

Living Streets

A Highways Guide for Developers in Wokingham



Contents

Abbreviations	4
1.0 Introduction	5
1.1 The Purpose of the Design Guide	5
1.2 Local Policy Context	5
1.3 Philosophy for all Development.....	7
2.0 Design Principles and Standards for All New Development.....	9
2.1 Introduction	9
2.2 Small Scale Development.....	9
2.3 Provision for Pedestrians	9
2.4 Public Rights of Way	10
2.5 Provision for Cyclists & Combined Facilities	11
2.6 Equestrians.....	11
2.7 Provision for Public Transport.....	11
2.8 Provision for Emergency Vehicles.....	12
2.9 Provision for Service & Refuse Vehicles.....	12
2.10 Designing for Low Traffic Speeds	12
2.11 Street Clutter.....	13
2.12 Signs and Markings	13
2.13 Street Nameplates	14
2.14 Street Lighting.....	14
2.15 Landscaping and Trees.....	15
2.16 Carriageway Alignment, Gradient and Width.....	16
2.17 Junctions	17
2.18 Traffic Signal Installations	17
2.19 Visibility and Sightlines	18
2.20 Frontage Access	18
2.21 Vehicles Turning.....	19
2.22 Security	19
2.23 Residential Street Hierarchy	19
2.24 Materials and Maintenance	20
2.25 Drainage & SuDS	20
2.26 Provision of New Statutory Utilities.....	21

2.27	Parking	22
3.0	Procedures	24
3.1	Introduction	24
3.2	Pre-Application Discussions	24
3.3	Transport Assessments, Traffic Modelling and Travel Plans	24
3.4	Adoption Policy	25
3.5	The Advance Payments Code.....	26
3.6	Procedure for the Submission of Design Drawings for Acceptance	27
3.7	Road Safety Audits	28
3.8	Departures from Standards	29
3.9	Defining the Highway Boundary	29
3.10	New Roads and Street Works Act 1991 & Section 50.....	29
3.11	Traffic Regulation Orders	30
4.0	Agreements	31
4.1	Introduction	31
4.2	Section 106 Agreements	31
4.3	Section 38 Agreements	31
4.4	Section 278 Agreements	33
4.5	Bonds	33
4.6	Section 184 Agreement / Licence	33
4.7	Section 228 Agreements	34
4.8	Commuted Sums	34
	References.....	39

List of Tables

Table 1: Walk Distances to Key Destinations and Levels of Accessibility.....	9
--	---

List of Figures

Figure 1: Design Review and Planning Approval.....	36
Figure 2 Adopted Highways: Technical Review and Delivery Process	37
Figure 3 Unadopted Highways: Technical Review and Delivery Process.....	38

Appendices

Appendix A	Street Hierarchy & Highway Palette of Materials Tables
Appendix B	Guidance on Public Rights of Way
Appendix C	Guidance for Emergency & Refuse Vehicles
Appendix D	Trees & Landscaping Additional Information
Appendix E	Electric Vehicle Charging
Appendix F	Advance Payments Code

Key Documents (Key Docs)

- Key Document 1: Highway Standard Details **(WBC, To be Published)**
- Key Document 2: Commuted Sums Calculator **(WBC, To be Published)**
- Key Document 3: Sustainable Drainage Systems Strategy (WBC, 2017)
- Key Document 4: Parking Standards Study Report (WBC, 2011a)

Abbreviations

APC	Advance Payments Code
CEMP	Construction Environmental Management Plan
CIL	Community Infrastructure Levy
CPZ	Controlled Parking Zone (parking enforcement by WBC)
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DP	Development Plan
EV	Electric Vehicle
HDG	Highway Design Guide
ITS	Intelligent Transport Systems
LED	Light Emitting Diode
LPU	Local Plan Update
LTP3	Local Transport Plan 3 (Wokingham BC's)
LTP4	Local Transport Plan 4 (Wokingham BC's)
MDDL	Managing Development Delivery Local Plan
MfS1	Manual for Streets 1
MfS2	Manual for Streets 2
NPV	Net Present Value
PROW	Public Rights of Way
PS	Project Sponsor
RTPI	Real Time Passenger Information
SCS	Sustainable Community Strategy
SDL	Strategic Development Location
SPD	Supplementary Planning Document
SuDS	Sustainable Drainage Systems
TA	Transport Assessment
TPO	Tree Preservation Order
TRO	Traffic Regulation Order
WBC	Wokingham Borough Council

1.0 Introduction

1.1 The Purpose of the Design Guide

1.1.1 Welcome to *Living Streets: A Highways Guide for Developers in Wokingham*. The document aims to outline the key principles to follow when producing new highway layouts for all types of development. These layouts should be compliant with the philosophy of *Manual for Streets* (DfT, 2007c) and *Manual for Streets 2* (CIHT, 2010) by creating quality places that are fully accessible by all modes of transport.

1.1.2 This guide supersedes the existing Wokingham Highway Design Guide (2006). It should be used in conjunction with the *Wokingham Borough Design Guide* (WBC, 2012), Wokingham transport policy guidance documents as referred in this document and any subsequent relevant documents.

1.1.3 Highways associated with development involve processes and procedures which are detailed in Chapter 3 of this guide. The process will generally begin at the planning application stage with WBC's Planning Department and the Highways Development Control Team. It then progresses to other members of the Team who deal with the Section 278 and 38 agreements and site supervision. Depending on the characteristics of proposals, specialist inputs from WBC will be necessary in town planning, landscape, drainage, public rights of way, arboriculture, street lighting, traffic management, and highway structures such as bridges and culverts.

1.1.4 Wokingham Borough Council supports the design principles advocated within *MfS1* and *MfS2* and encourages users of this guide to apply these in the design process for any development proposals.

1.1.5 For more information, queries or plan submissions please email HighwaysDC@wokingham.gov.uk.

Manual for Streets (MfS1)

1.1.6 MfS1 states that a crucial factor in the design of a new development is the consideration of the needs of the street users. This means that the design should aim to be inclusive, providing, wherever possible, the opportunity for all kinds of road users to fully access the facilities of the development.

Manual for Streets 2 (MfS2)

1.1.7 MfS2 does not supersede MfS1 but sets out how the principles should be applied beyond the urban street, to cover busier streets and non-trunk roads for both the urban and rural networks. Through guidance and example case studies the document aims to bridge the perceived gap between the Department for Transport's *Design Manual for Roads and Bridges* (DMRB) and MfS1, to inform future design.

1.2 Local Policy Context

1.2.1 This guide is also intended as a supplementary document to support the Development Plan for Wokingham Borough. For the purposes of this Highways Design Guide, the primary documents for consideration are the Core Strategy

(WBC, 2010) and the Managing Development Delivery Local Plan (MDDLP) (WBC, 2014). The Core Strategy sets out a number of policies that are relevant to this Guide, including CP1 (Sustainable Development), CP3 (General Principles for Development) and CP6 (Managing Travel Demand).

Core Strategy Approach

- 1.2.2 As part of the current strategy, development will be delivered to sustain economic growth of the area and ensure that the needs of all users have been considered. The Core Strategy identifies four new communities that will accommodate the majority of the 13,000 new homes required in the borough up to 2026. Each community will be supported by significant infrastructure investment, including schools, roads and open spaces, to provide sustainable, well-designed mixed-use development. This aims to reduce the need to travel, by providing sustainable alternative travel options. 1.2.3 As a result, a key part of the strategy is the provision of a good transport system. To do this, adequate capacity will be provided on public transport networks to access services and facilities that are not within easy walking distance.
- 1.2.4 Policies also set out how development proposals will need to respect the existing character and appearance of an area and be designed to retain and enhance local distinctiveness and a sense of place. The Borough Design Guide (2012) sets out further guidance on development to maximise design quality.
- 1.2.5 A new Local Plan is being prepared that will set out the long-term development strategy for the borough, known as the Local Plan Update (LPU). Further information on the preparation of the LPU, including supporting evidence and the timescale for adoption are available from the council's website.¹

Local Transport Plan

- 1.2.6 *Wokingham's third Local Transport Plan (LTP3)* (WBC, 2011d) sets out the Borough's Transport Strategy to 2026. The overriding vision of Wokingham's LTP3 is:
- "To provide a cost-effective, inclusive transport network that enhances the economic, social and environmental prospects of the Borough whilst promoting the safety, health and wellbeing of those that use it".*
- 1.2.7 In order to meet this vision, the LTP3 has five key goals that will be used as the basis for developing further policy and scheme options. These goals are as follows:
- **Highways Goal:** To have a resilient, safe highway network that balances capacity for all users, enhances the economic prospects of the Borough, and promotes sustainable travel.
 - **Active Travel Goal:** To work with partners to promote walking and cycling as health-enhancing physical activities for all of our residents through providing:

¹ <https://www.wokingham.gov.uk/planning-policy/planning-policy-information/local-plan-update/>

- Connected, convenient, safe and signed pedestrian networks across the Borough to enhance existing networks;
- New cycleways integrated with the existing cycle network; and
- Improved cycle parking at stations, businesses and schools.
- **Public Transport Goal:** To promote an integrated and inclusive public transport network that provides a convenient, acceptable, reliable and affordable alternative to car travel.
- **Smarter Choices and Demand Management Goal:** To enable people who live, visit and work in the Borough to make informed, safe and sustainable travel decisions from a range of transport options.
- **Strategic Projects Goal:** To manage the demand for travel in order to ensure that people have a high level of access to different destinations, with sufficient choice, whilst minimising the adverse effects of congestion.

1.2.8 The LTP4 is being worked on and a draft for consultation is expected later in 2019.

Sustainable Community Strategy (SCS)

1.2.9 *Wokingham's SCS* (Wokingham Borough Sustainable Partnership, 2010b) sets out a vision for Wokingham's future as a community. This includes social, economic and *environmental* sustainability objectives and covers the period 2010 to 2020. The design of the built environment is a crucial element of a sustainable future for Wokingham and this guide aims to support the policies in the strategy.

Wokingham Borough Council Design Guide

1.2.10 The *Borough Design Guide* (2010c) has been prepared to advise designers and applicants when formulating development proposals and to help the Local Authority assess planning applications. It provides guidance on urban design, streets and spaces, and development layouts.

Parking Standards Study Report

1.2.11 This document (Key Doc 5) (WBC, 2011a) provides guidance on the design and volume of car parking, cycle parking and motorcycle parking. It is identified as a key document within the Borough Design Guide. This is partly a research document and the parking standards are reproduced in Appendix 2 of the MDDL (WBC, 2014). Appendix E of Living Streets contains some updates including Electric Vehicle charging requirements.

1.3 Philosophy for all Development

1.3.1 It is expected that all development that takes place in Wokingham will adhere to all relevant national, regional and local planning policy and guidance, national highway rules and regulations. Developers should refer to MfS1 and MfS2, on which the design philosophy of this document is based, and the Development Plan.

1.3.2 In the first stages of any potential development it is vital that the following design principles are considered, irrespective of land-use type or scale:

- The local character and context of the area
- The movement and place function of a development site
- The hierarchy of travel modes, involving the promotion of sustainable modes of travel above private motor vehicles
- The creation of sustainable developments and communities
- Quality public realm in association with Green Infrastructure.

2.0 Design Principles and Standards for All New Development

2.1 Introduction

2.1.1 This section outlines the key principles, design standards and details that developers should apply to their schemes when designing new roads or altering existing road layouts. As stated in the previous section, new layouts for development should be compliant with the philosophy of MfS1 and MfS2 by the creation of quality places that are fully accessible by all modes of transport. Streets should also comply with the Healthy Street Guidance (TfL, 2017a) and assessment indicators (TfL 2017b).

2.1.2 All development proposals should follow the user access hierarchy whatever the size of the development. This hierarchy is as follows:

- 1st Pedestrians
- 2nd Cyclists
- 3rd Public Transport
- 4th Specialist service vehicles (emergency services and waste collection)
- 5th Other motor traffic.

2.1.3 There are other technical matters that need to be taken in consideration with any highway proposals and these will include SuDS, highway design, landscaping and traffic management and should be considered at the outset as part of the master planning process.

2.1.4 As stated in the *Borough Design Guide*, (WBC, 2010c) there is a wide variety of environments in the Borough and many are attractive places to live and work. Any new developments will have to respond to the character of the surrounding area in a positive way to provide high quality environment. It is important to understand the context of the development area and to identify surrounding street character types and the wider landscape character as identified in the Borough Design Guide.

2.2 Small Scale Development

2.2.1 Where small scale development takes place (generally 5 or less dwellings, although in planning 'major' development is 10 dwellings or more) it may be difficult to fully apply the guidance in MfS1 and MfS2. Therefore, a balance may need to be reached in providing a modern design that encompasses MfS whilst allowing integration into the surrounding area.

2.3 Provision for Pedestrians

2.3.1 Safe and convenient provision for pedestrians should be one of the fundamental elements in the design of new development layouts. The design should ensure safe and direct routes within the development site and to existing adjacent development, services and amenities (CIHT, 2015). Streets should be designed in accordance with the Healthy Streets guidance (TfL, 2017a) and assessments carried out to ensure they comply (TfL, 2017b). Pedestrian routes must also be considered in respect of the *Crime and Disorder Act 1998* and the *Disability and Equality Act 2010*.

- 2.3.2 The design of pedestrian routes must consider the need for the provision for people with mobility and visual impairments. People will generally prefer to walk along footways where they can be seen, either by residents, or by traffic. Pedestrian routes will need to be carefully planned if people using them are to feel safe, and be designed to accord generally with the principles and spirit of the *Safer Places: The Planning System and Crime Prevention* (Department for Communities and Local Government, 2004) and the DfT document entitled *Inclusive Mobility* (Department for Transport, 2005). In general, providing a safe, segregated pedestrian and/or cycle route away from traffic is desirable.
- 2.3.3 The layout of development should enable pedestrians and cyclists to move easily between different parts of the layout and adjoining networks. It is expected that all developments will provide safe and well-lit pedestrian links to services such as train stations and bus stops, local shops and community facilities, leisure facilities and schools / colleges.
- 2.3.4 Table 1 below sets out some walk distance ranges to key destinations partly based on, *Providing for Journeys on Foot* (IHT, 2000). These assist in defining the sustainability of development sites. WBC would expect developments to fall within the high to medium categories of accessibility for a site to be sustainable.

Table 1: Walk Distances to Key Destinations & Levels of Accessibility

Facility / Land Use	Level of Accessibility		
	High	Medium	Low
Bus stop (with regular service)	<300m	<400m	>400m
GP surgery	<800m	800-1200m	>1200m
Community facility	<800m	800-1200m	>1200m
Local shop	<800m	800-1200m	>1200m
Post office	<800m	800-1200m	>1200m
Primary / Nursery School	<800m	800-1200m	>1200m
Secondary School	<1000m	1000-2000m	>2000m
Core employment area	<1000m	1000-2000m	>2000m
Rail Station	<1000m	1000-2000m	>2000m

Note: These are actual walk distances (not crowfly), lit & safe.

- 2.3.5 Mobility and visually impaired people especially in relation to gradients and widths of pedestrian routes must also be taken into account in all designs. Dropped kerbs together with tactile surfaces will be required at crossing points in accordance with the DfT publication *Guidance on the use of tactile paving surfaces* (Department for Transport, 2007a).

2.4 Public Rights of Way

- 2.4.1 Any potential impact of development on Public Rights of Way (PROW) should be examined at an early stage and the aim is to protect Public Rights of Way. If a diversion is required, then the new route should be direct as possible, secure, visually attractive and as a minimum designed to match the existing provision. Where PROWs are potentially affected by development proposals then the WBC PROW officers must be consulted at an early stage of the planning process. Please refer to Appendix A which contains some guidance about Public Rights of Way. For information there is a PROW Improvement Plan (WBC, 2010c) and there is an emerging document for 2020-2030.

2.5 Provision for Cyclists & Combined Facilities

- 2.5.1 The provision of cycling facilities is also essential for all developments. They should accord with the Council's *Cycle Infrastructure Style Guide* (WBC, 2013b), advice given in Sustrans documents such as the *Connect2 Greenway Design Guide* (Sustrans, 2016) and *Handbook for Cycle Friendly Infrastructure* (Sustrans 2014). There are also several DfT documents including *Local Transport Note 2/08* (DfT, 2008).
- 2.5.2 Personal security for off-road cycle facilities must be considered. Routes that have natural surveillance are preferred. For routes that cater for evening journeys, it will be appropriate to install lighting. Blind corners should be avoided by maintaining a minimum forward visibility.
- 2.5.5 Developments must include the provision of safe cycle links to all local amenities, including rail stations, local shops, community and leisure facilities as well as local schools / colleges.
- 2.5.6 Where contrasting coloured surfacing is required it will be provided in accordance with the Wokingham Borough's (2011f) *Code of Practice for the Use of Coloured Surfaces in Road Layouts* and /or the *Materials Palette* (KD1).

2.6 Equestrians

- 2.6.1 In rural areas a developer may need to consider access by equestrian highway users. Equestrian routes may include bridleways and other rights of way open to horses and riders.
- 2.6.2 When designing for equestrian use, national guidance TA/90/05² (Highways Agency, 2005) and *MfS* must be considered in respect to the needs of these users in the design. Where highway crossings are required, then Pegasus crossings and/or appropriate alternatives will be necessary.

2.7 Provision for Public Transport

- 2.7.1 Encouraging the use of public transport is a key consideration in any new development and should be planned at an early stage. The need for public transport access into, and permeability through the development, will have a major influence on the design of the movement network. Discussions should be held with the Highway Authority at an early stage to determine the need to provide public transport routes and associated services. Key recommended guidance is provided in the *CIHT Buses in Urban Developments* (CIHT, 2018b), *Stagecoach Bus Services & New Residential Developments*, (Stagecoach, 2017), *IHT Planning for Public Transport in Developments* (IHT, 1999) and *Wokingham Borough Council's Bus Stop Policy* (WBC, 2013a).

² Design Manual for Roads and Bridges Volume 6 Section 3 Part 5 TA/90/05 The Geometric Design Of Pedestrian, Cycle and Equestrian Routes (Highways Agency, 2005) Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/dmr/vol6>

- 2.7.2 Tortuous routes and long loops should be avoided whenever possible. The furthest walking distance to a bus stop should be no more than 400m. This is based on the IHT guidance (IHT, 1999) which represents five minutes walking and preferably no more than 300m. Consideration must be given to the gradient and pedestrian facilities on-route when calculating walking times and distances. More recent guidance such as by Stagecoach (Stagecoach, 2017) recommends an efficient bus routing strategy, serving the great majority of dwellings well, rather than serving all homes poorly with a low-frequency or indirect service.
- 2.7.3 All facilities for bus users should be provided in accordance with Wokingham Borough Council's Bus Stop Policy (WBC, 2013a). Developments need to consider bus routes and stops at the outset of their proposals and not as an afterthought 'to fit in later'.

2.8 Provision for Emergency Vehicles

- 2.8.1 Adequate access must be provided for Emergency Service Vehicles and consultation with the Emergency Services is essential at an early stage within the planning application process. Good permeability of layout design can often avoid the need for an independent access. If an independent access is required, this should be no less than 3.7 metres wide and connected to a part of the highway network that is remote from the primary access.
- 2.8.2 Further guidance on emergency vehicle provision is contained in Appendix B.

2.9 Provision for Service & Refuse Vehicles

- 2.9.1 Refuse collection is an important consideration in layout design but should not dominate the shaping of the area. When considering the movements of refuse vehicles, effective layout design can often avoid the need for difficult layouts such as cul-de-sacs and requirements for turning heads. More information about refuse vehicle requirements can be found in BS 5906: 2005 *Waste Management in Buildings: Code of Practice* (British Standards Institute, 2005) and The Building Regulations Part H (2000) (Office of the Deputy Prime Minister, 2002).
- 2.9.2 More guidance on service and refuse vehicles is contained in Appendix B and *Guidance Notes for Developers (Waste and Recycling)*, (WBC, 2016).
- 2.9.3 Access and other arrangements for the servicing of, and the loading and unloading of goods for industrial, retail and other commercial developments will depend on individual operational needs and should be agreed during discussion with WBC at the pre-application stage. Planning policy on service arrangements and delivery for employment and retail use is set out in policy TB20 of the MDDLDP.

2.10 Designing for Low Traffic Speeds

- 2.10.1 The design of a development should create an environment that naturally encourages appropriate speeds. Where traffic flows are low, and the primary purpose of the area is a place to live, speed limitation should form an integral part of the overall design and not be designed as an afterthought. Ideally,

designers should aim to create streets that control vehicle speeds naturally rather than having to rely on unsympathetic traffic-calming measures.

- 2.10.2 Details of potential speed restraint measures for residential areas are provided in *MfS*. If traffic calming features are being considered, it should be noted that all relevant legislation such as *The Highways (Road Humps) Regulations 1999*, *The Highways (Traffic Calming) Regulations 1999* and the *Traffic Signs Regulations and General Directions 2016* as amended must be adhered to.
- 2.10.3 For new residential streets, a maximum design speed of 20mph should normally be used, but it depends on the category of street and layout. Refer to the Street Hierarchy and Materials Palette (Key Doc 2) which identifies the recommended design speeds by street type. In urban areas design speeds should consider all road users and keeping speeds low can have safety benefits for motor traffic, pedestrians and cyclists. Further advice on setting speed limits is detailed in *MfS* and DfT *Circular 01/B Setting Local Speed Limits* (Department for Transport, 2013).
- 2.10.4 Horizontal speed features will generally be used in preference to vertical features. Vertical features will rarely be accepted as they tend to introduce noise, vibrations and maintenance issues that would not need to be introduced using more sympathetic design.
- 2.10.5 The geometric design of new carriageways of 40mph and above is governed by the selected design speed as specified in the document *DMRB (Design Manual for Roads and Bridges) TD 9/93*³.
- 2.10.6 For the purposes of residential layout design it is deemed more appropriate to use those design guidelines contained in *MfS1* and *MfS2*. Design speeds by street type are identified in the Street Hierarchy and Highway Materials Palette in Key Doc 1.

2.11 Street Clutter

- 2.11.1 Designs should aim to reduce the need for unnecessary street furniture such as signing, bollards, railings, road markings, street lighting and signals equipment. While street design must take account of safety and comply with highway regulations, unnecessary street furniture takes up valuable space, can obstruct sight lines and detracts from the street scene. Excess street clutter can also distract drivers and be an obstruction for pedestrians.
- 2.11.2 Where necessary the designer should consider the size, style, colour, materials and frequency of furniture to ensure its impact on the streetscape is minimised. Guidance on the steps of de-cluttering existing streets, and the benefits of this, can be found in *MfS1*, *MfS2* and the Borough Design Guide (WBC, 2012).

2.12 Signs and Markings

- 2.12.1 Signing and lining on the existing and new highway to be adopted must be provide in accordance with the Government Statutory Instrument Traffic Signs Regulations and General Directions and associated Traffic Signs Manuals. The

³ Design Manual for Roads and Bridges: Volume 6, Section 1 TD 9/93 Highway Link Design (Highways Agency, 2002)
Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/dmr/b/vol6>

proliferation of signing and road markings can add to street clutter and may confuse drivers. Limiting the number of signs can encourage drivers to proceed with added caution and interact more effectively with other streets users and the environment in which they are travelling.

- 2.12.2 In rural areas additional measures can be taken by developers to reduce street clutter and the intrusiveness of signing. It is important to remember that the important part of road signs is the sign face, while the pole and back of the sign should remain as unobtrusive as possible. Developers should within the confines of the signing regulations make signing as unobtrusive as possible.
- 2.12.3 Sign plates will be made from composite anti-theft materials and sign faces will be reflective to a high intensity prismatic finish. All signs requiring illumination will where possible be powered by or supplemented with sustainable energy.
- 2.12.4 Signs mounted on bollards will be mounted on a passively safe rebound bollard that can be illuminated internally by LEDs or used in a non-illuminated way.
- 2.12.5 Signs should be sited in such a manner not to impact visibility of traffic signals and the effect of street lighting.
- 2.12.6 Signs should be sited away from trees.

2.13 Street Nameplates

- 2.13.1 Wokingham Borough Council is responsible for street naming and numbering. Street nameplates for new development shall be manufactured in accordance with the Council's specification and be fully funded by developers.
- 2.13.2 Street nameplates should be sited within the limits of the adopted highway on both sides of the road at junctions and along the major road opposite each side road unless otherwise agreed. At least one street nameplate will be visible to all road users approaching from any direction and be located at the entrance to streets from cycleways and footways.
- 2.13.2 Street nameplates for a single access road or series of roads should include all relevant information including 'No Through Road' symbols. Street nameplates for roads not being offered for adoption should include the word 'private'.

2.14 Street Lighting

- 2.14.1 The Developer is responsible for providing street lighting on all new roads and footpaths for adoption unless there is agreement with WBC that the site should not be lit. In addition, all developments of 5 dwellings or more should also have street lighting unless otherwise agreed in writing by WBC. New lighting must comply with current British Standards [including Electrical Standards] as well as WBC Street lighting design standards. Complete calculations must be submitted to the Highway Authority for acceptance.
- 2.14.2 All street lighting layouts and equipment specifications on new housing developments will require acceptance from WBC before they are accepted as part of an agreement to adopt a road as public highway. The lighting design shall be undertaken by a suitably experienced and qualified lighting engineer at the developer's expense. All street lighting energy charges will be paid by the developer until the lights are adopted by WBC.

- 2.14.3 The column locations, lantern aiming directions, column numbering and use of “louvers” or “baffles” shall be shown on the final adoption drawing. The drawing shall include a key to show the agreed column heights, lantern types, lantern aiming positions, lantern bowl/glazing types, lamp types and control types.
- 2.14.4 Once approved, the design and specification shall not be modified without the consent of the Council’s Engineer. Any modifications to the original approved design shall be indicated on an “as built” drawing which shall be provided to the Council prior to adoption.
- 2.14.5 More detailed guidance is available from *Street Lighting Design, Adoption Process and Specification*, (WBC 2013c). There are also two appendices to this document, and they detail the specification requirements for the lighting and columns.

2.15 Landscaping and Trees

- 2.15.1 There should be an integrated approach to the design of the public realm and that should be reflected in the retention of existing vegetation and appropriate space given for new planting including street trees.
- Street trees, new and existing, contribute to the character and distinctiveness of all built development and provide the following benefits:
- Social – by improving the health and wellbeing of the local population including reducing stress.
 - Environmental – reduces the urban heat island effect through evapotranspiration, shading and interception of storm water runoff.
 - Ecological – provision of wildlife habitats and provision of green corridors.
 - Economic – increase in property values.
- 2.15.2 As part of the design process all existing vegetation including trees will need to be surveyed and assessed by a competent Arboricultural Consultant in accordance with the guidelines given in *BS5837:2012 – Trees in relation to design, demolition and construction – Recommendations*. When designing new road layouts or altering existing layouts, proper consideration will need to be given to the retention of existing trees in relation to the benefits listed above and their contribution to the visual amenity of the area. Trees will need to be considered as a significant constraint to development and highway layouts will need to provide the necessary space for their retention and protection during the construction process for their long-term survival in accordance with BS5837:2012. Trees may also be protected by Tree Preservation Orders (TPOs) and this will need to be a material consideration in the design process. Developers and/or their Arboricultural Consultant will need to check with WBC Tree and Landscape team as to whether there are any TPOs on or adjacent to the site and the information included within the Tree Survey.
- 2.15.3 Where existing trees need to be removed either due to the tree’s condition or design requirements (such as in visibility splay), the developer will need to provide replacements. The number will depend on the size and quantity of the tree(s) to be removed. Early discussion with the WBC Tree and Landscape Team is recommended.
- 2.15.4 All new development will need to provide sufficient space within the development to include street tree planting especially along primary streets and where appropriate this will need to be included as part of a Green Infrastructure

proposal. The location of street trees as well as other specimen trees throughout the development should not cause significant future maintenance problems either above or below ground. This includes siting new trees away from traffic lights, street lighting and signage. An integrated approach to master planning and the multi-disciplinary design team with Landscape Architect and Arboricultural Consultant involvement from the outset to consider issues such as location, species and tree pit design. Special attention should be given to the selection of species appropriate to the location. Large, mature, long-lived trees deliver substantial benefits to developments therefore the maturity, health and longevity of the tree needs to be considered at the outset of the design process.

2.15.5 Appendix C contains further guidance on trees and landscaping and details on:

- Tree species
- Tree pit specifications
- Maintenance of trees and soft landscaping.

2.16 Carriageway Alignment, Gradient and Width

2.16.1 Carriageway width, alignment and gradients are outlined in MfS, DMRB TD9/93 and WBC Street Hierarchy & Palette of Materials document in Key Doc 1. Where the development connects to the existing highway the design will follow the design principals of the main carriageway. Some of the main considerations for the designer include:

- The types, volumes and composition of vehicular traffic
- The volume and composition of pedestrian/cyclist activity
- The design speed
- The method of demarcation between carriageway and footway
- Whether parking is to take place on the carriageway and if so, the details of such parking
- The curvature of a carriageway, radii and including any curve-widening needs
- Carriageway longitudinal gradients
- Carriageway in cross-sectional profile
- Any intention to include one-way streets or other such traffic management measures
- A parking bay and walkable access shall be provided for a maintenance vehicle and operative at any traffic signals site.
- Forward visibility and Stopping Sight Distances resultant from the chosen design speed
- Skid resistance and the associated in-service dry and wet-weather general surface friction characteristics of the chosen surface materials.

2.16.2 For the design of residential streets also refer to the Street Hierarchy and Highway Materials Palette in Key Doc 1. This identifies a range of recommended highway design characteristics by street type. New streets should also comply with the Health Streets guidance (TfL, 2017a) and be assessed for their Healthy Street Indicators (TfL, 2017b).

- 2.16.3 The WBC highway standard details are contained in Core Doc 2. These include an extensive set of highway details and should be followed where possible.

2.17 Junctions

- 2.17.1 When designing highway junctions, it will be necessary to consider the needs of all road users, notably pedestrians and cyclists. In addition, vehicular capacity, geometrical movement and limiting constraints all need to be considered. It is important to achieve a good balance between the environment and the functional needs of the junction and therefore the choice of junction design should be made after considering all such requirements.
- 2.17.2 The swept path requirements of larger vehicles can have a major impact on the overall space required for the junction. Junction radii should be kept to the minimum required to accommodate the swept path safely without overhanging the footway or adjacent traffic lanes. Where the use by large vehicles is infrequent and traffic speeds are low, a design can include:
- the use of both sides of the carriageway, provided there is sufficient forward inter-visibility;
 - Over-runable areas.
- 2.17.3 Within most residential areas simple priority junctions will provide ample capacity to accommodate the expected levels of traffic flow. The three basic types of priority junctions are T junctions, staggered junctions and crossroads. Where flows are higher, right turn lanes may be appropriate and these provide the opportunity to add in a pedestrian and/or cycle refuge.
- 2.17.4 Further guidance on design of junctions in residential areas is provided in MfS1/MfS2, WBC Street Hierarchy and Palette of Materials Document in Key Doc 1.

2.18 Traffic Signal Installations

- 2.18.1 There may be instances where a new development requires the provision of a signalised access junction, a signalised pedestrian crossing or upgrade to an existing signalised installation. The Highway Authority has prepared detailed Technical Requirements for the design and construction of traffic signal installations. This document should be appended to any Appendix 12/5⁴ submission. This can be located on the Council's website or will be supplied on request from the Council's Traffic Management or Development Control Teams.
- 2.18.2 Developers should be aware that the Highway Authority will require all new or upgraded installations to be equipped with Extra Low Voltage (ELV) equipment and have remote monitoring via a system compatible with the Council's monitoring equipment.

⁴ Manual of Contract Documents for Highway Works, Volume 1: Specification of Highway Works: Traffic Signs & Volume 2: Notes for Guidance on the Specification for Highway Works: Traffic Signs (Department for Transport, 2017) Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/mchw/vol1/index.htm>

2.18.3 For all new traffic signal installations or modifications to existing installations, the following information will be required as a minimum before Technical Acceptance can be granted:

- Traffic signal and design drawings
- Appendix 12/5 specification (based on the council's standards document)
- TR2500 controller configuration forms (Highways Agency, 2005)
- Design Statement (including any capacity modelling)
- Safety Case (TA/84/06⁵ compliant)
- Designer's Risk Assessments (TA/84/06 compliant)
- Intergreen calculations (for junctions).

Commuted sums will be sought for the installation of any new traffic signal installation. These are set out in Key Doc 3.

- All apparatus shall be sited in such a manner that maintenance is possible without the need of traffic management (for examples cabinets not placed in the central reservation). Where traffic management will be required, this will be added to the commuted sum.

2.19 Visibility and Sightlines

2.19.1 Drivers need to see and be seen. They need to be aware of all road users and it is necessary to provide clear unobstructed [save for minor, permitted obstructions] forward visibility, of a distance related to design speed.

2.19.2 Designers should follow guidance in MfS for residential streets and MfS2 for non-residential streets with a speed limit of 40mph or less (to be more precise 85th percentile speeds up to 37mph). For roads with speeds above 40mph minimum visibility requirements can be found in *TD9/93*⁶ and *TD42/95*⁷.

2.19.3 Vegetation and street furniture shall be placed appropriately.

2.20 Frontage Access

2.20.1 The design of frontage access onto a street will depend on the street type and these are indicated in the Highways Materials Palette Tables in Appendix A. Access is a key part of the place function of streets and should be facilitated where required. Where driveways meet the rear of footways sufficient inter-visibility should be provided between drivers and pedestrians, a minimum of 2m x 2m. Where the driveway crosses a cycle route more inter-visibility will be required.

5 Design Manual for Roads and Bridges Volume 8, Section 1 Traffic Signals and Control Equipment, Part 2, TA 84/06 Code of Practice for Traffic Control and Information Systems for all-purpose roads (Highways Agency, 2006) Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/DMRB/vol8/index.htm>

6 Design Manual for Roads and Bridges Volume 6 Section 1 Part 1: Highway Link Design (Highways Agency, 2005) Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/dmr/vol6>

7 Design Manual for Roads and Bridges Volume 6 Section 2 Part 6: Geometric Design for Major / Minor Priority Junctions (Highways Agency, 1995). (Highways Agency, 1995) Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/dmr/vol6/section2/td4295.pdf>

- 2.20.2 Swept path analysis should confirm that the geometry allows safe and convenient movement for vehicles into and out of the access.

2.21 Vehicles Turning

- 2.21.1 In the design of new development layouts, effort should be made to avoid the need for turning areas by creating networks of linked streets. Traditional turning heads are particularly undesirable as they provide a space where usage is occasional. Other designs should be considered based on the character of the street and the buildings immediately fronting the turning area.
- 2.21.2 Design standards relating to waste collection vehicles are considered in Section 2.11, provision for service & refuse vehicles. More details are contained in Appendix C and Guidance Notes for Developers (Waste and Recycling), (WBC, 2016).

2.22 Security

- 2.22.1 All aspects of the design should reflect the need to reduce the risk and fear of crime and developers are encouraged to adopt the UK Police initiative supporting designing out crime entitled “Secured by Design” (www.securedbydesign.com).
- 2.22.2 Designs should aim for natural surveillance of thoroughfares, neighbours should be able to see each other’s houses and parking should ideally be where owners can see their own vehicles. Movement routes should be well overlooked to reduce the fear of crime and vulnerability. Play areas and their accesses need to be located where they have maximum natural surveillance. Refer also to the Streets and Spaces section in the Borough Design Guide (WBC, 2010c).

2.23 Residential Street Hierarchy

- 2.23.1 Developments in Wokingham such as the SDLs require a clear distinction of the street hierarchy which allows for a more intuitive navigation by all road users and helps to identify principal entry and exit routes. Street hierarchies can also contribute to character variation within developments. The Street Hierarchy and Highway Materials Palette Tables are contained in Appendix A. They detail many of the recommended highway geometry for each of the street types. There are four main categories: Primary, Secondary, Tertiary and Access Mews/Squares.
- 2.23.2 Primary Streets are major local roads and examples include Reading Road and the Northern and Southern Distributor Roads in Wokingham and the Nine Mile Ride extension in the Arborfield SDL. The carriageway will be wider than secondary streets – generally 7.3m minimum with potential widening on bends. Footpaths, cycleways and landscaping will be applied on both sides of the road and direct frontage accesses are discouraged.
- 2.23.3 Secondary Streets are residential streets that will normally be accessed from primary streets and will include some ‘through traffic’ facilitating access to tertiary streets and shared surface areas. An example would be the development at South of Croft Road in Spencers Wood where a central spine road routes through the development. They will often be fronted by housing on either side with limited direct access and on street parking will be in lay-bys. The main

carriageway will be 5.5m-6.1m with 6.1m minimum required if it is a bus route. On bends there is some widening defined by TRACK analysis.

2.23.4 Access to Tertiary Streets would usually be from a Secondary Street(s) although also occasionally from Primary Streets. Tertiary Streets are not generally through-routes and sit at the bottom of the street hierarchy. There is flexibility in the layout of these streets with the carriageway width a minimum of 5.0m.

2.23.5 Access Mews, Housing Squares & Parking Courtyards have residential dwellings accessed via Secondary or Tertiary Streets with a minimum width of 4.5m. Parking facilities are normally provided through a combination of on-curtilage driveway and allocated/unallocated off-road and courtyard parking. Courtyard parking should only be used sparingly and only where there are design constraints and a strong justification for doing so. Common access and turning space within courtyards should be paved to provide continuity with the tertiary street surface.

2.24 Materials and Maintenance

2.24.1 For carriageway and cycle/footway materials refer to the Highway Standard Details in Key Doc 1 and the Street Hierarchy Highway Materials Palette Tables in Appendix A.

2.24.2 All highway works that are to be adopted must be to a standard that is acceptable to the Council and a specification agreed and included in associated legal agreements relating to construction and adoption. In general terms, the specification relating to an agreement should be prepared on the basis of the WBC local standards or where this is not applicable, the Department for Transport's 'Specification for Highway Works'.

2.24.3 Note that the Standard Detail drawings in Key Doc 1, are likely to be continually reviewed and updated.

2.24.4 Developers will be expected to provide a CEMP for major development sites covering a range of topics including construction traffic movements, deliveries and lorry routes. Wheel cleaning facilities should also normally be provided on-site to prevent mud and debris being deposited on the public highway. In addition, adequate staff parking should be provided on-site, and developers should encourage staff to choose sustainable forms of transport by providing information and promoting vehicle sharing, walking and cycling.

2.25 Drainage & SuDS

2.25.1 An adequate system of drainage must be provided for surface water from roads, footways and cycleways. Final proposals in respect of the design, installation and any outfalls including SuDS and all associated flood modelling work will require sign-off and acceptance of the Highway Authority.

2.25.2 It is the responsibility of the Developer to make adequate and satisfactory outfall arrangements for highway drainage. It must not be assumed that permission will automatically be granted by the Highway Authority to make connections to the existing highway drainage system in adjacent maintained roads. It will not be acceptable for the highway to drain onto private land or vice versa.

- 2.25.3 The Highway Authority will not consider the road for adoption without an adequate highway drainage system provided. Piped surface water drainage systems for adoption shall minimally comply with the appropriate Sewers for Adoption document.
- 2.25.4 Sustainable Drainage Systems (SuDS) are the preferred method of surface water drainage. WBC has recently adopted a SuDS Strategy (WBC, 2017a) which specifies the approach and requirements of the Authority and please refer to this guidance for more details (Key Doc 3).
- 2.25.5 The SuDS should be designed to control surface water runoff close to where it falls and mimic natural drainage as closely as possible. A range of techniques can be used, and these techniques used in combination greatly improve water quality, biodiversity and amenity value and should be applied wherever practical and technically feasible. SuDS designs must be submitted to the Highway Authority and will be considered for acceptance following the existing process for traditional methods of drainage outlined in the SuDS Strategy.
- 2.25.6 In December 2014 the Department for Communities and Local Government (DCLG) gave Local Planning Authorities the powers to approve SuDS via planning conditions through the planning process. In the interests of safeguarding its future residents, the Council is currently working towards developing an Interim SuDS Adoption Policy. Where adoption takes place, commuted sums apply, and these are detailed in Key Doc 3 of the SuDS strategy.

2.26 Provision of New Statutory Utilities

- 2.26.1 The highway layout of all new developments should be designed to accommodate provision of utility services. It is essential that the developer contacts all relevant statutory undertakers early in the design process to ensure that connections and apparatus comply with recommendation of the National Joint Utilities Group. Services shall be placed either in the designated service margin or, where available, an adjacent combined foot/cycleway, unless otherwise agreed in writing by WBC. Subject to agreement with the Utility Companies' and landowner's approval, services can be routed away from adopted highway if necessary. The normal minimum widths for utilities margins required on residential streets are:
- 2.0m along housing frontages
 - 0.5m if no services
 - 1.0m for streetlights.
- 2.26.2 Due consideration must be given to the future maintenance of services. Provision of such services should not cause inconvenience to any user of the highway network or affect highway safety. Early negotiation with Utility Companies can enable these to be positioned within areas that do not directly affect the movement of people or vehicles, for example within areas of soft landscaping. Access to services shall not be provided within properties, under car parking areas or in areas that cannot be accessed without the need for basic Chapter 8 traffic management.
- 2.26.3 If the adopted highway or public open space is insufficient for statutory undertakers' apparatus, the developer must provide service routes with

satisfactory easements. It is the responsibility of the developer to agree such easements with the statutory undertakers concerned.

- 2.26.4 Positioning of services outside of the approved utility corridors will result in additional commuted sums being levied on the developer.

2.27 Parking

Car Parking

- 2.27.1 In line with national and regional guidance, parking areas should be specified as stated in WBC's (2011a) *Parking Standards Study Report*, Key Doc 5 or any successor Parking Standards document adopted by the Council. These standards indicate the minimum levels of private off-street parking for new developments and changes of use. It also includes a car parking calculator which identifies minimum parking supply and the levels of unallocated and visitor spaces. The distinction of unallocated (spaces not allocated to specific residential units) and visitors (for those visiting residents) does in some instances need to be differentiated on the layout, especially in parking courts. The Wokingham *Parking Standards Study Report* also identifies the preferred geometric layout for garages, on-street, off-street and disabled user parking bays.
- 2.27.2 The context of a new residential development inputs to determining the appropriate level of parking supply. This will be explained by the Transport Assessment, together with the accompanying Travel Plan or joining the My Journey Borough Travel Planning scheme. In addition to being functional, parking design should also be in keeping with the characteristics of the area.
- 2.27.3 The use of Electric vehicles (EVs) is expected to grow in the coming years and a major barrier to ownership is the ability to have an accessible charging point at the drivers' home. WBC are adopting a phased approach to increase EV charging points over a period between 2018 to 2030 and this is detailed in Appendix E.
- 2.27.4 Where car parking is intended not to be adopted, there should be a clear delineation on site as to the extent of the adopted area to ensure that residents are informed as to which areas (once adopted) are the responsibility of WBC and which areas are not.

Cycle Parking

- 2.27.6 Cycle parking must be considered early on the development design process to ensure it is well integrated. Minimum requirements for cycle parking are provided in the WBC *Parking Standards Study Report*, Key Doc 5 and Cycle Infrastructure Style Guide (WBC, 2013). It is noted that all cycle storage should be covered and located in an overlooked area. Further best practice guidance can also be found in *Sustrans Information Sheet FF37* (Sustrans, 2004).
- 2.27.6 Where there are cycle parking stores, details are presented in the Parking Standards Report (Key Doc 5). At flatted developments at least 2 Sheffield stands will be provided as visitor cycle parking near to the main entrance door.

Motorcycle Parking (or Powered Two Wheeler – PTW)

- 2.27.8 Motorcycle parking should be provided close to key trip attractors. The availability of secure parking spaces is particularly important in areas such as

public transport interchanges, workplaces, shopping and entertainment centres, where medium to long-term parking is expected.

- 2.27.9 Guidance on the geometric design standards and recommended level of motorcycle parking is provided in the WBC (2011a) *Parking Standards Study Report*, Key Doc 5. Other guidance can be found in MfS, Department for Transport's (2002) guidance on Motorcycle Parking and the Borough Design Guide (WBC, 2012).

Disabled Parking Requirements

- 2.27.10 Information relating to the provision of Blue Badge Parking and design together with allocation for specific developments can be found in the WBC (2011a) *Parking Standards Study Report*, Key Doc 5.

3.0 Procedures

3.1 Introduction

3.1.1 The guidance in this section is intended to help the developer understand the planning requirements, and procedures required for any development scheme affecting the highway. This section provides guidance on the following:

- pre-application discussions
- transport assessments, traffic modelling and travel plans
- adoption policy
- Advance Payments Code (APC)
- procedure for the acceptance of drawings and designs
- road safety audits
- departures from standards
- defining of the highway boundary
- New Roads and Streetworks Act 1991
- Traffic Regulation Orders.

3.1.2 There is a necessary process between the initial highway scheme design that requires planning permission to the highway opening to traffic as an adopted highway. Figure 1 summarises the transport and highways input to the planning application process. Figure 2 indicates the Section 38 and Section 278 highway adoption process.

3.2 Pre-Application Discussions

3.2.1 Developers and their agents are encouraged to have pre-application discussions at an early stage with the Council's Development Management Team. The planning officers in that Team will include other Council Service areas such as Highways Development Control in the pre-application discussions. Refer to the WBC Planning Department website for more details, forms and costs.

3.3 Transport Assessments, Traffic Modelling and Travel Plans

3.3.1 A Transport Assessment (TA) is required for all development above the land use threshold size. This will allow the transport implications of the proposed developments to be properly considered and, where appropriate, will help identify suitable measures to mitigate the highways and transport impact of a development. The need for and the level of scope required in the TA must be discussed with WBC at an early stage. In considering such a scope, the developer should refer to the Department for Transport's document (2007b): *Guidance on Transport Assessment*.

3.3.2 Transport Assessments will utilise the Wokingham Borough Traffic Models where appropriate to test the impact of schemes. Thresholds above which developments require the use of data from the Wokingham Transport Model are provided in the *Protocol for Use of the Wokingham Transport Models by Developers* (WBC, 2019). The use of the traffic model should be discussed with WBC when agreeing the scope of the TA. Where this is necessary, the modelling work will be undertaken by WBC but funded by the developer.

3.3.3 Many developments will require a Travel Plan or to sign up to WBC 'My Journey' programme for promoting active and sustainable travel across Wokingham

Borough. Travel planning is a management tool aimed at promoting active and sustainable travel as part of a new or existing development. The emphasis is on promoting healthy and low carbon transport options to residents and visitors and reducing the volume and length of car journeys. Travel Plans should be tailored to the circumstances of development proposals and should consider factors such as the skills and knowledge of the future residents/employees of the development as well as the quality of public transport services in the area, the availability of direct and coherent walking and cycling networks, local car parking restrictions, and demand management opportunities.

- 3.3.4 Wokingham Borough Council has prepared *Residential Travel Plan Guidance* (WBC, 2017b) and *Workplace Travel Plan Guidance* (WBC, 2011e) as a guide for developers preparing travel plans within the Borough. The WBC 'My Journey' approach to travelling planning is proving to be popular, simpler and more effective. These guidance documents should be considered by developers when preparing travel plans for submission as part of a planning application. Furthermore, pre-application discussions with the Council are advisable to determine the travel planning requirements that will be necessary to accompany a planning application.

3.4 Adoption Policy

- 3.4.1 Wokingham Borough Council is the Local Highway Authority for all the publicly maintained highways in Wokingham Borough, other than Trunk Roads.
- 3.4.2 The Council will usually seek the adoption of new residential streets serving more than five dwellings. Adopted highways become maintainable at public expense and will be subject to the Advance Payments Code. To be adopted, roads must be suitable in terms of layout, condition, function and specification for WBC. Planning permission for new development will be required and detailed application submissions should identify the measures to be undertaken to comply with the adoption requirements as included in this guide.
- 3.4.3 The normal mechanism for adopting a new highway is through a Section 38 agreement. Section 278 agreement adoptions apply to existing public highway outside the developers control to enable road improvements. The S38 and S278 agreements are referred to in more detail in the agreements chapter below, in sections 4.3 and 4.4. Figure 2 shows a flow chart of the design and delivery process when adopting a highway.
- 3.4.4 In some instances the new highway may not be adopted by choice of the developer or WBC. WBC may decline to adopt all or part of the highway if:
- The highway is not constructed to an adoptable standard
 - Utilities are placed in the carriageway instead of the service margins
 - There is tanked storage (SUDS) below the highway
 - Highways Structures such as bridges and culverts have not acquired the appropriate status from the council's technical approval process.

If this is the case, then a Section 106 Agreement will be required to indemnify the Council against future applications for adoption under the Private Streets and Works Act. This will normally include clauses as set out below in para 3.4.5.

3.4.5 Developers may prefer not to offer the highways for adoption for a variety of reasons. However, the highway will still be required to be constructed to an adoptable standard and the Advance Payments Code and inspections fees still apply. The process is summarised in Figure 3 which is largely similar to the highway adoption process except that there is not a Section 38 agreement. A Section 106 agreement will also be required which includes clauses on:

- indemnifying the Council against future applications for adoption under the Private Streets and Works Act
- Ensuring that the highway is maintained in perpetuity and a maintenance agreement is set up for maintaining the private highway
- There is initial funding to cover the costs of the maintenance agreement
- Access rights across the private highway.

3.4.6 A highway generally consists of all vehicular and pedestrian thoroughfares that are available for public use. Where appropriate, and under normal circumstances, adoption will include the following:

- Carriageways and footways
- Verges which are adjacent to the carriageway
- Visibility splays
- Service margins
- Other verges or landscaped areas which form an integral part of the highway network
- Footpaths and cycleways
- Structures, i.e. Retaining walls and embankments, which support the carriageway or any other adoptable area
- Street lighting
- Gullies, gully connections and highway drains, and other highway drainage features
- Sustainable Drainage Systems (SuDS), including swales and permeable paving
- Street furniture and signing
- Traffic control systems
- Traffic flow permanent monitoring equipment where applicable;
- Public transport Infrastructure.

3.4.7 Proposals for “Shared Space” style development need careful consideration and early discussions with the Highway Authority are recommended to identify whether such an area is suitable for adoption as public highway. Factors to consider include allocated parking spaces and the extent of highway (including areas draining into highway drains) that can be clearly identified and segregated.

3.5 The Advance Payments Code

3.5.1 Under the *Highways Act 1980*, a Highway Authority must protect the owners and prospective owners of premises from the ultimate liability of Private Street Works charges. The two provisions within the Act are:

- The Advance Payments Code (APC) (Sections 219 to 225)
- A Highway Adoption Agreement (Section 38)

3.5.2 The aim of the APC is to relieve house buyers of road charge liabilities under the Private Street Works Scheme if the developer defaults. It is an offence to do work

in contravention of the code, such as, to start erecting the buildings before depositing the funds.

- 3.5.3 The Advance Payments Code (APC) places an obligation on the Developer to deposit a bond or secure a sum of money to the satisfaction of WBC. The sum estimated by WBC represents the future liability for street works charges related to that development. The Code applies as soon as building works commence. Wokingham Borough Council's policy is to serve APC notices on new buildings that will have a frontage onto a new street unless:

- A Section 38 Agreement already exists for the street, or
- The buildings are exempt for any other of the reasons listed in the Code.

- 3.5.4 Any building works which are carried out without the deposit having been made constitutes a breach of the law and may lead to prosecution of both the landowner and the developer. APC notices are registered with Land Charges and are transferred with ownership of the land.

- 3.5.5 If the Developer fails to carry out his obligations to provide adequate access to new properties, the monies deposited (or secured) shall be used by WBC to complete the street works. There will be a financial liability for the outstanding monies on the owners of the plots if the final cost exceeds the sums secured.

- 3.5.6 It should be noted that subsequently amended Building Regulation approvals are likely to generate fresh charges. The original charge will remain in force until the Developer formally notifies WBC of the withdrawal of the original plans.

- 3.5.7 For further information please refer to the APC Policy set out in Appendix F.

3.6 Procedure for the Submission of Design Drawings for Acceptance

- 3.6.1 When submitting drawings and plans for assessment prior to final acceptance they should include two hard copies and be accompanied by a Design Verification Statement. Both paper and an electronic version of the following are required as a minimum. The following drawings are required:

- Layout plan to 1:500 scale including street lighting and drainage proposals
- Location plan to 1:2500 scale
- Construction detail drawings to 1:50 scale
- Longitudinal sections of all roads 1:500 horizontal and 1:10 vertical scales. Levels on gradients to be at 10m intervals and on short vertical curves at 5m intervals
- Longitudinal sections of surface water drains to 1:500 horizontal and 1:10 vertical
- All levels shall relate to Ordnance Datum (Newlyn) and position and value of the Ordnance Bench Mark shall be shown on the 1:2500 location plan
- Cross sections will be required on sites with excessive changes in levels to scale 1:50
- Highway Asset Management Schedule
- All drawings and associated documents relating to traffic signal design
- Road Safety Audit Stages 1 & 2 and designers' response
- Statutory Undertakers Service Plan
- Service margin corridors drawing.

- 3.6.2 Any plan with a change of scale must be first discussed and agreed with the Highway Authority.
- 3.6.3 All drawings should preferably be no larger than A1 metric size.
- 3.6.4 The layout drawings submitted for use in the Section 38 or 278 Agreements use the following colours:
- Brown: the carriageway being offered for adoption
 - Grey: footways
 - Green: verges
 - Orange: gullies, gully connections and drainage and to show the direction of flow
 - Yellow circles: street light positions
 - Green boundary line: around the development to indicate the land in the Developer's ownership
 - Yellow: cycleways
 - Purple: adoption of public highway which previously was not highway
 - Pink: easements across third party land such as highway drainage.

3.7 Road Safety Audits

- 3.7.1 Road Safety Audits (RSAs) will be required for all new highway related planning applications or, where the existing highway needs to be altered to accommodate a new development proposal. That is, unless it is agreed and stated in writing by WBC that it is not necessary.
- 3.7.2 The purpose of a Road Safety Audit is to ensure that all road safety issues have been considered during the design process. This is done by checking design proposals against safety standards and for other potential hazards from the perspective of all road users, including pedestrians, drivers, cyclists and the mobility impaired.
- 3.7.3 The Audit will be carried out, at the Developers expense, by the Highway Authority or a team approved by the Highway Authority. The team will consist of two or more suitably qualified members, as appropriate to the size and complexity of the project. The team will be independent of the design team and will have a Project Sponsor who is WBC.
- 3.7.4 A Safety Audit will have four stages and should be carried out in accordance with GG 119 Road Safety Audit⁸ and other updates.
- Stage 1 Completion of preliminary design
 - Stage 2 Completion of detailed design
 - Stage 3 Completion of Construction/opening to traffic
 - Stage 4 Monitoring.
- 3.7.5 At all stages the Project Sponsor (WBC) is responsible for approving the RSA Brief which shall be issued to the RSA Team. Developers will submit a (their) designer's response report with each audit (stages 1-3 only) undertaken. If, for any reason,

⁸ Design Manual for Roads and Bridges Volume 5 Section 2 Part 2 HD19/03 Road Safety Audit (Highways Agency 2015) which incorporates amendments from May 2017. Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/dmr/vol5/section2/hd1915.pdf>

a Stage 1 Road Safety Audit has not been carried out (for example, a small scale scheme), Road Safety Audit Stages 1 and 2 shall be combined at Stage 2 and shall be referred to as a Combined Stage 1 & 2 Audit. Once the Highway Authority has agreed with the designer's response, new drawings will be submitted incorporating any audit recommendations agreed with. At this stage a further Safety Audit may be required.

3.8 Departures from Standards

- 3.8.1 Where any element of a scheme's design is not deemed to be an accepted relaxation or (step) below the minimum standard and instead departs considerably from the standards the Applicant or Developer will need to request from the Highway Authority a design (departure) exemption certificate. The developer shall not assume that the acceptance of such departure is a given formality and only in exceptional circumstances will departures be considered. Should an exemption be approved then formal certification will be issued.
- 3.8.2 Even if a departure is issued, the commuted sum may be increased to compensate for the increased cost of maintenance
- 3.8.3 It should be noted that there can be a conflict in the highway design approach between DMRB and MfS. For example, a reduced visibility or road width may be a method of reducing speed and hence accident severity in MfS. Where there are differences, as a general rule MfS will take precedence in locations where speeds limits are below 40mph (refer to para 2.19.2) and on more local roads. In paragraph 1.1.3 of MfS1 it states that it *'is expected to be used predominantly for the design, construction, adoption and maintenance of new residential streets, but it is also applicable to existing residential streets subject to re-design.'* MfS2 also says that *'the strict application of DMRB to non-trunk routes is rarely appropriate for highway design in built up areas, regardless of traffic volume'.*

3.9 Defining the Highway Boundary

- 3.9.1 A method of accurately defining and marking the position of the highway boundary should be discussed and agreed with the Highway Authority. On hard paved areas this can be achieved by edge restraint and other physical features. Greater attention will be required within soft landscaping areas. Whilst there is a preference for marking to be continuously defined, any innovative methods may be considered to identify the boundary between the highway and privately maintained areas.

3.10 Works on the Highway: Section 50 or 171

- 3.10.1 Permissions are required to work on the public highway. Section 50 of the New Roads and Street Works Act applies to apparatus on the highway and Section 171 for other works such as constructing a new access.
- 3.10.1 Section 50 of the New Roads and Street Works Act places responsibilities and duties on those wishing to excavate the highway for the purposes of extracting, inspecting, adjusting, altering, maintaining, replacing or providing new apparatus in the same or a new position the highway. These duties and responsibilities are

detailed in the Act, and the Codes of Practice. To carry out any of the above it is necessary to apply for a Street Works Licence from WBC. The applicant for a Section 50 licence should identify whether there is a Section 278 agreement (ref section 4) or Section 184 Minor Works agreement (ref section 4) relating to the activities on the highway. Allowance should be made to comply with the prescribed timescales which will vary depending on the location and extent of works. To find out more and to apply for a licence refer to streetworks@wokingham.gov.uk.

- 3.10.3 Section 171 of the Highways Act states that permission is required to work on the public highway. Similarly, a licence needs to be applied for and a time will be allocated when the works can be carried out. For more details and application forms refer to streetworks@wokingham.gov.uk.

3.11 Traffic Regulation Orders

- 3.11.1 Permanent Traffic Regulation Orders (TROs) typically take six to nine months from start to finish. It is therefore important for the Developer to liaise with the Highway Authority at an early stage to discuss whether a TRO is required, or an existing order needs to be modified. Where a TRO is required the Highway Authority undertakes the statutory processes on a re-chargeable basis. TROs will be required to implement any new or amend prohibition or restriction of movements or waiting such as speed limits or parking. During construction works temporary TROs are often required to reduce speeds.
- 3.11.2 For more information on the TRO application process and the required forms refer to traffic.management@wokingham.gov.uk for permanent TROs and streetworks@wokingham.gov.uk for temporary TROs.
- 3.11.3 In Autumn 2017 the entire Borough changed over to decriminalised parking. This will enhance enforcement and has updated and coordinated all TROs.

4.0 Agreements

4.1 Introduction

4.1.1 The guidance in this section is intended to help the developer understand the agreement requirements for any development scheme affecting the highway. This section provides guidance on the following;

- Section 106, of the Town and Country Planning Act 1990
- Section 38, of the Highways Act 1980 (highway adoption)
- Section 278, of the Highways Act 1980 (works to highways)
- Bonds
- Section 184, of the Highways Act 1980 (minor highway works)
- Section 228, of the Highways Act 1980
- Commuted Sums.

4.1.1 For more information, queries or plan submissions please email HighwaysDC@wokingham.gov.uk.

4.1.2 In the information set out below it is useful to be aware that many elements are common to both Section 38 and 278 agreements. These include submitted plans, colour codes on the plans, inspection fees, inspection processes, commuted sums and bonds. This is because both result in works on existing or future public highway which WBC will maintain after construction.

4.2 Section 106 Agreements

4.2.1 "Section 106 Agreements" and "Unilateral Undertakings" are types of Planning Obligation authorised by Section 106 of the Town and Country Planning Act 1990 as amended by the Planning and Compensation Act 1991 Section 12. Planning Obligations are used alongside planning permission to secure community infrastructure in new developments or to mitigate the impact of new developments upon community facilities including the transport network.

4.2.2 The introduction of the Community Infrastructure Levy (CIL) has meant that S106 agreements are required less to cover costs of highway infrastructure. The general rule is that if the transport infrastructure is on the Council's CIL list of schemes then these schemes should be funded by CIL and not S106 contributions.

4.3 Section 38 Agreements

4.3.1 Wokingham Borough Council applies Section 38 of the Highways Act 1980 for securing adoption of new highways. An agreement under this section of the Act provides for a structured robust procedure for the technical acceptance of the works using regular inspections and other methods to ensure works are completed to the Council's requirements. Preliminary consultation with the Highway Authority must be undertaken prior to any Section 38 Agreement. Refer also to Figure 2 that shows a flow diagram of the highway adoption process.

4.3.2 Before a Developer can enter into a Section 38 Agreement with the Highway Authority, the Developer will need to prove title to the land and have obtained

full planning permission for the development, including the approval of any reserved matters relating to the highway.

- 4.3.3 The Section 38 Agreement sets out the obligations of the developer to construct the streets to an agreed standard and maintain them for 12 months. Following the satisfactory discharge of these obligations, the new streets are automatically dedicated as public highway and are maintainable by WBC.
- 4.3.4 If it is proposed to drain the new highway into a sewer, discussions must be carried out with the permission of the appropriate utility company. A Section 104 Agreement (Water Industry Act 1991) must be completed and approved by the Sewer Authority. This must be carried out prior to the completion of a Section 38 Agreement. A highway that is expected to be adopted cannot drain into a private drain. Adoption of the highway can only take place after the adoption of any drainage system into which it drains.
- 4.3.5 Access from the new development onto the existing highway will involve works to the highway verge/footway and are likely to require a Section 278 agreement. A single agreement combining both Section 38 and Section 278 is possible but must be agreed and approved before any works can take place on the public highway unless a temporary access is created under a licence.
- 4.3.6 In the previous Chapter, Section 3.6 sets out the required submission documents for the Section 38 agreement technical acceptance process.

Inspection Process and Fees

- 4.3.7 The checking of detailed design and inspecting the works (and of all associated administration) must be paid for in advance by the Developer. A deposit is required by the Highway Authority prior to checking of any drawings submitted and this deposit will be deducted from the final fees. For details of current fees, please refer to WBC's Fees and Charges document which is updated annually.
- 4.3.8 The Highway Authority will only inspect the works when the full amount of the inspection fee has been paid. Any works carried out before the inspection fee has been paid will have to be physically evidenced to the Highway Authority by way of exposing the works, by CCTV survey or otherwise as required. Such works are being carried out at the Developer's own expense.
- 4.3.9 The following points should be noted:
- The payment of the Inspection Fee does not overcome the necessity for the deposits required by the Advance Payments Code (APC) Notice
 - Any inspections carried out prior to an Agreement being completed do not guarantee that the road will be adopted
 - Roads will not be adopted if they have not been offered for inspection (and satisfactorily signed-off) at each pre-determined stage of construction
 - Any works carried out without a signed Section 38 agreement **is entirely at the Developer's own risk.**
- 4.3.10 The inspection requires sign off at the following main stages unless otherwise agreed by WBC:
- Drainage foundation level
 - Surfacing base and binder
 - Kerbs

- Finished surfaces.

4.3.11 The Developer may also be required to pay the costs of a traffic survey for new roads. This is to establish the position of a new road within the maintenance hierarchy.

4.4 Section 278 Agreements

4.4.1 The Section 278 agreement permits the developer to make alterations to the existing highway. Section 278 agreements not only apply to the area where the development joins the existing highway but may be any area of highway requiring mitigation works to alleviate the impact of the development during or after construction. Figure 2 shows a flow diagram of the highway adoption process.

4.4.2 No Section 278 works may commence on the public highway until there is a signed Section 278 agreement and if required a Section 50 licence is applied for and approved.

4.4.3 Minor access changes and the provision of permitted development dropped kerb footway crossings may, subject to the acceptance of the Highway Authority, be covered by a Minor Works Agreement or license arrangement. The latter would incorporate procedures under Section 184 of the *Highways Act 1980* (as referred in section 4.6 below).

4.4.4 For the Section 278 agreement a series of documents and information is required for technical acceptance. In Section 3.6 of the previous Chapter it sets out these required submission documents including the colour coding of drawings.

Inspection Process and Fees

4.4.5 For the checking of detailed design, gaining technical acceptance and inspecting the works, the same fees apply as to S38 agreements as set out above in paras. 4.3.7-11.

4.5 Bonds

4.5.1 The purpose of a bond is to ensure that the Highway Authority can complete the highway works if the Developer defaults for any reason. The Bond should cover the cost of the works necessary for completion to an adoptable standard and associated administration costs for each Section 38 and Section 278 agreement. It must be provided by a member of the British Insurance Association or one of the Joint Stock Clearing Banks.

4.5.2 Bonds will be released after the Final Certificate for adoption is completed. This is released following final inspection and completion of all snagging. During the process a percentage reduction of the bond after the Provisional Certificate of Completion is issued.

4.6 Section 184 Agreement / Licence

- 4.6.1 For small changes to the highway and where there is permitted development in terms of planning permission then a Section 184 Minor Works Agreement or licence can be used. Typical examples are dropped kerb footway crossings and simple new accesses.

4.7 Section 228 Agreements

- 4.7.1 In some circumstances the Developer may not be able to dedicate a certain area of land as highway because the owner of the land is not known. In these situations, the highway can be adopted using the procedures under *Section 228 of the Highways Act 1980*. On completion of the works, notices are posted on site. These state that unless objections are received from the owner of the land, the highway in question will become maintainable at public expense one month after the date of the notice. An inspection fee is payable in the same way as for Section 38 Agreements. WBC considers that this method of adoption is only suitable for small areas of land.

4.8 Commuted Sums

- 4.8.1 Commuted sum maintenance payments are sought under the legislation of the Highway Act 1980 for S38 & S278 agreements.
- 4.8.2 The commuted sum costs are to cover the costs for ongoing maintenance of the development highways and structures and include features such as:
- Highway structures
 - Highway pavements and footways
 - Unusual street furniture
 - Exceptional non-standard street lighting
 - Traffic Signals
 - Traffic permanent monitoring equipment
 - Soakaways
 - SuDS
 - Flow attenuation devices
 - Trees
 - Landscaping.
- 4.8.3 The Developer is advised to hold discussions with the Council prior to planning application to agree the principals of commuted sum costs and overlapping maintenance issues especially those related to SuDS and non-standard materials.
- 4.8.4 The WBC standard commuted sum values are set out in Key Doc 2. Otherwise the developer can estimate the values themselves based on Net Present Value (NPV) lifetime costs which will take account of periodic maintenance and renewal costs over the asset's lifetime with the applicable maximum period (years), for standard measures. When entering into the initial agreement a provisional commuted sum will be agreed and included for calculating the bond.
- 4.8.5 For trees and other planting, it will be necessary to provide a whole life cost assessment. This should consider the maintenance and other associated costs from initial planting, through to successful establishment and maturity, with consideration given to replacement costs of plant failures and short-lived species.
- 4.8.6 A final sum valuation will:

- Be index linked
- Allow for variations to the schedule of items and costs
- Require payment before the final adoption certificate is issued.

4.8.7

Ultimately, it is suggested that developers follow a whole life cycle cost approach to all facets of their design as reducing future maintenance liability will also reduce the commuted sum.

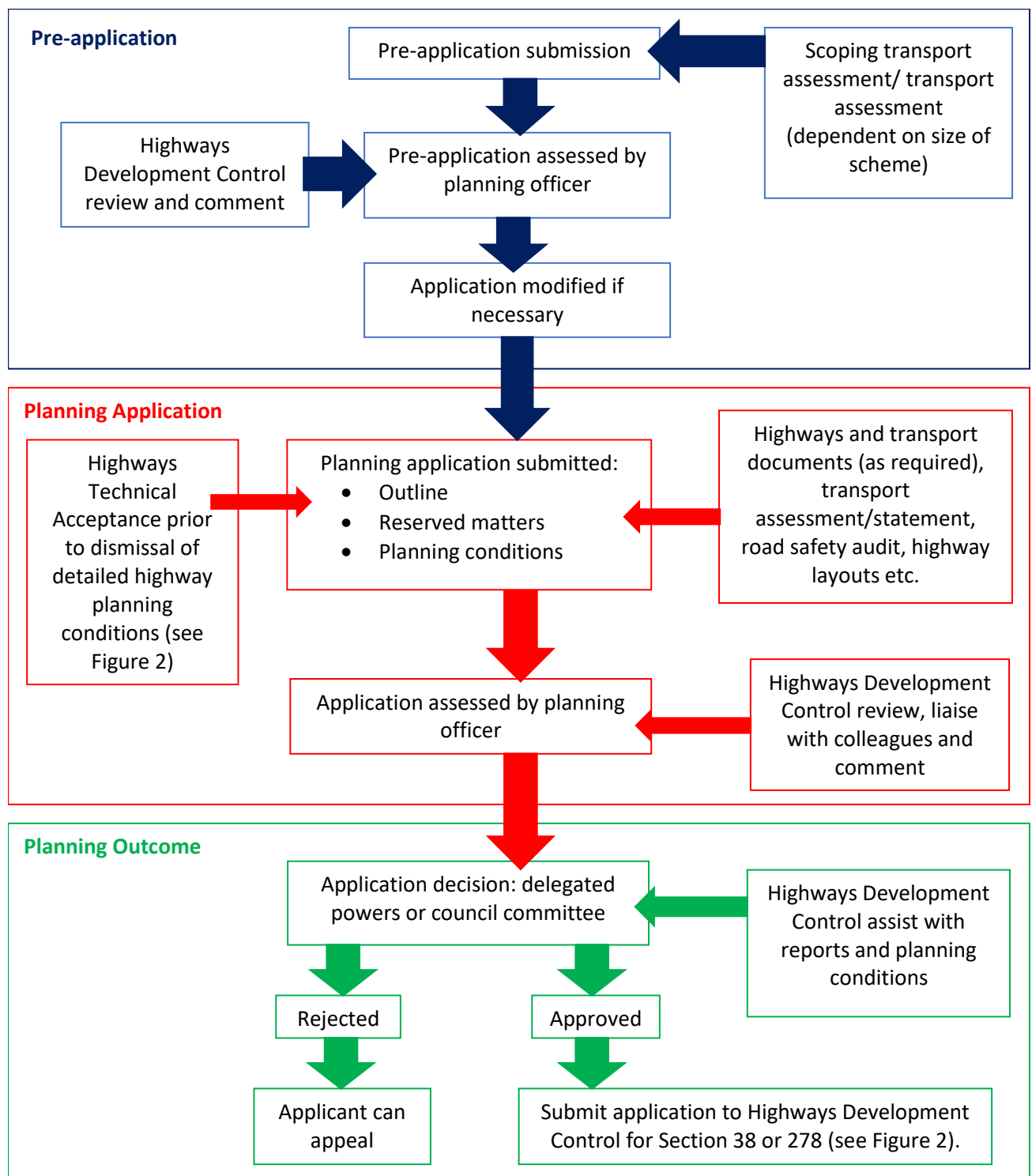
Figure 1: Design Review and Planning Approval

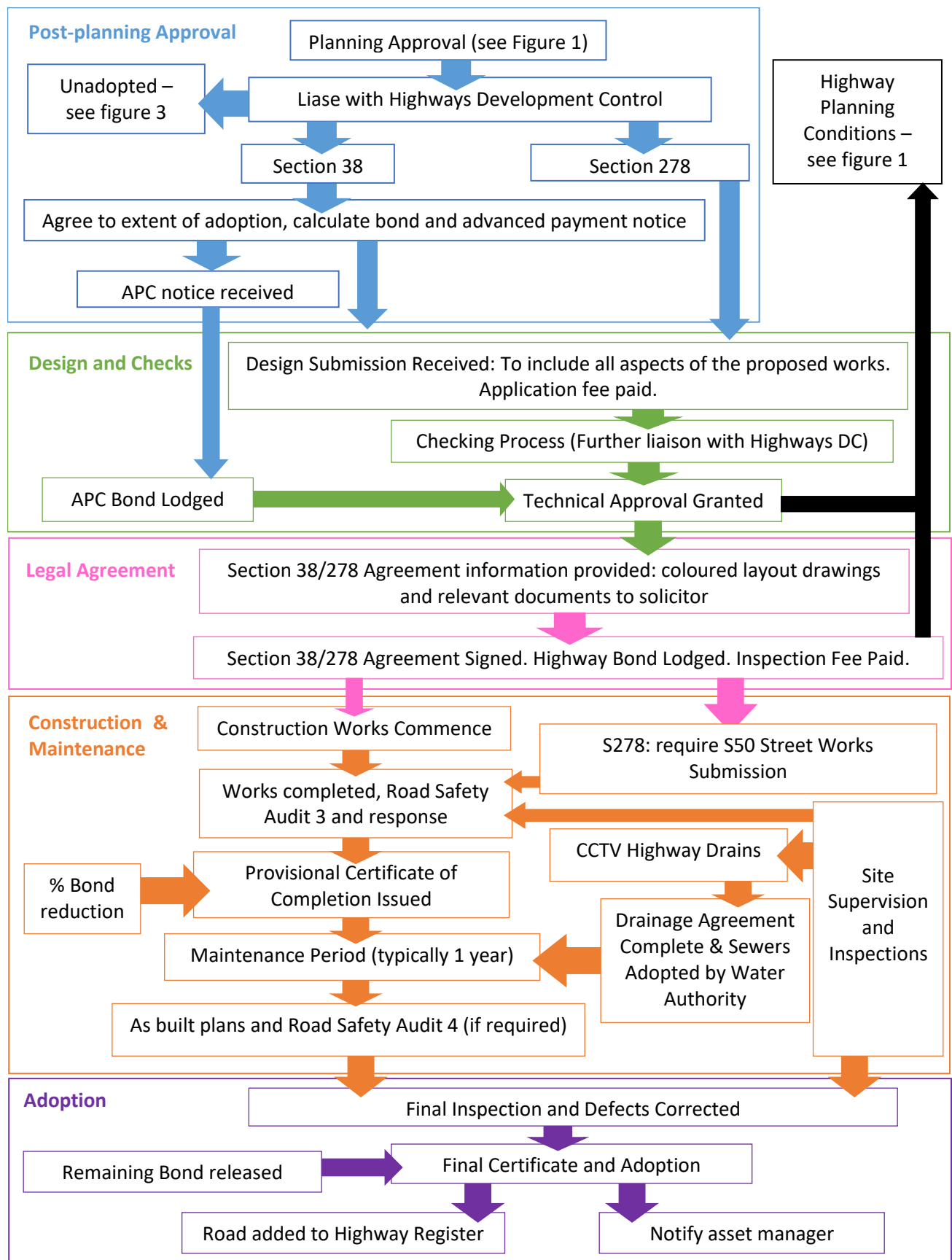
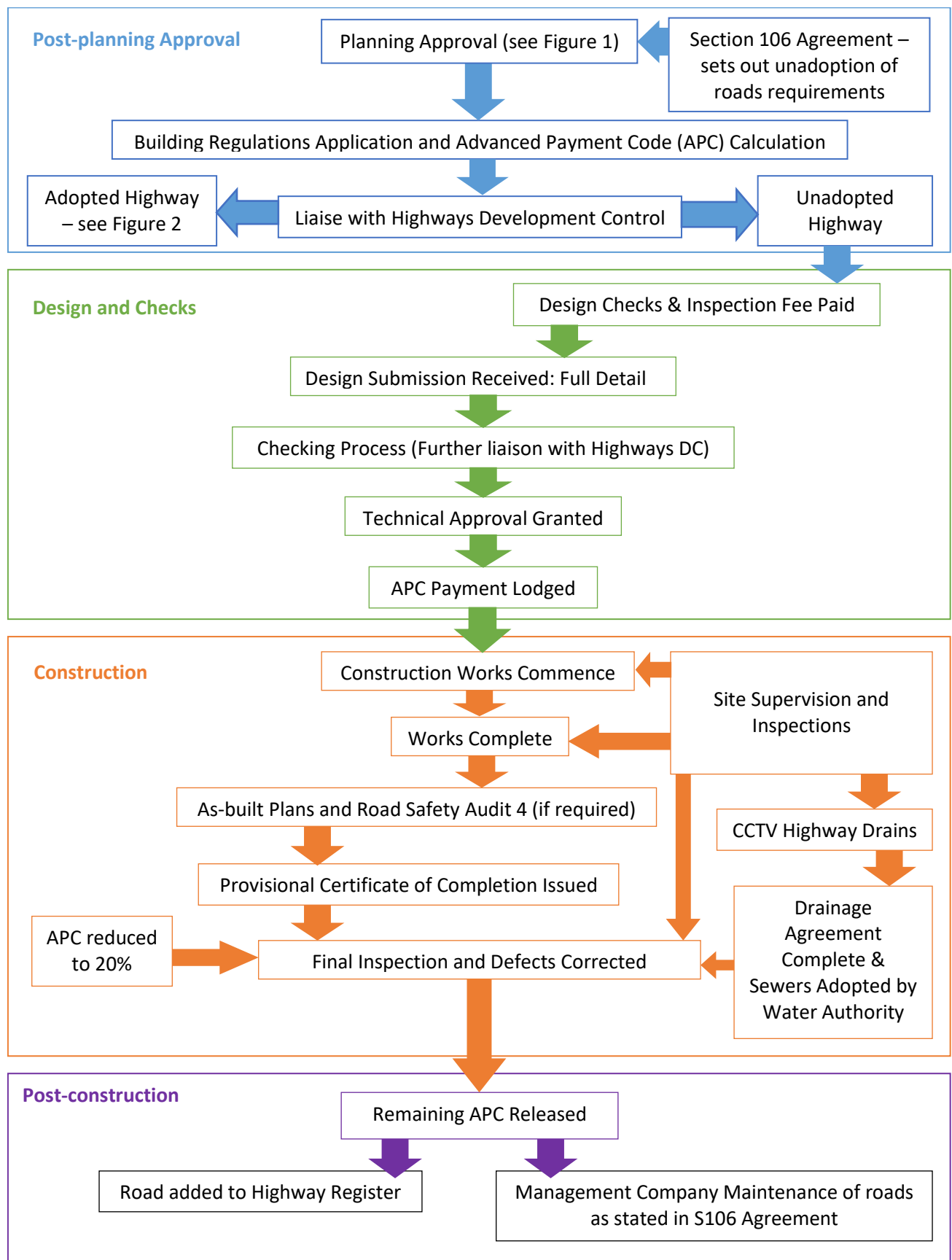
Figure 2 Adopted Highways: Technical Review and Delivery Process

Figure 3 Unadopted Highways: Technical Review and Delivery Process

References

- British Standards Institute. (2005). *Waste Management in Buildings - Code of practice*. Retrieved from <https://www.rbkc.gov.uk/pdf/BS5906-2005.pdf>
- British Standards Institute. (2012). *BS 5837 Trees in Relation to Design, Demolition and Construction: Recommendations*. Retrieved from <https://standardsdevelopment.bsigroup.com/projects/2009-03965>
- British Standards Institute. (2014). *BS 8545 Trees: from nursery to independence in the landscape – Recommendations*. Retrieved from <https://shop.bsigroup.com/ProductDetail/?pid=000000000030219672>
- Chartered Institution of Highways & Transportation. (2010). *Manual for Streets 2: Wider Application of the Principles*. Retrieved from www.ciht.org.uk/download.cfm/docid/055693F6-8DB0-4BBE-AA9FF1B5BC5E9412
- Chartered Institution of Highways & Transportation. (2015). *Planning for Walking*. Retrieved from <http://www.ciht.org.uk/en/knowledge/streets-and-transport-in-the-urban-environment/index.cfm>
- Chartered Institution of Highways & Transportation. (2018a). *Buses in Urban Developments*. Retrieved from <http://www.ciht.org.uk/en/knowledge/streets-and-transport-in-the-urban-environment/index.cfm>
- Chartered Institution of Highways & Transportation. (2018b). *Creating Better Streets: Inclusive and Accessible Places*. Retrieved from <http://www.ciht.org.uk/en/document-summary/index.cfm/docid/BF28B40D-9855-46D6-B8C19E22B64AA066>
- CIRIA. (2007). *The SuDS Manual (C697)*. Retrieved from https://www.ciria.org/Resources/Free_publications/SuDS_manual_C753.aspx
- Department for Communities and Local Government. (2004). *Safer Places: the Planning System and Crime Prevention*. Retrieved from <http://webarchive.nationalarchives.gov.uk/20110118185822/http://www.cabe.org.uk/files/safer-places.pdf>
- Department for Transport. (2002). *Motorcycle parking: Traffic Advisory Leaflet 2/02*. Retrieved from <http://webarchive.nationalarchives.gov.uk/20120606202850/http://www.dft.gov.uk/publications/tal-2-02/>
- Department for Transport. (2005). *Inclusive Mobility*. Retrieved from <https://www.gov.uk/government/publications/inclusive-mobility>
- Department for Transport. (2007a). *Guidance on the use of tactile paving surfaces*. Retrieved from <https://www.gov.uk/government/publications/guidance-on-the-use-of-tactile-paving-surfaces>
- Department for Transport. (2007b). *Guidance on transport assessment*. Retrieved from <https://www.gov.uk/government/publications/guidance-on-transport-assessment>
- Department for Transport. (2007c). *Manual for Streets*. Retrieved from <https://www.gov.uk/government/publications/manual-for-streets>
- Department for Transport. (2008). *Cycle infrastructure design*. Retrieved from <https://www.gov.uk/government/publications/cycle-infrastructure-design-ltn-208>
- Department for Transport. (2008). *Traffic management and streetscape (LTN 1/08)*. Retrieved from <https://www.gov.uk/government/publications/traffic-management-and-streetscape-ltn-108>

Department for Transport. (2013). *Setting local speed limits circular 01/2013*. Retrieved from <https://www.gov.uk/government/publications/setting-local-speed-limits>

Department for Transport. (2017). *Manual of Contract Documents for Highway Works (MCHW)*. Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/mchw/vol1/index.htm>

Highway Authorities & Utilities Committee (HAUC). (2012). *Town centre redevelopments and underground services and apparatus*. Retrieved from [http://www.whauc.com/site/HAUC%20UK/HAUC%20UK%20ADVICE%20Town%20Centre%20Redevelopments%20-%20Draft%20Advice%20Note%20v5%20\(2\)%20\(2\).pdf](http://www.whauc.com/site/HAUC%20UK/HAUC%20UK%20ADVICE%20Town%20Centre%20Redevelopments%20-%20Draft%20Advice%20Note%20v5%20(2)%20(2).pdf)

Highways Agency. (1995). *Design Manual for Roads and Bridges Volume 6 Section 2 Part 6: Geometric Design for Major/Minor Priority Junctions*. Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/dmr/vol6/section2/td4295.pdf>

Highways Agency. (2002). *Design Manual for Roads and Bridges Volume 6*. Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/dmr/vol6>

Highways Agency. (2005). *Design Manual for Roads and Bridges Volume 6*. Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/dmr/vol6>

Highways Agency. (2005). *Specification for Traffic Signal Controller*. Retrieved from <http://www.ukroads.org/webfiles/tr2500a%20.pdf>

Highways Agency. (2006). *Design Manual for Roads and Bridges: Volume 8*. Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/DMRB/vol8/index.htm>

Highways Agency. (2015). *Design Manual for Roads and Bridges Volume 5 Section 2 Part 2*. Retrieved from <http://www.standardsforhighways.co.uk/ha/standards/dmr/vol5/section2/hd1915.pdf>

Institute for Highways & Transport (1999). *Planning for Public Transport in Developments*.

Institute for Highways & Transport (2000). *Providing for Journeys on Foot*.

National SuDS Working Group. (2004). *Interim Code of Practice for Sustainable Drainage Systems*. Retrieved from http://www.susdrain.org/files/resources/other-guidance/nswg_icop_for_suds_0704.pdf

NJUG. (2007). *Volume 4 Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees*. Retrieved from <https://njug.org.uk/wp-content/uploads/2016/09/V4-Trees-Issue-2-16-11-2007.pdf>

Office of the Deputy Prime Minister. (2002). *The Building Regulations 2000: Drainage and waste disposal*. Retrieved from http://webarchive.nationalarchives.gov.uk/20151113141044/http://www.planningportal.gov.uk/uploads/br/br_pdf_adh_2002.pdf

Office of the Deputy Prime Minister. (2005). *Circular 05/05 Planning Obligations*. Retrieved from <http://webarchive.nationalarchives.gov.uk/+http://www.communities.gov.uk/planningandbuilding/planning/planningpolicyimplementation/planningobligations/>

Stagecoach. (2017). *Bus Services & New Residential Developments*, Retrieved from <http://www.stagecoach.com/~media/Files/S/Stagecoach-Group/Attachments/pdf/bus-services-and-new-residential-developments.pdf>

Sustrans. (2004). *Cycle Parking Information Sheet FF37*. Retrieved from https://www.pathsforall.org.uk/component/option,com_docman/Itemid,69/gid,258/task,doc_download

Sustrans. (2014). *Handbook for cycle friendly infrastructure*. Retrieved from

https://www.sustrans.org.uk/sites/default/files/file_content_type/sustrans_handbook_for_cycle-friendly_design_11_04_14.pdf

Sustrans. (2016). *Greenway management handbook*. Retrieved from http://www.sustrans.org.uk/sites/default/files/file_content_type/greenway_management_handbook.pdf

Transport for London. (2017a) An Introduction to the Healthy Streets <https://healthystreets.com/home/about/>

Transport for London. (2017b) Guide to the Healthy Streets Indicators <http://content.tfl.gov.uk/guide-to-the-healthy-streets-indicators.pdf>

Wokingham Borough Council. (2010a). *Wokingham Borough Core Strategy*. Retrieved from www.wokingham.gov.uk/EasySiteWeb/GatewayLink.aspx?alId=268860

Wokingham Borough Sustainable Partnership. (2010b). *Innovating Wokingham: A Sustainable Community Strategy for Wokingham 2020*. Retrieved from <http://www.wokingham.gov.uk/EasysiteWeb/getresource.axd?AssetID=219944>

Wokingham Borough Council. (2010c). *Borough Design Guide*.

Wokingham Borough Council. (2010d). *Rights of Way Improvement Plan*. Retrieved from http://www.wokingham.gov.uk/_resources/assets/attachment/full/0/00123690.pdf

Wokingham Borough Council. (2011a). *Parking Standards Study Report*. Retrieved from www.wokingham.gov.uk/EasySiteWeb/GatewayLink.aspx?alId=210333

Wokingham Borough Council. (2011b). *Protocol for use of the Wokingham Transport Models by Developers*. Retrieved from www.wokingham.gov.uk/EasySiteWeb/GatewayLink.aspx?alId=276582

Wokingham Borough Council. (2011d). *Wokingham Borough Council Local Transport Plan 2011 to 2026*. Retrieved from www.wokingham.gov.uk/_resources/assets/attachment/full/0/210332.pdf

Wokingham Borough Council. (2011e). *Workplace Travel Plan Guidance*. Retrieved from www.wokingham.gov.uk/EasySiteWeb/GatewayLink.aspx?alId=183918

Wokingham Borough Council. (2011f). *Code of Practice for the Use of Coloured Surfaces in Road Layouts*. Retrieved from <http://wokingham.moderngov.co.uk/Data/Executive%20-%20Individual%20Member%20Decisions/201201060930/Agenda/195971.pdf>

Wokingham Borough Council. (2012). *Borough Design Guide Supplementary Planning Document (SPD)*. Retrieved from www.wokingham.gov.uk/EasySiteWeb/GatewayLink.aspx?alId=219991

Wokingham Borough Council. (2013a). *Bus Stop Policy*.

Wokingham Borough Council. (2013b). *Cycle Infrastructure Style Guide*. Retrieved from www.wokingham.gov.uk/_resources/assets/attachment/full/0/408228.pdf

Wokingham Borough Council. (2013c). *Street Lighting Design, Adoption Process and Specification Guide*. Retrieved from http://tap.iht.org/objects_store/201003/Street%20Lighting%20-%20Design%20Process,%20Requirements%20and%20Specification%20Guide%20-%20DRAFT.pdf

Wokingham Borough Council. (2014). *Managing Development Delivery Local Plan (MDDLDP)* Retrieved from www.wokingham.gov.uk/EasySiteWeb/GatewayLink.aspx?alId=269993

Wokingham Borough Council. (2015). *Wokingham Borough Council CIL Guidance Notes for Applicants*. Retrieved from <http://www.wokingham.gov.uk/planning/advice-for-developers/community-infrastructure-levy-advice/>

Wokingham Borough Council. (2016). *Guidance Notes for Developers (Waste and Recycling)*. Retrieved from <http://www.wokingham.gov.uk/rubbish-and-recycling/recycling/waste-information-for-developers/>

Wokingham Borough Council. (2017a) *Sustainable Urban Drainage Systems Strategy*. Retrieved from www.wokingham.gov.uk/resources/assets/attachment/full/0/399029.pdf

Wokingham Borough Council. (2017b). *Residential Travel Plan Guidance*. Retrieved from www.wokingham.gov.uk/EasySiteWeb/GatewayLink.aspx?allId=183917

Wokingham Borough Council. (2019). *Protocol for use of the Wokingham Transport Models by Developers*. Retrieved from www.wokingham.gov.uk/EasySiteWeb/GatewayLink.aspx?allId=276582

WRc. (2012). *Sewers for Adoption 7th Edition - A Design and Construction Guide for Developers*. Retrieved from <http://www.dwrcymru.com/~media/Files/Dev%20Services/Publications/2015/04/SFA7smalldev%20sep2013.ashx?la=en>

APPENDICES

Appendix A	Street Hierarchy & Palette of Materials Tables
Appendix B	Guidance on Public Rights of Way
Appendix C	Guidance for Emergency & Refuse Vehicles
Appendix D	Trees & Landscaping Additional Information
Appendix E	Electric Vehicle Charging
Appendix F	Advance Payments Code

Appendix A

Street Hierarchy & Palette of Materials Tables

1. Introduction

- 1.1 This document identifies guidance on the main standards and palette of materials for streets in Wokingham Borough. It covers new streets within developments as well as other public space such as town and district centres.
- 1.2 The palette of materials document aims to:
- Deliver a high quality public realm across all major Wokingham residential, town centre and mixed use developments;
 - Equip developers to bring forward schemes that are compatible with established design parameters;
 - Promote greater aesthetic consistency within and between developments, thereby establishing a recognisable local character across the Borough;
 - Provide for legible, easily navigable routes within developments;
 - Introduce more efficient and effective future maintenance regimes on adopted roads and in public spaces.
- 1.3 The Tables contained at the end contain summary guidance. Table A1 on the main characteristics of the street hierarchy categories and these apply the design principles of Manual for Streets. Table A2 summarises the materials in other public spaces such as town and district centres and Table A3 has some materials details.

2. General principles

- 2.1 The design of the highway has a major influence on the appearance of an area. Specifically, it is important to address the design detail of the highway boundary, carriageway and kerbs as set out below.
- 2.2 The quality of the highway boundary has a significant visual impact on the public realm. Consideration should be given to how the boundary can be enhanced through residential development. This will include a thorough assessment of how design and choice of materials will affect visual amenity, maintenance and safety/security issues.
- 2.3 The carriageway forms a large visual component of the overall streetscape. The carriageway should be designed with visual simplicity in mind. The incorporation of different surface materials and colours should be kept to a minimum and varied only when required to denote function. For example, approaches to pedestrian crossings may use alternative surface materials to distinguish these from the main carriageway. Junctions can also have surface material changes to accentuate the junction and slow traffic. Block paving may be used on tertiary streets to indicate shared surfaces and encourage slower vehicle speeds.
- 2.4 The design quality and materials used for kerbs also affects the streetscape. The kerb alignment should be consistent and follow smooth and flowing lines to provide definition between the footway and carriageway. The Borough requires the use of Conservation Kerbs on all major local routes.

- 2.5 Shared surface streets should be considered as a means to encourage lower speeds and a pedestrian-friendly public realm. Rather than conventional kerbing with upstands raised block paving may be used to delineate the edge of the main carriageway/courtyard space. Pedestrian routes within this shared space can be demarcated with contrasting block colours or laid patterns.
- 3. Street hierarchy**
- 3.1 A clear distinction between street hierarchy allows for a more intuitive navigation by all road users and helps to identify principle entry and exit routes. Street hierarchies can also contribute to character variation within developments.
- a. Primary Street – major local route**
- 3.2 Examples include the Northern and Southern Distributor Roads in Wokingham and the Nine Mile Ride Extension at Arborfield.
- 3.3 The carriageway will have a minimum carriageway width of 7.3m. Footpaths, cycleways trees and other landscaping will be used throughout and on both sides of the road, with higher quality hard materials together with conservation kerbing being used throughout. Soft landscaping combined with verge planting will lend character and there will also be integrated SuDS design requirements.
- 3.4 Primary streets will usually incorporate island-style pedestrian and /or cycle crossing points. An island width of not less than 2.0m together with individual carriageway lane widths of 3.25m at such locations will aid safety of pedestrians.
- b. Secondary Streets – connecting primary streets and access to dwellings**
- 3.6 Secondary residential streets will normally be accessed from primary streets and will include some 'through traffic' facilitating access to tertiary streets and shared surface areas, having a minimum carriageway width of 6.1m.
- 3.7 Secondary residential streets will often be fronted by housing with limited direct access and on street parking will be in lay-bys. For bus routes the minimum carriageway width should be 6.5m. On bends there may be a need for local widening subject to radius.
- 3.8 Secondary residential streets will also incorporate Conservation Kerbs and with soft landscaping along the verges.
- c. Tertiary residential streets**
- 3.9 Access to tertiary streets would usually be from a secondary street(s) although also occasionally from primary routes. They provide an intermediate street type, a minor access road and there is flexibility in their layout with a minimum carriageway width of 5.5m.
- 3.10 They are generally of flexible [bituminous] construction but can also be block paved, subject to surface the texture / skid resistance properties of the chosen concrete block. They will include for a footway on at least one side of the street.
- d. Shared Surface Streets**
- 3.11 These streets are the most constrained street, dominated by the adjacent housing with direct accesses. The streets will be shared surface and normally with block paving and with a design speed of 15-20mph.

- 3.12 The key point of differentiation is the carriageway surface, which will be a specific variety of concrete block paving to form a shared surface for pedestrians and vehicles (i.e. no formal kerb). The use of block paving has several functions:
- Surface properties: Concrete block paving with necessary minimum surface texture / skid resistance properties [as tested for an 'equivalent' minimum PSV under a portable skid tester]
 - Aesthetic: Concrete block paving in grey contrasting colours ('charcoal' and 'natural') or red contrasting colours ('brindle' and 'red') will fashion a distinct identity and prevent an unsatisfactory convergence with residential dwellings, which are themselves often built with red or red multi bricks in the Borough. Over time, coloured block paving will aid in establishing a recognisable local character for new developments in Wokingham. In cases where major development is delivered in parcels built by multiple developers, this common aesthetic will tie neighbouring areas together.
 - Economic: The use of approved paving materials and colours will help to ensure more efficient maintenance regimes on adopted roads where the same materials are laid on multiple sites, Borough wide. Hence, Marshalls⁹ materials, widely available, are generally preferred.
 - Environmental: The use of permeable block paving (where appropriate) can deliver important environmental advantages where incorporated within a wider SuDS strategy.

e. Access Mewses, Housing Squares & Parking Courtyards

- 3.11 Residential dwellings accessed via tertiary streets will usually provide parking facilities through a combination of on-curtilage driveway, and allocated/unallocated off-road and courtyard parking.
- 3.12 Courtyard parking should only be used sparingly and only where there are design constraints and a strong justification for doing so.
- 3.13 Common access and turning space within courtyards should be paved to provide continuity with the tertiary street surface.
- 3.14 Courtyard parking spaces where individual parking may be paved or tarmac. In no circumstances should paint be used to mark out spaces. If paving is used, spaces are to be delineated by blocks in a contrasting colour to the main surface. Where bituminous surfacing is used, spaces should be marked out with embedded concrete paving in the standard 'natural' shade.

4. Town Centres & Other Public Realm

- 4.1 For other public realm locations such as town centres and district centres, Table A2 identifies a range of palette materials. It classifies them into two main groups, either high quality specification for town centres and standard quality for more peripheral locations or neighbourhood centres. These places tend to be individual so a mix and match between the two is welcomed and it may well be that budget availability will help to decide on the materials used. Discussions with WBC officers are recommended in developing the design approach.

⁹ Where Marshalls are referred to in the text & tables, comparable / similar products are acceptable subject to approval from WBC.

- 4.2 'Creating Better Streets: Inclusive and Accessible Places' (CIHT, 2018a) provides some useful recent guidance and identifies a series of case studies for comparison. It sets out a new design approach to replace 'shared space' design which has been subject to criticism by some groups. It suggests three categories of scheme:
- 'pedestrian prioritised streets' where pedestrians feel that they can move freely anywhere and where drivers should feel they are a guest. Under current legislation, this does not give formal priority to pedestrians;
 - 'informal streets' where formal traffic controls (signs, markings and signals) are absent or reduced. There is a footway and carriageway, but the differentiation between them is typically less than in a conventional street;
 - 'enhanced 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.
- 4.3 Creating Better Streets (CIHT, 2018a) identifies the importance of setting out scheme objectives to help clarify the purpose and priorities in the design. These objective are, inclusive environment, ease of movement, safety and public health, quality of place and economic benefit.
- 4.4 When choosing the palette for street furniture it is recommended to be have either a matching black or stainless steel scheme. Black would probably apply to historic areas and stainless steel for more contemporary or new developments.

5. Detailed Specifications – Reference Table

- 5.1 Please refer to the Highways Standard details and for conservation kerbs and blocks these are indicated in Table A3.

There are the following tables attached which summarise key standards and the palette of materials:

Table A1: Street Hierarchy & Palette of Materials for Developments

Table A2: Town Centre and Other Public Realm Palette of Materials

Table A3: Materials Specification for Conservation Kerbs and Block Paving

Table A1: Street Hierarchy & Highway Palette of Materials

	Primary Street	Secondary Street	Tertiary Street	Shared Surface Street	Access Mews/parking courts
Street Function or Role	Connecting neighbourhoods and main destinations with some through traffic. Residential Distributor Road	Connecting to primary streets and access to dwellings. Major Access Road.	Access to dwellings, with no through movements. Minor Access Road.	Access to dwellings with shared surface.	Mews Lanes / Mews Courts / Housing Squares. Generally not adopted, but some may need to be at a later date.
Guide max. no of housing	Not applicable	500	200 (100 max. cul de sac for emergency access)	50	25
Dimensions of main carriageway	7.3m carriageway, widening on bends to accommodate tracking of vehicles. Carriageway to accommodate buses. Carriageway widened to accommodate island-style pedestrian crossings and 3.25m lane widths.	6.5m-5.5m (min) carriageway, widening on bends to accommodate tracking of vehicles. If buses then minimum 6.5m wide.	5.0m (min) Depends on parking and road layout. Not suitable for full sized buses.	4.8m (min) Alternative arrangement is 4.1m plus two x 2.0m margins with contrasting colours and intermittent planting or street furniture 4.1m where less than 10 dwellings and no accesses.	4.5m (min) 4.1m where less than 10 dwellings and no accesses.
Footway, cycleway, verge & margin	Additional width required to accommodate verge planting on both sides of the road. 3m (min) footway/cycleways on	Additional width required to accommodate verge planting on at least one side of the road. 2m (min) footways on both	2m (min) footways on one or both sides of the carriageway. Delineated service margins, generally 2m (min), should be included on	2m (min) service margin on both sides of the road where development is proposed. 0.5m no services & 1.0m	2m (min) service margin on both sides of the road where development is proposed. 0.5m no services & 1.0m with street lights.

Table A1: Street Hierarchy & Highway Palette of Materials					
	Primary Street	Secondary Street	Tertiary Street	Shared Surface Street	Access Mews/parking courts
	both sides. Usually landscape strip of 2.0m between carriageway and footway/cycleway.	sides. Off Road cycle provision normally required, subject to demand and traffic flows. For off road cycling a minimum 3m route or a shared ped / cycle facility.	either side of the carriageway. Normally cycling with traffic. Optional grass verges can accommodate trees.	with street lights.	
Refuse & Vehicles	Streets used for refuse vehicles require tracking for an 11.3m long vehicle. Maximum walk from truck to household waste bin is 25m and 10m to eurobins.	Streets used for refuse vehicles require tracking for an 11.3m long vehicle. Maximum walk from truck to household waste bin is 25m and 10m to eurobins.	Streets used for refuse vehicles require tracking for an 11.3m long vehicle. Maximum walk from truck to household waste bin is 25m and 10m to eurobins.	Streets used for refuse vehicles require tracking for an 11.3m long vehicle. Maximum walk from truck to household waste bin is 25m and 10m to eurobins.	Streets used for refuse vehicles require tracking for an 11.3m long vehicle. Maximum walk from truck to household waste bin is 25m and 10m to eurobins.
Target Max. Design Speed	30mph	20-30mph	15-20mph	15-20mph	10-15mph
Junction Radii (priority to non-priority)	10m	6m	6m	6m	n/a
Junction sightlines X/Y distance	2.4m/ 43m (min) (Based on MfS s.s.ds)	2.4m/ 33 (min) (Based on MfS s.s.ds)	2.4m/ 25/m (min) (Based on MfS s.s.ds)	2.4m/ 25m (min) (Based on MfS s.s.ds)	n/a
Accesses	Limited direct accesses.	Some direct accesses.	Some direct accesses.	Many direct accesses	Accesses to rear garages, parking areas and very local movements.

Table A1: Street Hierarchy & Highway Palette of Materials					
	Primary Street	Secondary Street	Tertiary Street	Shared Surface Street	Access Mews/parking courts
Parking	All on street parking in designated bays only. Min. bay width 2.5m	On street parking mainly in designated bays. Min. bay width 2.5m	On street parking as appropriate for the street layout.	On street parking as appropriate for the street layout.	Not expect on street parking, but as appropriate for the design.
Carriageway surface	refer standard details	refer standard details	refer standard details Marshalls Block Paving, colour: greys: 'Charcoal' or 'Natural' reds: 'brindle' or 'red' - subject to contrast with adjacent highway and houses.	refer standard details Marshalls Block Paving, colour: greys: 'Charcoal' or 'Natural', reds: 'brindle' or 'red' - subject to contrast with adjacent highway and houses.	refer standard details Marshalls Block Paving, colour: greys: 'Charcoal' or 'Natural' reds 'brindle' or 'red' - subject to contrast with adjacent highway and houses.
Kerb materials	Marshalls Conservation Kerb 255x205mm. Silver Grey.	Standard pcc kerb or Marshalls Conservation Kerb	Standard pcc kerb or Marshalls Conservation Kerb	Shared surface. No alternative kerb material: pedestrian walkways delineated with contrasting block colours or patterns	Standard pcc kerb or Marshalls Conservation Kerb in parking bays.
Pedestrian footway materials	refer standard details	refer standard details	refer standard details	Shared surface. No alternative kerb material: pedestrian walkways delineated with contrasting block colours or patterns	n/a
Cycleway	refer standard details.	refer standard details	refer standard details	n/a	n/a

Table A1: Street Hierarchy & Highway Palette of Materials					
	Primary Street	Secondary Street	Tertiary Street	Shared Surface Street	Access Mews/parking courts
materials	On some shared ped/cycle routes, Greenways & bridleways. Flexible paving, also porous is being applied (50% rubber mix, gravel coloured Stone Age Bronze) flexipave by KBI, or nu-flex.	On some shared ped/cycle routes, Greenways & bridleways. Flexible paving, also porous is being applied (50% rubber mix, gravel coloured Stone Age Bronze) flexipave by KBI, or nu-flex.	On some shared ped/cycle routes, Greenways & bridleways. Flexible paving, also porous is being applied (50% rubber mix, gravel coloured Stone Age Bronze) flexipave by KBI, or nu-flex.		
At Grade Crossing	See standard detail	See standard detail	n/a	n/a	n/a
Central Islands	Marshall's Conservation Kerb 255x205mm, Natural, or Masterpave Buff	Marshall's Conservation Kerb 255x205mm. Silver Grey.	n/a	n/a	n/a
Street Lighting	LED, specification from street lighting WBC	LED, specification from street lighting WBC	LED, specification from street lighting WBC	LED, specification from street lighting WBC	LED, specification from street lighting WBC
Trees	Tree pits to be used throughout for all tree planting. Required pit specification varies by location and need to agree with WBC. Not in service margins.				

Table A2: Town Centres & Other Public Realm Palette of Materials			
	High Quality such as Town Centres	Standard Quality	Comments
Street/Area Function or Role	Define space functions and scheme objectives (Reference CIHT, 2018a)	Define space functions and scheme objectives (Reference CIHT, 2018a)	
Design Speed	As appropriate – likely to be 15-20mph	As appropriate – likely to be 15-20mph	Consider street hierarchy and also refer to Table A1
Carriageway surface	Tarmac: Refer to standard details	Tarmac: Refer to standard details	Can also have block paving or granite sets in some locations and at crossings and approaches to crossings.
Footway and paved area	York stone: Marshalls Scoutmoor. Finish: Diamond sawn	Marshalls Perfecta Trafica (non-chamfered). Natural 400x400x65mm	
Kerb materials	Raised kerb: Charcon Granite kerb. G2010 Silver Grey. Typical size: 300x915x depth tbc Channel lines and overruns: granite setts. 100x100x100mm. Charcon, G2010 Silver Grey	Raised kerb: Marshalls Conservation Kerb, silver grey (ref Table A3) Channel lines and overruns: Marshalls Mistral silver grey, charcoal or heather grey or conservation kerbs Granite kerbs as in the high quality palette can also be identified on some nearby streets of standard quality (as applied in Wokingham Town Centre)	If studs then brass studs for black scheme and stainless steel studs for stainless steel scheme White line delineation to be minimised
Parking bays	Parking bay delineation and the bay. Granite setts 200x100x100; Charcon texture; G2010 Silver Grey	Marshalls Mistral silver grey, charcoal or heather grey. Bay delineation with granite setts	White line delineation to be minimised
Pedestrian crossings & islands	Tactile studs. Brass Olejar AISI-Line AISI/K2 Carriageway surface. As footway &	Tactile studs. Marshalls concrete blister paving flag. Colour: charcoal or natural.	Generally brass studs with the Yorkstone and black/Iroko scheme or stainless steel

Table A2: Town Centres & Other Public Realm Palette of Materials			
	High Quality such as Town Centres	Standard Quality	Comments
	paved area. Carriageway approaches. Granite setts 200x100x100mm. Charcon texture; G2010 Silver Grey	Carriageway surface. Marshalls Mistral Carriageway approaches. Granite setts 200x100x100mm. Charcon texture; G2010 Silver Grey	
Lighting columns	Site specific. On buildings if possible to reduce clutter.	Site specific. Elsewhere Street Lighting to confirm	
Planting	Site specific: refer to landscape architect	Site specific: refer to landscape architect	Bluegreen Urban tree rooting system and tree grilles. The bespoke design for the Market Place can be cast/used elsewhere
Street furniture - benches	DAE Montseny timber bench. Sized 1.5m or 3.0m. Colour: Black RAL code 9011.	DAE Montseny timber bench. Sized 1.5m or 3.0m. Colour: Black RAL code 9011.	Black or stainless steel scheme
Street furniture - bins	Voss litter bin. Ref: Lb10tVoss Recycling bin Ref: Lr10t with four apertures Both to be front opening steel, frame in RAL 9011 with Iroko timber door and back	Voss litter bin. Ref: Lb10t Front opening stainless steel. Recycling bin tbc	Black or stainless steel scheme
Street furniture - cycle stands	Sheffield stand (Senior) in RAL9011	Sheffield stand (Senior) in RAL9011	Black or stainless steel scheme
Bollards	Generally to be avoided due to clutter and trip hazard. If required then tie in with other street furniture. Finish: Stainless steel grade 304 or galvanised steel, powder coated in RAL code 9011.	Generally to be avoided due to clutter and trip hazard. If required then tie in with other street furniture. Finish: Stainless steel grade 304 or galvanised steel, powder coated in RAL code 9011.	Black or stainless steel scheme

Table A3: Materials Specification for Conservation Kerbs and Block Paving**Block Paving**

For use as indicated within section 4 detailed specification table:

- Marshalls 'Keyblok' concrete block paving (or equivalent), compliant to BS EN 1338:2003
- 200x100mm rectangular blocks with interval spacers
- Grey colours: 'Charcoal' or 'natural' or red colours: 'brindle' or 'red' or an appropriate mix across a development
- Arranged in either "Herringbone" or "Stretcher Course" patterns – can be machine laid
- Car parking spaces to be denoted with contrasting coloured blocks and white lining to a minimum
- All block paving in carriageway or adoptable areas to be 80mm thickness

Thickness (mm)	Plan (mm nom.)	Size (mm)	Pack size (m2 approx.)	Edge	Unit Weight (kg approx.)	Pack Weight (kg approx.)	Product Ref No (natural)	Product No (charcoal)
60mm	200 x 100		8.08	Chamfered	2.8	1131	PV2050250	PV2050500
65mm	200 x 100		7.44	Chamfered	3	1116	PV4050250	PV4050500
80mm	200 x 100		6.16	Chamfered	3.7	1140	PV5050250	PV5050500

Conservation Kerb

For use as indicated within specifications table:

- Marshalls Concrete Conservation Kerb (or equivalent), compliant to BS EN 1340:2003
- 255 (wide) x 205mm (high) – based on proportions similar to traditional granite kerbs
- Concrete – combines the appearance of granite aggregate with precise manufacture
- Texture and appearance must be equivalent to Marshalls 'Silver Grey' – see illustration

Type	Size	No. per 1/4 circle	Length (mm)	Weight (kg)	Silver Grey product ref
Straights			915	96	RK7000000
			600	62	RK7000010
			450	48	RK7000020
			300	32	RK7000030
Radius ext.	1.48m	4.6	500	58	RK7000100
	2.98m	6	785	92	RK7000300
	6.2m	12.5	780	96	RK7000700
	11.0m	22	780	97	RK7001000
Radius int.	1.23m	4.6	415	58	RK7002100
	2.73m	6	715	92	RK7002400
	5.93m	12.5	740	96	RK7002700
	10.75m	22	740	97	RK7003100
Droppers	1 in 18 (1st part) lh			97	RK8050010
	1 in 18 (2nd part) lh			69	RK8020010
	1 in 18 (1st part) rh			97	RK8050020
	1 in 18 (2nd part) rh			69	RK8020020
	1 in 9 lh			83	RK8040010
	1 in 9 rh			83	RK8040020
Chamfered	255 x 205			52	RK8070000
Chamfered Drop LH	255 x 205 /130			52	RK8060010
Chamfered Drop RH	255 x 205 /130			52	RK8060020
Centre	Chamfered			71	RK8070000
	255 x 100			55	RK8030000
	255 x 145			83	RK6500000
Quadrant	305 x 255			42	RK8075400
Edging	63 x 150		915	-	ED6405650
Step Tread – 1 Strip	255 x 205 x 915			98	RK9363100
Step Tread – 2 Strip	255 x 205 x 915			98	RK9363200

APPENDIX B

Guidance on Public Rights of Way

Introduction

B1 Potential impacts of development on Public Rights of Way (PROW) should be examined at an early stage to ensure protection of Public Rights of Way. Diversions if required, should be direct as possible, secure, visually attractive and as a minimum designed to match the existing provision. Where PROWs are affected by development proposals then the WBC PROW officers should be consulted at an early stage of the planning process.

Widths

B2 If not diverting a PROW, then the integrity of the width should be protected or a width given which is appropriate to the surrounding highways. For instance if a 2m adopted highway is being created linking to a public footpath which is a right of way then this width would be appropriate for the PROW.

B3 Widths of rights of way are not always set out in the Definitive Statement. In Wokingham developers will need to speak to the rights of way officers. Research is often needed from parish records and historic maps to determine the width of the prowl.

Definitive Line

B4 Check the line of the public right of way on the Definitive Map. Do not rely on any other mapping system which may not be legally correct. Electronic copies of the map are available from the rights of way officers. The Definitive Map (paper copy) can be viewed at the Civic Offices, 2nd floor reception.

B5 The Definitive Line (DL) may not be the walked line on the ground. Developers may find that the DL infringes on the development site. In this case the options are to either incorporate the DL into the development design or to divert the right of way.

Surfacing

B6 If a public right of way which is in a rural setting and unsealed, is incorporated into a development it should then be sealed with tarmac or flexi-pave. Hogging and gravels are not sufficient in most cases as the PROW will have increased usage and often be part of an urban, sealed landscape. Any sealed surfacing needs to conform with highway standards.

Status

B7 When a public footpath is being incorporated into a development, upgrading to a bridleway or allowing permissive cycling rights over the way is preferable, especially if it will link to other cycle ways.

Diverting a right of way

B8 Diversion Orders can be made under S257 of the Town and Country Planning Act 1990. The criteria is that the 'Authority is satisfied that it is necessary to do so in order to enable development to be carried out'. This applies to footpaths, bridleway and restricted byways. A Diversion Order can

be made at the planning application stage but cannot be confirmed until planning permission is granted which includes signing off on any S106 agreements.

B9 WBC has to consult a number of organisations on Diversion Orders, including the Ramblers' Association, the Open Spaces Society and the Parish Council. If there is an objection to an Order which is not withdrawn then it is sent to the Secretary of State for determination via written representations, hearing or Public Inquiry.

B10 It is recommended that the developer consults on the diversion order with the local community as soon as possible. WBC can also carry out an informal consultation with the above groups.

B11 Developers should allow 4-6 months for this process and longer if there are objections.

Greenways

B12 The Greenways project aims to encourage more walking and cycling throughout the Borough. It may be that a right of way through a development has been identified as a Greenway. If this is the case then there will be a higher specification applied to the surfacing and possible upgrading to the status as described above. The rights of way officers will be able to advise on routes which are potential Greenways.

B13 Within some developments there will be an opportunity to create new rights of way and Greenways and these opportunities should not be missed. The rights of way officers will advise if they want to create a right of way through a development.

Appendix C Guidance for Emergency & Refuse Vehicles

C1 Fire and Rescue Infrastructure

Introduction

C1.1 The Council considers that Fire and Rescue infrastructure should not be distinguished from other items of community infrastructure necessitated by a development. Where development would result in increased risk or the extension of developed areas then mitigation measures will be required to safeguard the provision of adequate fire and rescue infrastructure.

Assessing the Requirement

C1.2 Water supply works may be needed to fulfil the Royal Berkshire Fire & Rescue Service's duty to ensure the provision of an adequate supply of water for fire fighting. Requirements for the provision of fire hydrants and for other works necessary to ensure adequate supplies of water, in terms of both volume and pressure, may be required by the fire service.

C1.3 Developers should bear in mind that these requirements may relate to small-scale developments, particularly in more isolated locations without adequate infrastructure.

C1.4 The nature of risk will vary according to the type, density and location of development and each development will need to be assessed on an individual basis. The following guidelines are intended to inform and assist landowners and developers in assessing potential fire and rescue requirements:

- In residential areas fire hydrants should generally be positioned at 400 metre intervals and no dwelling should be more than 200 metres from the nearest hydrant. In industrial areas hydrants should be positioned at 250 metre intervals and not more than 125 metres from any development.
- Fire hydrants covering public buildings, hotels, and commercial developments should be spaced at distances determined on a risk assessment basis defined by the fire service.
- The cost of providing a new fire hydrant on a new water main will vary depending upon the size of the main with an average cost in the region of £650 (excluding VAT) in 2010.
- The size of water mains provided is determined by the Water Undertaking. Where water undertakers are not proposing to lay mains of adequate size for fire fighting purposes, the cost of a supply from the nearest main of adequate size would be determined on an individual basis.
- Before laying a main, confirmation from the fire service would be required that the intended size would fulfil the fire fighting needs identified for the nature of risk presented by the proposed development.
- In planning provision of fire hydrants in countryside areas, attention should be given to specific risks and no definitive distances can be provided.
- For developments that are of significant risk e.g. processing activities involving the use of highly flammable materials, proposals will be considered on their merits to ensure that the overall provision for fire fighting is adequate. This may include internal water based

protection systems, private fire hydrants, statutory fire hydrants and other “open water” supplies where appropriate.

- Fire hydrants should be sited in positions to be agreed by the Royal Berkshire Fire Authority and the Local Planning Authority. Such locations will be at main roads, feeder roads or road junctions where they are readily visible.

C2 Refuse Vehicles

Introduction

C2.1 All carriageways on any new development shall be designed to such a width which permits ease of access by refuse collection vehicles and other domestic service vehicles. It is policy within WBC to enable the collection of refuse bins from the edge of highway. It is not common practice for refuse vehicles to access private roads and developers should thus provide suitable bin storage facilities desirably within 10 metres of the adopted highway.

C2.2 ‘Purpose built collection points’ are discouraged for self-contained dwellings. These should only apply to communal buildings, such as flats. These collection points should therefore only be provided for apartments.

C2.3 The maximum walk distances between a refuse vehicle and the refuse collection point are:

- 25m for standard collections
- 10m for bin stores such as at communal buildings and/or ‘Euro bins’

C2.4 The recommended maximum walk distance for residents to the roadside or collection point is 30m.

C2.5 For more information refer to the Guidance Notes for Developers (Waste and Recycling), (WBC, 2016). <http://www.wokingham.gov.uk/rubbish-and-recycling/recycling/waste-information-for-developers/>. You may also consult our Cleaner & Greener Team on 0118 974 6000 or via cleanerandgreener@wokingham.gov.uk.

Appendix D Trees & Landscaping Additional Information

D1 Further Guidance Details on Trees & Landscaping

D1.1 New tree planting will need to take account of visibility splays although the road layout should be designed to accommodate sufficient tree planting so not as to obstruct visibility. MfS2 indicates there is a need to consider the overall visibility envelope as there may be circumstances where the occasional obstacle such as clear stem trees can be included. Studies have shown that one of the benefits of trees adjacent to roads is that they improve roadway definition and reduce design speeds. The choice of tree species within the highway will need to be carefully considered as part of the overall design proposal and specialist advice sought from a Landscape Architect. (Further parameters for planting are given below).

D1.2 Shrub planting within and/or adjacent to the highway boundary will need to be designed so that it doesn't obstruct footways/ cycleways or require continued maintenance to maintain a clear route. Low level planting within the visibility splays is permitted provided it doesn't exceed 600mm in height when mature. Trees should also not interfere with street lighting, traffic signals or signage.

D1.3 New utilities routes should be planned to avoid strategic areas of Green Infrastructure including the root protection areas of existing trees to be retained and new street trees. Where possible underground services should be routed in shared service ducts located under the footway/cycleway. Where required, tree root barriers can be installed within the service run at the same time as the services are installed. (Further details on tree pit requirements are set out below)

D1.4 The planning, design, procurement, planting and maintenance of street trees should follow the principles set out in BS 8545:2014 Trees: from nursery to independence in the landscape – Recommendations under the supervision of a Landscape Architect or Arboriculturalist.

D1.5 All trees that are within the highway boundary to be adopted will attract a commuted sum for maintenance (including the establishment of new planting). Refer to Key Doc 3 for these commuted sum values.

D1.6 Hard landscaping within the highway boundary such as walls, fences, surfaces and street furniture can dictate the character of an area and should form part of an integrated design that forms part of the wider public realm strategy. Hard landscaping can be used to create links between buildings, give security to private areas, direct pedestrian and vehicles movement, assist people with disabilities and provide areas of social activity. The selected material used should complement the surrounding buildings and locality. It should also be durable for its purpose, of sound quality and replacement parts readily available.

D2 Selection of Tree Species

D2.1 The choice of tree species will depend on the space available for the trees to grow to maturity both above and below ground. As part of a new build scheme a multi-disciplinary approach to the design process will be essential to design in the necessary requirements for trees adjacent to the highway. Consideration will need to be given to the site constraints for trees adjacent to highways both for new build or retrofit which include availability and quality of soil, soil volume, water availability and movement, sunlight and shade, pollution and wind. Climate change will also be a factor when considering the suitability of some species and their ability to adapt to predicted

climate conditions. The choice of trees will also need to consider aesthetics such as shape, colour, texture and seasonal variations (including flowers, fruit, and leaf drop).

D2.2 The specification for the size of tree provided at the time of planting will need to relate to its proposed location. In the public realm where adjacent to a primary route, it is expected that larger tree stock such as Advanced Heavy Standards (16-18cm girth) or Semi-Mature trees (18-20cm+) are specified to provide appropriate visual amenity at the outset for these key specimen trees and to reduce their vulnerability though vandalism. The spacing for street/avenue trees will depend on the design and layout of the scheme, highway constraints such as utilities and sight-lines which should have been designed out as much as possible, and species selection.

D2.3 Smaller tree stock (Standards and Heavy Standards) can be specified within the public realm where the trees are planted in groups and where there is less risk vandalism. There may be some locations where whips and transplants can be used to create a woodland type mix for planting associated with new road schemes in rural areas or those schemes requiring more informal planting.

D3 Tree Pit design

D3.1 The rooting volume for all new trees will need to be carefully considered and provision made for sufficient root space. One simple calculation is to take the projected canopy area of the mature tree and multiply this by a depth of 0.6m. Where trees are planted in 3m wide verges that are continuous the volume of soil can be shared by the trees. Where trees are planted in small areas of verge, in-between parking bays of less than 2m wide or as part of a hard landscape scheme (i.e. with paving or hard surfacing around the tree) there will be insufficient soil volume in a standard tree pit for these trees to thrive. In these circumstances we will require a below ground engineered system to provide a non-compacted rooting environment which has a load bearing capacity and allows sufficient access to air and water. These cellular systems can also be used for storm water management as they allow water to flow more freely through the tree's rooting zone. A number of companies provide an integrated crate type systems/root cells that provide these features.

D3.2 Where the rooting area of the tree will need to be restricted to prevent any future conflict with associated highway structures and utilities, the use of root barriers and/or root directors should be considered. In some circumstances it may be appropriate to locate root barriers on the edge of the service trench rather than within the tree pit. The use of the crate system or structural soil cells can also be used in conjunction with service corridors in areas where utilities are prevalent.

D3.3 Trees require a good quality loam soil with a high content of organic matter, sand and clay silt, however specific requirements will depend on the species of tree planted, its location and if there are any storm water management objectives. The use of structural soils containing a high proportion of angular gravel or stone will not be permitted.

D3.4 Tree pits for the larger specimens will need to be fitted with a watering system which allows water to directly penetrate the rootball which is essential during prolonged dry weather.

D3.5 In some locations it may be appropriate to use the tree pits as part of a SuDS strategy especially where structural soils cells are used. This should be developed in conjunction with the drainage engineer.

D3.6 Trees will need to be staked using a single or double stake depending on the size of the tree, with stake height to be no more than one third of the clear stem of the tree or approximately 600mm above ground level. Where double stakes are used a cross piece will be required with suitable spacers. Advanced Heavy Standard or Semi-Mature trees will have a much larger rootball and therefore these will need to be supported using an underground guying system. If the tree is planted within tree pit with a below ground engineered system of soil cells, the underground guying system will need to be used.

D3.7 Depending on location but especially within the urban public realm, trees may require tree guards and the design and type will need to be integrated as part of the tree pit detail.

D3.8 All tree pit designs and especially those within the public highway will need to be fully detailed to show adequate rooting volume for trees in a variety of circumstances and these will need to be submitted as part of a detailed landscape scheme to comply with a landscape condition.

D4 Maintenance

D4.1 All maintenance will need to be in accordance with the general requirements of B8545:2014 and/or part of a wider landscape management plan provided for all new planting on development sites.

D4.2 Watering newly planted trees will be essential during the first two planting seasons.

D4.3 Trees planted in the highway verge will require an area of mulch around base of tree up to 1m in diameter and 50-75mm thick to help suppress weeds and retain moisture.

D5 Further Guidance

D5.1 Further guidance can be found at TDAG – Trees in Hard Landscapes – A guide to Delivery, September 2014.

Appendix E Electric Vehicle Charging

E1 Electric vehicles (EVs) are expected to largely replace existing petrol and diesel cars in the coming years. A major barrier to ownership is the ability to have an accessible charging point at the drivers' home as charging overnight is reliable and efficient. There are two types of provision:

- 'passive': a wired in system that can be readily converted later
- 'active': includes a direct charging point ready for use.

E2 A distinction between passive and active is made because at new developments it is relatively low cost to introduce a passive system for upgrading to active. Retro fitting a system is costly and disruptive to developments. Therefore, the priority for new developments is to ensure high availability of passive facilities that can be converted later as required.

E3 WBC are adopting a phased approach to increase provision over a period between 2019 and 2030 as shown on Table E1. All residential planning applications are required to provide as a minimum, these levels of EV charging facilities per dwelling. Provision is different for 'on-plot' parking spaces which means the parking space is within the residential curtilage and may also include a garage and/or car port. The 'off-plot' charging spaces are outside the dwelling's curtilage and can be an allocated or unallocated space within a parking court or near to, or adjacent to a dwelling. The Table shows that 'on-plot' parking provision from 2019 with all planning applications requires 35% passive and 5% active. By 2030 this increases to 70% passive and 30% active.



Year	Spaces on-Plot		Spaces off-plot	
	Passive	Active	Passive	Active
2019	35%	5%	25%	5%
2026	50%	20%	40%	10%
2030+	70%	30%	60%	20%

Table E1: Minimum Electric Vehicle Charging Requirements

E3 On-street EV charging spaces are welcomed and can contribute to off-plot totals. In new developments they should be provided in addition to visitor spaces. If on public highway, a commuted sum for maintenance is required and a Traffic Regulation Order may be needed. Wider application of for rapid charging should be considered near to sub stations.

E4 For small scale developments of up to three dwellings there is a minimum requirement of a passive space for each dwelling in 2019 and an active space for each dwelling from 2026.

E5 For each EV passive or active charging point these specifications apply:

- a power supply that can accommodate a minimum of 7.4kw (1 phase 32A) and preferably 11kw (16A 3 phase). Demand for 11kw and 16kw chargers are expected to increase with larger vehicle batteries and extended ranges. The Borough may increase the requirement of the minimum kw charging rate in line with technology changes;
- for 'off-plot' charging an individual payment system is required. This is likely to be a metered connection to a dwelling or a card payment system.

E6 For non-residential land uses including employment, leisure, education and retail, EV charging points will also be required. Land uses with shorter stays such as leisure and retail should

consider rapid chargers. Where they are active, the EV parking bays will need to be marked out and signed. The following minimum levels of provision are required if there is car parking:

- 1 passive and 1 active charging point for up to 20 parking spaces;
- 5% of car parking spaces to be passive and 5% active for proposals of more than 20 spaces.

Appendix F Advance Payments Code

Introduction

F1 The following sets out what the Advance Payments Code is and how it is applied within Wokingham Borough. Figure F1 shows a flow chart of the process.

F2 Please note that this guidance applies both to roads that are to be adopted and to those that are to remain private (and thus not maintainable by the Council).

What is the Advance Payments Code (APC)?

F3 The Advance Payments Code (the Code) is the mechanism for ensuring the payment of the costs of street works in private street fronting buildings in the event that the builder cannot complete them. The Code is intended to protect purchasers of new properties fronting a private street from having to pay for the costs of making up the street to a usable standard in the event that the builder fails to do so.

F4 The Council will calculate the potential costs for the making up of the roads and within 6 weeks of the passing of building regulations approval will serve notice (an APC Notice) on the builder requiring them to provide security for the sum (usually in the form of an NHBC Bond) before starting any other works in the private street.

F5 It is an offence to start building works before complying with the Notice and the Council may bring a prosecution against anyone who contravenes the Code.

F6 The Bond will be cancelled at such time as a Section 38 Agreement is entered into or the Council certifies that the street is exempted from the provisions of the Code. The relevant legislation is set out in sections 219 to 225 of the Highways Act 1980.

How the Code will be Applied and Exemptions

F7 The Council will apply the Code to developments of more than five units.

F8 The Code will generally **not** be applied to a private street that is capable of serving five or fewer units. The reasoning for this is that these streets do not constitute sufficient public utility and are therefore not suitable for adoption.

F9 However the Code **may** be applied to a private street that has five or fewer units if it is capable of taking further development in the future which would lead to more than five units.

F10 The Code provides for certain buildings to be exempted from the Code. Requests for exemptions from the Code will be considered by the Council. However it should be noted that the fact that a Developer may have indicated their intention to enter in a Section 38 Agreement will not constitute grounds for exemption from the Code and will not discharge the legal obligation to provide security for the sums specified in the APC Notice.

Serving the Notice

F11 The Council will serve the APC Notice within six weeks of formal notification of Building Regulations being approved or acceptance of the Initial Notice served by an independent building control inspector on the person who deposited the plans.

F12 The APC Notice will also be registered in the Local Land Charges Register and thus will be binding on future owners of any land within the development.

F13 On commencement of building works the Council will remind the Developer that the Code now applies and will send an APC Bond for execution by the Developer and the NHBC.

F14 If the Developer fails to provide the APC Bond in contravention of the Code legal proceedings may be issued by the Council.

APC Sum

F15 The APC Notice will specify the sum required to be secured by a surety bond. This sum represents the estimated reasonable and administrative costs for making up the roads to a satisfactory standard and will be the amount recoverable under the Private Street Works Code if it became necessary for the Council to make up the road.

F16 The sum is calculated by the Council using the same standard formula used in calculating bonds for Section 38 adoption agreements.

F17 Any person on whom the Notice was served, or if a different person the owner of the land on which the building is to be erected, may within one month of the service of the Notice appeal to the Secretary of State who may substitute a smaller sum than that specified by the Council.

Payment and Enforcement of APC

F18 All Developers are required to provide security for the amount set out in the Notice prior to commencing building works. The Council's usual practice is a requirement of a third party bank or insurance bank bond. In practice most bonds are provided through the NHBC and any alternative supplier will require the approval of the Council's Finance Officer.

F19 It is a criminal offence for the Developer or the person erecting the buildings (if different) not to secure the sums required to be paid under the Code (or enter into a Section 38 Agreement with the Council) before commencing construction of **buildings** and therefore if building work is carried out before provision of the required surety the owner of the land and the person carrying out the building may be prosecuted by the Council. It should be noted that the provision of the APC Bond will be required notwithstanding that the Developer intends to enter into a Section 38 Agreement at a later date. On completion of the subsequent Section 38 Agreement the obligation to provide an APC Bond will automatically lapse and the Council will cancel the APC Bond.

Exemption from APC

F20 The Council will cancel the APC Bond immediately upon the Developer entering into a Section 38 Agreement providing for the adoption of the roads to which the APC Notice related.

F21 If it is intended that the roads will remain private and thus not maintainable by the Council in the future the following process will be applied.

F22 The Developer is required to agree a construction specification with the Council so as to ensure that the private roadway is reasonably fit for purpose.

F23 The Developer is required to provide layout and construction drawings to the Council for technical approval.

F24 The Developer is required to pay an inspection and administration fee calculated in accordance with the Council's Fees and Charges applicable to Section 38 Agreements prior to commencement of the works.

F25 The Developer is required to notify the Council not later than 15 working days before the date on which it intends to start construction of the roadway.

F26 The Developer shall co-operate with the Council's Highways Inspector throughout the works, notifying him or her at each significant phase of construction to enable each phase to be inspected.

F27 The Developer (or the owner of the private street if different) shall include a covenant in the deeds of sale to each plot fronting the private road requiring that successors in title will not seek the future adoption of the private street either under Section 37 or 205 of the Highways Act 1980. Legal Services will approve the wording of the proposed covenant before it is put in place.

F28 Provided that the roadway has been constructed to a satisfactory standard fit for its purpose and certified by the inspector, and provided that the Developer has paid the fees referred to above and complied with the provisions, then the Council will issue an exemption notice under 219(4) certifying that as at the date of the notice the Council was satisfied that the condition of the road was satisfactory and cancel the APC Bond.

Figure F1: APC Procedure Flowchart