbed means of dispersing to larger areas of natural habitat forming important wildlife corridors or stepping stones. For example wildflower verges currently provide invaluable stepping stones for

declining pollinators, so the permeability of the landscape should be maintained and enhanced by new development and act to support national initiatives such as National Pollinators Strategy.

Furthermore, many such streets also accommodate other functions. For example, the street may be used by people to host events, markets, demonstrations, social gatherings, somewhere to eat and drink and for sightseeing; these functions are all uses of the street as a place. Additionally, these road verges may, due to their undisturbed nature, have intrinsic value for wildlife by providing opportunities for overwintering, breeding, foraging and taking refuge, many within the county being designated as Roadside Verge Nature Reserves (www.worcestershire.gov.uk).

Verges can provide a critical ‘stepping-stone’ function to surrounding sites of nature conservation value. With appropriate design and management the verges can serve to link local populations of wildlife throughout the county.

Consideration of a route’s link and place function is an essential part of the development process, which directly contributes towards creating successful and attractive spaces which also benefit wildlife.

Worcestershire County Council suggests that Developers specifically consider this in the context of statutory legislation and nonstatutory guidance (reference Appendix C), and agree proposals with the DM team

1.6 Review

The Streetscape Design Guide will be reviewed annually to ensure that it remains current to changes in national and local policy and to reflect on emerging evidence. The document may be reviewed sooner should a more fundamental change be needed.

2. The Design Process

2.1 Introduction

Designing highways has changed. It is no longer the common practice to make vehicles the dominant feature of a road. This message is echoed throughout central government design guides and documents. The ‘Manual for Streets’ notes significant flaws in past road hierarchies stating that:

“In the past, road design hierarchies have been based almost exclusively on the importance attributed to vehicular movement. This has led to the marginalisation of pedestrians and cyclists in the upper tiers where vehicular capacity requirements predominate. The principle that a road was primarily for motor traffic has tended to filter down into the design of streets in the bottom tiers of the hierarchy... Streets should no longer be designed by assuming ‘place’ to be automatically subservient to ‘movement’.” (P18: Manual for Streets, DfT, 2007)

The Department for Transport’s Manual for Streets goes on to state that the design of any new road or improvements to an existing road should follow a user hierarchy as set out below:

Consider First	Pedestrians
	Cyclists
	Public Transport Users
	Specialist Service Vehicles (e.g. emergency services, waste etc.)
Consider Last	Other Motor Traffic

There is ever evolving guidance for the wide variety of road types. The following list some of the most commonly used guidelines for highway design:

- Design standards for highway layouts are prescribed in Design Manual for Roads and Bridges. It is important to note that Design Manual for Roads and Bridges has been

prepared for Trunk Roads and may not always be appropriate for lower speed urban and local roads.

- Manual for Streets 1 and 2 (Manual for streets) aims to transform the quality of road design, breaking away from the standardised, risk-averse approaches. It provides designers with advice on how carriageway widths, alignments and cross-sectional details can be designed in a way that better respects local context and the needs of users other than motor traffic.
- West Midlands Cycle Design Guidance: This document was published by Transport for the West Midlands in September 2017 and provides useful guidance on all aspects of cycling infrastructure.
- ‘Traffic in Villages – A toolkit for communities’ is a publication produced by Dorset AONB Partnership and is a toolkit to help Parish Councils and local groups understand the core principles for reducing speed, improving safety and retaining local distinctiveness. The Toolkit extends the key principles of Manual for Streets and Manual for Streets 2 to support rural communities coping with the impact of traffic in villages and small towns of which Worcestershire is home to many.

2.2 Further Guidance

A flow chart, which sets out the various stages of the design process can be found in Appendix D.

‘Street Design for All – An update of national advice and good practice’ is a well-regarded document on street design with an emphasis on the public realm. Produced by PRIAN it is commended for use by the DfT (Department for Transport) and the CIHT (Chartered Institute of Highways and Transportation).

The section on road safety is particularly useful for understanding driver perception and should be read and understood by all designers involved in highway design.

Beyond the carriageway, for urban and rural areas alike, the integration of the footway user along the county's roads must be given high consideration and importance in the development of designs. This is the place of most activity from non-motorised users. Conflicts can arise between pedestrian flows and desire lines, street furniture, cycleways, crossing points.

For high pedestrian footfall areas such as along high streets, Pedestrian Comfort Guidance for London (2010) provides further guidance on the integration of footway users with the highway. It describes the footway as having four different zones, these being the: Kerb zone, Furniture zone, Footway clear zone and the Frontage zone. It explains how to collect data to determine the configuration of the footway zone for each development type through a comfort assessment in order to achieve appropriate footway widths for users of the footway.

2.3 Integrating Infrastructure and Environmental Context

Consideration of the environmental context of the site will provide many opportunities for enriching the streetscape experience.

Green Infrastructure

Integration of green infrastructure has proven health, environmental and economic benefits. Worcestershire County Council published its Green Infrastructure Strategy in 2013 and its vision is that:

Worcestershire's high quality natural and historic environment will fulfil a multi-functional role. It will enable sustainable growth of the economy, improve the community's experience of natural and historic places, deliver benefits to health and well-being and underpin the county's resilience to climate change.

It is expected that proposals for investment in infrastructure will incorporate green infrastructure as an integral part of the development or to replace traditional infrastructure approaches with green infrastructure solutions where retro-fit improvements to highways are planned.

Figure 11 of Worcestershire's Green Infrastructure Strategy sets out the principles to consider when integrating green infrastructure within new development. A copy of the strategy can be found here http://www.worcestershire.gov.uk/downloads/file/3780/worcestershire_gi_strategy_document_2013.

Trees In The Streetscape Environment

Trees found within the urban environment can make a significant contribution to promoting economic value, a sustainable integrated infrastructure approach, climate change adaptation and human health and well-being. The increasing spatial flexibility of streetscape design context should prompt a design approach that explores greater diversity in the tree assemblage. There is a logic (not least visual) to planting single species street trees in Avenues and Boulevards. By contrast, with the street there is an opportunity to introduce a range of species of different structural characteristics and heights to further soften the overall character and create temporal view points for people walking along the Street. Varying height, structure and the appearance of trees (leaf colour, bark texture and flowering season) can create a greater sense of depth and filtered views, therefore, adding to the experience of these particular places that sets them apart from more formal streetscapes.

It is commonly perceived by local authorities and developers that the installation and maintenance of trees requires high capital investment and high maintenance costs.

Trees in Hard Landscape A Guide for Delivery (TDAG) is a publication commended by the Minister of State for Transport. It explains the collaborative process to be adopted in designing with trees, provides technical design solutions and species selection criteria. The aim of the guidance is to ensure the right tree and right technical design solution is included in street design. The process and installation and maintenance need not be costly if integration and adequate provision for trees in the planning and adoption processes is secured from the outset.

Worcestershire attaches great importance to the contribution that a diverse mixture of tree planting can make to our environment. Where possible existing trees must be integrated within new development proposals. It is important to engage an arboriculturist to carry out a tree survey in accordance with the British Standard BS: 5837 2012 Trees in relation to design, demolition and construction –

Recommendations at the commencement of developing plans of any new highway infrastructure. This will establish the health, longevity, root zone and tree works required of existing trees and should aid in the decision making of any road alignment. The removal of trees should be a last resort and should only occur following a collaborative process to determine that a tree's retention is impossible.

Trees And Sustainable Drainage Solutions (SuDS)

The development of the design details for the street should incorporate water-sensitive design where appropriate. The design needs to ensure:

- There is allowance for some precipitation to reach the tree-rooting environment,
- Full advantage of the capacity of the trees rooting environment is taken into account to help manage stormwater runoff, and
- Trees are explicitly integrated in the surface water drainage plan for the site in accordance with SuDS best practice.

Further guidance on the delivery of SuDS can be found in The SuDS Manual (C753).

The updated SuDS Manual incorporates the very latest research, industry practice and guidance. In delivering SuDS there is a requirement to meet the framework set out by the Government's 'non statutory technical standards' and the revised SuDS Manual complements these but goes further to support the cost-effective delivery of multiple benefits.

Environmental and Ecological Impact Assessments

Some of Worcester's scarcest species have populations reliant on the careful management of the county's highway networks.. Appropriate levels of ecological assessment should be carried out to work as an iterative process with the development as part of the wider ecological assessment.

In England and Wales, the requirements of the EIA Directive with regards to road projects has been transposed into UK statute by Section 105 of the Highways Act 1980 ,as amended by the Highways (Environmental Impact Assessment) Regulations 2007.

Developments classified as relevant under the EIA Directive Annex II will therefore need further assessment in accordance with the Design Manual for Roads and Bridges Volume 11, to establish whether significant envs are likely to arise during its construction and operation.

The environmental assessment for developments must be undertaken in accordance with the Design Manual for Roads and Bridges Volume 11, and any relevant Interim Advice Notes (IAN).

To inform the baseline of these assessments Worcestershire County Council resources and datasets should be referred to with specific focus on the Green Infrastructure Framework 2 report which will assist in establishing the baseline conditions at a sub-regional context and provides guidance on the process of carrying out Ecological Impact Assessment (EcIA). Worcestershire County Council provides and maintains a mapping data resource at an overall spatial level, which can be accessed at: gis.worcestershire.gov.uk.

New development and highway infrastructure often impacts upon the existing landscape. To avoid detrimental effects on the landscape character a full assessment of the existing character and its ability to accept change needs to be established. Worcestershire's Landscape Character Assessment provides guidelines for the protection and

enhancement of the rich and varied landscape character types. It indicates where pressures for change are occurring and what future planning and management needs to be incorporated into development plans.

Similarly, Worcestershire's Historic Landscape Characterisation provides a framework for informing landscape strategies, spatial planning and development control. It is being used by the County Council or District Council strategic planning or conservation staff especially those with responsibility for setting frameworks for change or making decisions that might affect the County's historic landscape character.

Streetscape Design and Wildlife Mitigation Measures

Where new or altered roads risk fragmenting contiguous natural habitats and all options to avoid this have been exhausted (and there is evidence to demonstrate this process), the County Council requires that best practice mitigation measures such as mammal passes, inset kerbs, tunnels, drains with wildlife exit routes, and arboreal hop-overs are incorporated along known wildlife corridors. Highway design is expected to take the mitigation hierarchy into account.

appropriate quantitative and qualitative thresholds in deciding the level of assessment that may be required.

Worcestershire County Council may interpret the need for assessment in light of local circumstances. There are several qualitative factors that need to be taken into account and that are not captured by this document. There will also be site-specific issues that assessments will need to cover.

2.4 Transport Assessments and Statements

The following thresholds are for guidance purposes and should not be read as absolutes.

Thresholds are normally applied for initiating a Transport Assessment. Developments below these thresholds still have an impact on the local transport network and so will normally be required to provide a Transport Statement, unless exempted from this requirement, in writing, by the Development Management Team.

In some circumstances, a Transport Assessment may be appropriate for a smaller development than suggested by the thresholds. In others, a Transport Statement may be appropriate for a larger development than suggested by the thresholds. Early pre application discussions between a developer and the relevant authorities are strongly recommended. In these, it is important for highway authorities to combine the

The following threshold limits apply:

Land Use	Size	No Assessment Required	Transport Statement Required	Threshold for Transport Assessment
A1 – Food Retail	Gross Floor Area	<250 square metres	>250 <800 square metres	>800 square metres
A1 – Non-Food Retail	Gross Floor Area	<800 square metres	>800 <1500 square metres	>1500 square metres
A2 – Financial and Professional Services	Gross Floor Area	<1000 square metres	>1000 <2500 square metres	>2500 square metres
A3 – Restaurants and Cafes	Gross Floor Area	<300 square metres	>300 <2500 square metres	>2500 square metres
A4 – Drinking Establishments	Gross Floor Area	<300 square metres	>300 <600 square metres	>600 square metres
A5 – Hot Food Takeaway	Gross Floor Area	<250 square metres	>250 <500 square metres	>500 square metres
B1 – Business	Gross Floor Area	<1500 square metres	>1500 <2500 square metres	>2500 square metres
B2 – General Industrial	Gross Floor Area	<2500 square metres	>2500 <4000 square metres	>4000 square metres
B8 – Storage or Distribution	Gross Floor Area	<3000 square metres	>3000 <5000 square metres	>500 square metres
C1 – Hotels	Bedroom	<75 bedrooms	>75 <100 bedrooms	>100 bedrooms
C2 – Residential Institutions – Hospitals and Nursing Homes	Beds	<30 beds	>30 <50 beds	>50 beds
C2 – Residential Institutions – Residential Education	Student	<50 students	>50 <150 students	>150 students
C2 – Residential Institutions – Institutional Hostels	Resident	<250 residents	>250 <400 residents	>400 residents
C3 – Dwelling Houses	Dwelling Unit	<50 units	>50 <80 units	>80 units
D1 – Nonresidential Institutions	Gross Floor Area	<500 square metres	>500 <1000 square metres	>1000 square metres
D2 – Assembly and Leisure	Gross Floor Area	<500 square metres	>500 <1500 square metres	>1500 square metres

Other Considerations	Transport Assessment and Travel Plan Required
Any development that is not in conformity with the adopted development plan.	<input type="checkbox"/>
Any development generating 30 or more two-way vehicle movements in any hour.	<input type="checkbox"/>
Any development generating 100 or more two-way vehicle movements per day.	<input type="checkbox"/>
Any development proposing 100 or more parking spaces.	<input type="checkbox"/>
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.	<input type="checkbox"/>
Any development generating significant freight or HGV movements per day, or significant abnormal loads per year.	<input type="checkbox"/>
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.	<input type="checkbox"/>
Any development proposed in a location within or adjacent to an Air Quality Management Area (AQMA).	<input type="checkbox"/>

Scoping Reports shall be provided and agreed in writing by Worcestershire County Council Development Management Team prior to the undertaking of a Transport Assessment Report.

Every Transport Assessment or Statement must be accompanied by a Travel Plan, which is compliant with Worcestershire County Council's guidelines. Travel Plans are typically a package of practical measures to encourage residents, employees and visitors to consider their travel options or reduce the need to travel. Typical examples of measures include: personalised travel plans and welcome packs for residential use, and for commercial use, the provision of showers, lockers and changing facilities, car sharing schemes, flexible working schemes etc.

It should be noted that the provision of Personalised Travel Planning is mandatory for all residential developments of 50 or more dwellings. Under 50 dwellings need a Travel Welcome Pack which must be put together using Worcestershire County Council guidelines. Worcestershire County Council provides a Personalised Travel Planning service, which can be purchased from the County Council. Further information is available from Worcestershire County Council's Travel Plan Officer.

Businesses are required to register with Starsfor (www.starsfor.org) to create a suitable travel plan, using this online tool. Schools are required to use Modeshift Stars (www.modeshiftstars.org) to create their travel plans. Further information, including the level of accreditation required, is available from Worcestershire County Council's Travel Plan Officer.

3. Layout and Connectivity

3.1 Establishing Access from the Existing Network

Traditional Junction Design

The developer must demonstrate that the junction arrangement proposed represents the best use of available capacity whilst ensuring the safety for all highway users. This will need to be demonstrated through capacity analysis of the various junction types, with the junction form which minimises delays and is subject to safety considerations being progressed. For example, traffic signals will not be supported when a priority junction provides adequate capacity for vehicles wishing to enter and exit the development. TD 42/95, Geometric Design of Major/Minor junctions, Chapter 2 provides further guidance in this area.

When proposals provide for a new footway crossover or priority junction, guidance on its design should be sought from Manual for Streets 1 and 2. However, where more complex junctions are required, which could involve signal control, roundabouts and/or right turning lanes, DMRB is considered to be the appropriate design standard, again, the applicant should make reference to TD42/95, although this should always be discussed and agreed with the DM team. In some cases, it may be appropriate to deviate from these standards. Again, this should be agreed in writing early in the design process with the DM team.

Contemporary Junction Design

Innovation in junction and street design is welcomed and it can be appropriate to extend these principles on to the existing highway network, either as part of a specific access to a site or as wider mitigation. Where innovative schemes are to be promoted, early discussions are essential and some specific issues will need to be explicitly considered. A non-exhaustive list follows.

- The design should reflect the needs of the surrounding environment;
- There should be high levels of pedestrian movements;

- The needs of visually or physically impaired users should be considered and local user groups involved from an early stage;
- Design speeds should be low (under 20mph);
- Proposed construction materials should be readily available;
- Consideration must be given to junction efficiency, minimising delay to all road users.

The developer will need to demonstrate that any highway design to be offered for adoption by the Local Highway Authority or to take place on the existing highway network enables Worcestershire County Council to discharge responsibilities placed upon it by Section 149 of the Equality Act, 2010. In order to achieve this, early involvement with local groups and national organisations with disability access expertise should be undertaken and the access needs of people who have a relevant disability should be incorporated into the design. Section 149 of the Equalities Act, 2010 requires Local Authorities, when making any decision, to have “Due Regard” to three aims. These include:

Eliminating unlawful discrimination (which includes a requirement to make reasonable adjustments for disabled people) and advancing equality of opportunity between people who have one or more of the Protected Characteristics listed in the Act (including People who have a disability) and people who do not have relevant Protected Characteristics. Advancing Equality of Opportunity would include reducing or minimising disadvantage (including environmental disadvantage).

The application of contemporary junctions should not be considered to be an easy solution or a fall-back position, where traditional junction types are difficult to achieve.

3.2 Vertical Alignment

The Developer must consider the following when designing vertical curves on new developments. Generally, the maximum and minimum gradients allowable on new developments will be as detailed within the table below:

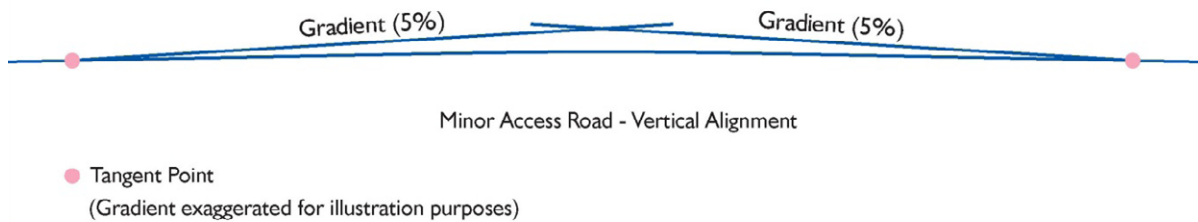
Category	Maximum Gradient	Minimum Gradient
All road categories	1:20 (5%) desirable but consideration may be given to gradients up to 1:12	1:100
Cycle tracks and footways	1:20 (5%)	1:100

Additionally, the Developer must consider the curvature of the new highway. The design curve length will be a function of the algebraic change of gradient, expressed as a percentage, multiplied by the 'K' value. 'K' values are provided in the table below:

Category	Minimum 'K' value
Major access and above	6
Minor access and below	2
Cycle track	2

Example, Minor Access Road – Vertical Alignment

The example below has been included to assist developers in designing vertical curves.



The Developer should note that side road gradients into junctions should be set at a maximum of 1:20 (5%) for the first 10m. Additionally, the minimum vertical curve length of any section of road should be not less than 20m.

In the above example, assuming it is a Minor Access Road, and the curve length will be 20m.

The 'K' Value is given by:

Design curve length / Algebraic change of gradient

$$= 20\text{m} / 10$$

$$= 2$$

Therefore the above example falls within the design criteria and would be acceptable. The developer should note that where gradients exceed 5% there may be a requirement for

a grit bin. In such instances, the developer will need to ensure the design provides an adequate location and that a suitable grit bin is provided.

3.3 Headroom

Additionally, the Developer must also consider in the design that the minimum allowable headroom for all new highways intended for adoption shall be as follows:

Category Minimum Headroom

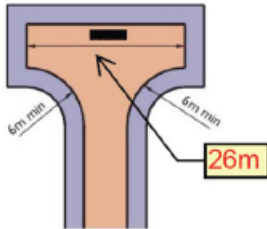
All Roads 5.3m

Cycleway 2.7m

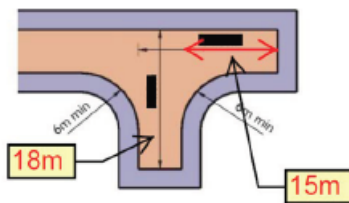
Footway 2.7m

3.4 Turning Heads

T-form' turning facilities should maintain a distance of 26 metres (m) across the 'T' to facilitate manoeuvres by pantechnicon (HGV) sized vehicles. The carriageway widths, radii and footway widths should comply with the design specification for the road which they serve.



'Side T-form' turning facilities should maintain a width of 18 metres (m) and a distance of 15m from the termination of the carriageway and the start of the spur. The carriageway widths, radii and footway widths should comply with the design specification for the road which they serve.



3.5 Landscaping

The retention of existing landscape features of value must be taken into account and therefore the preliminary design of residential access roads, cycleways and footpaths to serve the development should as far as possible be sympathetic to the Authority's wishes. So, for example, if a tree of value was situated within the visibility splay, all attempts should be made to reposition the access if this can be done safely.

In residential areas the Highway Authority will normally only adopt the paved surfaces and verges which are critical to the functioning of the highway.

Small areas of grass should only be permitted where adequate maintenance arrangements can be guaranteed for the foreseeable future.

Appropriate root protection systems will be provided for all trees and they must not be planted near structures or services.

Existing trees, which will become maintainable at public expense, shall be the subject of a condition survey to ascertain their health and may be subject to commuted sum payments to cover their future maintenance costs. Highway trees should be of slender girth and modest canopy. The trunk should be maintained free of side shoots and branches to a height of 2.1m. The developer may be required to pay commuted sums for the future maintenance of highway trees. The Highway Authority will work closely with the local Arboricultural officer to agree the most suitable species and ensure it is compatible with the site wide approach to green infrastructure.

Highway landscape features should be maintained by the developer for a period of 5 years.

Thorny species shall not be accepted immediately adjacent to footways and cycle tracks. It is expected that non highway hedges adjacent to the prospective highway will be transferred to frontagers or the site wide management company to ensure future maintenance is addressed. .

Any new carriageway should be outside the canopy (or reduced canopy if reduction is deemed suitable) of any existing tree to prevent damage to the new construction by the tree roots. Any work under the canopy of deciduous trees or within a radius of half of the height of coniferous species shall comply with BS 5837: 2012.

3.6 Street Lighting

The aim of the Worcestershire Street Lighting service is to:

- Create a safer and more secure night time environment, by providing an energy efficient and cost effective system of street lighting and illuminated signs.

The objectives for new developments are to:

- Reduce crime and the fear of crime;
- Minimise environmental impact;
- Implement Best Practice in systems and operations All highway lighting, illuminated sign and illuminated bollards must be designed, specified and installed to Worcestershire County Council (WCC) requirements. There are two methods for developers to achieve the above requirements, which are provided in Worcestershire's Highway's Specification for New Developments. However, developers need to also take account of local attitudes relating to the provision of street lighting, so that they might be relieved of the duty of providing such where it is not needed.

3.7 Drainage

General Requirements

In general, drainage systems shall be designed in accordance with the current edition of Sewers for Adoption and with the Specification accompanying this Design Guide.

WCC welcomes the use of Sustainable Urban Drainage Systems (SUDS) but does not currently adopt SUDS systems. The Highway Authority only accepts adoptable highway drainage that connects directly into systems that are maintained by a statutory body (e.g. Severn Trent). Where a dedicated highway surface water system is proposed a SUDS system can be considered based on the design proposals and geotechnical considerations.

All pipes that only carry surface water from the adoptable highway are prospectively maintainable by the Highway Authority. Pipes that carry surface water from the adoptable highway as well as other areas such as roofs, private drives etc must be adopted by the water authority and must comply with their requirements.

Lateral connections into public sewers will remain private but shall be designed and constructed to adoptable standards. All such connections shall run approximately at right angles to the centreline of the road to minimise their length.

Sustainable Urban Drainage Solutions

While issues exist as to the acceptance of Sustainable Drainage Solutions (SuDS) by various bodies, Worcestershire County Council expects developers to incorporate storage, attenuation and filtration measures in accordance with 'SUDS- A Guide for Developers' by the Environment Agency and 'SUDS - A Design Manual for England and Wales' by CIRIA.

Worcestershire County Council will examine all proposals for SUDS and judge them on their merits. Permeability tests and hydrology surveys will be required to verify the suitability of the designs and commuted sums will be required for ongoing maintenance of the systems. The amount of the commuted sums will be calculated by the Council and will reflect the special maintenance requirements of the proposed system.

The SUDS proposals for a development shall be submitted along with geology and hydrology information, at planning application stage. Any proposals for outfalls into existing watercourses or ponds shall be accompanied by an environmental impact report and obviously such outfalls will need Consent to Discharge from the Environment Agency.

Private SUDS drainage shall drain into the water authority surface water sewers and any infiltration will be into private land. SUDS for the highway shall drain into the highway drain network and any infiltration will be within highway/public areas.

Adoption Requirements

Where foul or surface water sewers are to be laid under the adoptable highway or where the highway drainage is to be connected into a surface water sewer, written assurance must be obtained beforehand that the water authority will adopt the sewers, subject to compliance with their adoption procedure.

The Highway Authority will normally decline to adopt any highway covered by a Section 38 agreement until the water authority has confirmed the adoption of all sewers within the highway. This also includes any other sewers not within the adoptable highway but which carry water from it.

All drains that are intended to be adopted as highway drains shall discharge to a pipe or watercourse at a point approved by the Highway Authority. Evidence will be required that the developer has right to discharge, free of any liability which may be binding upon the Highway Authority when the drain is adopted.

Private drains will not normally be permitted within the adoptable highway.

All prospectively maintainable highway drains shall be located within land that is to be adopted by the Highway Authority. Only in exceptional circumstances will they be permitted in land that is to remain private.

Where such circumstances do arise the land owner at the time of completing a Section 38 Agreement will be required to give a grant of easement keeping 3m each side of the pipe clear of all obstructions, which will be binding on successors in title. The developer is strongly advised not to sell any land that will contain a highway drain before completion of such an Agreement. The Highway Authority will not accept any different form of undertaking, which dilutes the rights conferred on it.

Outfalls And Watercourses

Where the outfall is into a ditch or watercourse the approval of the Environment Agency must be obtained in writing.

Where the outfall is proposed to be through an existing highway drain the developer will be required to prove its capacity and condition before approval for the connection can be given. This will include a CCTV survey of the drain and the carrying out of any improvement works found to be necessary.

Where the highway drain discharges into a watercourse, calculations shall take into account the possibility that the watercourse may be flooded.

The Council may consider the use of combined kerb and drainage systems depending on the situation and design submitted for approval.

In certain cases the Council may require the provision of a larger capacity drain than would

normally be needed in order to accommodate the drainage of adjoining land and/or future development.

Soakaways

Where soakaways are to be considered it will be at the discretion and approval of the Director of Economy and Infrastructure Services and will be considered as a last resort only (refer to Specification, Section 13). The Developer is to note that a commuted sum may be charged for each soakaway installed.

The minimum diameter shall be 1500mm.

If more than one soakaway is planned, they are to be linked by a 225mm diameter pipe.

The soakaways are to be surrounded by Terram or similar, laid between the chamber and the filter material. The appropriate filter material to be used will vary according to prevalent ground conditions. Where possible, the soakaway is to incorporate an overflow link (minimum diameter 225mm) to an existing highway drain/outfall system.

Drainage Design

Gully spacing shall be determined using the recommendations of HA 102/00, Spacing of Road Gullies. Gullies will be required immediately upstream of block pavements, pedestrian crossing points and road junctions but shall never be located on a crossing point. It is the developer's responsibility to demonstrate and ensure that the number and positioning of gullies is adequate to drain the highway.

The parameters to be used during the drainage design are as listed below:

Rainfall average return period	2 years
Rainfall average return period (risk of flooding)	120 years
Time of entry	4 minutes
Design flow velocities	0.75m/s (Min) 7.5m/s (Max)
Minimum gradient	1:225
Design maximum rainfall	50mm/hour
Minimum pipe diameter	225mm

3.8 Structures

Structures that are considered to ‘potentially affect’ the safety of the highway, whether to be adopted or not and permanent or temporary, where Worcestershire County Council are the highway authority are to follow technical approval procedures as set out in the ‘Technical Approval of Highway Structures’ BD2 of the Design Manual for Roads and Bridges volume 1 section 1. After April 1st 2010 and unless agreed with the Technical Approval Authority (TAA) Eurocodes must be used for the design and modification of existing highway structures (including geotechnical works)

Where Worcestershire County Council is the highway authority for the purposes of this guide references to the TAA in BD2 means Worcestershire County Council.

All structures shall be designed in accordance with the Design Manual for Roads and Bridges [DMRB], and constructed in accordance with the Specification for Highway Works [SHW].

BD2/05 ‘Technical Approval of Highway Structures’ although based on previous design standards, many of which are now withdrawn, remains current at the time of writing. There are standards within the DMRB which have not been withdrawn but conflict with the Eurocodes. Where there is conflict between standards within the DMRB, including BD2, and the Eurocodes the requirements of the Eurocodes take precedence. This guidance will be updated to respond to any changes in legislation/guidance brought about by Brexit.

The Director of Economy and Infrastructure Services or their appointed representative will advise developers of the determined category for any proposed structures. All structures except for category 0 will require an Agreement in Principle (AIP) to be submitted and accepted prior to any design work [only completed versions of the forms in appendix C of this guide will be accepted – word versions available on request]. Currently there is no guidance within the public domain covering the required changes to either the AIP or design and check certificates. Until the DMRB is updated for the application of

Eurocodes guidance should be sought from the TAA on this matter Any design work completed prior to the acceptance of the AIP will be at the developers’ risk, whether or not the work completed is compliant with the DMRB.

The Highway Authority reserves the right to alter the design standards as it considers necessary and this will be communicated before and where necessary during the submission of the AIP. Early consultation for structural requirements is strongly advised.

All structures covered by BD2 will require Design and Check Certificates, and Construction Compliance Certificates [only completed versions of the forms in appendix C of this guide will be accepted – word versions available on request].

The AIP, or in the case of category 0 structures submitted with the Design and Check certificate, must contain evidence of consultation and discussions with statutory undertakers, planning authorities, the Environment Agency and any other relevant body statutory or otherwise.

The AIP must contain relevant extracts from the geotechnical ground investigation including all relevant testing for the proposed design.

A list of structures to be subject of technical approval is as follows:

- All bridges over or under the highway
- All culverts pipes crossing under the highway greater than 0.9m span
- Pipes or culverted streams or other structures greater than 0.9m span or diameter along the highway either maintained privately or by statutory undertakers.
- Any structures which are not pipes less than 0.9m span/diameter
- Retaining walls greater than 4 feet in height and within 4 yards of the highway boundary as described in section 167 of The Highways

Act 1980.

- Any retaining wall within 4 yards of the highway retaining sloping ground.
- Any retaining wall supporting the highway regardless of height.
- Any private cellar or basement under or adjacent to the highway
- Reinforced earth structures with or without hard facings, includes gabion and crib lock walls.
- High masts and lighting columns compliant with the standard for the design of minor structures BD94/07 will be category 0 unless notified otherwise.
- High masts and lighting columns not compliant with the standard for the design of minor structures BD94/07 will be category 1 unless notified otherwise.
- Any part of a building structure overhanging the highway
- Highway sign posts greater than 7m in height.
- Any temporary works which are described as above.
- Structures required to be assessed by the highway authority whether or not maintained by them.

NOTE: This list may not be exhaustive and developers are urged to consult with the Highway Authority at the earliest possible stage.

Where developers combine various structural components, each with different designers, to be incorporated into one structure they will undertake to provide one Design and Check Certificate[s] from the principal designer that takes responsibility for the whole structure [and includes reference to and copies of the design and check certificates of the component parts]. Examples of this might include:

- a bridge that comprises of insitu cast abutments with pre-cast concrete deck

beams, or

- cast insitu or driven piles on which insitu abutments / piers are constructed, and
- temporary works Adoption Of Structures By The Council The Council may adopt certain structures adjacent to, under or over the highway. In normal circumstances, the only structures that will be considered for adoption are those upon which the Highway relies for support and are constructed on Highway land.

All structures to be adopted should have received structural approval in accordance with the procedures shown as follows:

SCENARIO 1 - All new structures under an existing highway, or prospectively adoptable highway:

- These will be subject to the requirements of BD2
- Where any part of the structure [including approach embankments, etc] extends beyond the limits of the current highway the land not currently designated as public highway shall be dedicated to public highway so as to give the Highway Authority full control over the land upon which the structure and its component parts rest. This includes all land within the 'footprint' of the structure.
- An additional 2m margin 'halo' around all structural elements [including buried elements such as foundations, soil nailing, and reinforced earth] shall be dedicated to highway so as to protect the structure from interference and to provide for future uninhibited inspection and maintenance access by the Highway Authority.
- These additional areas shall be finished in low maintenance materials agreeable to the Highway Authority, and which may vary from development to development. The area so dedicated shall be fenced off as agreed with the Highway Authority.
- Commuted sums shall be paid to the Highway Authority by the developer to cover future maintenance, and / or reconstruction.

SCENARIO 2 - All new structures over an existing highway where it is intended that the structure will carry a prospectively adoptable highway:

- These will be subject to the requirements of BD2
- Where any part of the structure [including approach embankments, etc] extends beyond the limits of the current highway the land not currently designated as highway shall be dedicated as public highway so as to give the Highway Authority full control over the land upon which the structure and its component parts rest. This includes all land within the 'footprint' of the structure.
- An additional 2m margin 'halo' around all structural elements [including buried elements such as foundations, soil nailing, and reinforced earth] shall be dedicated to highway so as to protect the structure from interference and to provide for future un-inhibited inspection and maintenance access by the Highway Authority
- These additional areas shall be finished in low maintenance materials agreeable to the Highway Authority, and which may vary from development to development. The area so dedicated shall be fenced off as agreed with the Highway Authority.
- Commuted sums shall be paid to the Highway Authority by the developer to cover future maintenance, and / or reconstruction.

SCENARIO 3 - Structures supporting the highway [e.g. retaining walls] adjacent to private housing developments:

- These will be subject to the requirements of BD2
- Where any part of the structure extends beyond the limits of the current highway the land not currently designated as public highway shall be dedicated as public highway so as to give the Highway Authority full control over the land upon which the structure and its component parts rest.
- An additional 2m margin 'halo' around

all structural elements [including buried elements such as foundations, soil nailing, and reinforced earth] shall be dedicated to highway so as to protect the structure from interference and to provide for future un-inhibited inspection and maintenance access by the Highway Authority. These additional areas shall be finished in low maintenance materials acceptable to the Highway Authority, and which may vary from development to development. The area so dedicated shall be fenced off as agreed with the Highway Authority.

- Commuted sums shall be paid to the Highway Authority by the developer to cover future maintenance, and / or reconstruction.

SCENARIO 4 - Structures supporting land above the highway [e.g. retaining walls] adjacent to private housing developments:

- These will be subject to the requirements of BD2
- Land not currently designated as public highway shall be dedicated as public highway so as to give the Highway Authority full control over the land upon which the structure and its component parts rest.
- An additional 2m margin 'halo' around all structural elements [including buried elements such as foundations, soil nailing, and reinforced earth] shall be dedicated to highway so as to protect the structure from interference and to provide for future un-inhibited inspection and maintenance access by the Highway Authority. These additional areas shall be finished in low maintenance materials acceptable to the Highway Authority, and which may vary from development to development. The area so dedicated shall be fenced off as agreed with the Highway Authority.
- Commuted sums shall be paid to the Highway Authority by the developer to cover future maintenance, and / or reconstruction.

Approval Of Structures Not To Be Adopted By The Council The following structures although not necessarily to be adopted by the Council require Structural Approval.

- These will be subject to the requirements of BD2:
- Any wall or basement constructed on private land by an individual or developer that affects the support of the highway;
- Bridges crossing the Highway where there is no public access to the bridge; [Requires licence s176 of Highways Act 1980. Requires condition to pay for removal or alterations required by highway authority]
- Retaining walls where any part of the retaining wall is 1.20m above the boundary of the highway nearest that point; and
- Buried structures over 0.9m span/diameter carrying services or plant S330 Highways Act 1980 requires SU to gain approval from the highway authority.

Therefore any structure should be considered but general access chambers using precast units should not need approval. Longitudinal structures which use bespoke parts including pipe and PC box sections should be subject to TA.

SCENARIO 5 - All new structures under an existing highway, or prospectively adoptable highway provided by or for Statutory Undertakings [e.g. flood attenuation, storm overflows].

- These will be subject to the requirements of BD2:
- Structures should ideally be located away from the carriageway, or in public open space, if this cannot be achieved then they should be so positioned and agreed with the Highway Authority so as not to prohibit the future use of the highway during:
 - Cyclic cleansing
 - Maintenance of the structure

SCENARIO 6 - Structures supporting the highway [e.g. retaining walls]: adjacent to ongoing commercial developments.

- These will be subject to the requirements of BD2:

- The developer will be required to commit to the Code of Practice for the Management of Highway Structures complying with the inspections and maintenance requirements in all respects and provide evidence to the Highway Authority that this has been done at each cycle specified within the code. Evidence shall include: copies of inspection reports, maintenance works and structural assessment calculations.
- The developer will carry annual insurance, and / or indemnify the Highway Authority against all such claims arising from the construction, presence, use, and maintenance of the structure. Written evidence shall be provided on an annual basis that such indemnity is provided.
- The above requirements shall be included in property deed transfers to ensure future owners of the land are kept aware of their liabilities. The Highway Authority shall be provided with a copy of the deeds after each transfer of the land.

SCENARIO 7 - Structures supporting land above the highway [e.g. retaining walls] adjacent to ongoing commercial developments.

- These will be subject to the requirements of BD2:
- The developer will be required to commit to the Code of Practice for the Management of Highway Structures complying with the inspections and maintenance requirements in all respects and provide evidence to the Highway Authority that this has been done at each cycle specified within the code. Evidence shall include: copies of inspection reports, maintenance works and structural assessment calculations.
- The developer will carry annual insurance, and / or indemnify the Highway Authority against all such claims arising from the construction, presence, use, and maintenance of the structure. Written evidence shall be provided on an annual basis that such indemnity is provided.

- The above requirements shall be included in property deed transfers to ensure future owners of the land are kept aware of their liabilities. The Highway Authority shall be provided with a copy of the deeds after each transfer of the land.

SCENARIO 8 - All new and to be modified structures over an existing highway where the use is to remain private [service and access].

- These will be subject to the requirements of BD2:
- Wherever possible these should be constructed such that all supporting components are located within land to remain private.
- In particular every attempt should be made to prevent, in use, objects from falling on to the public highway beneath.
- The developer will be required to commit to the Code of Practice for the Management of Highway Structures complying with the inspections and maintenance requirements in all respects and provide evidence to the Highway Authority that this has been done. Evidence shall include: copies of inspection reports, maintenance works and structural assessment calculations.
- The developer will carry annual insurance, and / or indemnify the Highway Authority against all such claims arising from the construction, presence, use, and maintenance of the structure. Written evidence shall be provided on an annual basis that such indemnity is provided.

The above requirements shall be included in property deed transfers to ensure future owners of the land are kept aware of their liabilities. The Highway Authority shall be provided with a copy of the deeds after each transfer of the land.

Assessment Of Existing Structures

Eurocodes are not to be used for the assessment of existing structures.

Assessments will be undertaken in accordance with BD21 and the associated standards within

the DMRB. Where structures are modified using Eurocodes, as stated above, there is the potential for a conflict due to differences in the effect of actions. In these cases the TAA is to be consulted for guidance.

Any existing structure which may be considered to potentially affect highway safety may be required to be assessed in accordance with BD2. All structures that are to be modified for the purposes of the development or to be subjected to increased magnitude or frequency of loading shall be assessed according to BD21. This will be undertaken as part of the Design and Check Process in BD2.

Approval Submissions

The Technical Approval Process shall consist for all structures whether adoptable or not an AIP where appropriate, Design and Check Certificates and Construction Compliance certificates.

The AIP will include the following:

- General arrangement drawing showing location and extent of all structures and in the case of walls detailing lengths to be adopted and/or over 1.20m high if applicable;
- Sufficient to determine wall heights, giving ground levels, behind and in front of wall and any features affecting loadings such as cover to culverts;
- Clearances to deck soffit and piers/abutments shall be submitted for bridges
- Cross section drawings for retaining walls annotated with proposed and existing ground levels
- Designers Risk Assessment; This is to include risks for design, construction, maintenance and operation, and demolition
- Site investigation details and geotechnical assumptions on which the design has been based.

Appropriate sections of the geotechnical report should be included. This must be given in sufficient detail on the drawing to allow the

designers assumptions to be compared with the conditions actually found on site by those responsible for construction;

- Construction details and material specifications;
- Agreed departures from standard.

For Category 0 structures the design and check certificate must be accompanied by the design calculations with full reference to the design standards used; and for structures that are to be adopted or for structures upon which the Highway relies for support: Design and Construction Certificates and it will be a condition of the approval that developers submit As-Built drawings for the CDM Health and Safety File.

For reference to the required standards, Developers are requested to review the Technical Approval Schedule as listed in the current version of BD2. In addition to the standards in the Design manual for Roads and Bridges developers may be required to comply with interim advice notes published by the Highways Agency. WCC will advise developers on a scheme basis during the technical approval process.

Departures From Standard

Departures from standards applicable to Eurocodes will only be accepted where the principle or concept is not covered therein or is a proposed alteration to the national annex which does not conflict with the Eurocode. If it is a requirement that designers comply with the principles of the Eurocodes these clauses are denoted with a letter P. It is permissible to use alternative design rules different from the Application Rules given in EN 1990 for works, provided that it is shown that the alternative rules accord with the relevant Principles and are at least equivalent with regard to the structural safety, serviceability and durability which would be expected when using the Eurocodes.

There may be instances where due to site constraints or nature of the development that it is not possible to design works in accordance with the appropriate highway

standard. In these cases the developer can apply for a departure from the standards.

Departures will only be granted when the site constraints prevent the implementation of the standard. A request for a departure should contain the following:

Proposed departure

- Reasons for departure
- Consequences of the departure, particularly any increases in risks or hazards.
- A risk assessment for complying with the standard and one for the departure.

Normally all departures are to be agreed prior to the acceptance of the AIP and shall be included in the AIP.

Bridge Maintenance Manual/Health And Safety File

On completion of the work the Developer must provide a Bridge Maintenance Manual containing:

- Details of the materials used in construction and the supplier;
- Requirements for future maintenance;
- Any survey and geotechnical details undertaken on the site of the Structure;
- Details of problems encountered during construction that may have a long-term effect on the structure;
- Any access arrangements for future maintenance;
- As built drawings as electronic TIF, DXF or AutoCAD files;
- Design calculations; and Special arrangements required for demolition.

The above information will comprise the documentation you have to legally provide under the CDM Regulations. In addition to contents listed, the following must be included:

- All relevant documentation from the technical approval process
- Approval in Principle
- Design and Check certificates
- Construction Compliance Certificate

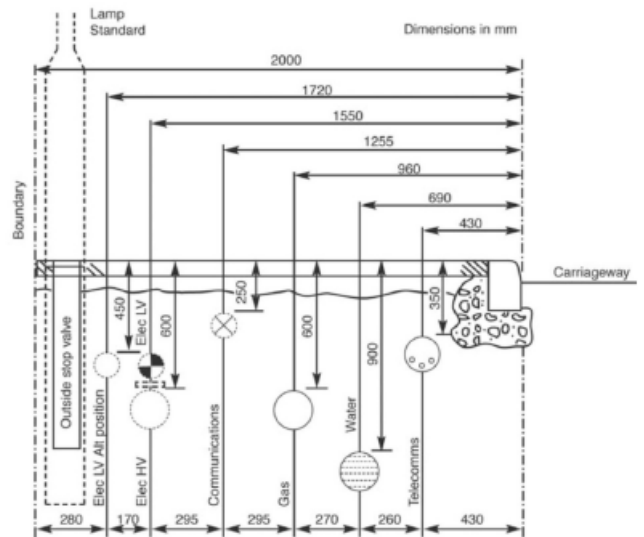
These are to be copies of the accepted certificate by the TAA:

- Appropriate certification of components, VRS systems, quality assurance certification for reinforcement and concrete suppliers, waterproofing and other materials.
- Certificates for any material or integrity testing undertaken, i.e. concrete cube results or integrity testing of piles
- Any residual risks or hazards within the structure, similar confined space, hazardous materials used in construction or hazards found within the original ground.

Worcestershire County Council has a standard format for Health and Safety Files, a copy of which is available on request.

3.9 Statutory and Other Services

New estate roads should be designed to accommodate services and liaison with all statutory undertakers and communications providers should be done at the earliest stage possible to ensure that their equipment is installed in an efficient manner and as much as possible to comply with the recommendations of the National Joint Utilities Group.



Although this idea is not always possible it is important to ensure that services do not conflict.

All categories of estate road should have either footways or service strips in which services will be located. The Highway Authority will not adopt land the sole purpose of which is to contain services. Any land must have a justifiable connection with the highway and be clearly adoptable as highway.

The laying of apparatus within the carriageway will not generally be permitted although at junctions and in the case of public sewers exceptions are clearly unavoidable.

The Developer shall ensure that service strips are clear of permanent obstructions. Any trees shall be located so that their root systems when mature will neither damage apparatus, nor be damaged during the laying and maintenance of apparatus. Root protection barriers should be used. An approach of integration with suitable protection should be adopted rather than the separation of landscaping and services. Developers should consult the Local Planning Authority regarding any Tree Preservation Orders and should act in accordance with BS 5837:2005 during construction works.

Service strips shall be delineated from private property by Highway Boundary concrete marker blocks.

When selecting routes for services, dual mains installations should be the norm to prevent carriageway crossings weakening the road structure and preventing the need to dig up the carriageway.

Where services are to be laid within the extent of the highway, ideally, the appropriate utility company should lay the required service. Where services are not laid or subsequently adopted by the appropriate utility company, they should not be laid within the extent of the highway.

In exceptional circumstances, where unadopted services cannot be avoided within the limit of the highway, a section 50 license will be required before the highway can be adopted.

3.10 The Street Hierarchy

As stated previously, the design of new streets should take into account the intended link and place functions of the street, as well as the type, density and character of the development. Developing a streetscape environment should also, where appropriate, be accessible, comfortable and safe for pedestrians. Furthermore integration of the surrounding landscape and ecological context of the site must be integral to any design development.

Carriageway widths should be appropriate for the particular context and use of the street.

Key factors to take into account include:

- The volume of vehicular traffic and pedestrian activity;
- The traffic composition;
- The requirements for clear demarcation between carriageway and footways;
- If on street parking is to be provided, its distribution, arrangement, the frequency of occupation and any need for enforcement;
- Design speeds;
- Curvature of the street, including increased width for bends to accommodate swept

paths of larger vehicles; any intention to include single lane working in two way streets.

The following street definitions provide a design character for a typical street. Variation from these definitions is encouraged, although these should be supported with clear justification of how these variations will continue to meet the requirements set out in relevant statutory legislation and nonstatutory guidance.

3.11 Innovative Street Design

Worcestershire County Council welcomes innovative design proposals. Where innovative designs are proposed for adoption as public highway, the following guidelines should be followed:

- As with standard street designs, the designer must ensure that an Equality Impact Assessment, (which evidences Due Regard to the aims of the Equality Duty as required by Section 149 of the Equality Act, 2010 is undertaken;
- Design should be bespoke to the road and the development;
- Design speeds should be a maximum of 10 mph on all prospective highways and street furniture and landscaping should be used to achieve this;
- Materials should help legibility and create a sense of place where the car is a guest, they also should be readily sourced ;
- Green Infrastructure should be provided in accordance with the County Councils GI Strategy.
- Drainage is a key consideration in Innovative design and should be considered at an early stage.

3.12 Enhanced Streets

Streets where the public realm has been improved and restrictions on pedestrian movement (e.g., guardrail) have been removed but conventional traffic controls largely remain.

Design Details for Enhanced Streets
Traffic Speed
Design Speed - 20mph, achieved through measures such as surface changes, visual narrowing, sensitive parking provision and green infrastructure.
Street Dimensions and Character
Carriageway Width - No less than 5.5 metres (if street is identified as a bus route then consideration should be given to increasing width to 6.1 metres)
Footway - A minimum footway width of 3.5 metres should be provided, but the final width of the total footway/cycleway should be determined by a comfort assessment and where required should be wider. Adequate space should be provided within a dedicated furniture footway zone to accommodate street lighting columns, cycle parking stands, planters, bins and benches specified and a footway clear zone provided for uninhibited access for footway users.
Direct vehicular access to parking - This will be permitted, subject to suitable visibility being demonstrated in the design process
Street Design Details
On Street Parking - Discretely positioned on-street, parallel, unallocated parking bays for visitor use will be permitted at agreed locations. Parallel bays should be a minimum of 2 metres x 6 metres with a 1 metre 'pull out' strip in addition. A maximum of 3 contiguous bays will be permitted. A Traffic Regulation Order may be required, and should be considered on a case by case basis
Junction Radii - Typically 6 metres, or sufficient to accommodate a FTA identified 10-metre rigid vehicle.
Landscaping - The landscaping should reflect the Green Infrastructure strategy for the character area of the site. Existing trees should be accommodated within the design and removal of them should be the last resort. New Green Infrastructure should be incorporated as part of the service margin using an appropriate design solution.
Biodiversity - Ways to incorporate enhancements for wildlife should be included in the streetscape design in a way that engages the public and is tamper proof. Street
trees should be incorporated to enhance permeability of the landscape for
species to connect with other habitat types such as woodlands and grasslands.
Materials
Main Carriageway - Predominantly macadam, with contrasting materials being considered for traffic calming features where appropriate.
Footway - Predominantly macadam, the use of pavers or fine textured pre-cast flags in appropriate locations may be considered. Alternative surfacing materials must be suitable to withstand accidental mounting by all types of vehicle.

3.13 Informal Streets

Streets where formal traffic controls (signs, markings and signals) are absent or reduced.

Design Details for Informal Streets
Traffic Speed
Design Speed - 20mph, achieved through measures such as surface changes, visual narrowing, central reservations, sensitive parking provision and green infrastructure.
Street Dimensions and Character
Carriageway Width - 5.5 metres (if street is identified as a bus route then consideration should be given to increasing width to 6.1 metres).
Footway - A minimum of 2 metres. Where necessary street furniture are accommodated in the footway (such as street lighting columns, cycle parking stands, planters, bins and benches) then a wider footway should be specified.
Direct vehicular access to parking -This will be permitted, subject to suitable visibility being demonstrated in the design process.
Street Design Details
On Street Parking - Residential Distributors are envisaged as being a more traditional residential street, with on street visitor parking provided within the highway extent. Where identified as a bus route some discretely positioned on-street unallocated parallel parking bays for visitor use, will be permitted at agreed locations to preserve bus journey time reliability and punctuality. Parallel bays should be 2 metres x 6 metres with a 1 metre 'pull out' strip. A maximum of 3 contiguous bays will be permitted.
Junction Radii - Typically 6.0m or sufficient to accommodate the local refuse collection vehicle. A minimum centre-line radius of 20 metres should be provided.
Landscaping - Green infrastructure can significantly add to the quality of the streetscape. Wherever possible, this should be accommodated outside the limits of the adopted highway.
Materials
Main Carriageway - Predominantly macadam
Footway - Predominantly macadam, the use of pavers or fine textured pre-cast flags in small appropriate locations may be considered. Alternative surfacing materials must be suitable to withstand accidental mounting by all types of vehicle.
Kerbing - Low rise kerbs should be provided, either as kerb setts or concrete edge strips to indicate the boundary between adopted highway and private property.

3.14 Pedestrian Prioritised Street

Streets where pedestrians feel that they can move freely anywhere and where drivers feel they are a guest. Pedestrian Prioritised Streets should not have vehicle movements exceeding 100 vehicles per hour.

Design Details for Pedestrian Prioritised Streets
Traffic Speed
Design Speed - 15mph, achieved through variations in carriageway width, horizontal alignment of the carriageway and provision of on-street parking facilities.
Street Dimensions and Character
Carriageway Width - Variable width, predominantly between 4.1 and 6 metres, narrowing to a minimum of 3.7 metres on short lengths.
Footway/Verge - A 2 metre wide service margin/footway/verge should be provided to facilitate the provision of street lighting and/or statutory undertaker's equipment. This facility should be defined within the extent of the highway by the introduction of physical demarcation, such as a low level kerb.
Direct vehicular access to parking - This will be permitted, subject to suitable visibility being demonstrated in the design process.
Street Design Details
On Street Parking - Designers should use local carriageway widening to accommodate this.
Junction Radii - Typically 6.0m or sufficient to accommodate a FTA 10m rigid vehicle. Smaller radii will be encouraged and/or vehicular footway crossings where appropriate. A minimum centre-line carriageway radius of 15 metres should be provided.
Landscaping - Green infrastructure should be used extensively to soften highway infrastructure and add to the visual appeal of the street. The landscaping should consider the Green Infrastructure strategy for the character area of the site. Existing trees should be accommodated within the design and removal of them should be the last resort. New Green Infrastructure should be incorporated as part of the service margin using an appropriate design solution.
Biodiversity - Ways to incorporate enhancements for wildlife should be included in the streetscape design in a way that engages the public and is tamper proof. Street trees should be incorporated to enhance permeability of the landscape for species to connect with other habitat types such as woodlands and grasslands.
Materials
Main Carriageway - A combination of concrete block paving with macadam would be considered suitable. Parking areas, junctions, slow points and traffic management features will need to be highlighted, using different materials.
Kerbing - Low rise kerbs should be provided, either as kerb setts or concrete edge strips to indicate the boundary between adopted highway and private property.

3.15 Private Shared Drives and Courtyard Parking Areas

A private driveway can serve one or more properties, up to a maximum of six, after which the traffic generated and number of turning movements associated with the driveway is considered sufficient for the access to be considered for adoption by the Local Highway Authority.

Communal private parking areas can be considered an exception due to the need generated by the type and layout of the development. Private driveways are also appropriate for small scale commercial development.

These areas are not considered of sufficient public utility to warrant adoption by the Highway Authority.

Design Details for Private Shared Drives and Courtyard Parking Areas
Traffic Speed
Design Speed - 10mph
Street Dimensions and Character
Carriageway - A shared surface serving more than two properties can be of varying width, but must be a minimum of 4.1 metres for the first 15 metres behind the back of the carriageway to allow two vehicles to enter and leave simultaneously. Turning facility provided for cars where cul-de-sacs are longer than 20 metres (Manual for Streets, Paragraph 6.8.3) Refuse collection points should be provided within 25 metres of the highway.
The connection to the priority road shall be laid out as per a footway crossing, in accordance with Section 184 of the Highways Act, 1980, where applicable.
Footway - Part of the shared driveway
Street Design Details
Parking - All car parking should be provided off-street. Provision must be made to enter and exit in a forward gear on roads with high levels of vehicle flow. In/out drive arrangements are only permitted where space allows for manoeuvring within the site and does not rely on the use of both accesses, full visibility is required at both accesses. Car parking spaces must be delineated to maximize occupancy and courteous behaviour, which may not otherwise be achieved through errant parking.
Junction Radii - Vehicular footway crossover. Vehicles to enter and exit at 90° to the kerb line.
Paving Style - Paving style to suit immediate environment of the public realm setting.
Landscaping - A landscape scheme should be integral to the design of the space using trees and shrubs. Native species of Hedgerow and trees, and vegetated ditches should be incorporated wherever possible.
Materials
Main Carriageway - Predominantly macadam and/or concrete block paving laid in a herringbone or tegular pattern. A stretcher course of blocks should be used to identify the edge of a parking areas, junctions, slow points and traffic management features as appropriate.
Intersections - Adequate vehicular and pedestrian visibility must be provided.
Kerbing Low rise kerbs should be provided, either as kerb sets or concrete edge strips to indicate the boundary between adopted highway and private property. Level surfaces will be considered.
Street Lighting Any street lighting provision will remain in private ownership.

3.16 Active Travel (Walking and Cycling) Routes

In all cases, Active Travel Routes in new developments should be designed to ensure they provide a more direct and convenient means of accessing services and facilities than by using the highway network alone.

Worcestershire County Council requires that Active Travel Routes are to be clearly marked to provide adequate separation of pedestrians and cyclists, recognising the accessibility and safety benefits of this approach. They should be designed to minimise the need for cyclists to stop and to maintain a speed of approximately 12mph.

Design Details for Active Travel Routes
Traffic Speed
Design Speed - 15mph for cyclists
Street Dimensions and Character
Active Travel Route Width - Separated, shared facilities are required. Active Travel Routes should be a minimum of 3.5 metres wide to allow for two cycles to pass each other comfortably, with an associated 1 metre service margin/verge to accommodate street lighting where appropriate.
Street Design Details
Cycle Parking - Secure cycle parking should be provided in the vicinity of all trip attractors, positioned to ensure maximum visibility, but not in locations where it would become an obstacle to pedestrians or cyclists.
Protection from Vehicular Use - Bollards should be used to prevent use of footways and cycleways by motor vehicles. Guard railing must not be used.
Biodiversity and landscape - Ways to incorporate enhancements for wildlife should be included in the streetscape design in a way that engages the public and is tamper proof. Hedges, trees and wildflower verges should be incorporated to enhance permeability of the landscape for species to connect with other habitat types such as woodlands and grasslands. This will also enhance the user experience along the route.
Materials
Carriageway - Active Travel Routes should be exclusively of macadam (Hot Rolled Asphalt is preferred to minimise rolling resistance). More porous materials will be considered for leisure routes.
Demarcation - Flush kerbing or green infrastructure should be used to demarcate cycleways and footways, as required.

3.17 Industrial Access Roads

Industrial access roads are to be provided to serve industrial or employment areas where HGV movements are to be accommodated on a regular basis. Carriageway widths may need to be increased to accommodate all types of vehicles expected to access these sites.

Design Details for Industrial Access Roads
Traffic Speed
Design Speed - 30mph
Street Dimensions and Character
Carriageway Width - 6.7 metres minimum, up to a maximum of 7.3 metres if required to accommodate larger vehicles.
Active Travel Route - A separated active travel route should be provided which runs parallel, providing direct access to all trip attractors in the site. This should be separated from the highway by a minimum 1 metre green infrastructure strip.
Direct vehicular access to parking - This will be permitted, subject to suitable visibility being demonstrated in the design process.
Street Design Details
On Street Parking - Parking on the highway will not be permitted. This will necessitate the implementation of a Traffic Regulation Order if the road is to be adopted by the Highway Authority.
Junction Radii - Typically 10 metres. Tracking must be provided for the largest permitted vehicle.
Landscaping Green infrastructure has a strong role to mitigate the impacts of major industrial/ employment uses on the adjacent landscape. The landscaping can be integrated with SuDS drainage using swales and tree planting to provide additional GI benefits as part of a site wide SuDS and GI strategy. Wherever possible, this should be accommodated outside the limits of the adopted highway.
Biodiversity Green infrastructure has a strong role to mitigate the impacts of major industrial/ employment uses on the biodiversity. Wherever possible, this should be accommodated outside the limits of the adopted highway.
Materials
Main Carriageway - Macadam
Kerbing Pre-cast concrete kerbs. Larger, more robust kerbing may be required to prevent overrunning and damage to green infrastructure.

4. Planning for Parking

4.1 Introduction

On 25th March 2015, a Ministerial Statement updated Paragraph 39 of the National Planning Policy Framework, providing further detail on the application of parking standards, this statement has been incorporated in the draft revisions of the NPPF. This document seeks to provide an approach as to how car parking in Worcestershire should be provided to support new and expanding business and residential development in a manner which embraces the NPPF.

It is considered that if the applicant is the end user that they are well placed to assess operational demands but all sites must be considered against a planning use class to ensure they equally address the needs of future users. Therefore applications should provide a suitable evidence base to ensure vehicles are not displaced onto the Highway to ensure highway safety is not compromised and maintain the free flow of traffic to the benefit of the local economy.

This document only reflects a small part of managing vehicle demands and therefore should be read alongside the Local Transport Plan which contains policies to promote sustainable travel through the provision of physical infrastructure and travel planning initiatives.

4.2 Residential Houses and Apartments

There is no direct relationship between car parking provision and choice of transport mode, so a minimum provision for residential need should be made to ensure suitable in curtilage storage.

The following are the minimum requirements:

1 Bedroom Unit - 1 Space, 1 cycle space

2 – 3 Bedroom Units – 2 Spaces, 2 cycle spaces

4 – 5 Bedroom Units – 3 Spaces*, 2 cycle spaces

* In Rural parishes of Redditch this should be increased to 4 spaces.

These are the minimum requirements. They apply to both Affordable/Social Housing and Market Housing. The requirements apply to flats/apartments and houses. Cycle parking must be sheltered, secure and easily accessible

Garages are excluded from the car parking calculations due to the ability to convert them into habitable accommodation without the need for permission and their usage for personal storage rather than that of a vehicle. The exception to this being where they have an internal dimension of 6m x 3m and are equipped with infrastructure to support an ultra-low emission vehicle such as an electric vehicle charging point as per the below specification. In this event a planning condition will be sought to retain the garage for the purposes of parking a vehicle only. In the above circumstances a garage will be counted as 1 car parking space even if it can cater for two vehicles or more.

Worcestershire County Council strongly encourages all properties to be equipped with Ultra Low Emission Vehicles (ULEV) charging points including provision where communal parking is provided. This position is supported by the NPPF.

Houses of Multiple Occupancy

Houses of Multiple Occupancy (HMO's) have their own separate use class and as such require a separate parking standard from those above. Typically HMO's in Worcestershire are located near academic establishments and are in existing residential communities, and as such are attractive to students, however this is not exclusively the case. HMOs which have 4 bedrooms or less do not require planning permission, therefore no standards are indicated for sub 5 bedrooms.

Bedrooms	Required Spaces
5	3
6	3
7	4
8	4
9 +	Demonstrate Provision, but Minimum of 4

Cycle storage at a ratio of 1 space per bedroom should be provided where they are sheltered, secure and easily accessible.

Visitors

These are permitted to be counted within the street due to their short term duration and infrequent occurrence. Where existing on street demand or parking restriction prevents this or for communal parking areas off road provision should be made at a ratio of 1 space per 5 bedrooms. For clarity HMO parking provisions include allowances for visitors. Provision should also be made for cyclists where spaces should be shared and the number proportionate to the scale of the development.

Car Clubs

In areas where housing density is greater and there is a wider range of transport choices car free development will be encouraged. However residents should still be given the ability to travel by car should they choose and where there is sufficient critical mass in terms of development or existing population to support a scheme the provision of a car club can provide a valuable service. Where these are proposed early discussions with the Highway Authority and club operators is needed to ensure long term viability and city wide take up.

Care Homes

These are a mix of residential and employment uses which can fall into C2 or C3 uses. Most sites are promoted by established care providers who will have experience of comparable sites. The applicant should present appropriate up to date data from similar sites on car parking demand to inform levels for their proposal rather than applying

the residential C3 standards with may not be appropriate.

Commercial / Industrial (Non-Residential)

Commercial operators should have a good understanding of the needs of their business and will determine how land under their control could be managed. Car parking need is a subjective matter particularly in the mind of neighbours; the applicant should provide a minimum parking provision for each development along with an evidence base to demonstrate the appropriateness of the provision. Trip rates accumulation should either be derived from first principles or from existing data, for example; TRICS or comparison to facilities of similar size and geographic circumstance.

Adequate space for heavy goods, delivery and public service vehicles must be made within the site boundary, which should not conflict with the proposed parking arrangements.

Parking Free Development

For both residential and commercial developments in town and city centres the applicant may choose not to provide car parking spaces at all. Consideration must be given to the opportunity to access the site sustainably, the availability and capacity of public car parks, existing parking restrictions, the number of linked trips and the implementation of an approved Travel Plan or welcome pack. Provision for servicing and deliveries must always be made within the site, unless there is a strong fall-back position which would remove this requirement.

Educational Facilities

A maximum of 1 Space per member of staff however in urban locations staff levels should be reduced based on the availability of alternative options. Car free development is permissible depending on the local circumstances. Sheltered facilities to provide for pupil scooter storage should be provided in an accessible location for primary schools and cycle parking for all educational facilities.

Other Users Needs In Non Residential

Development Consideration and provision

must be made for disabled badge holders, motorcycles, bicycles and ULEV. The following ratios are required.

Accessible Spaces:

Size of Car Park (no of spaces)	Designated Bay Provision
1-50	2 + 3% of total car park
51-200	3 + 3% of total car park
201-500	4 + 3% of total car park
501-1000	5 + 3% of total car park
1000 +	6 + 3% of total car park

Motorcycle Spaces - 1 space per 10 car spaces, minimum provision 1 space

Bicycle Spaces:

- Offices (B1a) 1 space per 30m² of GFA.
- General Industry and Storage (B1c, B2, B8) 1 space per 40m² of GFA.
- Other uses see <http://www.camcycle.org.uk/resources/cycleparking/guide/appendix.html%20-%20standards>.

ULEV Charging Spaces – Initially 5% of the total parking spaces provided and a further 5% of the total parking spaces at an agreed trigger.

Commercial development must be supported by a travel plan to promote sustainable travel choices irrespective of the number of car parking spaces provided and where a transport assessment is provide they should be a key factor in managing traffic generation and car parking supply.

Specifications

Car Parking Spaces should be a minimum 2.4m x 4.8m. For residential development circulation space around the vehicle is needed so dimensions increase to 3.2m x 6m. A minimum of 6m is required in front of a garage door.

Garages can be used to provide bicycle storage as well as for other household storage needs, where this occurs garages should have an internal dimension of 6m x 3m.

Cycle stands – a minimum width of 1m must be provided between cycle stands. Stands for nonstandard cycles should be allocated at the end of a standard provision with a minimum width of 1.5m provided to allow for dismounting.

Separate bin storage areas should be provided which do not conflict with any proposed parking spaces.

ULEV charging systems should be:

- Residential 7kW charging points.
- Non Residential 22kW charging points.

5. Planning for Passenger Transport

5.1 Philosophy

Worcestershire County Council requires developers to ensure access to high quality passenger transport facilities and services to optimise travel choice, and ensure sustainable development, regardless of whether a residential, commercial or industrial development.

It is critically important that development seeks to strengthen the commerciality of the passenger transport network. To do this, it must actively contribute towards ensuring passenger transport is an attractive travel choice, which assumes that developments will be designed to benefit from:

- Quality infrastructure and information – to limit wait times, ensure passenger comfort and enable intuitive journey planning;
- Quality passenger transport services – to support passenger transport companies to offer direct, fast, punctual and reliable services using appropriate vehicles, which are affordable and attractive to use;

In practice, developers will be expected to consider passenger transport access at a very early stage in the development process, and set out a costed passenger transport access strategy for their development.

5.2 Bus Routes

Worcestershire County Council recognises that ensuring direct, fast, reliable and punctual bus services is critically important if passenger transport is to offer a credible travel choice option.

Wherever possible, bus routes should not be required to make circuitous detours into residential areas, as this increases travel time and reduces the attractiveness of bus routes. With this in mind, Worcestershire County Council proposes a mean average walk distance for all properties within a development to scheduled bus stops of 400 metres, distances of upto 800 metres will be

considered where a high quality, direct and level route is provided. This is to be measured accurately from front door to bus stop, and not by drawing a radius on a map (i.e. as the crow flies). Measurements should assume that residents will make use of planned walking routes within the development.

Large phased developments should make provision for the earliest phases to be served by bus services. The provision and phasing will require detailed consideration at the planning application stage and will need to be incorporated into any legal agreement tied to the planning consent.

Where bus routes are proposed to operate through developments, these should be agreed in advance with the bus operating company, and should offer direct, unimpeded access through the site to minimise any impacts on journey times. On-street parking provision must be designed so as not to cause detriment to bus service operational efficiency. Bus priority measures may be required to support this, and these should be specifically designed and discussed with the DM team in advance of application submission.

5.3 Bus Stops

The provision and location of bus stops should be planned at an early stage and made the subject of a safety auditing process to ensure stops are not placed in hazardous areas on the network. The stop must be clearly marked on all plans, well in advance of construction and brought to the attention of potential house buyers to avoid any problems when a service starts later than intended occupation dates.

The provision of bus stops should be minimised within developments, to preserve operational reliability. A minimum distance of 400 metres between bus stops is recommended.

Stops should be located to give the best penetration into the development site by means of associated footpaths and they need to serve the greatest catchment area possible in terms of convenience.

Bus routes within new developments should be designed to be continuous (i.e. they should either pass directly through the development, or operate in a loop. Developments must not require bus services to make any unnecessary manoeuvres, so turning facilities should never be required.

Bus stops provided on, or adjacent to existing highway networks should be placed as close as possible to existing footpaths which provide access into the development.

In locations where Worcestershire County Council is the bus shelter provider, a commuted sum may be sought from developers to support ongoing maintenance of this infrastructure, full details of the shelter maintenance policy can be found in the Transport Asset Management Plan.

5.4 Real Time Passenger Information

Worcestershire County Council operates a countywide Real Time Passenger Information system for buses (RTPI). In many cases, contributions may be sought from developers to provide for RTPI displays at bus stops.

5.5 Rail

Where a development is adjacent to a railway line or other rail infrastructure (stations, sidings, freight facilities), then the developer should consult, at an early stage, with Network Rail. Contact details and procedures for such consultation can be obtained from the Network Rail website (www.networkrail.co.uk).

The Council's policies for rail are included in its Local Transport Plan. Where development is expected to generate additional demand for rail travel, and improvement schemes are identified, then financial contributions may be sought to support bringing forward delivery of these.

Where a development is adjacent to a railway station, developers should contact the relevant Train Operating Company responsible for managing that station. If in doubt, developers are advised to contact the DM team for advice.

5.6 Community Transport

Worcestershire benefits from a comprehensive network of Community Transport schemes, which provide passenger transport services to those who are unable to access scheduled passenger transport services, for a variety of reasons. Developers may be required to contribute towards service enhancement of community transport services to support access to developments by sustainable modes. This will be particularly relevant in more rural locations.

6. Planning for an Adoptable Public Streetscape

6.1 Introduction

This section covers works on the public highway instigated by developers and the creation of new highway maintainable at public expense, commonly referred to as Section 38 and Section 278 Highways Agreements.

6.2 Definitions and Interpretations

The following definitions and interpretations apply within this section:

- Adopted Highway – Highway maintainable at public expense.
- Adopt (Adoption) – The process by which future maintenance of a Highway at the public expense is accepted by Worcestershire County Council
- CDM Regulations – Construction (Design & Management) Regulations 2015
- Consultant – An organisation employed by the Developer to design the works.
- Contractor – An organisation employed by the Developer to carry out construction works.
- Dedicate (Dedication) – The freehold legal owner of a piece of land dedicates the top soil of that land for use as Highway, surrendering all rights to the top soil, whilst retaining legal ownership of the subsoil.
- DMRB - Design Manual for Roads and Bridges.
- Developer – An individual or organisation promoting a development.
- Development Control Engineer - Officers responsible for the technical approval, site inspection and management of the works on pursuant to a Sec. 38 and/or Sec. 278 Agreement.
- Easement – The right (secured by a legal agreement) to use or cross someone else's land for a specified purpose, for example to carry out work on subterranean ducts.
- Highway – A way over which the public have right to pass and re-pass unhindered.
- Highway Agreement – a legal agreement between Worcestershire County Council and the developer.

Worcestershire County Council will enter the agreement where it is satisfied that the works to the Adopted Highway will be of benefit to the public. The Developer (or their contractor) will be responsible for executing the works on the Adopted highway in accordance with the terms of the agreement.
- Minor Works – minor work is limited to works of this description only: lowered kerbs for a single vehicular access; a simple bellmouth serving a private development that requires no amendment to the street lighting, highway drainage system or horizontal and vertical alignment of the Adopted Highway.
- Section 38 Agreement – A legal agreement made pursuant to Section 38 of the Highways Act (1980) that provides for Dedication of a road or other way as a Highway, and an agreement to Adopt the Highway at a specified point in time.
- Section 278 Agreement – A legal agreement made pursuant to Section 278 of the Highways Act (1980), which enables a Local Highway Authority, where it is satisfied that it will be of benefit to the public, to execute works on the Adopted Highway, in accordance with the terms of the agreement entered into with the developer.
- Surety – A third party approved by Worcestershire County Council becomes a party to the Section 38 and/or 278 agreement

and guarantees to pay the sum specified in the said agreement for the completing of the works in certain circumstances.

- Worcestershire County Council – Worcestershire County Council is the Local Highway Authority (LHA) responsible for the construction, maintenance, operation, use and control of the Adopted Highway.

Section 38 of the Highways Act (1980) allows Worcestershire County Council as Local Highway Authority (LHA) to enter into a legal agreement with a Developer to adopt highways for future maintenance at the public expense, provided that they are constructed to Worcestershire County Council's approved conditions and specifications. The agreement may also contain further necessary provisions for the construction and dedication of the road as Worcestershire County Council considers appropriate.

Where schemes require alterations or improvements to the existing public highway, Sec. 278 of the Highways Act 1980 allows for Worcestershire County Council to enter into a legal agreement with a Developer in order to enable the Developer to make alterations or improvements to the public highway.

Sec. 38 Agreements will often be combined with a Sec. 278 Agreement if works in the existing highway are involved and Sec. 278 Agreements may also include a 'Sec. 38 Agreement element' if land is required to be adopted.

Submissions will not be registered until all of the information required, as specified in the relevant Application Form has been submitted in an acceptable format. Worcestershire County Council doesn't have the resources to undertake technical assessment of schemes that can't gain technical approval due to missing information.

Sec. 38 of the Highways Act 1980 allows Worcestershire County Council (WCC) as Highway Authority (HA) to enter into a legal agreement with a Developer to adopt highways for future maintenance at the public expense, provided that they are

constructed to WCC's approved conditions and specifications. The agreement may also contain further necessary provisions for the construction and dedication of the road as WCC considers appropriate.

Where schemes require alterations or improvements to the existing public highway, Sec. 278 of the Highways Act 1980 allows for WCC to enter into a legal agreement with a Developer in order to enable the Developer to make alterations or improvements to the public highway.

Sec. 38 Agreements will often be combined with a Sec. 278 Agreement if works in the existing highway are involved and Sec. 278 Agreements may also include a 'Sec. 38 Agreement element' if land is required to be adopted.

The Early Technical Assessment (ETA) of offsite highway works, during the lifetime of the planning application is a precursor to the Sec. 278 process and is not an iterative process.

This facility is offered, primarily to highlight issues which may arise during the detailed design process of the proposed off-site highway works but which wouldn't necessarily come to light during the assessment of the preliminary designs submitted as part of the planning application submission.

The ETA process will enable a more rigorous assessment of the off-site highway improvements submitted as part of the planning application and should give developers greater confidence that their proposals are deliverable in compliance with both National and WCC design specifications.

In order to produce an assessment of the off-site highway works within the timescales allotted to the planning process (8 to 12 weeks) the level of information required is reduced from that normally needed to initiate a Sec. 278 submission.

Please see the Early Technical Assessment, Sec. 38 Application Form & Sec. 278 Application Forms, which are available at www.worcestershire.gov.uk/SDG for a breakdown

of the information required to commence the respective submission.

Electronic submissions and general enquiries should be sent to:
HighwayTechSub@worcestershire.gov.uk

Submissions will not be registered until all of the information required, as specified in the relevant Application Form has been submitted in an acceptable format. WCC doesn't have the resources to undertake technical assessment of schemes that can't gain technical approval due to missing information.

All drawings and plans must be drafted by a competent highway consultant appointed by the Developer who must have experience in highway design and construction.

The initial technical submission will need to be supported by a Design Report which discusses all of the design elements of the scheme from horizontal & vertical alignment, drainage and junction control etc. their relevant merits and justifies their use within the submitted design.

This document will need to be refreshed with each subsequent technical submission, to take account of any amendments made to address issues highlighted in the technical assessment.

Each technical assessment carried out by Worcestershire County Council or its consultants and returned to the developer will be accompanied by a Comment Summary that will establish the headline issues which need to be resolved prior to Technical Approval being issued. The developer will need to complete the Designer Response section for each of the comments, as well as the revised Departure from Standard Report and resubmit this form with their subsequent submission. Failure to address each of the comments will result in the submission being returned, without registration.

It is strongly recommended that the developer or their agents undertake detailed discussions with WCC prior to each submission being made, to ensure that their submission addresses the outstanding issues and new departures from standard which occur as a result of addressing those comments.

Meetings between the developer, their agents and WCC are the best way to resolve the issues affecting the award of Technical Approval and would recommend that a meeting is held to discuss the content of each technical assessment. However, after the issue of every second technical assessment, a progress meeting will have to take place and failure to attend will prevent the registration of any further submissions?

The Developer will be required to enter into a formal agreement with the Local Water Authority in respect of sewers and pumping stations in accordance with Sec. 104 Water Industry Act 1991 and provide written assurance that the Water Authority will adopt sewers within the Sec. 38 Works.

Private sewers within the Sec. 38 Works are not accepted by WCC and will not be adopted. Adoption of the Sec. 38 Works will not take place until proof of the adoption of the private sewers etc. by the Local Water Authority has been provided to WCC.

WCC require the inclusion of the Traffic Management works required to deliver the Sec. 278 works within the technical submissions. The traffic management proposals will need to be certified by an accredited TM Practitioner (Sector 12d). The traffic management plans, will be assessed to ensure it enables WCC to manage the highway network to secure the expeditious movement of traffic on the network. The traffic management plan will also be used to schedule Streetwork permits, temporary traffic regulation orders etc. within the works programme and form part of the Sec. 278 agreement.

A Comment Summary will accompany each assessment returned to the Developer. This form will need to be completed by the developer or their agent and submitted alongside their next technical submission.

This document will evolve alongside the scheme through each subsequent technical submission and provide ongoing record of the schemes progress through the technical assessment process. WCC reserves the right to withhold registration and return the

submission should any of the comments remain unaddressed.

6.3 Fees

Worcestershire County Council will charge a Management and Inspection Fee, based upon a percentage of the County Council's estimate of the total cost of the works, currently 7.5% for Sec. 38 and 8% for Sec. 278. This fee will cover the following in respect of the proposed Sec. 38/ Sec. 278 Works:

- Basic technical approval;
- Assessment of Traffic Management proposals and Programme of Works (Sec. 278 only)
- Calculation of Bond Fees:
- Administration;
- Site inspections during construction inspections of Traffic Management works (Sec. 278 only) and for provisional and final certificates (see below); and
- Inspections of highways, adoptable highway drainage and street lighting inspections

The Developer will also be responsible for payment of all additional fees incurred by Worcestershire County Council for Worcestershire County Council consultancy design checks and audits as considered appropriate for each Sec. 38/278 proposal which may include:

- Street lighting design;
- Major junction design;
- Structures design and inspection

All fees are payable before the Agreement is signed.

6.4 Site Inspections

The Developer is responsible for the day to-day supervision and setting out of the Sec. 38/Sec. 278 Works up to the date of issue of the Final Certificate of Completion for the works (see below). A Worcestershire County Council Inspector will be responsible for ensuring the works comply with

Worcestershire County Council's Specification and the agreed Traffic Management proposals (Sec. 278 only). The Developer must allow Worcestershire County Council's representative access to every part of the Sec. 38/Sec. 278 Works at all times for the purpose of inspecting the Sec. 38/ Sec. 278 Works and all materials used or intended to be used therein. It is the responsibility of the Developer to ensure the works are constructed in accordance with the approved drawings/specification submitted to and approved by Worcestershire County Council and delivered in accordance with the agreed Traffic Management scheme (Sec. 278 only). The Developer is responsible for the testing of materials using an approved laboratory as specified and/or requested by Worcestershire County Council.

Non-compliance with the approved drawings/specification will result in the Developer being required to reconstruct defective area(s) of the Sec. 38/Sec. 278 Works (a Defective Works Requirement). Each and every additional inspection to check compliance with a Defective Works Requirement will be charged at £250 per visit.

6.5 Completing the legal requirements

Once technical approval has been granted, the Developer must provide 13 coloured copies of the Sec. 38/Sec. 278 layout drawing to be included in the agreement.

Please see Sec. 38 Application Form & Sec. 278 Application Form, available at www.worcestershire.gov.uk/SDG for details regarding the colour of highway features.

6.6 Surety

The Developer will be required to provide a financial security in order to ensure that there is adequate provision to allow the Sec. 38/Sec. 278 Works to be completed in default of the Developer's obligations under the Sec. 38/Sec. 278 Agreement. This may include unfinished or defective works. The amount to be secured must be equal to the total cost of the Section 38/Section 278 Works as determined by Worcestershire County Council. The security may be in the form of:

- a. A bond in Worcestershire County Council agreed format with a reputable financial institution (Bank/Insurance company) approved by the County Council.
- b. a deposit of the equivalent sum deposited with Worcestershire County Council until issue of the final certificate of completion of the Sec. 38/Sec. 278 works
- c. NB in the case of a Sec. 278 Agreement where a bond is provided, the surety may be a party to the Agreement

6.7 Constructing the Works

Where works are being carried out under a Sec. 38/Sec. 278 Agreement, the Developer must not commence any works on the site until:

- a. The Sec. 38/Sec. 278 Agreement has been completed;
- b. An acceptable form of the financial security has been provided;
- c. All fees have been paid;
- d. Written notification has been provided of the Developer's intention to commence construction giving at least 3 months notice (to comply with the requirements of the Traffic Management Act 2004;
- e. Details of the appointed contractor in order for Worcestershire County Council to validate its suitability to carry out the Sec. 38/Sec. 278 Works

NB: Any anomalies/amendments encountered whilst construction is ongoing and before the issue of the Provisional Certificate/ Final Certificate of Completion will require a formal amendment to the plans appended to the Sec. 38/Sec. 278 Agreement, which will require the completion of a supplemental agreement. The Developer will be responsible for any costs associated with the drafting and completion of the supplemental agreement and any additional supervision fees that may be required.

6.8 Timescale for completing the works

All Sec. 278 schemes must be completed in compliance with the agreed Programme of Works. Once works have commenced on site they must be completed to Worcestershire County Council's satisfaction within a reasonable time period, either within 3 months of all buildings on site being completed, or within 3 years of the date of signing the Sec. 38/ Sec. 278 Agreement. If this timescale is not adhered to Worcestershire County Council may refer the matter to their Legal Services and take action as set out in 'Defects and Default Lists' below.

6.9 Issuing a Provisional Certificate

A Provisional Certificate of Completion (The Provisional Certificate) will only be issued and the 12-month maintenance period commence, once the Sec. 38/Sec. 278 Works have been completed in accordance with the approved drawings (including compliance with any Defective Works Requirements) and to the satisfaction of Worcestershire County Council's Engineer.

The Provisional Certificate must be formally requested in writing by the Developer from Worcestershire County Council's Engineer.

6.10 Inspection Process following request for Provisional Certificate

- a. As soon as is reasonably practicable Worcestershire County Council's Engineer will undertake an inspection of the Sec. 38/Sec. 278 Works and produce and supply a defects list (Defects List) to the Developer.

b. The Developer will within 3 months from the date of receipt (or such other period of time as notified in writing by the Engineer) complete the works as identified on the Defects List (The Defect Works).

c. When Worcestershire County Council's Engineer is satisfied all works identified have been carried out in accordance with the Sec. 38/Sec.278 Agreement and Worcestershire County Council's specification or as otherwise directed by the Engineer above, Worcestershire County Council's Engineer will then issue the Provisional Certificate in order to commence the 12 month maintenance period. The bond supporting the Agreement will then normally be reduced to 50% of its original value. The Developer will remain fully responsible for maintaining the works for a minimum period of 12 months until a Final Certificate of Completion is issued.

NB: The issue of the Provisional Certificate of Completion will constitute the road being 'first open' to the public traffic for the purposes of Sec. 1(9) of the Land Compensation Act 1973. The Sec. 38/Sec. 278 Agreement will make provision for the Developer to indemnify Worcestershire County Council from any claims relating to the works including those made under the Land Compensation Act 1973.

NB: Where a developer has commenced work on highways to be included within the Sec. 38 agreement, Worcestershire County Council will consider the imposition of a 36 month maintenance period. Even though a road is 'open to public traffic' it will not, in respect of the Sec. 38 Works, constitute the road(s) becoming highway maintainable at the public expense until the Final Certificate of Completion is issued.

Similarly, in respect of any Sec. 278 Works carried out, the works will not be deemed to form part of the publicly maintainable highway until the issue of the Final Certificate of Completion.

6.11 Defects, Default Works and Notice to Surety

If the Defect Works or Defective Works Requirements (the Default Works) have not been completed as set out above, the Engineer will consider, with advice from Worcestershire CC's Legal Services, the legal options for ensuring the works are completed.

Worcestershire CC may without prejudice to any other right claim or remedy under the Sec.38/Sec. 278 Agreement:

In respect of an Agreement supported by a Bond or Surety, send to the Surety a Notice in writing ("the Default Notice") specifying the works required to be carried out, containing an estimate by Worcestershire County Council's Engineer or Agent of the cost of carrying out the outstanding works and of the cost of administration, supervision, execution, completion and maintenance of the works for a period of 12 months prior to the street(s) and way(s) becoming (or in the case of existing highway maintainable at the public expense forming part of) a highway maintainable at the public expense (the Default Costs); [the Surety or the County Council to apply the sum to carry out the work as appropriate]; or In the case of the financial security being in the form of a cash deposit lodged with Worcestershire County Council, send to the Developer Notice in writing ("the Default Notice") specifying the work to be carried out, containing an estimate by Worcestershire County Council's Engineer or Agent of the cost of carrying out the outstanding works and of the cost of administration, supervision, execution, completion and maintenance of the works for a period of 12 months prior to the street(s) and way(s) becoming (or in the case of existing highway maintainable at the public expense forming part of) a highway maintainable at the public expense, (the Default Costs) and without further notice to the Developer apply the sum held upon deposit in the execution of carrying out the Default Works.

6.11 Issuing a Final Certificate of Completion

At the end of the 12 month maintenance period the Developer must request the Final Certificate of Completion, (the Final Certificate) from the Worcestershire County Council's Engineer in writing. Copies of as built drawings will also need to be supplied at the time the request is made.

6.12 Inspection Process following a request for a Final Certificate

The inspection process for the issuing of the Final Certificate will follow that of Paragraphs A and B of the Provisional Certificate inspection process above.

If Worcestershire CC's Engineer is satisfied that all works identified have been carried out in accordance with the Sec. 38/Sec.278 Agreement and Worcestershire County Council's specification or as otherwise directed by the Engineer, then Worcestershire CC's Engineer will issue the Final Certificate.

The issuing of the Final Certificate signifies (amongst other things) Worcestershire CC's adoption of the Sec. 38/Sec. 278 Works. Any roads open to public traffic forming part of the Sec. 38 Works will at this point become highway(s) maintainable at the public expense.

The Bond or deposit provided in support of the Agreement may now be cancelled/refunded. Should the Developer not have carried out the Default Works, nor requested the Final Certificate of Completion within 18 months of the date of issue of the Provisional Certificate, Worcestershire County Council will apply the remedies set out in the section entitled 'Defects, Default Works and Notice to Surety' above.

Health and Safety

Prior to formal adoption, the Developer will be required to submit a copy of the completed Health and Safety File in accordance with the Construction, Design and Management 2015 Regulations.

Appendix A - Useful Contacts

Organisation	Contact Details
Worcester County Council	County Hall, Spetchley Road, Worcester, Worcestershire, WR5 2NP www.worcestershire.gov.uk
Redditch Borough Council	Town Hall, Walter Stranz Square, Redditch, Worcestershire, B98 8AH www.redditchbc.gov.uk
Bromsgrove District Council	Parkside Market Street Bromsgrove Worcestershire B61 8DA www.bromsgrove.gov.uk
Wyre Forest District Council	Wyre Forest House, Finepoint Way, Kidderminster, Worcestershire, DY11 7WF www.wyreforestdc.gov.uk
Worcester City Council	The Guildhall, High Street, Worcester, Worcestershire, WR1 2EY www.worcester.gov.uk
Wychavon District Council	Civic Centre, Queen Elizabeth Drive, Pershore, Worcestershire, WR10 1PT www.wychavon.gov.uk
Malvern Hills District Council	The Council House, Avenue Road, Great Malvern, Worcestershire, WR14 3AF www.malvernhills.gov.uk
Highways England	3 Ridgeway Quinton Business Park Birmingham B32 1AF www.gov.uk/government/organisations/highways-england
West Mercia Road Safety Partnership	Suite 11, Malvern Gate, Bromwich Road, Worcester, WR2 4BN www.srpwestmercia.org.uk
West Mercia Police	PO Box 55, Worcester, Worcestershire, WR3 8SP www.westmercia.police.uk

Appendix B – Highway Network

GIS link and Highways England note

A dynamic map of Worcestershire's Local Highway Network, Public Rights of Way and many other features can be viewed here:

<http://gis.worcestershire.gov.uk>

It should be noted that the M5, M42 and M50 motorways and the A46 Trunk Road (from the County boundary with Gloucestershire, to the County boundary with Warwickshire) are managed by Highways England.

Appendix C – Biodiversity

Legislative Framework And Best Practice Guidance

The Wildlife And Countryside Act 1981 (As Amended)

The WCA is the major legal instrument for wildlife protection in the UK. This legislation is the means by which the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention'), the Convention on the Conservation of Migratory Species of Wild Animals (the 'Bonn Convention') and the European Union Directive on the Conservation of Wild Birds (79/409/EEC) (EC Birds Directive) are implemented in Great Britain (see below). The Act makes it an offence (subject to exceptions) to intentionally kill, injure or take any wild animal listed on Schedule 5 or wild bird not listed in Schedule 2; and prohibits interference with places used for shelter or protection and intentionally disturbing animals occupying such places. The Act makes it an offence (subject to exceptions) to intentionally pick, uproot or destroy any wild plant listed in Schedule 8.

Birds Directive 2009/147/Ec (Codified Version Of Directive 79/409/Eec As Amended)

The Directive provides for the establishment of a coherent network of Special Protection Areas (SPAs) comprising all the most suitable territories for endangered and migratory species. Since 1994 all SPAs form an integral part of the Natura 2000 ecological network. The Birds Directive also bans activities that directly threaten birds, such as the deliberate killing or capture of birds, the destruction of their nests and taking of their eggs, and associated activities such as trading in live or dead birds (with some exceptions).

Habitats Directive

The aim of the Habitats Directive is to 'maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest' (Habitats Directive, Article 2(2)).

The provisions of the Directive require Member States to introduce a range of measures, including:

- Maintain or restore European protected habitats and species listed in the Annexes at a favourable conservation status as defined in Articles 1 and 2;
- Contribute to a coherent European ecological network of protected sites by designating Special Areas of Conservation (SACs) for habitats listed on Annex I and for species listed on Annex II. These measures are also to be applied to Special Protection Areas (SPAs) classified under Article 4 of the Birds Directive. Together SACs and SPAs make up the Natura 2000 network (Article 3);
- Ensure conservation measures are in place to appropriately manage SACs and ensure appropriate assessment of plans and projects likely to have a significant effect on the integrity of an SAC. Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest. In such cases compensatory measures are necessary to ensure the overall coherence of the Natura 2000 network (Article 6);
- Member States shall also endeavour to encourage the management of features of the landscape that support the Natura 2000 network (Articles 3 and 10);
- Undertake surveillance of habitats and species (Article 11),

- Ensure strict protection of species listed on Annex IV (Article 12 for animals and Article 13 for plants).
- Report on the implementation of the Directive every six years (Article 17), including assessment of the conservation status of species and habitats listed on the Annexes to the Directive.”

Protection Of Badgers Act 1992

The Protection of Badgers Act 1992 protects badgers and their setts. Offences under the act include killing, injuring or taking a badger, or to damage or interfere with a sett unless a licence is obtained from the relevant statutory authority.

Countryside And Rights Of Way Act 2000 (Crow Act 2000)

The CRow Act provides for public access on foot to certain types of land, amends the law relating to public rights of way, increases measures for the management and protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation, and provides for better management of Areas of Outstanding Natural Beauty (AONB).

The Act places a duty on Government Departments and the National Assembly for Wales to have regard for the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity.

Schedule 9 of the Act amends SSSI provisions of the Wildlife and Countryside Act 1981, including provisions to change SSSIs and providing increased powers for their protection and management.

Schedule 12 of the Act amends the species provisions of the Wildlife and Countryside Act 1981, strengthening the legal protection for threatened species. The provisions make certain offences ‘arrestable’, create a new offence of reckless disturbance, confer greater powers to police and wildlife inspectors for entering premises and obtaining wildlife tissue samples for DNA analysis, and enable heavier penalties on conviction of wildlife offences.

Natural Environment And Rural Communities (Nerc) Act 2006

The NERC Act makes provision in respect of biodiversity, pesticides harmful to wildlife and the protection of birds, and in respect of invasive non-native species. It alters enforcement powers in connection with wildlife protection, and extends time limits for prosecuting certain wildlife offences.

Section 40(1) imposes a duty to conserve biodiversity:

“Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.”

Section 40(3) of the Act explains that:

“Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat”.

The duty applies to all local authorities and extends beyond just conserving what is already there to carrying out, supporting and requiring actions that may also restore or enhance biodiversity.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list (including 56 habitats and 943 species) has been drawn up in consultation with Natural England and draws upon the UK BAP List of Priority Species and Habitats. The S41 list should be used to guide decision-makers such as local and regional authorities when implementing their duty: to have regard to the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006.

The Conservation Of Habitats And Species Regulations 2010 (As Amended)

The Habitats and Species Regulations are the principal means by which the European Union Directive on the Natural Habitats and Wild Fauna and Flora (92/43/EEC) (EC Habitats Directive) is transposed in UK law. They also consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect

of England and Wales. The Regulations provide for the designation and protection of 'European sites (paragraph 8)', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites. In addition, the need for an assessment of impacts on Natura 2000 sites is set out within Article 6 of the EC Habitats Directive 1992, and interpreted into British law by the Conservation of Habitats and Species Regulations 2010.

Hedgerow Regulations 1997

The Hedgerows Regulations 1997 protect most countryside hedgerows from being removed (including being uprooted or otherwise destroyed) without prior permission from the local planning authority. The Regulations set out criteria for identifying important hedgerows, for which greater protection is conferred.

Biodiversity 2020: A Strategy For England's Wildlife And Ecosystem Services (2012)

This is a biodiversity strategy for England's wildlife and ecosystem services which builds on the Natural Environment White Paper and provides a comprehensive picture of how England is implementing its international and EU commitments.

It sets out the strategic direction for biodiversity policy for the next decade on land (including rivers and lakes) and at sea, building on the work that has gone before, but also seeking to deliver a step change.

One of the Priority actions is that DEFRA "will work with transport agencies and key delivery partners to create coherent and resilient ecological networks in the natural areas at the edges of our strategic roads and railways, which cover approximately 60,000 hectares. The Government will host a forum with environmental stakeholders to inform future priorities for the enhancement of these green corridors".

DEFRA state that they will "through reforms of the planning system, take a strategic approach to planning for nature within and across local areas. This approach will guide development to the best locations, encourage greener design and enable development to enhance natural networks. We will retain the protection and improvement of

the natural environment as core objectives of the planning system."

Infrastructure Act 2015

An Act to make provision for strategic highways companies and the funding of transport services by land; control of invasive non-native species; and nationally significant infrastructure projects.

National Planning Policy Framework (2012)

The National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied. This includes a number of environmental policies:

"Paragraph 117 states: To minimise impacts on biodiversity and geodiversity, planning policies should:

plan for biodiversity at a landscape-scale across local authority boundaries;

identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation;

promote the preservation, restoration and recreation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan;

Paragraph 118 states;

if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified

special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;

opportunities to incorporate biodiversity in and around developments should be encouraged;

planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and

the following wildlife sites should be given the same protection as European sites: – potential Special Protection Areas and possible Special Areas of Conservation; – listed or proposed Ramsar sites; and – sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.”

Defra (2011). Biodiversity 2020: A Strategy For England's Wildlife And Ecosystem Services

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf

Department For Communities And Local Government (2012). National Planning Policy Framework

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/60777/2116950.pdf

Chartered Institute Of Ecology And Environmental Management (2016). Guidelines For Ecological Impact Assessment In The Uk And Ireland. Terrestrial, Freshwater And Coastal

http://www.cieem.net/data/files/Publications/EcIA_Guidelines_Terrestrial_Freshwater_and_Coastal_Jan_2016.pdf

British Standard 42020:2013 Biodiversity. Code Of Practice For Planning And Development

<http://www.bsigroup.com/LocalFiles/en-GB/biodiversity/BS-42020-Smart-Guide.pdf>

Joint Nature Conservation Committee (2010). Handbook For Phase 1 Habitat Survey. A Technique For Environmental Audit. Jncc, Peterborough.

http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf

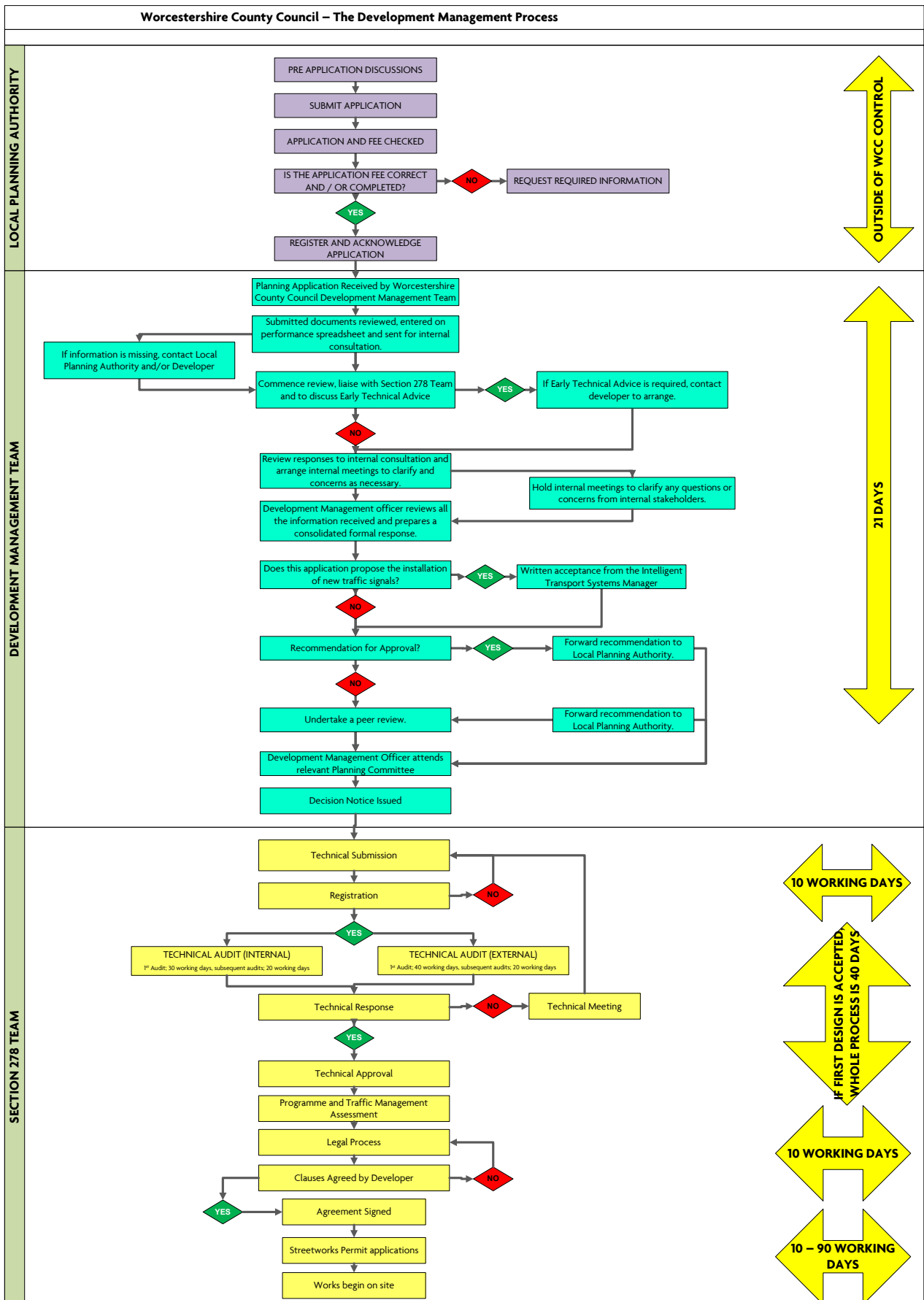
Highways Agency (1993). Design Manual For Roads And Bridges, Volume 11 Section 3 Part 4 Ecology And Nature Conservation

<http://www.standardsforhighways.co.uk/ha/standards/ - Volume 11, Section 3>

Highways Agency (2008). Design Manual For Roads And Bridges Volume 11 Section 2 Part 5 Assessment And Management Of Environmental Effects

<http://www.standardsforhighways.co.uk/ha/standards/ - Volume 11, Section 2>

Appendix D – Development Management Flow Chart



Worcestershire County Council

You can contact us in the following ways:

By telephone:

01905 844887

By post:

Economy and Infrastructure Directorate
Worcestershire County Council,
County Hall,
Spetchley Road,
Worcester WR5 2NP

By email:

Transportstrategy@worcestershire.gov.uk

Online:

www.worcestershire.gov.uk



Worcestershire
Local Enterprise Partnership



worcestershire
county council