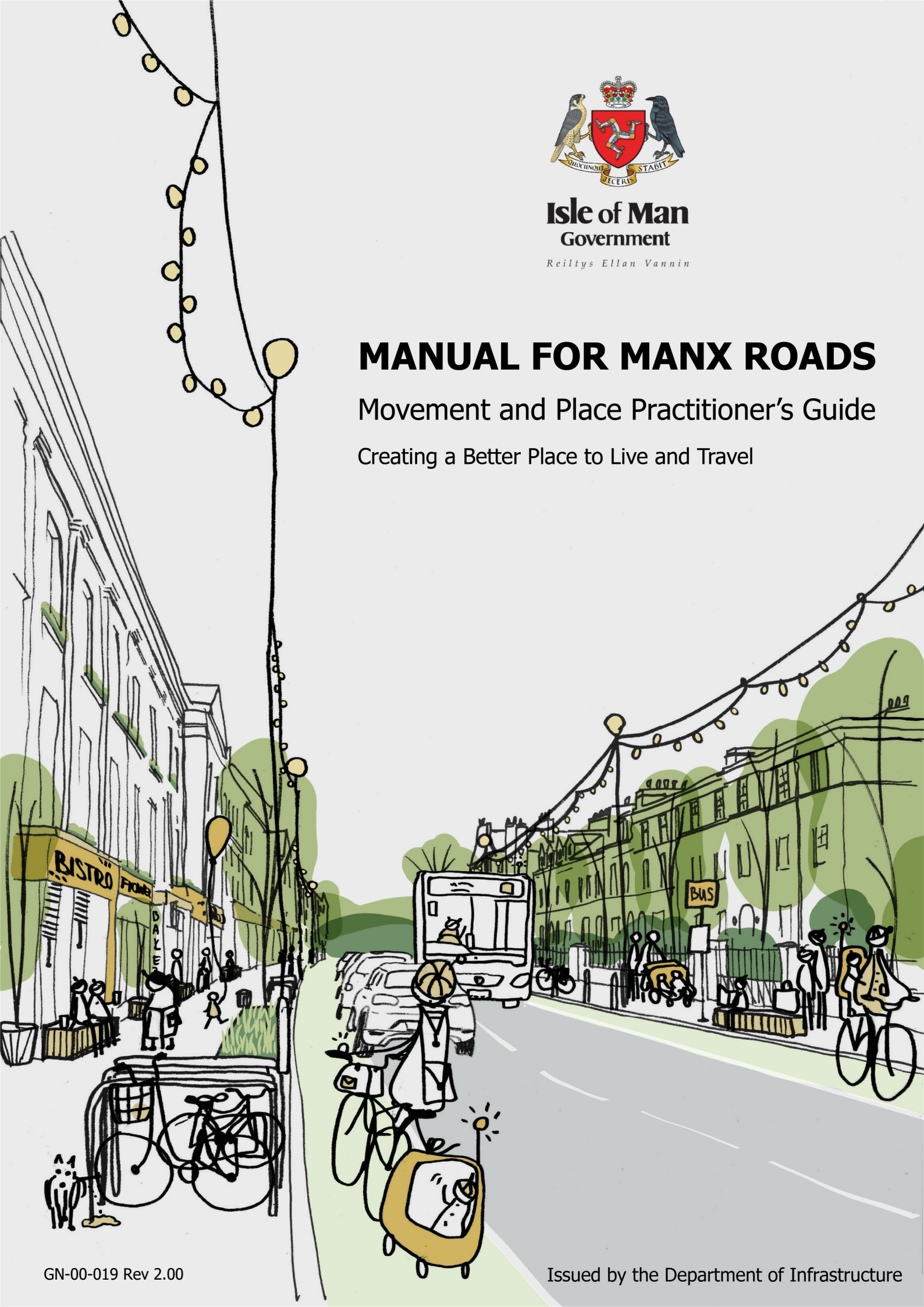
Isle of Man Government

Reiltys Ellan Vannin

MANUAL FOR MANX ROADS

Movement and Place Practitioner's Guide

Creating a Better Place to Live and Travel



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This document replaces the policies and guidance contained within the two previous documents: 'Manx Roads: A Guide to the Design of Residential Roads, footpaths, parking and services' and 'Manx Roads 2: Residential Roads Construction Guide', which were published in April 1993 and January 1997 respectively and are now withdrawn.

The Manual for Manx Roads (MfMR) is available online via the Government website. MfMR will be reviewed at regular intervals to ensure that it accurately reflects current guidance and policies as well as changes in working practices. Users are advised to consult the Government website to ensure that they are using the most up to date version of the document.

Throughout this document external hyperlinks (highlighted in blue underlined text) are provided for information and convenience only. The Department cannot accept responsibility for contents or reliability of sites linked to, or the information found there. For ease of navigation within MfMR, internal links are highlighted in green underlined text.

If you feel that any of the information is inaccurate or out of date, or if you have found a broken link, please contact the Department by emailing infrastructure@gov.im quoting 'MfMR' in the subject line.

Foreword

Everyone relies on the highway network to provide good access to services. People use the network to get to work, shops, education and healthcare facilities, whilst businesses rely on the network to enable raw materials and finished goods to be transported efficiently to their markets.

My Department is the custodian of the Isle of Man highway network, responsible for ensuring the safety and well-being of all road users. We are committed to ensuring that our national infrastructure assets are constructed to the best standards that we can reasonably afford.

Our aim is to develop, regulate and maintain a safe, modern highway network that is fit for purpose today but anticipates the opportunities the future brings. A network that is designed for people, reflects the needs of different road users and accommodates all modes of transport.

We will promote quality, innovation and sustainability but be considerate of economic and environmental factors. We will encourage collaborative working with all stakeholders to create healthy, viable and more inclusive environments for the people of our Island.

This guide is a key element in our drive to allow us and our partners to deliver this strategy.

Hon Tim Baker MHK

Minister for Infrastructure

Purpose

The Manual for Manx Roads (MfMR) is published by the Isle of Man Government's Department of Infrastructure. Our aims are:

- **to ensure the highway network enhances accessibility to goods and services and encourage a diversity of transport modes**
- **to ensure the highway network provides for safe interactions between transport modes**
- **to maintain a safe, inclusive and serviceable highway network**

The MfMR design guidance should be used by all practitioners whose decisions will result in changes to the Island's roads, and as such is a reference source for:

- Department of Infrastructure officers
- Government Departments and Boards
- developers
- architects
- design engineers
- local authorities
- the public

All new development requires some new highway infrastructure, ranging from a simple access onto an existing road or footway, to new street layouts serving many houses or mixed use commercial and industrial developments. The MfMR sets out design principles, processes and appropriate geometric and technical requirements for street design and public space for those involved in the planning, design, approval, construction and maintenance of highways and developments.

Its content reflects current best practice, standards and guidance and reference is made throughout to the Manual for Streets (MfS) and Manual for Streets 2 (MfS2). It recognises the importance of streets in promoting health and well-being, safety and security and in meeting the Government's wider aspirations outlined in the Programme for Government, the Road Safety Strategy and the Active Travel Strategy to provide new, safe places for people to live, work and play, promoting healthy lifestyles and environmental sustainability.

It incorporates current design thinking, promoting design principles, and clear, concise and collaborative ways of working from concept to completion. It provides technical guidance for more flexible designs to provide a well-balanced, safe, accessible and easily maintainable highway network with distinctive high quality infrastructure.

This guide is applicable to new residential, mixed use developments, as well as commercial and employment-led developments, and for the assessment and review of existing streets with a speed limit of 30 mph or below.

Generally, vehicular access points on roads with a speed limit of 40 mph or higher, or where 85th percentile speeds are more than 37.5 mph shall be designed in accordance with the Design Manual for Roads and Bridges (DMRB). Where there is an absence of specific advice within this guide, the design and construction of works on existing or proposed infrastructure, shall comply with the DMRB.

This guide recognises that the design of streets and the development these serve are multipart. It requires an understanding, consideration and integration of the setting and the bringing together of the many functions provided, including place, movement, access, drainage and parking.

Compliance with this guidance will result in a highway network which is safe and accessible for all road users, is suitable for all modes of travel, and which is buildable and affordable in relation to its future maintenance needs.

Introduction

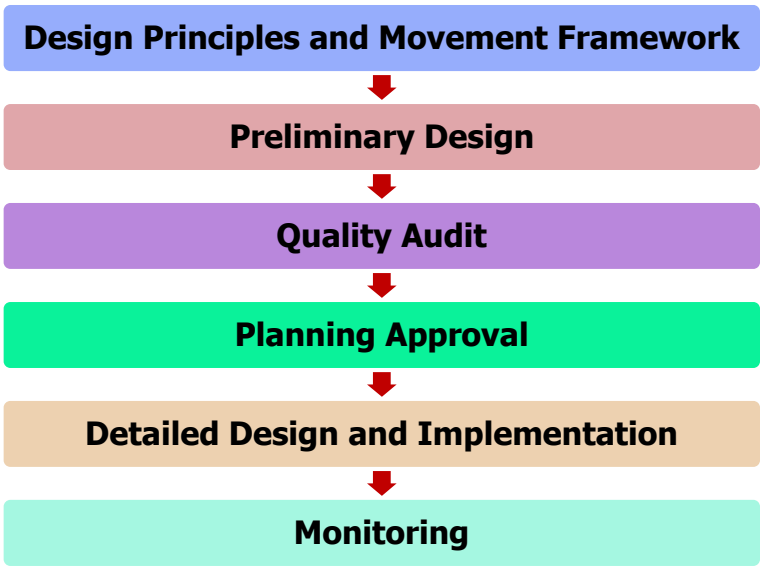
This document describes current best practice and sets the quality standard that the Department will accept. We expect designers to follow the design advice in this guide and show with supporting information how their scheme complies with it. We will consider flexibility in some areas of street design where there are no absolute requirements, such as relating to highway safety. Where designers propose a design or feature that does not accord with this guidance, advice and other parameters, it will be necessary for designers to justify their departure from our quality standard with supporting evidence that a better or more appropriate solution exists.

The Department is charged with fulfilling the various statutory duties set out in the Highways Act 1986 and other relevant legislation. Roads intended to be put forward for adoption under section 4 of that Act must comply with our design and construction criteria.

The Design Process from Policy to Implementation

MfMR sets out the processes to be followed to ensure consistency in delivering well-designed streets, spaces and developments. We encourage early engagement to save resources as schemes are more likely to require fewer changes as they go through the planning and technical approval stages.

The life of a scheme, from conception through design and implementation to maintenance can be broken down into a number of stages. The relevance and importance of each stage will vary from scheme to scheme depending on the size of the proposed development but the key stages can be summarised as:



Guidance for each of these six key stages is dealt with in more detail in the relevant part of MfMR as outlined below.

Part One – Design Principles and Movement Framework (Creating a Better Place to Live and Travel): provides guidance on recognising and understanding the need for good highway design, and identifies government policy and objectives that a designer should encompass within the highway design.

Part Two – Preliminary Design: indicates the acceptable design criteria for the highway making up the public space which facilitates all public activity. This includes streets, paths, the circulation and storage of motorised and non-motorised traffic and other related components.

Part Three – Quality Audit: provides guidance on carrying out quality audits required to assess compliance with Department's objectives.

Part Four – Planning Approval: shows how the Department assesses planning applications. It provides advice to developers, their architects and designers on the highway and traffic information which the Department requires to assess a planning application.

Part Five – Detailed Design and Implementation: provides guidance on road construction, the road adoption process and undertaking work within the highway. It includes information on the technical design of new roads, the specification of materials and standard of workmanship.

Part Six – Monitoring: indicates how the Department will monitor the impact of the development.

It should be noted that it is an offence under the Highways Act 1986 to carry out any works within the public highway without permission from the Department. Construction work affecting the highway should not commence until appropriate authorisation has been obtained.

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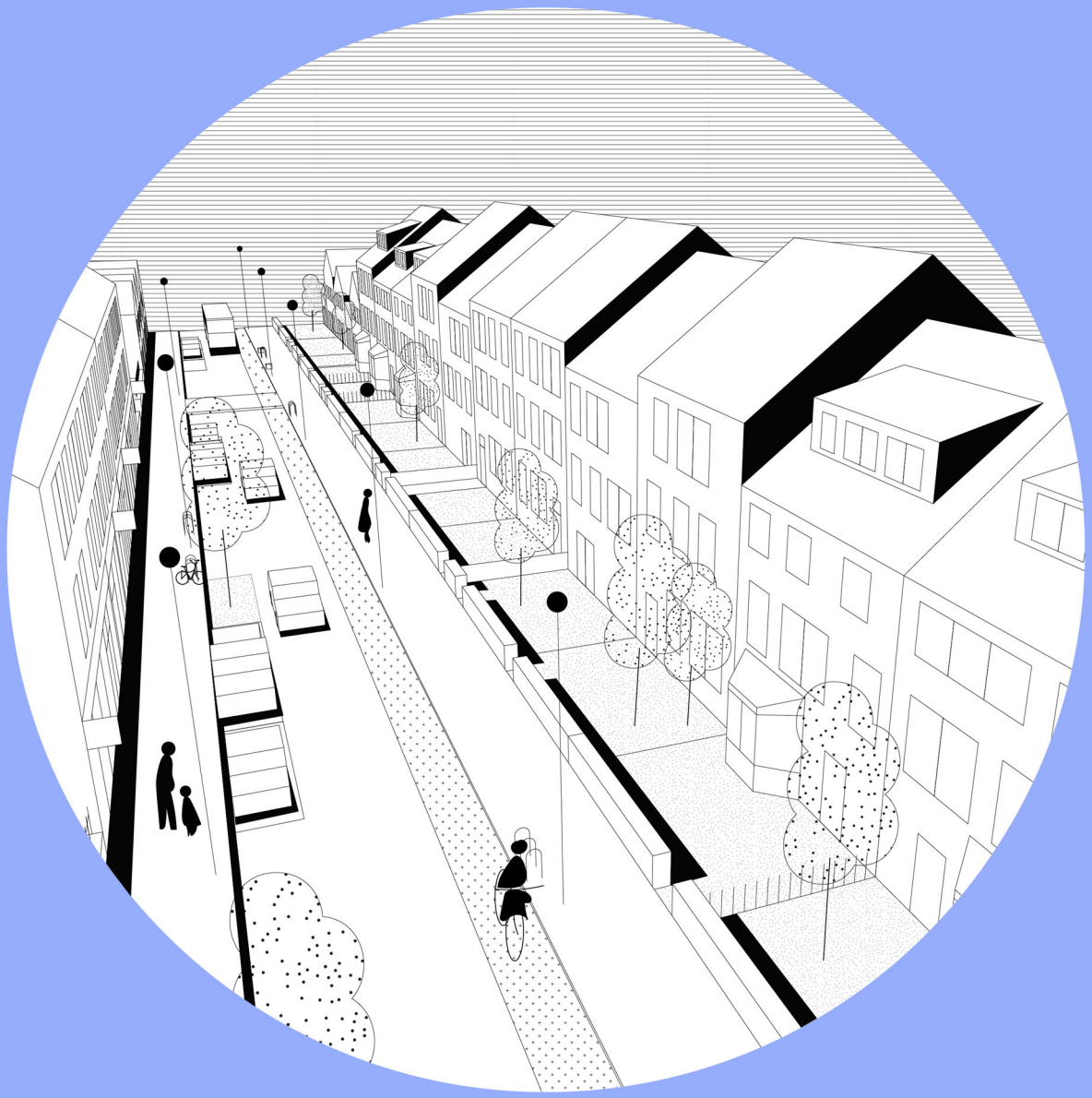
PART ONE

DESIGN PRINCIPLES AND MOVEMENT FRAMEWORK



Section 1 - Movement and Place

1.1 Transport Infrastructure and Planning

1.1.1 Transport infrastructure gives shape to the Island's towns and villages, often determining the location of other associated facilities. People's ability to access goods, services and other people underpins socioeconomic well-being. Improving and establishing more equitable access for all is critical in the development of our transport infrastructure.

1.1.2 To fully support the Government's response to climate change, we must fundamentally re-evaluate historic concepts underpinning how transport infrastructure is designed and developed. Assumptions that improved transport infrastructure must result in increased vehicle travel speeds and shortened journey times are out-dated. The focus should instead be on greater accessibility and better connectivity; on travel cost and time budgets; on reaching destinations safely, conveniently and reliably; and on providing opportunities for individuals and the exchange of goods and services.

1.1.3 Accessibility based transport planning and design reflects this change of emphasis from traffic (focus on level of service of roads and vehicle speeds) and mobility (focus on multi-modal, door-to-door movement), to connectivity (focus on ease of exchange between fixed locations) and accessibility (focus on travel costs and time to reach destinations).

1.1.4 These can be considered as nested concepts where traffic is a subset of mobility, and mobility is a subset of accessibility, as illustrated in Figure 1.1.

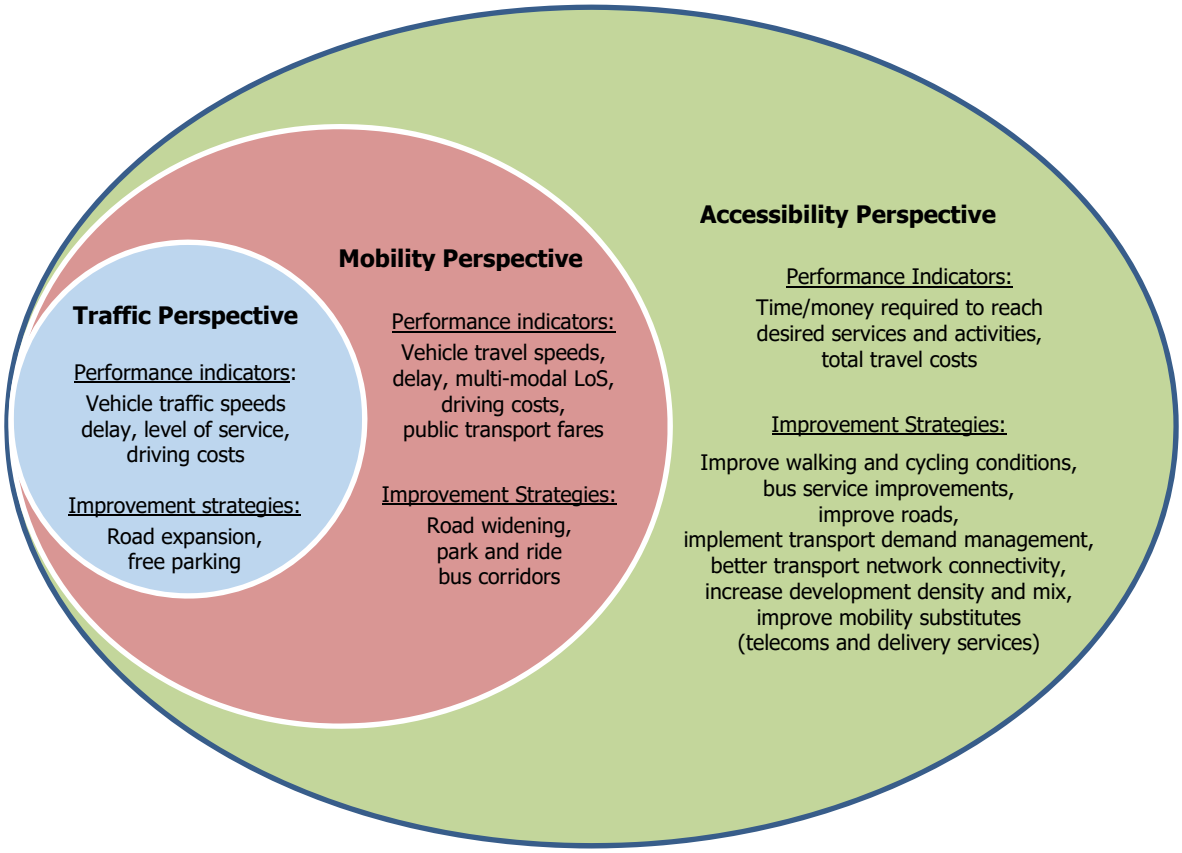


Figure 1.1 Nested Accessibility Criteria

1.1.5 Improving accessibility means that the relationship between transport infrastructure and settlement form must be considered holistically. For example, settlements with greater densities and mixed use, can act as substitutes for transport infrastructure and mobility services. Higher densities establish the preconditions for viable high-capacity public transport which in turn improve accessibility.

1.1.6 Transport infrastructure is therefore a critical strategic policy tool, shaping towns and villages and coordinating settlement futures, as it creates lock-in effects which can determine future development for decades. Well-designed transport infrastructure can be used to achieve objectives beyond town and village accessibility ranging from social inclusion to a more efficient use of land.

1.2 Principle of Movement and Place

1.2.1 In transport infrastructure development, the focus on accessibility implies a reordering of priorities. A central test for this reordering is the degree to which place making rather than the facilitation of movement is being supported. This reordering or recalibration, of design priorities gives at least as much planning and design attention to serving people and places as to mobility.

1.2.2 The principle of 'Movement and Place', which underpins MfMR, aims to develop a highway network which improves accessibility, which in turn supports the liveability and vitality of places where people live and work. The Movement and Place design principle integrates land use and highway design by having people focused outcomes, and delivers wider benefits for the health and wellbeing of the Island's community.

1.2.3 The Island's highway network is categorised into a hierarchy of four road and street types named Primary, District, Local, and Local Access. Figure 1.2 shows how the Movement and Place concept applies to each of the four road types.

1.2.4 The guiding principles of Movement and Place are that the needs and expectations of transport users and communities change for different street and road environments. Similarly, there is the need to prioritise different users, depending on which street or road environment they are travelling in. This more integrative approach will provide better clarity to users and the public about how the Department balances these different uses of the highway network to improve accessibility.

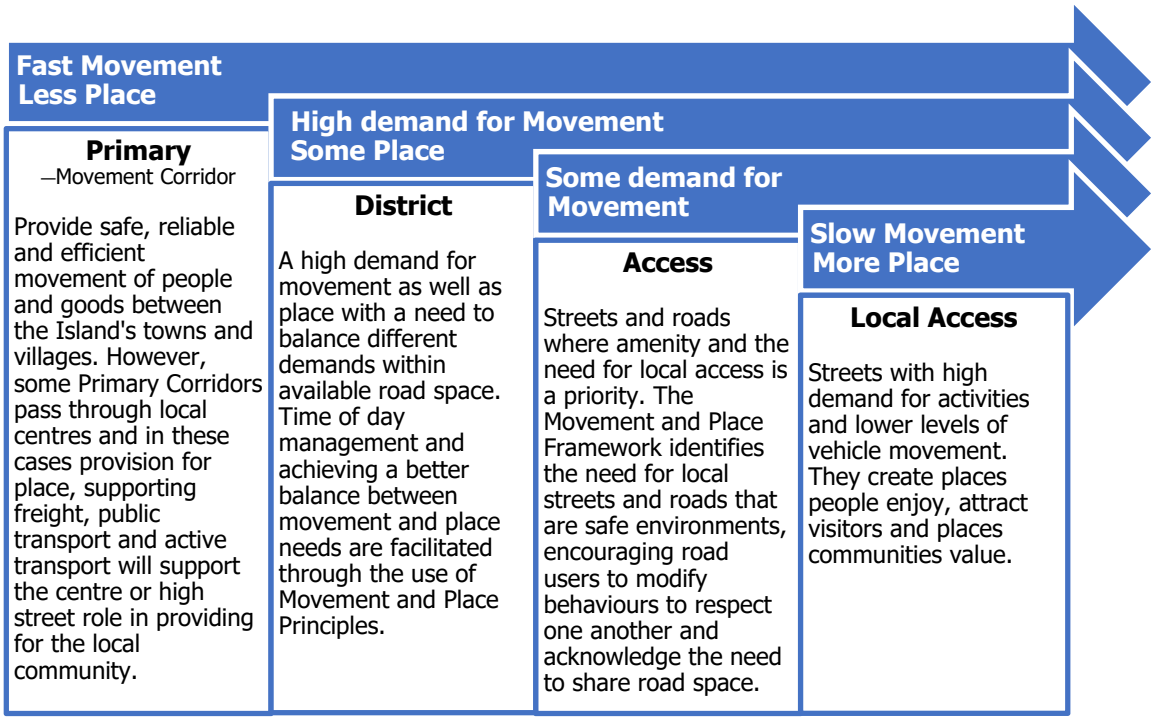


Figure 1.2 Road and Street Types

Section 2 - Design Principles

2.1 Introduction

2.1.1 This section sets out the design principles that are needed to achieve the Department's highway Movement and Place objectives by integrating movement and land use.

2.1.2 Each one of the eight design principles shown in Figure 2.1 should be kept in mind when creating new highways or changing existing ones.

Figure 2.1 The Eight Design Principles

2.1.3 Each of these eight principles is described in more detail below.

2.2 Designing by Collaboration

2.2.1 Joint working is an essential part of the design culture and should be applied at all stages of the design process. It is important to:

- set shared objectives
- understand one another's interests, aspirations and requirements
- reconcile any competing interests or site-specific challenges in an efficient and amenable way

- share information and seek the views of those involved

2.3 Enabling Walking and Cycling

2.3.1 Achieving a greater uptake of walking and cycling, or 'active travel', leads to a wide range of benefits such as:

- improvements in health and wellbeing
- reduced costs to the health service in tackling issues such as obesity and respiratory diseases
- a more efficient movement of vehicles within the road network leading to decongestion and improved air quality

2.3.2 Design solutions should give precedence to walking and cycling over motor vehicles wherever practicable. To maximise their uptake, designers should seek to create pleasant, inter-connected and overlooked places which deter anti-social behaviour, allowing people to feel safe when walking and cycling.

2.4 Providing Quality Public Spaces

2.4.1 The public realm is largely made up of streets. Successful designs embrace good urban design to ensure that streets are attractive and enjoyable places to linger and pass through. This encourages:

- walking and cycling
- social interaction

2.4.2 The nature of the public realm will differ from one street to another and is dependent on the context. To achieve a sense of place requires designers to consider the three dimensional aspects of the highway, the surrounding buildings and open spaces.

2.5 Supporting Safety and Security

2.5.1 Design solutions must promote safety and security for all users through:

- a more inclusive approach involving slower traffic speeds to create a safer environment
- the promotion of an appropriate level of activity in private and public spaces to foster natural surveillance and creation of defensible spaces to minimise crime and the fear of crime

2.6 Designing for All

2.6.1 Streets must take account of the needs of all users, including disabled and older people, and others with protected characteristics. Inclusive design involves creating buildings, streets and other spaces, which everyone can use easily, safely and with dignity.

2.6.2 Specialist services are vital for communities to function so street layout design must accommodate, for example emergency vehicles, waste collection and utility services.

2.7 Responding to Local Context

2.7.1 Designs should respond to the unique history, cultural heritage and diversity of the local area to help define and/or promote identity and contribute to the enjoyment of public spaces. This will include consideration of existing streetscapes, buildings and landscapes in order to produce suitable design outcomes.

2.8 Increasing Resilience for the Future

2.8.1 Streets are dynamic, multi-functional spaces where usage will evolve over time. So streets need to respond to future changes with design solutions that are:

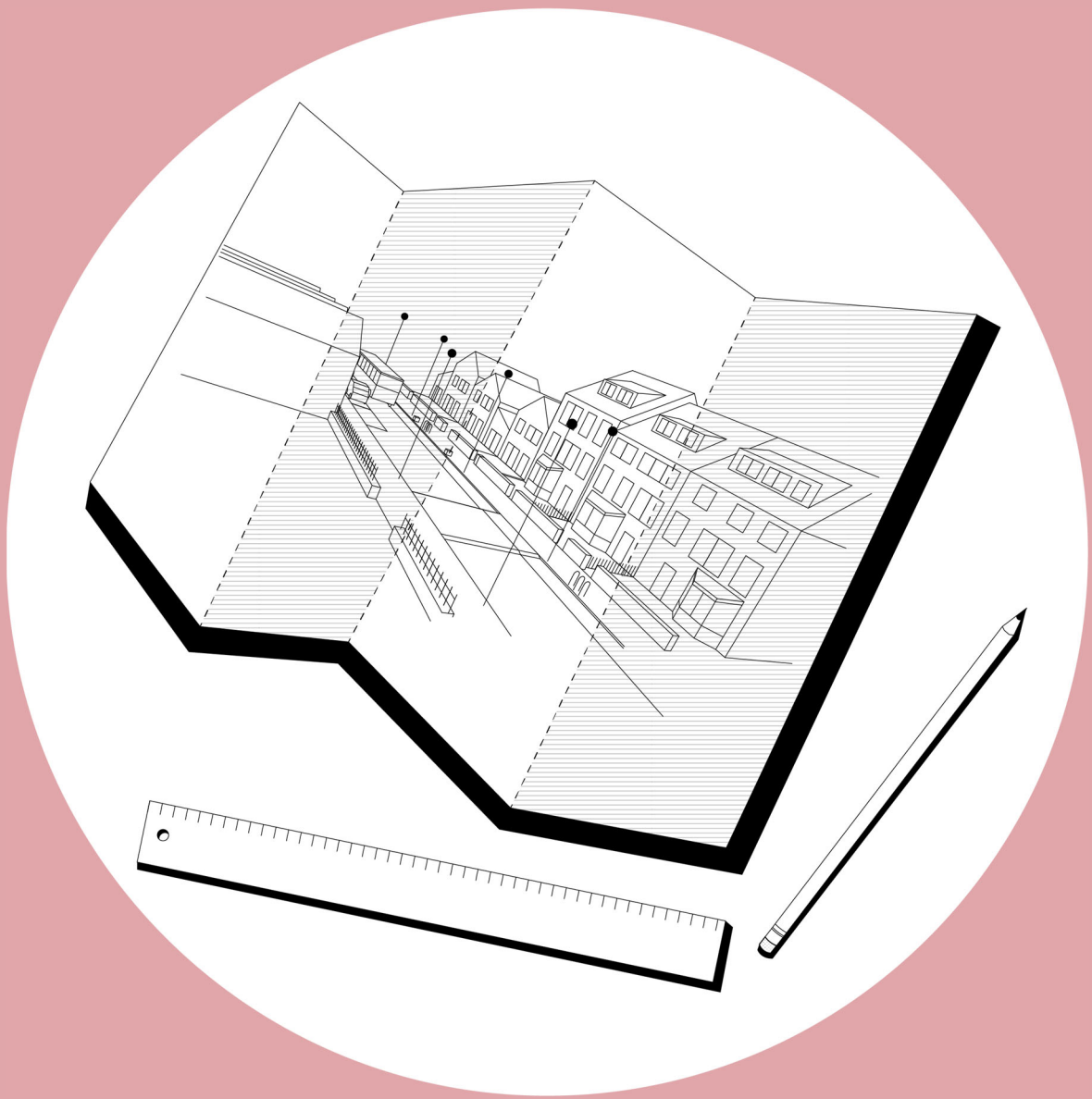
- simple and cost effective to maintain. The maintenance of streets which are to be adopted represents a cost to the Island which must be managed efficiently and effectively in terms of the organisations responsible for each element and through the selection of materials and design details
- coherent and sensitive to future needs which minimise environmental impact, such as by promoting sustainable travel, appropriate tree planting and other vegetation
- able to meet technological innovations, such as autonomous vehicles

2.9 Supporting Innovation

2.9.1 We are open and receptive to innovative designs which accord with the above principles without compromising future resilience, particularly when supported with robust evidence. We encourage the application of emerging and evolving best practice to overcome specific challenges, or meet existing and new needs in a better way.

PART TWO

PRELIMINARY DESIGN



Section 3 - Streets and Roads in Context

3.1 Streets and Roads

3.1.1 Streets and roads are multi-functional public spaces that have a significant impact on shaping places and influencing where people choose to live, visit and invest.

3.1.2 The term 'street' refers to a multi-functional place with a highway for movement that forms part of the public realm, typically with houses and other buildings and any green and/or communal areas on one or both sides. A street is predominantly about place. The term 'road' refers to a route that provides safe, reliable and efficient movement of people and goods between the Island's towns and villages. A road is predominantly about movement.

3.1.3 Streets and roads contain a variety of elements or physical features, such as carriageway, footway, verges, trees, parking facilities, lamp columns, seating etc. which all help to determine how the space functions and how people use it.

Characteristics		Type	Example
STREETS	Primarily about **Place** **Residential** in character	Mixed Residential and Commercial Streets	Mixed Residential and Commercial Street
		Residential Streets	Street with Footways
			Shared Surface Street
			Private Street
ROADS	Primarily about **Movement** **Non-residential** in character	Roads	Road in Built up Area
			Road in Rural Area
		Industrial Estate Roads	Major Industrial Access Road
			Minor Industrial Access Road
			Private Commercial Road

Table 3.1 Road and Street Type Examples

3.2 Street and Road Functions

3.2.1 Streets fulfil a number of important functions which can be grouped together as 'Place', 'Movement' and 'Servicing':

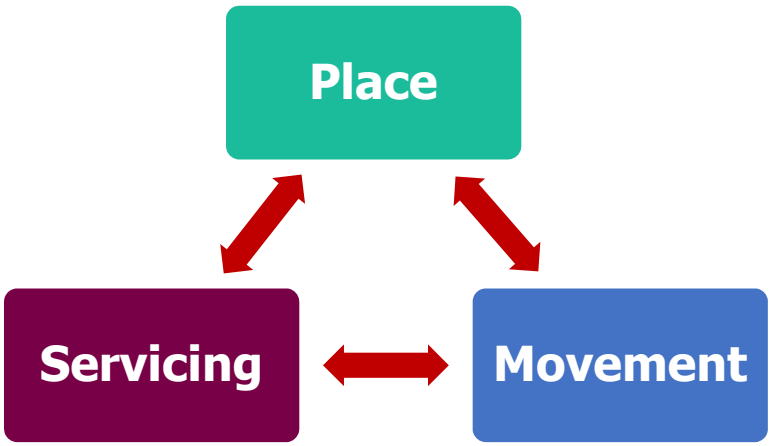


Figure 3.1 Movement — Place — Servicing

3.2.2 Place and Movement are the primary functions of streets. Streets are places where people live, work and play, and lie at the heart of community activity. Streets are also movement corridors allowing people and goods to get from A to B safely and conveniently.

3.2.3 Place and Movement are variables and the relative importance attached to each is best understood by the local setting and in collaboration.

3.2.4 Servicing is a supporting function, encompassing access, parking, drainage, utilities and street lighting. These are necessary to allow streets to work well at a practical level, and meet their primary place and movement functions.

3.2.5 We consider each of these themes is considered in greater detail below.

Place

3.2.6 Key considerations for designing streets that convey the greatest sense of place include:

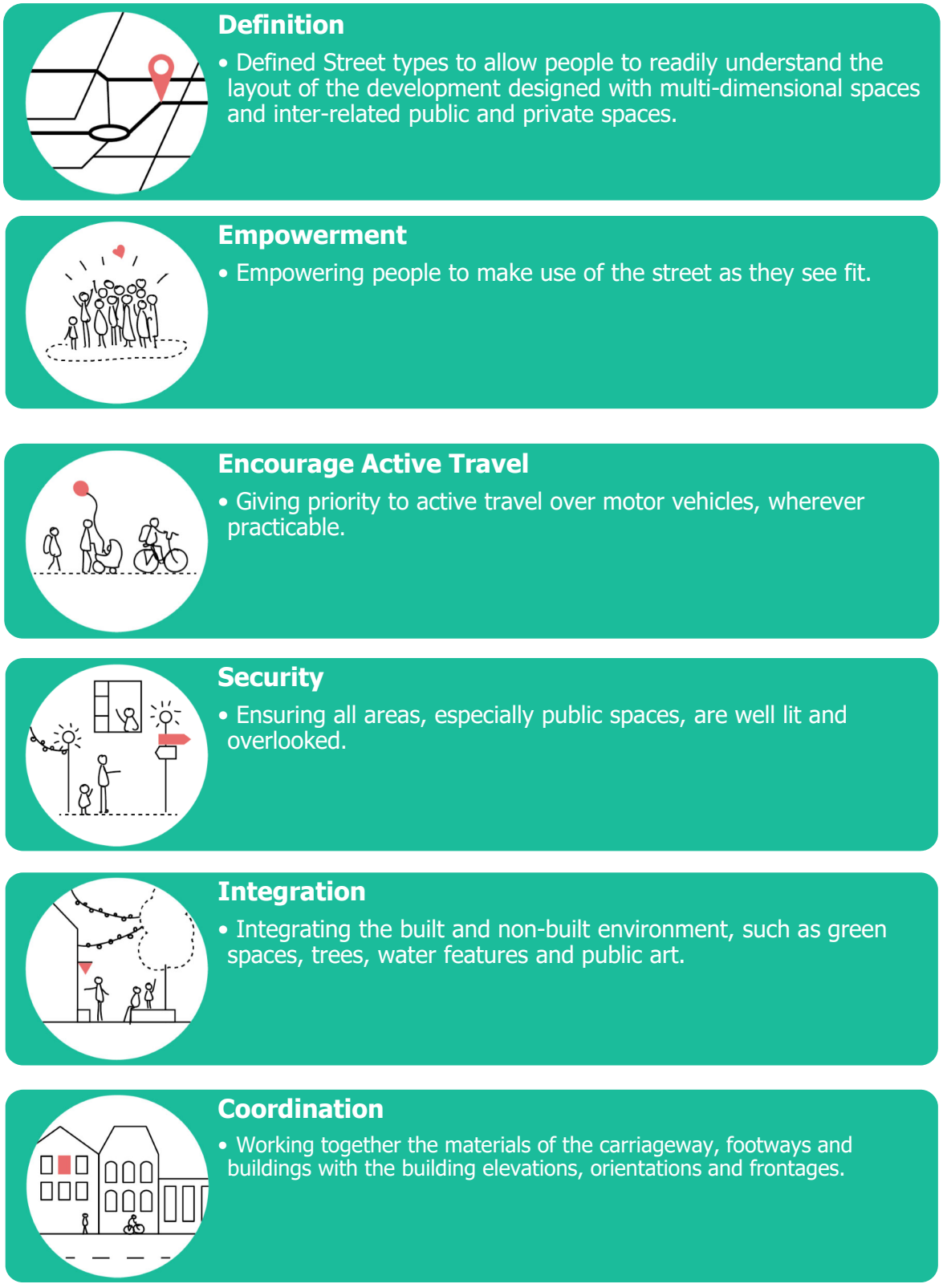


Figure 3.2 Key Place Considerations

Movement

3.2.7 Understanding the needs of various user groups is fundamental to designing sustainable movement. It provides direction on the prioritisation of decision-making for various modes.

3.2.8 Designers should consider all user groups to encourage the use of sustainable forms of movement, particularly for short trips, to the benefit of both the individual and the wider community. This shall be a key consideration when developing movement frameworks and in the design of streets.

3.2.9 The primary user groups are:

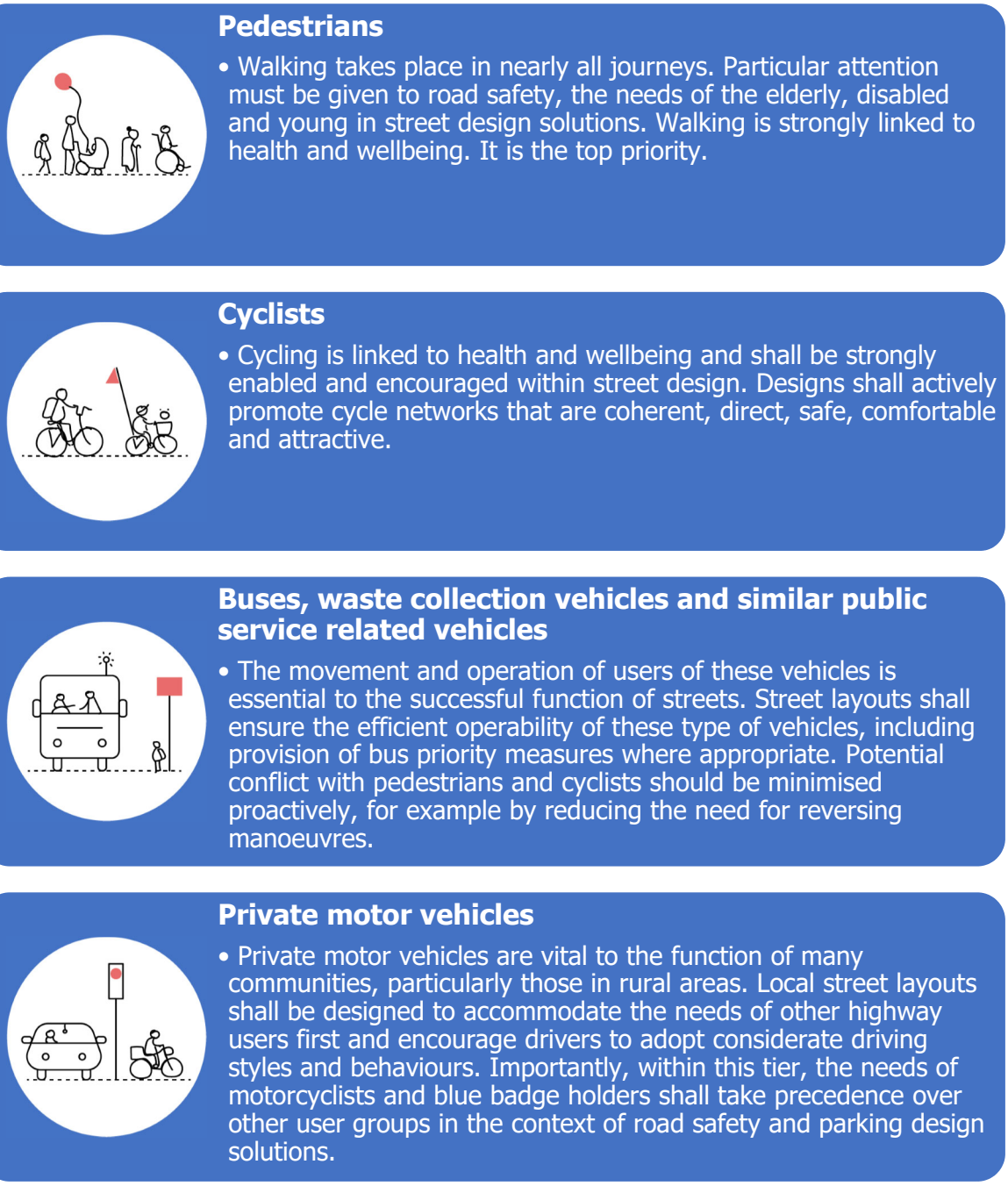


Figure 3.3 Primary User Groups

3.2.10 Preliminary movement design should include:

- an approach to street design that embraces the unique character of a street within the context of defined street types to help facilitate the needs of users, prioritising those walking, cycling and using public transport
- keeping vehicular speeds to appropriate levels
- taking account of both internal and external connectivity, which minimises the need for turning movements
- ensuring that streets accommodate the relevant vehicles which have the potential to be used for public transport
- ensuring that pedestrian and cycle routes follow desire lines to maximise their uptake and promote road safety

Servicing

3.2.11 Servicing considerations to allow safe and convenient functioning include:

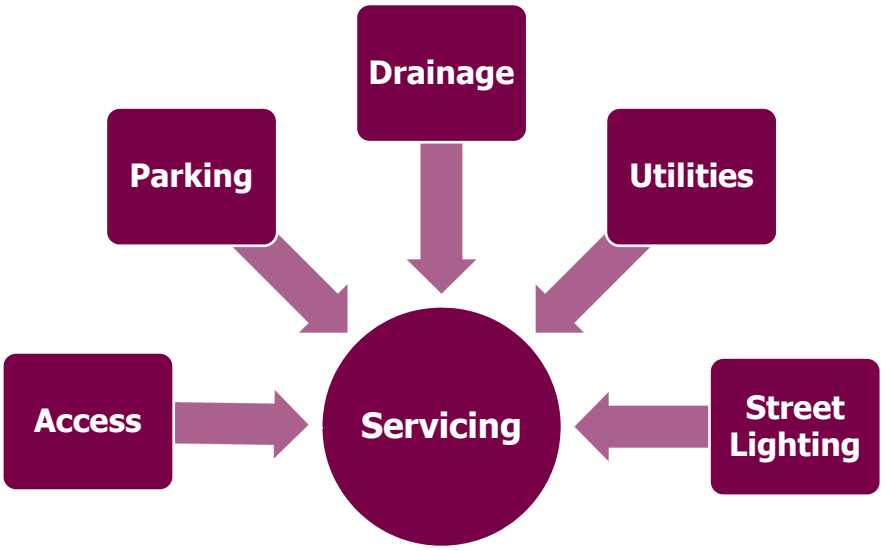


Figure 3.4 Servicing Considerations

Access

3.2.12 Access relates to the movement of people and vehicles between the street and buildings or other surroundings which it serves, and shall promote seamless, convenient and safe movement for all types of user. In designing for access, particular emphasis shall be placed on meeting the needs of disabled and older people, and others with protected characteristics, while encouraging active travel and public transport.

Parking

3.2.13 Parking relates to the organisation of stationary vehicles, including cycles, motorcycles, cars and other vehicles within a development and can be located on or off the street. Well-designed on-street car parking has the capability to control vehicle speeds and can contribute positively to the moving environment, but consideration should be given to minimising its visual intrusiveness.

Drainage

3.2.14 Drainage relates to the management of clean and foul water. The built environment inherently inhibits the natural course of rainfall and a strategy to mitigate the occurrence of negative outcomes, such as excess surface run-off and flooding, is essential to the successful operation of any development.

3.2.15 Consideration should be given to the use of SuDS in any proposed drainage strategy. SuDS is a general term made up of the use of a variety of techniques — either independently or as a collection of differing and complementary measures. These mimic natural drainage, having some storage capacity, slowing the movement of water and achieving a reduction in volume leaving a development during a storm. These can improve water quality too and provide amenity and biodiversity benefits.

Utilities

3.2.16 Utilities are the service apparatus that include electricity and telecommunication cables, piped water and drainage systems, and connections to adjacent properties. Straightforward access to buried and overhead services is critical for maintenance purposes. It is necessary to continue to allow the use of the street when utilities need to be exposed. A good inter-connected street network is helpful. Wherever possible, utilities infrastructure shall blend into or be concealed by the surrounding street environment to minimise its visual impact.

Street Lighting

3.2.17 Street lighting contributes significantly to the safe operation of a street by facilitating safe social interaction for all users during hours of darkness. Designers shall ensure that street lighting:

- achieves an adequate level of illumination
- is appropriately located
- is as efficient as possible from an energy consumption perspective
- has minimal visual impact on the street

3.3 Balancing Movement and Place

3.3.1 This section provides advice and guidance to designers on the decision-making steps to be taken when designing a new highway or changing an existing highway.

3.3.2 The definition of a street or road's place and movement function is an important part of the design decision making process. It helps designers to balance the competing user requirements resulting from place and movement status at different locations on the Island's highway network.

3.3.3 In reality, the evolution of street patterns and road networks in the Isle of Man has seldom been conducive to the multi-faceted demands of contemporary Manx society. Therefore, it is very likely that improvement works to existing roads and streets will not be able to accommodate the needs of all competing users.

3.3.4 To balance or prioritise either movement or place, we recommend that designers use the Movement – Place Matrix in Table 3.2.

Movement – Place Matrix					
Movement		**Place**			
Speed Limit or 85th percentile speed	Motor Traffic Flow (AADT)	Town Centres, District and Village Centres	Residential Streets and Roads	Commercial and Industrial Centres	Non built-up
20 mph	2000	Place	Place	Place	Balance
	4000	Place	Place	Balance	Balance
	>6000	Balance	Balance	Balance	Balance
30 mph	2000	Place	Place	Balance	Balance
	4000	Balance	Balance	Balance	Movement
	>6000	Movement	Movement	Movement	Movement
>40 mph	Any	Movement	Movement	Movement	Movement
This Matrix serves as a guide to inform the nature of designs. In practice, what is achievable in design terms within the available road space would need to be determined using professional judgement, mindful of the local conditions.					

Table 3.2 Movement – Place Matrix

How to Allocate Road Space

3.3.5 To best enable a road and street to fulfil user requirements, we encourage designers to follow the five step process outlined in Figure 3.5.

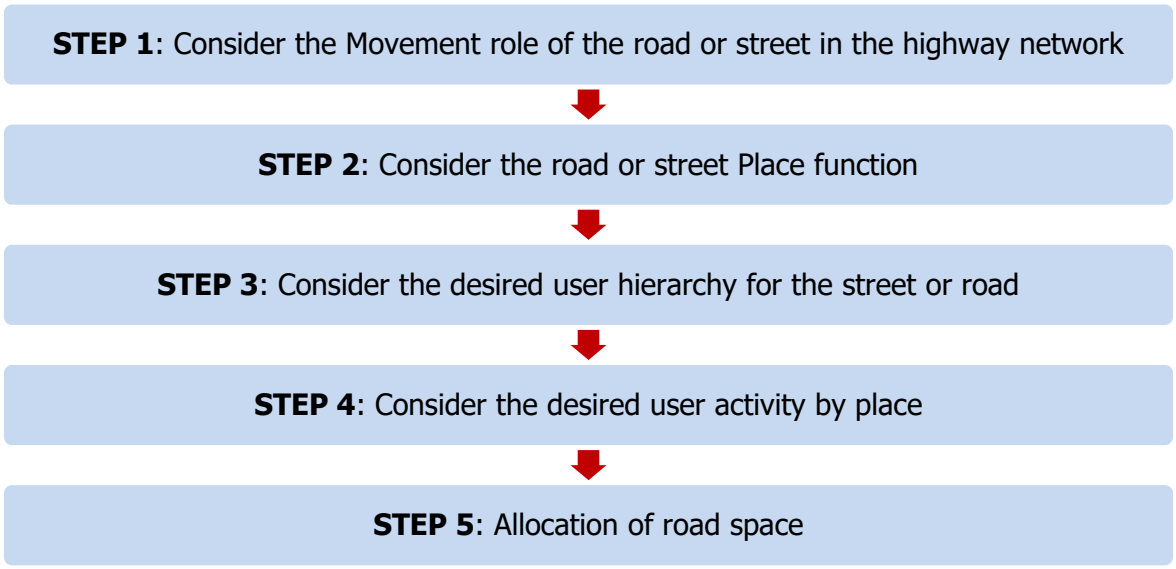


Figure 3.5 The Five Step Process

3.3.6 Each of these five steps is described in more detail in the tables below.

STEP 1: Consider the Movement role of the road or street in the highway network		
Each road or street on the Island's highway network is categorised as one of the four types listed below. A Road Hierarchy map is available as a downloadable document from the Highway Services webpage showing the status of each road		
Road or Street Status	**Defining Movement Characteristics**	**Example**
Primary	Multi modal link. Strategic routes linking urban centres and major routes within built-up areas	A1, A3, A5, A18, Peel Road, Douglas
District	Multi modal link. Important cross urban routes, key suburban routes	Victoria Road, Douglas
Local	Multi modal Link. Local distributor roads linking district routes to local roads	Athol Street, Douglas
Local Access	Local access routes with limited through traffic function	The majority of residential areas

Table 3.3 STEP 1: Movement Role

STEP 2: Consider the road or street Place function			
Designers should apply the following criteria:			
Place	**Defining Characteristics**	**Typical Speed Limit**	**Example**
Town Centres, District and Village Centres	Streets/places that serve as shopping areas or commercial centres at a district, neighbourhood or village level which generate high volumes of pedestrian activity	20 or 30 mph	Douglas town centre inner core, Peel, Ramsey, Castletown, Onchan, Port Erin
Residential Streets and Roads	Predominantly residential	20 or 30 mph	Majority of streets and roads within towns, villages and settlements
Commercial and Industrial Centres	Roads/places that serve commercial and industrial centres	30 or 40 mph	Cooil Road, Middle River
Non built-up	Rural or urban roads with limited residential frontage	>40 mph	Areas outside or towns, villages and settlements

Table 3.4 STEP 2: Place Function

STEP 3: Consider the desired user hierarchy for the street or road

Shown below is the user hierarchy and the order that should be followed when designing roads and streets. It is essential for this to be considered at an early stage on larger developments to give priority connections for pedestrians and cyclists, and routes for buses, service, waste and emergency vehicles over other motorised traffic.

1. mobility impaired and disabled users
2. pedestrians
3. cyclists
4. public transport, specialist service vehicles (emergency services, waste collection etc.)
5. private car drivers

It is equally important, particularly on larger developments built in separate phases, that key parts of the infrastructure are in place for all occupants and/or users of a particular phase to use without having to wait for other phases to be completed.

Link Hierarchy	Desired user hierarchy (from highest to lowest) by link type
Primary	HGVs ➡MGVs ➡LGVs ➡buses ➡car drivers ➡cyclists ➡pedestrians
District	LGVs ➡MGVs ➡HGVs ➡buses ➡pedestrians ➡cyclists ➡car drivers
Local	Pedestrians ➡cyclists ➡buses ➡car drivers ➡LGVs ➡MGVs ➡HGVs
Local Access	Pedestrians ➡cyclists ➡car drivers ➡LGVs ➡MGVs ➡HGVs

Table 3.5 STEP 3: Desired User Hierarchy by Link Type

STEP 4: Consider the desired user activity by Place	
Shown below is the desired user activity hierarchy and the order that should be followed when designing roads and streets.	
Place	**Desired User Activity Hierarchy (from highest to lowest) by Place Level**
Town Centres, District and Village Centres	Pedestrians using the place ➡ pedestrians not travelling ➡ pedestrians resting ➡ passengers waiting ➡ passengers boarding and alighting ➡ freight loading/unloading ➡ blue badge parking ➡ cycle parking ➡ car parking
Residential Streets and Roads	Pedestrians using the place ➡ passengers not travelling ➡ passengers waiting ➡ passengers boarding and alighting ➡ car parking ➡ cycle parking ➡ freight loading/unloading
Commercial and Industrial Centres	Freight loading/unloading ➡ pedestrians using the place ➡ passengers not travelling ➡ passengers waiting ➡ passengers boarding and alighting ➡ blue badge parking ➡ cycle parking ➡ car parking
Non built-up	Through traffic ➡ passengers waiting ➡ passengers boarding and alighting ➡ walking and cycling leisure activities

Table 3.6 STEP 4: Desired User Activity by Place

STEP 5: Allocation of road space to Movement or Place
The final step is to set out all of the user requirements for the selected street section, and take, as a starting point, the desirable design requirement for each. If there is sufficient road space for all the desirable lane designations and street furniture no further guidance is required.
If the minimum design requirements for each competing user requirement cannot be accommodated, the broad options open to the designer are:
1. Share the space — deploy schemes or measures to enable scarce street space to fulfil multiple user requirements. In many circumstances, with the appropriate design approach, a space can be shared effectively to fulfil multiple user requirements. Effective space sharing schemes can be deployed to good effect based on the specific design characteristics of a site, such as on-footway loading bays, shared use cycle paths, the shared use of dedicated traffic lanes between buses and taxis, buses and cyclists and buses and freight vehicles. It should be remembered that the shared use of a cycle path can pose issues to pedestrians in more confined spaces. 2. Allocate the space by time — utilise measures to enable road space to fulfil multiple user requirements by time of day. For example, off-peak loading and unloading permits the necessary access for servicing local businesses, whilst encouraging loading outside of peak periods, when the demand for road space is at its most critical, thus better enabling public transport to operate more reliably. 3. Direction based allocation — creation of one-way streets to reallocate capacity to public transport or active travel. 4. Prioritising key users where all-inclusive solutions cannot be found — if, having tested the design options to accommodate the minimum standards, and approaches to sharing space by users, time or direction of travel, it has not been possible to satisfactorily accommodate all user requirements — clearly one or more of the user requirements will have to be prioritised.
The process to determine which modes have priority on a particular street or road section should consider several factors, including the Movement and Place user hierarchies, the feasibility of shifting provision, and the most vulnerable users.
At this stage it is critical that user requirements are prioritised consistently with our wider aspirations for a sustainable and safe highway network. For this vision to become a reality and bring about real change, it is fundamental that highway and transportation development are delivered completely and coherently.

Table 3.7 STEP 5: Allocation of Space

Section 4 - Promoting Active Movement

4.1 Improving Accessibility

4.1.1 The Government's long-term vision is: "To be an Island where cycling and walking are normal and realistic transport choices for people of all ages and abilities", with the explicit goal of increasing levels of physical activity amongst all the population. The Department considers that this vision can be achieved through increasing the accessibility of travellers who wish to walk or cycle.

4.1.2 Accessibility describes a traveller's access to one or more destination opportunities available within a specific distance, travel time, or cost from the traveller's origin.

4.1.3 The number of destination opportunities accessible from a given location is determined by:

- traveller's mobility — (the door-to-door distance a traveller can cover within a travel time and cost budgets) and therefore the quality (availability, frequency, speed, comfort, etc.) of travel modes (walking, bicycling, taxies, public transport etc.)
- connectivity of the transport network — this can include the density of footway, road and public transit networks, and the quality of connections between modes, such as bus stops
- proximity — the distances between destinations or opportunities, and therefore land use development factors such as development density and mix, which affect these distances

4.2 Mobility

4.2.1 The characteristics of the spaces and routes to be used by pedestrians and cyclists will also have a bearing on the potential for users of a development to use those modes of travel, as well as public transport.

4.2.2 Walking alongside a busy main road can be unattractive and inhospitable, especially where there are no paths or footways immediately next to a carriageway used by large vehicles. Main roads can be unpleasant and hazardous for cyclists, especially if motor vehicle speeds are perceived as high. Conversely, pedestrian and cycle routes away from carriageways used by motor vehicles can be perceived as poor in terms of personal security. The gradient, and the existence or absence of street lighting and natural surveillance may also significantly influence the success of such routes in terms of encouraging modes of travel other than the car. These factors need to be considered when designing the walking and cycling routes linking a development to the nearest community facilities.

4.2.3 A barrier free pedestrian environment is essential to support active travel and improve social inclusion. Paragraph 6.3.3 of MfS states: "A street design which accommodates the needs of children and disabled people is likely to suit most, if not all, user types". Thus, if

a street is designed to cater for those with mobility impairments, it is also likely to benefit other pedestrians, including older people, people with small children and pushchairs, and people carrying heavy shopping or luggage. Without a barrier free environment, many of these people will be mobility impaired.

4.2.4 Pedestrians use streets for movement, socialising, resting, playing, and other activities. There are many needs to fulfil in good design, and it is important that the many functions of a street are given due consideration. A monotonous standard footway width is unlikely to fulfil that requirement, and disabled people and the elderly may be deterred from using a street if there are not places to sit at convenient intervals and locations. The inclusion of design features to cater for non-motorised users, including the disabled, can only add to the sense of place, prevent motor vehicles from dominating, and encourage journeys on foot.

4.3 Connectivity

4.3.1 Developers should maximise choice for people to make their journey by non-car modes by identifying direct routes (which are convenient, overlooked, safe and pleasant) to and from everyday facilities (such as shops, schools and bus stops) in the vicinity of the development site. Developers must also take the opportunity to repair incomplete or poor quality connections and improve the level of permeability.

4.3.2 Developers must likewise improve connectivity for other facilities (such as community centres, public open space, play areas and doctors' surgeries) which are likely to be frequent destinations for residents of a development or, and to a lesser extent, employees in the case of many commercial developments.

4.3.3 Where practical to do so, the design emphasis should be on people movement based on the needs of the disabled before others. Priority should be given to pedestrian and cycle movements, and access should be provided to high quality public transport facilities.

4.3.4 For developments that will generate significant amounts of movement, and depending on the nature and location of the site, opportunities for sustainable transport modes should be taken up to reduce the need for major transport infrastructure improvements.

4.4 Proximity

4.4.1 Historically, road and street networks within developments were predominately designed to serve private motor vehicles. Designs were based on a hierarchal classification system of road and street types that guide a typical trip from local access roads through local roads and district roads to primary routes. This type of hierarchy favours vehicle mobility for long trips but penalises mobility for alternative modes for short trips because it reduces the number of direct path choices needed to encourage walking and cycling.

4.4.2 Movement and land use are interconnected elements which are a function of the location of activities and directness of travel to reach a destination. Developers should consider how these elements impact on accessibility of the development.

Section 5 - Detailed Design Issues

5.1 User Needs

Pedestrians

5.1.1 The Department recommends that developers consult the following guidance which comprehensively details the methodology for designing footways and footpaths:

- Inclusive Mobility (DfT, 2005) (Inclusive Mobility)
- Designing for Walking (CIHT 2015) (Designing for Walking)
- Planning for Walking (CIHT, 2015) (Planning for Walking)
- Manual for Streets (MfS)
- Active Travel Wales (Active travel: design guidance)
- Cycle Infrastructure Design (DfT, 2020) (LTN 1/20)

5.1.2 The starting point should be to look at existing pedestrian routes and pedestrian desire lines in the form of footways and footpaths (including public rights of way) as well as informal routes created across highway verges, public open space, or other land due to local demand. Opportunities should be taken to provide any missing links in the network or to upgrade existing facilities and narrow widths.

5.1.3 To assist developers, we have undertaken a Pedestrian Environment Review System (PERS) review of the majority of footways within the Island's settlements. This data is available from the government website PERS Audit 2019.

Footway Widths

5.1.4 The widths of footways should reflect their likely usage. A minimum unobstructed width of 2.0 m is required for most footways/footpaths in residential areas. A narrower 1.2 m width may be permitted over a short distance where the speed limit is 30 mph or lower, only to avoid an important existing feature (such as in conservation areas or close to historic buildings) where there is no simple alternative. However, it is essential that this does not compromise space for utility apparatus and use of the footway by the mobility impaired. Further guidance on best practice can be found in Inclusive Mobility.

5.1.5 Where pedestrians are likely to be present in significant numbers, footways should normally be provided along both sides of highways, particularly in urban areas. Footway widths may also need to be wider than the minimum 2.0 m where there are high pedestrian flows, where a footway is adjacent to a heavily used or industrial carriageway, or is next to gathering places such as the front of schools, bus stops and shops. A minimum footway width of 2.6 m should be provided adjacent to roads subject to a 40 mph or higher speed limit. We do not stipulate a maximum width for footways or footpaths

5.1.6 Footways and footpaths should not have any overhanging elements from adjacent structures below a height of 2.6 m; for example, porch roofs, awnings, garage doors, or

windows. A licence under the Highways Act 1986 may be required for any permanent or temporary structure such as a window, advertising board, shop sign, banner or crane jib that will oversail the public highway.

5.1.7 Guidance on the design of shared pedestrian/cycle paths can be found in LTN 1/20. Where a developer proposes footways or shared use path widths that are below these specified minimums, we recommend early discussion with us and submission of a reasoned justification.

Footway Gradient

5.1.8 We require that footways and footpaths are as level as possible along their length, to improve accessibility of the footway and footpath network. Longitudinal gradients should ideally not be more than 5%. Where the topography of the site makes this unachievable, the maximum allowable gradient is 8%.

5.1.9 The crossfall of the footway or footpath should never exceed 1:40 (2.5%).

Pedestrian Crossings

5.1.10 The three main objectives of any pedestrian crossing should be safety, convenience and accessibility. The assessment and design of new controlled pedestrian crossings, or changes to existing crossings should be carried out in accordance with the requirements of the Traffic Signs Manual (Chapter 6 Section II).

5.1.11 Pedestrian crossing points should be sited to match pedestrian desire lines as closely as possible. Paragraph 6.3.9 of MfS recommends that formal or informal crossings be provided at a frequency of every 100 metres. Footway/verge crossings providing access to private driveways are unsuitable for that purpose and cannot include tactile paving that is needed at informal pedestrian crossing points.

5.1.12 Every pedestrian crossing point should have suitable dropped kerbs with a maximum upstand of 6 mm.

5.1.13 Tactile paving to assist blind and partially sighted people should be provided in accordance with UK national guidance (Guidance on the Use of Tactile Paving). Surface boxes for access to underground utility apparatus should be positioned so they do not conflict with tactile paving zones. Where this is unavoidable, recessed covers should be used to ensure the tactile paving can be installed to the correct configuration.

5.1.14 Road gullies should not be positioned adjacent to dropped kerbs at pedestrian crossing points. Where this is unavoidable due to other constraints, these should be fitted with pedestrian friendly gratings. Gullies should be located immediately upstream of any pedestrian crossing point to reduce the risk of water ponding at the crossing location.

Pedestrian Crossovers

5.1.15 To ensure pedestrian priorities along the main walking routes, a new style of side road entry treatment or crossing is supported by the Department, and is preferred in residential areas and town centre locations. These are usually known as 'Copenhagen Crossings', where the footway simply runs across the mouth of a junction negating the

need to warn pedestrians (with tactile paving and kerbs) that they are crossing a carriageway. These crossings are designed to slow down vehicles when entering or exiting side roads and encourage vehicles to give way to pedestrians crossing the road, reinforcing the rules of the Highway Code.

Vehicle Crossovers

5.1.16 Vehicle crossovers provide a transition from the carriageway across the footway and into private forecourts. When poorly designed, driveway entrances provide difficult walking environments, due to continual changes in crossfall. This is a particularly challenging issue for disabled or elderly pedestrians, and those with small children or mobility aids. The narrower the footway, the greater the impact of these gradient changes.

5.1.17 The excessive use of extended dropped kerbs across the frontage of developments can be problematic. It eliminates the possibility of on-street parking, and creates potential conflict points between pedestrians and motor vehicles such as obstruction of the footway where parking occurs.

5.1.18 We prefer the provision of a single 4.6 m wide vehicular crossover equivalent to three dropped kerbs flanked by two tapered kerbs. Wider vehicle crossovers may be required where simultaneous entry and exit is required. We discourage pairs of vehicular crossovers near each other.

5.1.19 The whole depth of the vehicle crossover should not be dropped. Instead, it should be designed to limit any significant increase in crossfall gradient to the first 500 mm of footway measured from the kerb. The rear section of footway should retain the standard crossfall gradient to provide a clear walking zone along its entire length.

5.1.20 This will result in a short ramp at the front (kerbside) of the footway, providing a vehicle transition from carriageway to footway. Consideration should be given to the potential for the grounding of vehicles using the crossover. A typical detail is shown in Figure 5.1. Consideration should also be given to visibility requirements at vehicle crossovers. Further details are included in Appendix B .

5.1.21 The design should ensure that priority is given to pedestrians using the footway where vehicles are permitted to cross. Materials used should generally match the existing footway. Edging strips or other materials which would suggest that vehicles have priority over pedestrians, should be avoided.

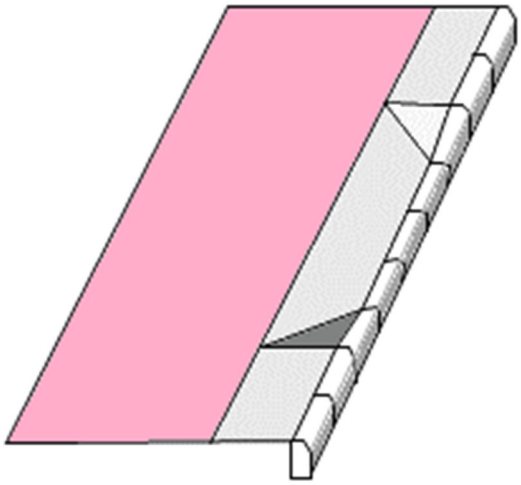


Figure 5.1 Typical Vehicle Crossover with Ramp

Footway Drainage

5.1.22 Footways and footpaths should have sufficient drainage to prevent standing water from obstructing pedestrians. These should be designed to avoid ponding within the highway and not allow surface water to run off onto private land.

Ramps

5.1.23 Pedestrian ramps are defined as a slope steeper than 5% (1 in 20) and must not exceed 8% (1 in 12) for a length of 2.0 m. Slopes between 5% and 8% need a handrail at least to one side.

5.1.24 The maximum length of a ramp is 6.0 m. Where a longer ramp is required, a level landing of 2.0 m is necessary with or without a resting platform.

5.1.25 Ramp width should be a minimum of 2.0 m to permit wheelchairs to pass. Hand rails should be positioned at 1.0 m above the ramp.

5.1.26 It is unacceptable to provide ramps into buildings from the adopted footway. If options within the building curtilage are unavailable, a re-grading of the footway may be considered on a site-by-site basis where this does not adversely impact highway users.

Steps

5.1.27 Where steps are required within a footpath, provision should be made for a complementary ramped route. Where no ramp can be provided, the steps should be designed to cater for as many user groups as possible.

5.1.28 Where there are to be flights of steps within a footpath of between 3 and 12 steps, these should have a constant rise of between 100 mm and no more than 150 mm. The preferred height is 130 mm. Treads should be 300 mm deep. Nosings should be splayed or rounded to a 6 mm radius. A non-slip edging should be provided at the head of each flight.

5.1.29 Resting places should be provided after each flight of at least 1.8m. Handrails should be fitted where there is more than one flight of steps.

5.1.30 Appropriate warning tactile paving should be provided at the top and bottom of any flight of steps in accordance with UK national guidance (Guidance on the Use of Tactile Paving).

Residential Footpath Links

5.1.31 We encourage developers to include footpath links which create good walking routes both through the development and to adjoining community services. We will consider adopting footpath links that fall into one or both of the following categories:

- footpaths that provide the most direct and practicable route for pedestrians and serve more than two properties, where this function if not fulfilled by a footway. The last portion of a cul-de-sac footpath serving one or two properties will be considered for adoption if it is constructed to the appropriate standard
- footpaths that form direct through routes within a development area

5.1.32 Footpaths that will not normally be considered for adoption include:

- secondary footpaths located at the rear of dwellings
- secondary footpaths that provide inferior alternatives to other footpaths

Shared Use Routes

5.1.33 The sharing of space provides opportunities to improve vibrancy without compromising road safety. In these circumstances, all users of a shared use facility have responsibilities to each other. Users of bicycle and motorised vehicles should consider their speed so as not to startle other people, particularly those who are frail or who have reduced sight, hearing or mobility.

5.1.34 Shared space proposals should:

- create a 'gateway' into the area of shared space that differentiates the space to the main highway. This can be achieved by a speed restriction sign, narrowing of the carriageway/overall street width, vertical change in street surface level and/or contrasting surface finishes from surrounding streets to imply pedestrian priority
- incorporate guidance paths to lead pedestrians along safe and logical routes
- manage speed through design (to achieve a vehicle speed of between 10 and 15 mph, with 10 mph preferred)
- keep the space uncluttered through minimal use of traffic signs and other street furniture
- enable the space to be kept free of obstacles by providing accessible and unobtrusive bin presentation points
- use tactile warning blister paving to indicate crossings in areas of shared space
- highlight uncontrolled crossings by a combination of:
  - tonal/visual contrast
  - bollards to indicate the pedestrian entry to the crossing
  - a raised table
  - narrow pinch points
  - differently textured surfacing and planting on vehicular approaches to crossings

Public Rights of Way (PRoW)

5.1.35 Public Rights of Way (PRoW) within a development or adjacent to a development can provide important links for pedestrians in connecting the development to adjacent community or countryside. PRoW must be considered fully in any development; some may need improving and others may require stopping up or diverting. Developers should consider the existing function and character of a PRoW and should not assume that it will be acceptable to divert it along a new road.

5.1.36 PRoW are recorded on the Isle of Man Definitive Map and Statement. A copy is available for viewing at the offices of Highway and Asset Management Section based in the Sea Terminal, Douglas.

5.1.37 PRoW are highways established in law, albeit usually with more limited public rights than roads and streets, and are protected from being obstructed or diverted without proper authority. We will not encourage vehicular use of any PRoW. The Department should be consulted before any work is carried out that may affect the route or surface of a PRoW because an extinguishment or diversion order may be required.

Cyclists

5.1.38 As part of the design process, a developer needs to take account of potential new trip makers to the site by cycle and to ensure that existing cycling trips on the highway network are either improved or at least not made worse. Clearly every scheme and location will need to be considered on its own merits.

5.1.39 We expect the following guidance to be followed when identifying the appropriate type and design of cycle facilities and cycle friendly infrastructure required:

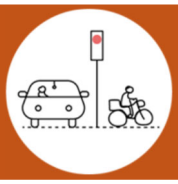
- Local Transport Note 1/20: Cycle infrastructure design (LTN 1/20)
- CD143: Designing for walking, cycling and horse-riding (DMRB)
- Active Travel Wales (Active travel: design guidance)
- Gear change: a bold vision for cycling and walking (DfT,2020) (Gear Change)

5.1.40 Cycle routes should be designed using the nine key design principles shown in Figure 5.2.

5.1.41 When developing new schemes for cyclists, before and after surveys should be taken to assess what impact they have on levels of cycling in that location.

5.1.42 The provision of convenient, secure cycle parking and related facilities is fundamental to encouraging increased cycling, particularly as a modal shift from single occupancy motorised journeys made over shorter distances on a regular basis. Cycle parking provision should be fully incorporated into a proposed development layout from the outset. Cycle parking standards are set out in Appendix C.2 Cycle Parking.

5.1.43 For non-residential development, it is expected that on-site cycle facilities should be provided in addition to cycle parking and off-site cycle infrastructure. Such on-site cycle facilities will include showers and changing rooms, lockers for the storage of equipment and clothing, and any other identified design features that will encourage cycling as a mode of transport for employees and visitors alike.

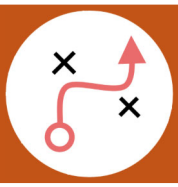


Cyclists should be separated from volume traffic, both at junctions and on the stretches of road between them.

Cyclists should be separated from pedestrians.

Cyclists should be treated as vehicles, not pedestrians.

Routes should join together; isolated stretches of good provision are of little value.



Routes should feel direct, logical and be intuitively understandable by all road users.

Routes and schemes should take account of how users actually behave.

Purely cosmetic alterations should be avoided.

Barriers, such as chicane barriers and dismount signs, should be avoided.

Routes should be designed only by those who have experienced the road on a cycle.

Figure 5.2 The Nine Key Design Principles

Public Transport

5.1.44 Providing public transport links to or through the development must be considered at an early stage in the design process. A developer is encouraged to consult IoM Public Transport Division prior to submitting a planning application.

5.1.45 Bus routes through the site should be direct, well related to the development as a whole, easily negotiable by appropriate sized buses and accommodate suitably sized stopping areas.

5.1.46 Public transport infrastructure should be provided at an early stage in the development, even if a site is only part occupied. Infrastructure in terms of road widths and potential stopping areas will be required where there is potential for small housing developments to be linked into a neighbouring future development that cumulatively will require the development of a penetrative bus route.

Public Transport Design

5.1.47 In respect of developments that generate significant amounts of movement, the proposed roads likely to be used by buses should be identified at the outset of the design stage and should be sufficiently extensive to ensure that the entrance to each dwelling is within a reasonable walking distance of a bus stop (when measured along the most appropriate walking route rather than the direct 'crow flies' distance).

5.1.48 Higher density housing should be located close to public transport routes, with lower densities in more remote parts of the site. The maximum walking distances to the nearest bus stop from any residential property should, on flat ground, not be greater than 400 metres. The maximum walking distances to the nearest bus stop from any residential property on hilly ground should be less than 400m.

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

5.1.50 Developers should ensure that identified bus routes within a development allow for buses to travel in both directions. It should always be possible to pass two buses along the majority of the proposed route except in agreed localised narrowing.

Bus Stops

5.1.51 The provision and position of bus stops locations should be considered in the initial design of the road layout, together with the location of bus shelters. To minimise the impact on resident's amenity, bus stops should not be located directly in front of windows of ground floor rooms.

5.1.52 Bus stop locations should be included in the road safety assessment process to ensure the location of the bus stop does not create a road safety risk to bus users, other traffic and the bus driver. Bus stops must be clearly marked on all plans well in advance of any house building operations and brought to the attention of potential house buyers to avoid any problems when a service starts at a later date to the occupation taking place.

5.1.53 Bus stops should be located to give the best penetration into the development site by means of associated footpaths and they need to serve the greatest catchment area possible in terms of convenience. Pedestrian crossing facilities may need to be considered on busier roads to provide safe and convenient access to and from bus stops.

5.1.54 In the exceptional circumstances where a cul-de-sac is unavoidable on a development that is to be served by a bus service, it will be necessary to provide adequate turning facilities at a suitable point within that development. These facilities will usually coincide with the position of a bus stop and the planning of such facilities must be well thought out in respect of any potential frontages, both in terms of possible on-street parking and the nuisance sometimes associated with bus stop facilities. Even along a no through road, attempts should be made to ensure that there is a loop road enabling buses to return along the street without having to reverse back and forth.

5.1.55 Bus stops provided on, or adjacent to existing highway networks should be placed as close as possible to footpaths and footways providing access into the development. In addition:

- kerb design should include Kassel kerbs with a 180 mm show positioned for front entrance buses (see our Standard Construction Details SD/17)
- provision should be made for electrical supply for lights and passenger information cables
- provision should be made for data cables for passenger information systems

Personal Safety

5.1.56 The popularity and sustainability of public transport systems relies heavily on the public perception of personal security, anti-social behaviour and vandalism. The operating strategy can be affected by incidents affecting staff safety and security, which occur particularly at night. The design of the overall system and its component parts must consider all environmental design issues which will help reduce the opportunity for crime and anti-social behaviour.

Bus Priority Measures

5.1.57 Opportunities to provide bus priority measures to improve bus service reliability for existing and enhanced bus services serving the development should be identified. Measures could include bus lanes, bus priority equipment at signal controlled junctions and bus only routes connecting the development to the local highway network. The potential for such measures should be discussed with the Department at the earliest possible opportunity.

Heritage Rail and Trams

5.1.58 The extent of local rail and tram network means that opportunities to provide direct links to rail stations or tram stops are limited. Major development proposals in the vicinity of rail stations or tram stops will need to provide for safe walking and cycling routes to/from the rail stations or tram stops. Additional access arrangements by public transport may also be needed. Where necessary a contribution towards the improvement of rail stations

or tram stops facilities will be sought. Major residential developments may require financial contributions from developers to enable the setting up of public transport services at an early stage in the development.

Vehicles

5.1.59 The Department encourages the use of public transport, walking and cycling. However, it is important that appropriate vehicle access and parking provision is also provided within a development.

5.1.60 It must be noted at this stage that highway safety will never be compromised on any development – a good accessible site will always have good highway safety for all users. This will be assessed as part of the Road Safety Audit process (see Section 8 - Road Safety Audit).

Service Vehicles Access and Circulation

5.1.61 All developments will need to cater for access by service vehicles of varying types, ranging from vans and waste collection vehicles to large articulated lorries. The developer should consider the number and type of service vehicles likely to enter a development, and make due provision for such access when designing the road layout. This will largely be dependent on the adoption status of the road under consideration and whether such vehicles would pose an unacceptable hazard.

5.1.62 For waste management, the development must conform to:

- BS 5906 Waste Management in Buildings Section 10 (Roads and Approaches to Buildings)
- Building Regulations Approved Document B

5.1.63 Where no provision is made for waste collection vehicles to enter a development, communal waste collection points should be provided to the satisfaction of the appropriate local authority.

5.1.64 The developer must demonstrate to the Department that waste collection or service delivery vehicles will be able to manoeuvre in a safe and convenient manner by providing vehicle swept path analysis of the largest sized vehicle.

5.1.65 If a private access is designed to accommodate waste collection or service vehicles, the road width will need to accommodate the largest vehicle that can reasonably be anticipated. This must be checked by using swept path analysis of the largest sized vehicle, and account should be taken of the need to pass other vehicles both along the access and at junctions.

Turning

5.1.66 Turning facilities should be provided at the head of all cul-de-sac intended for adoption and at least 40 m intervals. It is not always necessary to use 'Y' or 'T' shaped turning heads as the turning space should relate to its context.

5.1.67 For commercial units within sites or mixed development grouped around a shared turning area, this should be a minimum of 25 m (radius) to enable either a 10 m rigid or 16.5 m

articulated vehicle to turn clear of the individual unit forecourts. A forecourt depth of at least 7 to 10 m should be provided, with a 600 mm overhang strip around the extent of the adoptable or private industrial road.

5.1.68 Where units of a greater floor area are proposed, forecourt depths must be increased to accommodate the larger vehicles expected to visit the development. Typically, floor area to forecourt depth requirements are given in Table 5.1.

Unit Floor Area (sqm)	Forecourt Depth (m)
Up to 50	7
51 to 150	10
150 and above	16.5

Table 5.1 Typical Forecourt Depth Requirement

5.1.69 Whenever a turning area is proposed that may need to accommodate waste collection or service vehicles, vehicle swept path analysis must be carried out using swept path analysis of the largest sized vehicle. A developer should be able to justify the grounds for using a particular vehicle category when undertaking the swept path analysis.

5.1.70 Comprehensive guidance on designing layouts to accommodate service vehicles can be found in 'Designing for Deliveries Guide' (Logistics UK 2016).

Vertical Clearance

5.1.71 A minimum clearance of 5.3 m over public highways is required for new construction. For footbridges over public highways headroom of 5.7 m must be provided.

5.1.72 Minimum vertical clearance to serve car parking areas should be 2.1 m.

5.1.73 Increased vertical clearance should be considered where other types of vehicles are expected, as shown in Table 5.2.

Vehicle Type	Vertical Clearance (m)
Small service vehicles	2.5
Touring caravans	2.8
Motor caravans	3.3
Fire and rescue appliances	4.0
Most large service vehicles	4.1
The largest service vehicle	4.5

Table 5.2 Minimum Vertical Clearance

Servicing Distances

5.1.74 There is now a greater emphasis on keeping dead end access routes to a minimum. This is to be achieved by the greater use of loop roads, connecting streets, or cul-de-sacs with emergency link access. If this is not achieved the maximum length of any single access cul-de-sac should be 200 metres.

5.1.75 The recommended maximum servicing distances are shown in Table 5.3.

From	To	Maximum Distance (m)
Waste collection vehicle	Waste bin	45
Waste collection vehicle	Communal container	9
Oil tankers	Fuel inlet point	30
Service vehicles	Dwelling	3
Fire and rescue appliances	1 to 2 storey dwellings	45

Table 5.3 Maximum Servicing Distance

Emergency Vehicles Access and Circulation

5.1.76 When designing any highway scheme, it is important that consideration is given to the impact it may have on the ability of the emergency services to respond to incidents and perform their duties. For this reason, it is essential that a developer consults with the following persons during the design and planning stages:

- Isle of Man Constabulary
- Isle of Man Fire and Rescue Service
- Isle of Man Ambulance Service

5.1.77 In general, developments should be designed to enable access to all parts of the development by emergency service vehicles, and the use of cul-de-sac layouts should be kept to a minimum to facilitate such access.

Crime Prevention

5.1.78 The success or failure of a place as part of a sustainable community is influenced by the nature and quality of its connections, particularly to local and wider services and amenities. Too few connections can undermine vitality; too many, especially too many under-used or poorly thought out connections, can increase the opportunity to commit crime. The right level and type of access, resulting in places that are both well connected and secure, is achieved through careful and creative design based upon local assessment.

5.1.79 Successful places have a well-defined movement framework. A good movement framework has direct routes that lead to where people want to go by whatever means, including on foot, by cycle or public transport. This should cover the needs of all people, including the elderly and disabled.

5.1.80 Routes for pedestrians, cyclists and vehicles should, in most cases, run alongside one another, and not be segregated. Movement frameworks based upon 'primary routes' and shared spaces, remove the need for under-used alleyways, short-cuts, footpaths and a large number of minor access points that can become vulnerable to or facilitate crime.

5.1.81 Where footpaths are required, they should be as straight as possible and wide, avoiding potential hiding places. They should also be overlooked by surrounding buildings and activities.

5.1.82 Good signage and points of interest, such as market stalls, places to sit or street art, encourage people to use identified routes and spaces.

5.1.83 Guidance on crime prevention can be found in the following documents:

- Safer Places — The Planning System and Crime Prevention (ODPM 2004)
- Secured by Design
- Manual for Streets (MfS)

5.1.84 In order to minimise wasted effort and reduce costs it is recommended that designers consult with the Isle of Man Constabulary from the earliest possible stage in the design process to assess the crime risks of the proposed development.

5.2 Street Geometry

Design Geometry of Streets

Vehicle Swept Paths

5.2.1 Streets must be designed specifically to cater for use by the largest size service vehicles. All streets should be tracked using an 11.5 m long 3 axle waste collection vehicle to allow for future changes in the vehicle fleet. The swept path should be no closer than 500 mm from any structure, tree, or formal parking space (to allow for wing mirrors).

5.2.2 Car parking spaces should be tracked using a large car longer than 5.0 m in length.

5.2.3 For roads which are to remain private and do not require access by waste collection vehicles, vehicle swept path analysis of a large fire appliance will be required to demonstrate that emergency access can be accommodated. A large fire appliance is 8.6 m long by 2.6 m wide.

5.2.4 Where the proposed carriageway width is less than 5.5 m, adequate manoeuvring room must be available for safe access to, and egress from, adjoining drives.

Carriageway Widening at Bends

5.2.5 The swept path of a vehicle on bends is greater that the width of the vehicle itself. To enable vehicles to pass, curve widening in accordance with the swept path analysis of the largest vehicles likely to use the proposed street is required.

5.2.6 Widening is required on bends when the sum of the swept paths of passing vehicles is greater than the carriageway width. It is preferable to alter the inner radius of the bend when accommodating this widening.

Vertical Curves

5.2.7 Vertical curves should be provided at all changes in gradient to ensure reasonable standards of comfort at sag curves and to provide the appropriate visibility at crests.

5.2.8 Where the design speed is 50 km/h (30 mph) or greater refer to CD109 Highway Link Design (DMRB).

5.2.9 Where the design speed is less than 50 km/h (30 mph) the vertical curves should be the greater of either:

1. the length indicated by the formula L = KA where:
   L is the curve length in metres
   A is the Algebraic difference in gradients (expressed as a percentage)
   K has a value selected from Table 5.4 or

2. the length shown in the fifth column of Table 5.4

Design Speed	Desirable min. Crest K value	Absolute min. Crest K value	Absolute min. Sag value	Min Vertical curve length (m)
>50 km/h (30 mph)	6.5	6.5	9	30

Table 5.4 Minimum Vertical Curve Length

Gradient at Junctions

5.2.10 The maximum longitudinal gradient on a minor road approach to a junction should not exceed 5% (1:20) for the distance specified in Table 5.5, measured from the nearside edge of the major carriageway.

5.2.11 When the minor road approach to the junction is downhill rather than uphill a longer distance with a gradient not exceeding 5% is required. This is intended to reduce the risk of vehicles overshooting 'Give Way' or 'Stop' markings at the junction.

Highway Type of Minor Approach without Priority	Highway Type of Priority Carriageway	Distance along Street (measured from nearside edge of Road carriageway)	
		Downhill approach	**Uphill approach**
Street	Street	15 m	10 m
Street	Mixed Commercial/Residential	20 m	15 m
Mixed Commercial/Residential	Road	30 m	15 m

Table 5.5 Minimum Gradient Distance on Minor Road

Visibility

Stopping Sight Distance

5.2.12 The stopping sight distance (SSD) is the distance within which drivers need to be able to see ahead and stop from a given speed. It is calculated from the speed of the vehicle, the time required for a driver to identify a hazard and then begin to brake (the perception-reaction time), and the vehicle's rate of deceleration.

5.2.13 For new streets, the design speed is set by the designer. For existing streets, the 85th percentile wet weather speed is used. If a vehicle speed survey has not been undertaken by the developer, visibility spays based on the posted speed limit may be used by agreement with the Department.

5.2.14 Stopping sight distance guidance contained in MfS and MfS2 is considered appropriate for streets where the 85th percentile speeds are equal to or less than 37 mph. At speeds above this, the recommended SSDs in the DMRB are more appropriate.

5.2.15 For the purposes of MfMR, the recommended SSDs within MfS and MfS2 are considered appropriate in the following circumstances:

- within a built-up area
- where the place function of the street is more important than the movement function
- when it does not exacerbate existing design deficiencies that adversely affect safety

5.2.16 A location is 'built-up' when it relates to an area where there is development on at least one side of the carriageway, with accesses, junctions, activity and other features which will clearly influence driver behaviour and speed.

5.2.17 For routes that are more open and have vehicle speeds greater than 37 mph, the visibility guidelines within the DMRB apply.

5.2.18 Typical SSDs for various speeds are shown in Table 5.6.

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

Table 5.6 Stopping Sight Distance (SSD)

Visibility Envelope

5.2.19 The vertical and horizontal design of a street must provide the minimum stopping sight distances in accordance with the guidance contained in MfS and MfS2. The derived

visibility envelope must be kept free of obstruction in both the vertical and horizontal planes.

5.2.20 A visibility envelope (as shown in our Standard Construction Details) for a car is to be measured from a driver's minimum eye height of 1.05 m to an object height of 0.6 m above the road surface, and is to be checked in both the vertical and horizontal planes between any two points.

5.2.21 A visibility envelope (as shown in our Standard Construction Details) for HGVs is to be measured from a driver's minimum eye height of 2.0 m to an object height of 0.6 m above the road surface, and is to be checked in both the vertical and horizontal planes between any two points.

5.2.22 The gradient of the major road affects the stopping distance. Where the gradient exceeds 10% reference should be made to the formula in MfS section 7.5.3.

Visibility Splays at Junctions

5.2.23 The visibility splay at a junction ensures there is adequate inter visibility between vehicles on the major and minor arms. See further information and examples in Appendix B Access Visibility and Junction Layouts and our Standard Construction Details SD/22.

5.2.24 The distance back along the minor arm from which visibility is measured is known as the X distance. It is generally measured back from the 'Give Way' line (or an imaginary 'Give Way' line if no such markings are provided).

5.2.25 This distance is normally measured along the centreline of the minor arm for simplicity, but in some circumstances (for example where there is a wide splitter island on the minor arm) it will be more appropriate to measure it from the actual position of the driver.

5.2.26 The Y distance represents the distance that a driver who is about to exit from the minor arm can see to his left and right along the main alignment. For simplicity it is measured along the nearside kerb line of the main arm, although vehicles will normally be travelling a distance from the kerb line. The measurement is taken from the point where this line intersects the centreline of the minor arm (unless, as above, there is a splitter island in the minor arm).

5.2.27 When the main alignment is curved and the minor arm joins on the outside of a bend, another check is necessary to make sure that an approaching vehicle on the main arm is visible over the whole of the Y distance. This is done by drawing an additional sight line which meets the kerb line at a tangent.

5.2.28 Some circumstances make it unlikely that vehicles approaching from the left on the main arm will cross the centreline of the main arm – opposing flows may be physically segregated at that point, for example. If so, the visibility splay to the left can be measured to the centreline of the main arm.

X distance

5.2.29 An X distance of 2.4 m should normally be used in most built-up situations, as this represents a reasonable maximum distance between the front of the car and the driver's eye.

5.2.30 A minimum of 2 m may be considered in some very lightly trafficked and slow speed situations, but using this value will mean that the front of some vehicles will protrude slightly into the running carriageway of the major arm. The ability of drivers and cyclists to see this overhang from a reasonable distance, and to manoeuvre around it without undue difficulty, should be considered.

5.2.31 Using an X distance in excess of 2.4 m is not generally required in built-up areas.

5.2.32 Longer X distances enable drivers to look for gaps as they approach the junction. This increases junction capacity for the minor arm, and so may be justified in some circumstances, but it also increases the possibility that drivers on the minor approach will fail to take account of other road users, particularly pedestrians and cyclists. Longer X distances may also result in more shunt accidents on the minor arm.

Y distance

5.2.33 The Y distance should be based on values for SSD, see Table 5.6.

Forward Visibility

5.2.34 Forward visibility is the distance a driver needs to see ahead to stop safely for obstructions in the road. The minimum forward visibility required is equal to the minimum SSD.

5.2.35 It is checked by measuring between points on a curve along the centreline of the inner traffic lane.

5.2.36 See further information and examples in Appendix B Access Visibility and Junction Layouts and our Standard Construction Details SD/22.

Visibility along the Street Edge

5.2.37 Vehicle exits at the back edge of the footway mean that emerging drivers will have to take account of people on the footway. The absence of wide visibility splays at private driveways will encourage drivers to emerge more cautiously. Consideration should be given to whether this will be appropriate, considering the following factors:

- frequency of vehicle movements
- amount of pedestrian activity
- width of the footway

5.2.38 When it is judged that footway visibility splays are to be provided, consideration should be given to the best means of achieving this in a manner sympathetic to the visual appearance of the street. This may include:

- use of boundary railings rather than walls
- omission of boundary walls or fences at the exit location

Obstacles to Visibility

5.2.39 Parking in visibility splays in built-up areas is quite common, yet it does not appear to create significant problems in practice. Ideally, defined parking bays should be provided

outside the visibility splay. However, in some circumstances, on local access roads where speeds are low (85th percentile speed below 20 mph), some encroachment may be acceptable.

5.2.40 The impact of other obstacles, such as street trees and street lighting columns, should be assessed in terms of their impact on the overall envelope of visibility. In general, occasional obstacles to visibility that are not large enough to fully obscure a whole vehicle or a pedestrian, including a child or wheelchair user, will not have a significant impact on road safety.

5.3 Parking

Parking Strategy

5.3.1 MfMR supports the Department's Parking Strategy which in turn supports the Government's smarter movement policies. In particular, MfMR supports the need to reduce the level of encroachment of vehicles into the urban centre, reflecting concerns about the impact of traffic congestion on the environment and air quality, and the need to protect the historic fabric of the Island's towns and villages.

Parking Design and General Principles

5.3.2 The Department's guiding principle towards parking provision is that sufficient and well-designed parking should be available within a development to ensure that environmental and safety problems do not occur in the surrounding area as a result of overflow parking generated from the development. Parking facilities should be integrated within the overall design of the development so that they are easy, safe and attractive to use, and so that parking in inappropriate locations is discouraged.

5.3.3 The aim of this parking guidance is to support the provision of sufficient, practical, usable parking within a development without compromising highway safety or public amenity. The guidance covers the provision of parking at new developments for cars, cycles, motorcycles, electric vehicles, disabled parking, coaches and HGVs.

5.3.4 The Department is actively committed to encouraging modal shift, encourages active travel behaviours and considers that if an increase in cycling is to be achieved, cycle parking and storage in new developments should be an integral part of their design.

5.3.5 The Department also realises that alternative modes of transport will only be used where journeys are appropriate and real choice is available. With much of the Island being rural in nature, many residents have no other option than to use their own cars; therefore, car parking will remain an important issue. However, with the growth in electric vehicle production and supply, the Department considers that electric vehicle charging points should be built into new developments from the outset.

Car Parking Provision: Off-Street

5.3.6 The car parking spaces required for different development types are set out within Appendix 7 of the Isle of Man Strategic Plan.

5.3.7 If an applicant wishes to provide a lower number of car park spaces for a particular development, the applicant must demonstrate the accessibility of the site and that no environmental or highway safety problems would occur in the surrounding area. It is unlikely to be appropriate to lower parking standards simply because there is capacity for parking on the immediate road network. Lowering provision should primarily be related to accessibility to services and facilities and opportunities for travel by public transport, and safe walking and cycling.

5.3.8 Therefore, the applicant must demonstrate how the site is located in relation to:

- health care, educational and employment destinations
- availability of public transport
- opportunities for safe walking and cycling

5.3.9 This evidence must be included in the Accessibility Statement (see Section 7 - Accessibility Audit).

Car Parking Provision: On-Street

5.3.10 The Department's general presumption is that sufficient parking should be provided within the development site and reliance should not be made of on-street parking unless:

- it has been appropriately designed in from the start (i.e. new large residential developments) or
- it is a small residential developments within an existing residential area and on-street parking is already an established part of the character of the street

5.3.11 For small residential developments in existing residential areas car parking surveys should be undertaken and submitted with the Accessibility Statement (Section 7 - Accessibility Audit). The car parking survey will be assessed by the Department to identify the current level and capacity of on-street parking in the vicinity of the site and allow a true reflection of the existing car parking arrangements to be established. Particular attention should be given to developments which convert dwellings into flats because although the amount of development does not increase, the intensity does.

5.3.12 The parking survey should assess the current parking demand in the local area. This should be considered through on-site assessments, and liaison with the Department. Any surveys requiring the collection of primary data should be undertaken over a period of at least one week including both weekends and weekdays at a variety of times throughout the day including late in the evening and early in the morning. School holidays and weeks including bank holidays should be avoided.

Parking Standards

5.3.13 The parking standards for each parking category can be found in Appendix C Parking Standards.

- Cycle Parking
- Electric Vehicles
- Motorcycle Parking

- Parking for Disabled Users
- Car Parking – Residential On-street
- Car Parking – Residential Off-Street
- Car Parking Non-Residential
- Coach Parking
- Commercial Parking (HGVs & LGVs)
- Petrol Stations with Retail Provision

5.4 Traffic Signs and Road Markings

Traffic Signs

5.4.1 Traffic signs play an important role in assisting road users by providing:

- warnings of potential hazards (e.g. a tight bend or steep gradient)
- instructions that need to be followed (e.g. speed limits or one-way streets)
- clear directions to specific destinations (route signing to villages, towns or specific attractions)

5.4.2 The designer will be expected to identify what signs are required as part of the design process, in accordance with the Isle of Man Traffic Signs Regulations 2003 (SD 827/03).

5.4.3 The Department is committed to reducing signage clutter. The over provision of traffic signs can have a detrimental impact on the environment and can dilute more important messages. Chapter 1 of the Traffic Signs Manual gives advice on reducing sign clutter.

5.4.4 The Department expects that traffic signs will only be specified where the need is absolute to fulfil the requirements of the Traffic Signs Manual.

5.4.5 Where works are required on the existing local road network, the Department expects the design process to include a review of existing signing, and will require the developer to remove, replace or upgrade road signs as appropriate to accommodate the requirements of the new development.

Road Markings

5.4.6 Road markings provide road users with:

- warnings of potential hazards (e.g. notifying drivers where it is safe to overtake)
- instructions that need to be followed (e.g. indicating where drivers should remain in a specific lane)
- clear directions on which lane drivers should use to reach specific destinations, especially on the approach to junctions

5.4.7 The designer will be expected to identify what road markings are required as part of the design process, in accordance with the Traffic Signs Manual.

5.4.8 The Department expects road markings to be provided on major roads, notably the primary and distributor route network. On minor roads it may be that certain road

markings, such as centre line markings, will not be required. The Department should be consulted on these requirements at an early stage of the design process.

Street Furniture and Other Roadside Equipment

5.4.9 A wide range of street furniture and roadside equipment may be required to address specific issues in relation to traffic management. These include:

- pedestrian barriers and railings
- safety barriers
- bollards
- verge marker posts
- grit bins
- cattle grids

5.4.10 Where the need for street furniture is identified, siting should be in accordance with MfMR guidance on User Needs (see Section 5.1 User Needs) and guidance in the DMRB.

Unadopted Road signs

5.4.11 Once a new road is open so that the public can access it freely, the developer must ensure that information signs with the developer contact details are prominently displayed in locations to be agreed with the Department (generally where the extent of public highway terminates).

5.4.12 The signs must be reasonably maintained by the developer and should display the developer's corporate logo and contact details.

5.4.13 The signs should be 600 mm × 600 mm and include the wording:

'The roads on this development have not been adopted and remain the responsibility of (developer name). Enquiries should be made to: (developer contact details)'.

Traffic Management Systems

5.4.14 Traffic management systems include traffic signals, pedestrian crossings, and other traffic control systems such as variable message signs, closed circuit television (CCTV) cameras and camera based vehicle monitoring systems. These systems are maintained and managed by the Department, and support the Department's movement and road safety objectives.

Traffic Signals and Controlled Pedestrian Crossing

5.4.15 Where signal control is the preferred option for any junction related to a development, the developer will be required to provide modelling evidence to justify the use of signals, including comparison with alternative junction types.

5.4.16 Developers and their designers are encouraged to contact the Department to discuss proposals at the earliest possible opportunity, ideally prior to the submission of any planning application.

5.4.17 The current requirement for signal aspects is that they should all be of the LED type. Signal controllers and installation cables will be extra low voltage (ELV) unless otherwise agreed by the Department. Only equipment approved by the Department will be permitted for use on the highway.

5.4.18 Designers should contact the Department to confirm the standards and requirements for the supply, installation and maintenance of traffic signal equipment and associated minor civil engineering works.

Variable Message Signs (VMS)

5.4.19 Variable message signs are often used to inform drivers of traffic conditions, car parking availability or other useful information that might assist them with their journey. On the local highway network, two main forms of VMS are currently in use:

- mobile VMS, generally mounted on trailers, are often used to provide driver information at the roadside, generally where major roadworks are taking place. Where a development requires significant roadworks on the existing highway network, the Department may require the use of mobile VMS to pass information to drivers in advance of the works taking place. Such a requirement would be agreed as part of the traffic management plan for the highway works
- vehicle activated signs (VAS) are used to tackle local traffic management issues, such as speeding, by seeking to amend driver behaviour through the use of informative messages. Where such signs are proposed as part of a development, the type and location of the signs should be agreed with the Department, and a commuted sum is likely to be required to offset future operational costs associated with the equipment. Early discussion with the Department is recommended

5.5 Street Furniture, Landscaping and Conservation Areas

Introduction

5.5.1 MfS sets out the aspects of the built form that contribute to quality places. Some of these are not directly relevant to highway design but may have implications for the layout of the street.

5.5.2 The issue of most relevance to the Department is probably the need to minimise signs, road markings and street furniture. To some extent this is at odds with the expectations of highway users and there has perhaps been a tendency in the past to use signs and markings to rectify design flaws that should have been remedied by other changes to the layout.

Reducing Clutter

5.5.3 MfS2 covers a range of techniques to help reduce the clutter of unnecessary street furniture and signs on the highway. The Department supports this approach to street design, whereby signage and bollards are excluded from schemes unless circumstances indicate that they are essential. This has to consider those signs which are compulsory as

a result of legislation, for example, notifying of speed or weight restrictions. Guidance on reducing sign clutter can be found in Chapter 6 of the Traffic Signs Manual.

5.5.4 Where signage is required, it is preferable to utilise existing structures as a surface for mounting, for example street lighting columns or existing sign posts. Permission should be sought from the owner before mounting signs on existing street furniture.

5.5.5 When designing a new scheme, it is crucial that designers carry out an audit of existing signing, road markings and street furniture to ensure that every opportunity is taken to remove any redundant items and then integrate the remaining apparatus with those required as part of the new scheme.

Planting and Landscaping

5.5.6 It is an offence under Section 45(1)(b) of the Highways Act 1986 to plant a tree, shrub or hedge in a highway, or within 4.5 m of the centre of a carriageway without lawful authority. The approval of the Department must be obtained before planting is carried out. The necessary vertical clearance of foliage over any part of a footpath is 2.6 m and over any part of a carriageway is 5.3 m.

5.5.7 Soft landscape features can positively contribute to bio-diversity and climate change adaptation, and provide physical and mental health advantages (Health Benefits of Street Trees).

5.5.8 Appropriate planting can provide shade, shelter, privacy, spatial containment and separation. It can also be used to create buffer or security zones, visual barriers, landmarks or gateway features.

Highway Design

5.5.9 Soft landscaping can be used to limit forward visibility so as to influence driver's choice of speed. It can also aid road users to recognise the spatial extent of the carriageway.

5.5.10 Limited planting of trees within visibility splays can occur where trees are of a slender girth when mature, and numbers do not impede sight lines for a driver in a stationary vehicle position.

Sustainable Planting

5.5.11 When considering landscape designs it is important to ensure that all planting is sustainable in the long term. This can be achieved by ensuring the provision of:

- healthy growing conditions
- enough space for new planting to grow to maturity
- appropriate species in keeping with the local area and its function

5.5.12 The choice and selection of plant type should be in keeping with the environment in which it is to be placed, i.e. native species should dominate in rural schemes and more ornamental plants may be used in urban areas.

5.5.13 Tree planting should be carried out in accordance with BS 8545: 'Trees: from nursery to independence in the landscape – Recommendations'. This standard sets out good practice in the planting of amenity trees under the following headings:

- policy and strategy
- site evaluation and constraints assessment
- species selection
- nursery production and procurement
- handling and storage
- planting

5.5.14 The existing landscape features, both on and adjacent to a site, should be identified and incorporated into the scheme where appropriate.

5.5.15 A decision on whether a tree or group of trees merits retention should be based on the assessment criteria described in Section 4.5 of BS 5837: 'Trees in relation to design, demolition and construction – Recommendations'. The 'TreeABC' enhancement of the BS methodology, developed by Barrell Tree Care, should also be used.

5.5.16 During construction, the protection of existing landscape features, such as trees and hedges is essential. BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations' provides detailed guidance on the protection of trees on construction sites. A tree protection plan should be produced which clearly identifies where a construction exclusion zone will be implemented around trees and identify the precise location of the protective barriers that will be erected to form its boundary.

5.5.17 On difficult sites, an arboricultural method statement will be required to ensure minimal adverse impact on retained trees. Section 6.2.2 of BS 5837: 'Trees in relation to design, demolition and construction – Recommendations' provides guidance on the specification for protective barriers.

New Planting

5.5.18 It is important that a suitably qualified arboriculturist is consulted for professional advice on all landscaping matters relating to trees in new development, and all highway landscaping should be designed to integrate with the proposed streetscape, including the retention, wherever possible, of existing trees.

5.5.19 There are a number of design solutions available which will increase the probability of trees planted into hard landscapes and urbanised environments surviving and achieving 'independence in the landscape'. Trench planting, crate systems, irrigation, underground guying and the use of structural growing mediums should be considered. Guidance can be found in the Trees & Design Action Group document 'Trees in Hard Landscapes: A Guide for Delivery'.

5.5.20 It is also important that landscape design in, or adjacent to, the highway takes into account any potential impact on the construction of carriageway, footway, structures or subterranean services (for example highway drainage). A tree's demand for water can drastically alter the surrounding soil conditions. The effects of soil heave and shrinking

can have a dramatic impact on the integrity of footways and carriageways, and must be considered when designing a planting scheme.

5.5.21 Pedestrian routes and sight lines should not be obstructed by planting. Whilst it is generally necessary to maintain driver sightlines, vegetation should be used to limit excessive forward visibility in order to limit traffic speeds. In this situation slow-growing tree species with narrow trunks and canopies above 2 m should be considered.

5.5.22 When trees are to be located adjacent to footways, the species selected should not spread to reduce pedestrian space below the minimum dimensions for width and headroom, as outlined in DMRB. Low- hanging branches and overgrown shrubs that create a trip hazard are especially dangerous for blind or partially-sighted people.

5.5.23 In general, it is expected that the design of landscaping within the highway will be compliant with the landscaping policies set out by the Planning and Building Control Directorate (PBCD).

5.5.24 New landscaped areas will not normally form part of the highway to be adopted.

Verges

5.5.25 For ease of maintenance, roadside verges should be:

- grassed areas of at least 10 sqm, at least 1 m wide, with a hard-paved mowing strip 200 mm wide adjacent to vertical structures or at the roadside edge on streets with high traffic levels
- shrub areas at least 10 sqm, at least 2 m wide

5.5.26 Where verges are to include trees, an area at least 3 m wide and 6 m long is necessary to ensure sustainable soil volume and avoid future issues with kerbs, surfacing etc.

Conservation Areas

5.5.27 The Island has a wide range of towns and villages with a variety of local characteristics in relation to building types, materials used, and general layout of streets. It is recognised that the design and layout of new development needs to reflect this variety and that, whilst in asset management terms it may be desirable and more cost effective to restrict the design and use of materials to a limited palette, there will be locations where the need to fit in with the local characteristics takes priority. This will particularly be the case in locations that lie within designated conservation areas, or where a development might affect the setting of buildings of historic importance. In these cases, the Department will consider the use of more specific materials that are better suited to the particular setting.

5.5.28 Where enhanced materials are specified, the Department may require the developer to pay a commuted sum to reflect the additional maintenance costs that will be incurred by the Department as a result of such proposals.

5.5.29 The Planning and Building Control Directorate holds details of conservation areas or where other locally important designations are in place, and developers should refer to the Planning and Building Control website.

Section 6 - Manx Roads and Streets

6.1.1 This section provides a summary of the design guidance by road and street type.

6.1.2 The Department would be willing to consider proposals that depart from these requirements as long as the developer can produce reasoned justification for such departure.

6.1.3 Streets are mainly residential in character and are primarily about place whereas roads are mainly non-residential and primarily about movement. Examples of Road and Street Types are given in Table 6.1 and the design tables that follow.

Characteristics		Type	Example	Design Parameters
STREETS	Primarily about **Place** **Residential** in character	Mixed Residential and Commercial Streets	Mixed Residential and Commercial Street	Table 6.2
		Residential Streets	Street with Footways	Table 6.4
			Shared Surface Street	Table 6.7
			Private Street	Table 6.9
ROADS	Primarily about **Movement** **Non-residential** in character	Roads	Road in Built up Area	Table 6.10
			Road in Rural Area	Table 6.10
		Industrial Estate Roads	Major Industrial Access Road	Table 6.11
			Minor Industrial Access Road	Table 6.13
			Private Commercial Road	Table 6.15

Table 6.1 Road and Street Type

6.1.4 Streets should be planned, designed, operated, and maintained to enable safe, inclusive, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. Street design should aim to restrict car use and parking by reducing convenience to motor vehicles while promoting safe walking and cycling.

6.1.5 A Shared Surface street should be planned and designed so that clear routes for pedestrians are provided and that these are kept free of traffic, by using street furniture for example, to allow the shared area to be used by the visually impaired.

6.1.6 A Shared Surface street should be designed so that on street parking is minimised and only occurs in designated parking bays. Traffic calming features should be integrally designed, and be sympathetic to the needs of mobility impaired and visually impaired pedestrians. They should not be added as an engineered afterthought.

Mixed Residential and Commercial Street	Note: Design parameters relate to design speed of 20 mph only
High street design speed (85thpercentile)	20 mph (32 km/h) must be self-enforcing
Maximum dwellings	No limit but subject to modelling
Vehicular frontage access	A vehicular access should not be located within 23 m of a junction
Carriageway width	6.5 m minimum (6.75 m if a bus route) Subject to swept path analysis. The swept path of a vehicle on bends is greater that the width of the vehicle itself. To enable vehicles to pass, curve widening in accordance with the swept path analysis of the largest vehicles likely to use the proposed street is required
Footways	Minimum 3.0 m wide both sides
Cycleways	Protected space for cyclists should be provided if daily two-way vehicle flow is greater than 2000 vehicles. See MfMR User Needs Cyclists
On-street parking	6.0 m long by 2.0 m wide on either or both sides. Sufficient remaining carriageway for two-way traffic or single-file traffic with passing places must be provided
Gradients	8% maximum, 0.8% minimum
Horizontal curve radius	To be determined by swept path analysis of the largest size of vehicle likely to use the proposed street
Vertical curve lengths	30 m desirable
Forward visibility	25 m (design speed 20 mph)
Speed restraint centres	50 m maximum
Junction radii	To be determined by swept path analysis of the largest size of vehicle likely to use the proposed street
Junction visibility 'X' distance	2.4 m
Junction visibility 'Y' distance for side streets	25 m
Absolute minimum junction spacing for side roads	To be determined by swept path analysis of the largest size of vehicle likely to use the proposed street. Crossroads permitted in some circumstances dependent on vehicle swept path analysis

Table 6.2 Mixed Residential and Commercial Street Parameters

Mixed Residential and Commercial Street

Table 6.3 Mixed Residential and Commercial Street Example

Street with Footways	Note: Design parameters relate to design speed of 20 mph only
Street design traffic speed (85thpercentile)	20 mph (32 km/h) must be self-enforcing
Maximum dwellings	No limit but subject to modelling
Vehicular frontage access	A vehicular access should not be located within the SSD of a vehicle entering a junction
Carriageway width	**If car parking standards met** — 5.5 m minimum (6.75 m if a bus route) **If limited in-curtilage parking resulting in on-street parking** — 6.5 m minimum (6.75 m if a bus route) Subject to swept path analysis. The swept path of a vehicle on bends is greater that the width of the vehicle itself. To enable vehicles to pass, curve widening in accordance with the swept path analysis of the largest vehicles likely to use the proposed street is required
Footways	Minimum 2.0 m wide all sides
Cycleways	Protected space for cyclists should be provided if daily two-way vehicle flow is greater than 2000 vehicles. See MfMR Section User Needs Cyclists
On-street parking	If parallel 6.0 m long by 2.0 m wide and if perpendicular 6.0 m long by 2.5 m wide. Sufficient remaining carriageway for two-way traffic or single-file traffic with passing places must be provided
Gradients	8% maximum, 0.8% minimum
Horizontal curve radius	To be determined by swept path analysis of the largest size of vehicle likely to use the proposed street
Vertical curve lengths	30 m desirable
Forward visibility	25 m (design speed 20 mph)
Speed restraint centres	50 m maximum
Junction radii	To be determined by swept path analysis of the largest size of vehicle likely to use the proposed street
Junction visibility 'X' distance	2.4 m
Junction visibility 'Y' distance for side streets	25 m (design speed 20 mph)
Absolute minimum junction spacing for side roads	To be determined by swept path analysis of the largest size of vehicle likely to use the proposed street. Crossroads permitted in some circumstances dependent on vehicle swept path analysis

Table 6.4 Street with Footways Parameters

Street with Footways

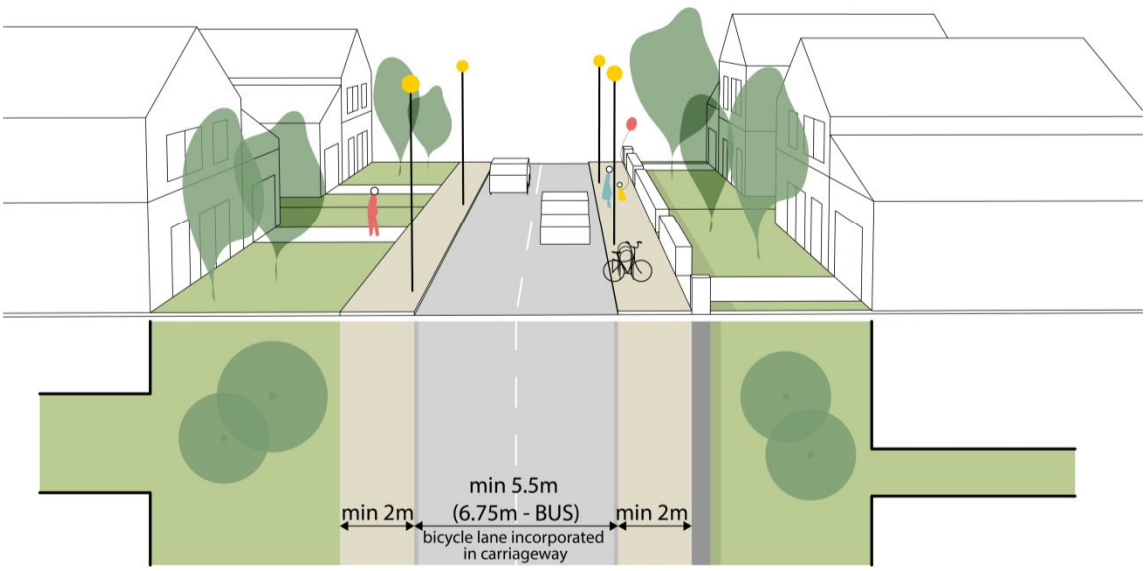


Table 6.5 Street with Footways Example

Square with Footways

Table 6.6 Square with Footways Example

Shared Surface Street	Note: Design parameters relate to design speed of 15 mph only
Shared surface design traffic speed (85thpercentile)	15 mph (24 km/h) must be self-enforcing
Maximum dwellings	No limit but subject to modelling
Vehicular frontage access	A vehicular access should not be located within the SSD of a vehicle entering a junction
Carriageway width	**If car parking standards met and visitor parking provided** — 4.8 m minimum **If limited in-curtilage parking resulting in on-street parking and/or no visitor parking** — 5.5 m minimum Subject to swept path analysis. The swept path of a vehicle on bends is greater that the width of the vehicle itself. To enable vehicles to pass, curve widening in accordance with the swept path analysis of the largest vehicles likely to use the proposed street is required Localised narrowings to 3.7 m for short distances on straight sections but an unobstructed pedestrian corridor must be maintained in addition to the 3.7 m
Pedestrian Corridor within carriageway	2.0 m minimum continuous and unobstructed
Cycleways	See MfMR Section User Needs Cyclists
On-street parking	Sufficient remaining carriageway for two-way traffic or single-file traffic with passing places must be provided
Gradients	8% maximum, 0.8% minimum
Horizontal curve radius	To be determined by swept path analysis of the largest size of vehicle likely to use the proposed street
Vertical curve lengths	30 m desirable
Forward visibility	17 m (design speed 15 mph)
Speed restraint centres	50 m maximum
Junction radii	To be determined by swept path analysis of the largest size of vehicle likely to use the proposed street
Junction visibility 'X' distance	2.4 m
Junction visibility 'Y' distance for side streets	17 m (design speed 15 mph)
Absolute minimum junction spacing for side roads	To be determined by swept path analysis of the largest size of vehicle likely to use the proposed street. Crossroads permitted in some circumstances dependent on vehicle swept path analysis

Table 6.7 Shared Surface Street Parameters

Shared Surface

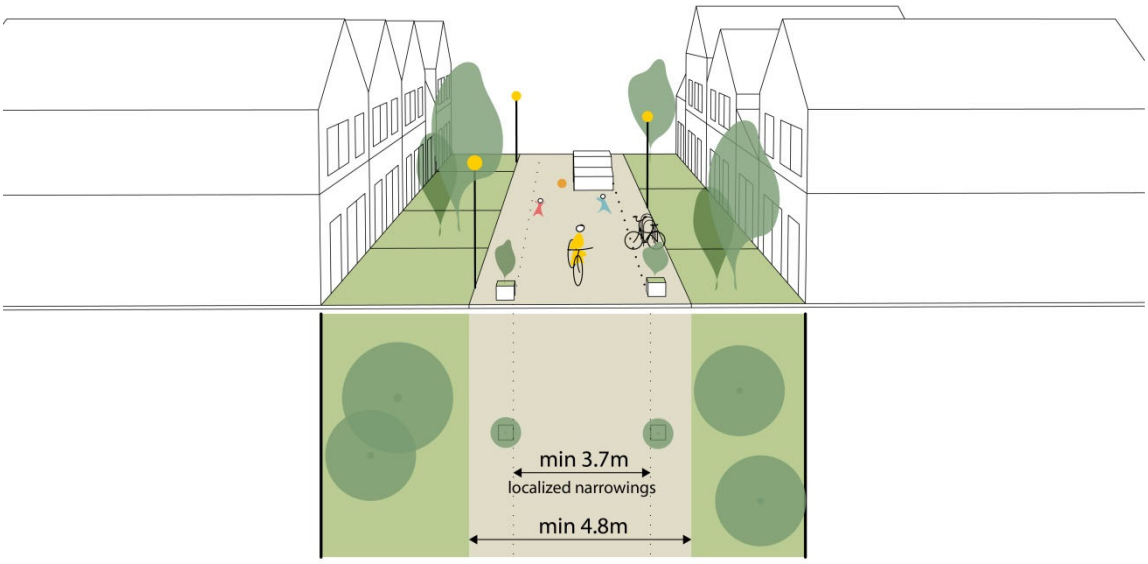


Table 6.8 Shared Surface Example (No Frontage Parking in lower image)

Private Street

A private street should serve no more than five dwellings. It should be a minimum of 4.8 m wide when accessed off a local access road and at least 5.0 m wide when accessed off a district or local distributor road. Width to be maintained for a distance of at least 6.0 m from the junction. Localised narrowings to 3.7 m for short distances on straight sections but an unobstructed pedestrian corridor must be maintained in addition to the 3.7 m. Sufficient carriageway width for two-way traffic or single-file traffic with passing places must be provided. Walls or boundary fences set back a minimum of 0.5 m either side. Where a shared surface layout is not proposed, 2.0 m wide footways should be provided. The layout should be designed to achieve a speed of 10 mph (16 km/h).

Table 6.9 Private Street Parameters

Road

The status of a highway within the road hierarchy is a strong indicator of its function. Primary and District roads carry large volumes of traffic and freight. In general, the standards set out in DMRB should continue to be used on roads classified as Primary or District routes, and other routes subject to large volumes of traffic. At some locations on Primary or District roads, however, where it can be demonstrated to the satisfaction of the Department that the place function outweighs the movement function (i.e. the characteristics of the highway and built environment are such as to warrant design considerations from MfS2) it is logical to apply the recommendations of MfS2. MfS2 recommendations should only be used on roads with 37.5 mph (60 km/h) or lower actual (85th percentile) speeds. If the speed on local roads exceeds 37.5 mph (60 km/h), the Department will require DMRB standards unless evidenced local interpretations are agreed by the Department as being more appropriate.

Table 6.10 Road Parameters

Industrial Estate Roads

6.1.7 Industrial estate roads must be designed specifically to cater for use by the largest size commercial vehicles of 16.5 m length.

6.1.8 Mixed use developments, or commercial developments with a high proportion of light goods and/or car movements should be designed in accordance with MfS2 or DMRB as appropriate.

6.1.9 Particular attention will be paid to the following points when assessing industrial development proposals:

- the manoeuvring characteristics of heavy commercial vehicles
- peak hour vehicle flows
- the minimization of vehicle speeds in the interests of highway safety
- operation and requirements with specific reference to the provision of parking, turning, loading, and storage facilities within the site curtilage which shall be identified at the planning application stage
- provision of facilities for pedestrians and cyclists and public transport links
- conflicts between HGVs and cars/cyclists/pedestrians

6.1.10 In developments likely to generate more than 250 commercial vehicle trips per day, a number of minor industrial roads should feed to the industrial access road which should not provide direct access to individual factory units. A looped arrangement is preferable so as to prevent the possibility of creating a cut through for main road traffic.

6.1.11 Further details of the criteria that the Department would expect to be followed in terms of proposals incorporating any of those industrial estate road types are set out on the following pages.

6.1.12 It should be noted that these criteria are intended for guidance only, and the Department would be willing to consider proposals that depart from them as long as the developer can produce reasoned justification for such departure.

Major Industrial Access Road (MIAR)	Note: Design parameters relate to design speed of 30 mph only
Industrial Access Road target design speed	30 mph (48 km/h)
Carriageway width	7.3 m
Maximum carriageway length	Unrestricted with secondary access
Cycleway	Protected space for cyclists should be provided if daily two-way vehicle flow is greater than 2000 vehicles. See MfMR Section User Needs Cyclists
Footways	2.0 m minimum
Marginal strips	2.0 m
Gradients	0.8% to 4.0%
Horizontal curve radius	60 m minimum
Vertical curve lengths	30 m minimum
Forward visibility	43 m
Junction radii	15 m
Junction 'X' distance	2.4 m
'Y' distance for side roads	43 m
Absolute minimum junction spacing for side roads	90 m [adjacent] 45 m [opposite]
Carriageway widening on bends	Yes to be determined by swept path analysis of full size (16.0 m) HGV

Table 6.11 Major Industrial Access Road Parameters

Major Industrial Access Road (MIAR)

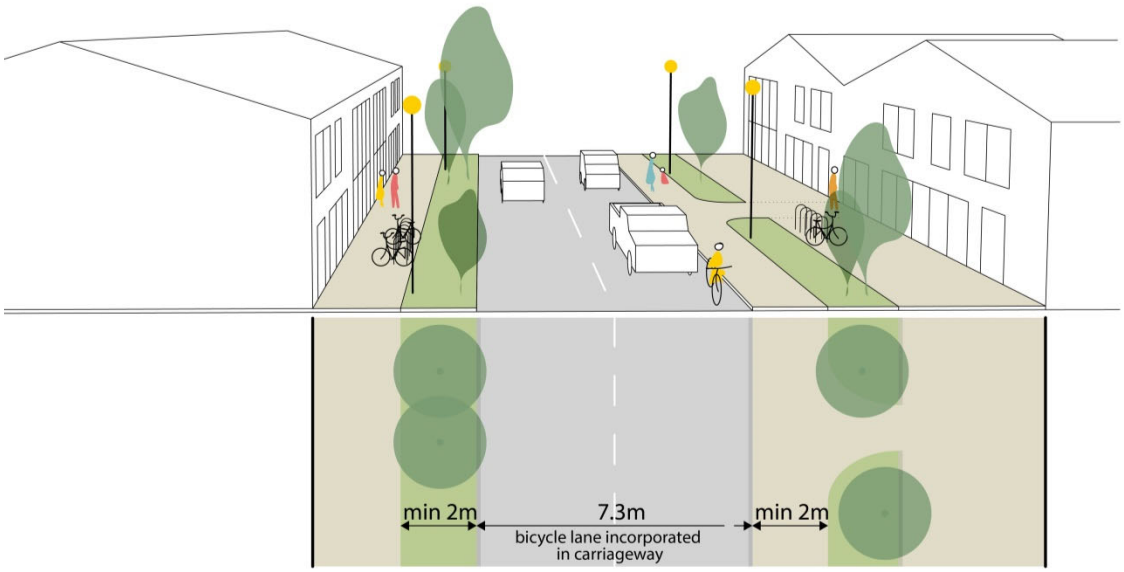


Table 6.12 Major Industrial Access Road Example

Minor Industrial Access Road (IAR)	Note: Design parameters relate to design speed of 30 mph only	Note: Design parameters relate to design speed of 25 mph only
Minor Industrial Road	Through Road	Cul-de-Sac
Industrial Access Road design traffic speed	30 mph (48 km/h)	25 mph (40 km/h)
May take access from	Major industrial access road	Major industrial access road
Carriageway width	7.3 m	7.3 m
Maximum carriageway length	Unrestricted	250 m
Cycleway	Protected space for cyclists should be provided if daily two-way vehicle flow is greater than 2000 vehicles. See MfMR Section User Needs Cyclists	Protected space for cyclists should be provided if daily two-way vehicle flow is greater than 2000 vehicles. See MfMR Section User Needs Cyclists
Footways	2.0 m minimum	2.0 m minimum
Marginal strips	2.0 m	2.0 m
Gradients	0.8% to 4.0%	0.8% to 4.0%
Horizontal curve radius	60 m minimum	60 m minimum
Vertical curve lengths	30 m minimum	30 m minimum
Forward visibility	43 m	33 m
Junction radii	15 m to MIAR	15 m to MIAR
Junction radii	12 m to IAR	12 m to IAR
Junction 'X' distance	2.4 m	2.4 m
'Y' distance for side roads	43 m	33 m
Absolute minimum junction spacing for side roads	90 m [adjacent] 45 m [opposite]	90 m [adjacent] 45 m [opposite]
Carriageway widening on bends	Yes to be determined by swept path analysis of full size (16.0 m) HGV	Yes to be determined by swept path analysis of full size (16.0 m) HGV

Table 6.13 Minor Industrial Access Road Parameters

Minor Industrial Access Road (IAR)

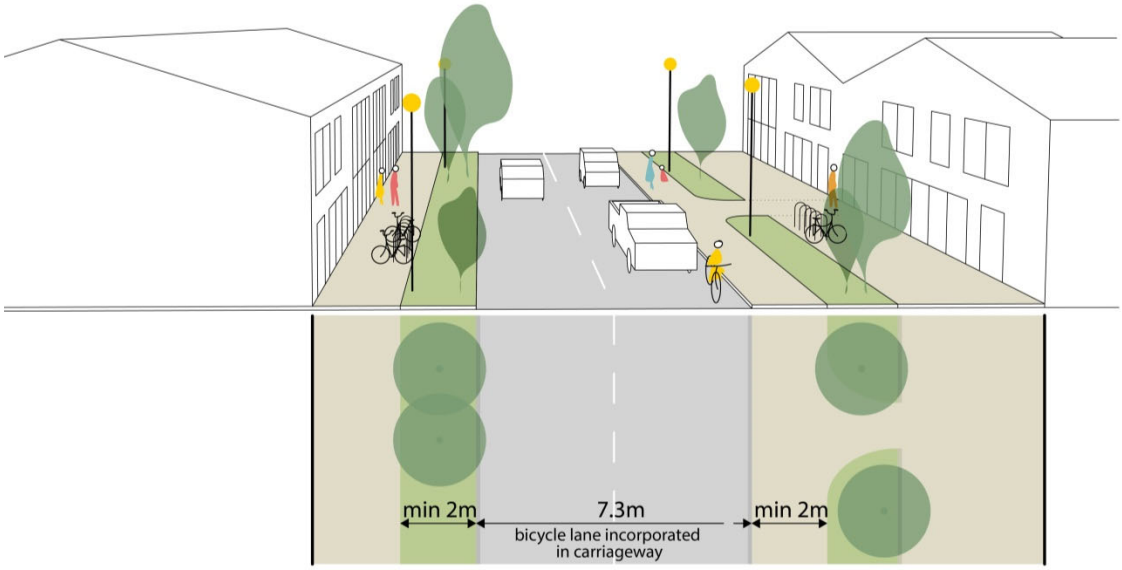


Table 6.14 Minor Industrial Access Road Example

Private Commercial Road

Adoption may not be required for small pockets of light industrial units and/or nursery units served by an enclosed courtyard type layout; however, the following design parameters apply: Entrance radii: To be determined by swept path analysis of the largest size of vehicle likely to use the proposed entrance Access width: 6.1 m minimum Entrance gates: At least 17.5 m back if site is to be used by HGV traffic Gradient: 5% [1:20] max Visibility: 'X' distance – 2.4 m 'Y' distance – refer to MfS or DMRB (depending on street or road type) For developments fronting major industrial access roads and most industrial access roads, on-site HGV manoeuvring facilities must be provided. Loading areas away from the highway are required.

Table 6.15 Private Commercial Road Parameters

PART THREE

QUALITY AUDIT

Section 7 - Accessibility Audit

7.1 Accessibility Assessment

General Principles

7.1.1 In order to support the Department's movement objectives, proposed developments must be assessed to determine the level of accessibility they provide to residents and workers.

7.1.2 This section details the accessibility assessment framework and how it should be undertaken for a development.

7.1.3 Proposed developments with poor accessibility will be required to be redesigned to improve the levels of accessibility. If accessibility levels are poor, especially for pedestrians and cyclists, a planning application may not be supported by the Department.

How to use the Accessibility Assessment

7.1.4 Four main areas have been identified where we would expect developers to comply with set criteria in relation to the accessibility mode. These are:

- Accessibility for Walking
- Accessibility for Cycling
- Accessibility for Public Transport
- Accessibility for Vehicles

7.1.5 The Department has adopted a checklist approach when assessing the accessibility of the proposed development site. All accessibility criteria identified play an important role in achieving a fully accessible development. Details on the requirements needed for a development in relation to accessibility are given below in the sections covering the main individual accessibility checklist. Development that complies with all criteria will be deemed fully accessible by the Department.

7.1.6 One page printable copies of each checklist are provided in Appendix E .

7.1.7 It is the aim of the Department that all development complies with all the criteria listed. Whist it is accepted that development sites in their current state may not meet all the accessibility criteria, the developer must demonstrate how the development will be made to meet the accessibility criteria. It is intended that the assessment acts as guide for developers to be able to identify where accessibility improvement will be required from the outset. This process must be viewed as the first stage in working with the Department in making sure that future developments are fully accessible for all users.

7.1.8 Each accessibility area should be examined for all development. Each check list must be completed as part of the accessibility assessment. Failure to do this and a failure to provide sufficient details within the assessment when required may result in the Department recommending that the application be refused.

7.1.9 Walking and cycling distances should be measured along routes that are safe for such activity. Using simple circular isochrones based on the location of a development is not acceptable. There may be significant barriers to walking or cycling, such as a major road, railway or river that will mean that a walking route from the development to a specific facility is in reality longer than the 'as the crow flies' line that the use of circular isochrones implies. Measurements should not be taken from the nearest part of the development to a particular facility, but from the centre of the development, to get the average distance, and from the furthest part of the development from a particular facility to get the maximum distance.

7.2 Accessibility for Walking

7.2.1 Accessibility for walking considers five criteria:

- safety
- location
- internal layout
- external layout
- links to surrounding highway network

7.2.2 Development that complies with all five criteria will be deemed fully accessible for walking.

7.2.3 In order to assess the development's accessibility by walking, the developer must answer the questions in Table 7.1. If for any reason the development does not comply with any of the criteria set out within Table 7.1, justification must be given on the measures that will be put in place to comply with criteria.

7.2.4 An accessibility plan should be drawn up showing existing infrastructure and identifying key routes needed through the site to provide the safest and most attractive pedestrian links to existing (and proposed) facilities and bus stops.

Accessibility for Walking Checklist		
Access Diagram		**Complies**
	Has a diagram been submitted which shows how people move to and through the development and how this links to the surrounding roads, footpaths and sight lines?	Yes/No
Access on Foot		**Complies**
Safety	Is there safe pedestrian access to and within the site, and for pedestrians passing the site (2 m minimum width footway on both sides of the road)? If no, application must address safe pedestrian access.	Yes/No
Location	For residential development: is it within 800 m of a district or local centre? Or for non-residential development: is the density of local housing (i.e. within 800 m) more than 50 houses per hectare?	Yes/No
Internal Layout	Does circulation and access inside the site reflect direct, safe and easy to use pedestrian routes for all, with priority given to pedestrians when they have to cross roads and cycle routes?	Yes/No
External Layout	Have all barriers to pedestrian access between site and local facilities been addressed i.e. dropped kerbs provided at crossing points or on desire lines; footway is at least 2 m wide; formal crossings provided where there is heavy traffic; no security concerns (e.g. due to absence of suitable lighting).	Yes/No
Links to Network	Are there links to the walking route network? If answer is No, please provide reasons why not.	Yes/No
Does development comply with all above criteria?		Yes/No
Comments or Action Required to Comply		

Table 7.1 Accessibility for Walking Checklist

7.3 Accessibility for Cycling

7.3.1 The accessibility for cycling considers six criteria:

- safety
- cycle parking
- location
- internal layout
- external access
- facilities for cyclists

7.3.2 Development that complies with all six criteria will be deemed fully accessible for cycling.

7.3.3 In order to assess the development's accessibility by cycling, the developer must answer the questions in Table 7.2. If for any reason the development does not comply with any of the criteria set out within Table 7.2 justification must be given on the measures that will be put in place to comply with criteria.

Accessibility for Cycling Checklist		
Access by Cycle		**Complies**
Safety	Is the development safe for cyclists turning into or out of the site or at road junctions within 400 m of the site? (e.g. no dangerous right turns for cyclists due to the level of traffic).	Yes/No
Cycle Parking	Does the development meet cycle parking standards in a secure location with natural surveillance or where appropriate contribute to communal cycle parking facilities?	Yes/No
Location	For residential development: is it within 1 km of a district or local centre? Or for non-residential development: is the density of local housing (i.e. within 1 km) more than 50 houses per hectare?	Yes/No
Internal Layout	Does circulation and access inside the site reflect direct and safe cycle routes, with priority given to cyclists where they meet motor vehicles?	Yes/No
External Access	Is the development within 400 m of an existing or proposed cycle route and/or is it proposed to create a link to a cycle route, or develop a route?	Yes/No
Facilities for Cyclists	If the development is commercial, does it include shower facilities and lockers for cyclists?	Yes/No
Does development comply with all above criteria?		Yes/No
Comments or Action Required to Comply:		

Table 7.2 Accessibility for Cycling Checklist

7.4 Accessibility for Public Transport

7.4.1 The accessibility for public transport considers three criteria:

- location and access to public transport
- frequency of public transport
- contribution to service enhancement

7.4.2 Development that complies with all three criteria will be deemed fully accessible for public transport.

Accessibility for Public Transport Checklist		
Access by Public Transport		**Complies**
Location and access to public transport	Is the site within a 400 m safe and convenient walking distance of a bus stop?	Yes/No
	Does the site have direct and safe pedestrian routes to bus stops? i.e. dropped kerbs and footways not less than 2 m wide, formal crossings where there is heavy traffic and bus access kerbs.	Yes/No
Frequency of Public Transport	Will the site be served by public transport? If Yes, indicate frequency of service at development opening by ticking High, Medium or Low box.	Yes/No
	High (four or more bus services an hour serving the town centre and/or local centre between 7am and 7pm Monday to Friday).	
	Medium (two or three bus services an hour serving the town centre and/or local centre between 7am and 7pm Monday to Friday).	
	Low (less than two bus services an hour serving the town centre and/or local centre between 7am and 7pm Monday to Friday).	
Contribution to service enhancement	Does the proposal contribute to bus priority measures serving the site?	Yes/No
	Does the proposal contribute to improvements to bus stops in the vicinity and/or provide bus stops in the site?	Yes/No
	Does the proposal contribute to an existing or new supported bus service?	Yes/No
Does development comply with all above criteria?		Yes/No
Comments or Action Required to Comply:		

Table 7.3 Accessibility for Public Transport Checklist

7.4.3 In order to assess the development's accessibility by public transport, the developer must answer the questions in Table 7.3. If for any reason the development does not comply with any of the criteria set out within Table 7.3 justification must be given on the measures that will be put in place to comply with criteria.

7.5 Accessibility for Vehicles

7.5.1 The Department would always encourage the use of public transport, walking and cycling. However, it is important that appropriate vehicle access and parking provision is also provided within a development (see Appendix C Parking Standards).

7.5.2 It is recommended that developers make themselves fully aware of the parking requirement for the developments early in the planning stage. Further advice or guidance on parking can be obtained from the Highway Development Control Team (HighwaysDevelopmentControl@gov.im).

7.5.3 The Department will support development that promotes sustainable accessibility by non-private car modes. Highway safety will never be compromised on any development – good accessible sites will always have a good highway safety for all users.

7.5.4 In order to assess the development's accessibility for vehicle access, the developer must answer the questions in Table 7.4. If for any reason the development does not comply with any of the criteria set out within Table 7.4 justification must be given on the measures that will be put in place to comply with criteria.

Accessibility for Vehicles		
Vehicle Access and Parking		**Complies**
Vehicles Access Circulation	Is there safe access to and from the Road?	Yes/No
	Can the site be adequately serviced?	Yes/No
	The safety and convenience of other users (pedestrians, cyclists and public transport) is not affected by the proposal?	Yes/No
	Has access for emergency services been provided?	Yes/No
	For development which generates significant freight movements, is the site easily accessed from the road (i.e. minimising the impact of traffic on local roads and neighbourhoods)?	Yes/No
Parking	Is the off-street parking provided as advised in section 5.3 Parking for that development type?	Yes/No
Does development comply with all above criteria?		Yes/No
Comments or Action Required to Comply:		

Table 7.4 Accessibility by Vehicle and Parking Checklist

Section 8 - Road Safety Audit

8.1 Road User Safety

8.1.1 The design of roads and streets, and the transport system in general, plays an important role in delivering the Government's Road Safety vision of: "A future where no one is killed or sustains serious/life changing injuries on our roads" – Road Safety Strategy 2019-2029.

8.1.2 The Road Safety Strategy sets out that this will be achieved by using the 'Safe System Approach'. This is an internationally accepted approach to road safety which considers all forms of road users. It recognises that people will always make mistakes and there will always be road traffic collisions, but if we design our 'system' correctly, then there will be fewer deaths and serious injuries from road traffic collisions over the longer term. The 'system' includes legislation, safety standards, education, enforcement and the design of our roads.

8.1.3 Safe Roads is one of the four key elements identified within the Safe System Approach (the others being Safe People, Safe Vehicles and Safe Speeds). Roads must be designed to reduce the risk of collisions occurring and the severity of injuries if a collision does occur. Safety features must be engineered into the road design from the outset.

8.2 Promoting Safe Roads in Developments - Road Safety Audits

8.2.1 The Department promotes casualty reduction and safer road use on the Island, and has a policy for a Road Safety Audit (RSA) to be carried out whenever permanent design changes are made to the adopted highway or new highway is proposed for adoption.

8.2.2 A RSA ensures that any changes carried out on the highway do not include features, or a combination of features, that may have a contributory influence on future personal injury collisions. It ensures that the road safety implications of the proposals are fully considered for all highway users, and it helps to confirm that the Safe System Approach is at the forefront of the design team's thinking.

Road Safety Audit

8.2.3 Road safety audit is a procedure for evaluating a scheme to identify road safety problems and to suggest measures to eliminate or mitigate any concerns. A road safety assessment can take the form of a road safety audit, road safety review or scheme self-certification depending on the impact of the scheme on the highway network.

8.2.4 The Department's Road Safety Audit Policy (Policy and Guidance) sets out the procedure for the consideration of developer proposals requiring the support of a Road Safety Audit. The Policy supports the national Road Safety Strategy and is required to preserve the safety of all road users using the public highway. The Department requires the procedures set out in DMRB GG119 to be followed, subject to the departures set out in this policy.

8.2.5 The objective of this Policy is to ensure that the road safety implications of all Highway Schemes required to support development, including those developments proposing new roads subject to future adoption by the Department, are fully considered for all road users of the highway, as well as those working on the highway, and to ensure that proposals are compliant with current statutory regulations. This will help to reduce safety risks on the Island's highways for all those who use them.

Road Safety Audit Requirement

8.2.6 The Department considers that a Road Safety Audit must accompany a planning application that includes any of the following:

- alterations to an existing highway
- intensification of use of an existing access. (Intensification is generally defined as 50 or more vehicle movements per day. However, it is recommended that clarification is sought from the Department where a proposal involves the intensification of an existing access as other issues such as collision data, visibility and geometry would need to be considered)
- formation of a new access
- off-site highway improvement

8.2.7 This will allow any safety implications to be fully assessed before any planning consent is granted.

8.2.8 For planning applications that include proposals which do not meet recognised standards, the need for a safety audit will be assessed by the Department. Of particular interest will be visibility, geometry and junction location. Safety Audits will not normally be required, for household applications, if guidance set out in MfS or DMRB is achieved.

8.2.9 It will be the responsibility of the developer to commission an independent audit team to consider the safety implications affecting their scheme.

8.2.10 Further details on how, when and what form of audit should be used are contained in the Department's guidance notes on road safety audit (Policy and Guidance) and the Department's policy on road safety audit (Policy and Guidance).

8.2.11 A table giving guidance on the type and stages of road safety audit is included in the Appendix as Table D.1 RSA Checklist.

8.2.12 Where developments require the alteration of the existing public highway, a road safety audit will be required as part of the agreement under section 109A of the Highways Act 1986. Similarly, a road safety audit will be required prior to new estate roads being adopted via the Highways Act 1986.

Section 9 - Pedestrian Environment Review

9.1 Pedestrian Environment Review

9.1.1 A Pedestrian Environment Review System (PERS) audit is a walking audit of a specified area, which seeks to assess the quality and composition of a range of pedestrian environments to understand how they may impact on walking movements.

9.1.2 PERS auditing techniques are used in the context of development proposals to identify the key routes which are likely to be used by those visiting, working, or living at the proposed development and for auditing existing routes to identify any necessary changes which need to be made to improve the pedestrian environment. These routes relate both to other transport modes (such as bus stops and rail stations) and also to local amenities, such as local centres, schools and hospitals.

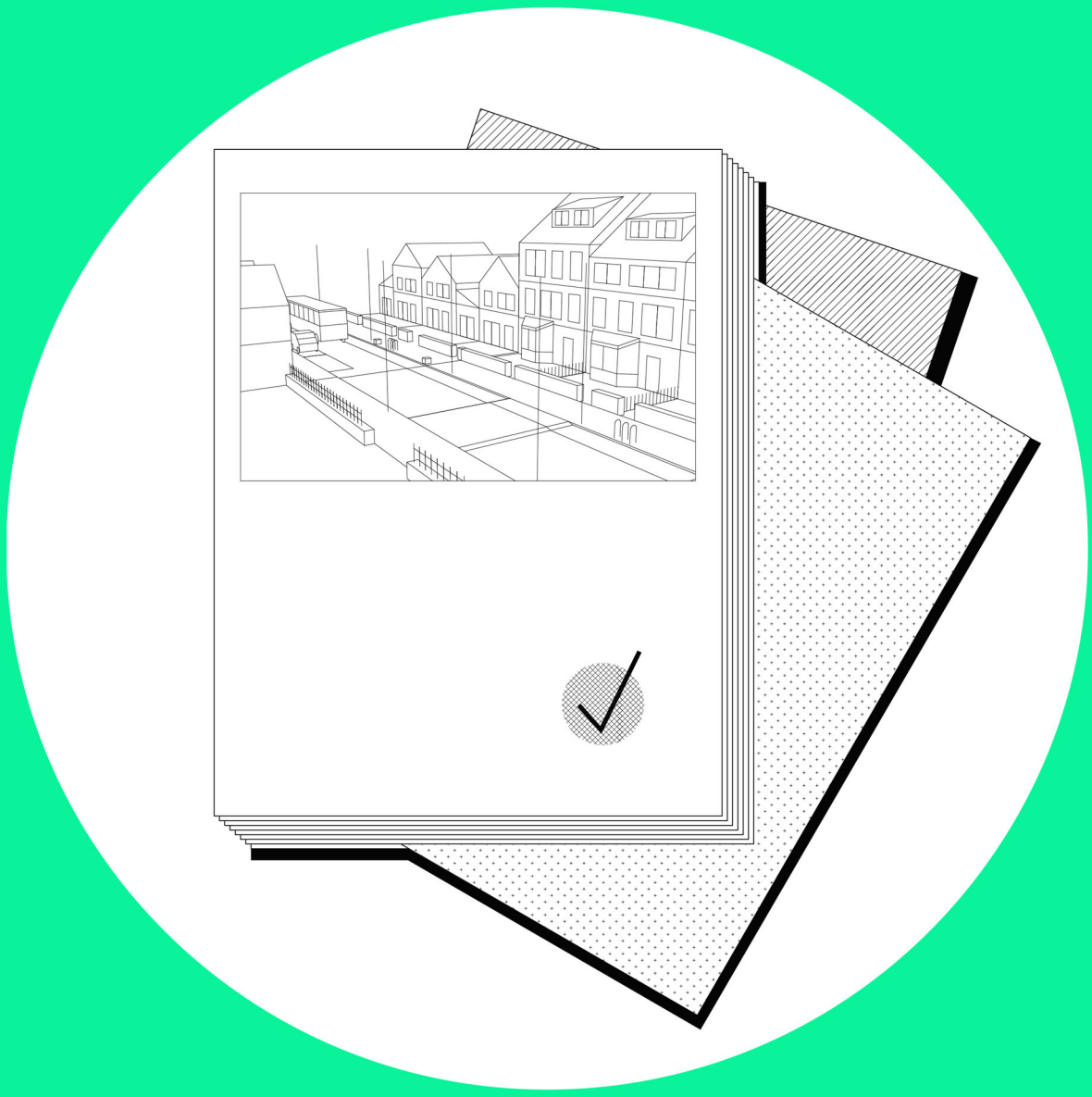
9.1.3 The Department has commissioned PERS audits for the settlements across the Isle of Man and they can be found on the government website (PERS Audits).

9.1.4 Each of these reports outlines the links and their scores, and maps the settlement to display the link scores and allow for easy identification of areas of poor links so these can be prioritised. Each report also identifies areas where there is no footpath present and links that were not assessed. This information can be utilised in conjunction with the walking element of the accessibility assessment.

9.1.5 Where a proposed development is located adjacent to a link not currently included in the extant PERS audits then we may request a review to be undertaken as part of the accessibility assessment.

PART FOUR

PLANNING APPROVAL



Section 10 - Highway Assessment of New Development

10.1 Introduction

10.1.1 A primary function of the Department is to provide an accessible, safe, sustainable and resilient highway network for movement of goods and people.

10.1.2 In this context:

- accessible refers to a transport system that maximises people's ability to reach goods, services and activities by the most sustainable modes of travel
- safe means a highway network that people feel safe using whatever their mode of travel, and is designed so that risk and severity of crashes is minimised
- sustainable means a highway network that is designed to contribute towards the reduction in carbon and other vehicle emissions, whilst also being financially affordable to operate within the constraints of public sector finances

10.1.3 An accessible, safe, and sustainable highway network supports the Island's economy by providing certainty, improving access to goods and services, improving mobility and helping to attract investment. But the highway network also helps to create and promote a range of social and economic activities that contribute to the health and wellbeing of the Island's communities. Therefore, in managing the road network, the Department will support development that improves accessibility and safeguards the highway network capacity for non-motorised transport.

10.1.4 The Department will only support new developments that:

- are designed to reduce the risk of collisions occurring and the severity of injuries if a collision does occur
- are designed to be accessible to all travel modes
- can be accommodated within the existing capacity of the highway network

10.1.5 It is the intention of Part Four of MfMR to provide simple, clear guidance and more certainty for developers on our requirements for highway assessment of new development.

10.2 Highway Assessment of a Planning Application

10.2.1 For the purposes of the MfMR, planning and development are defined as follows:

- planning is about land use influencing where development is located at a strategic level, to reduce the need to travel by car
- development is about assessing the impacts of proposed development, ensuring that it is sustainable in transport terms and, as far as practicable, mitigating any adverse impact (such as congestion) — in other words safeguarding the future operation of our road network

10.2.2 The key stages of the highway assessment process are shown in Figure 10.1, and explained in more detail below.

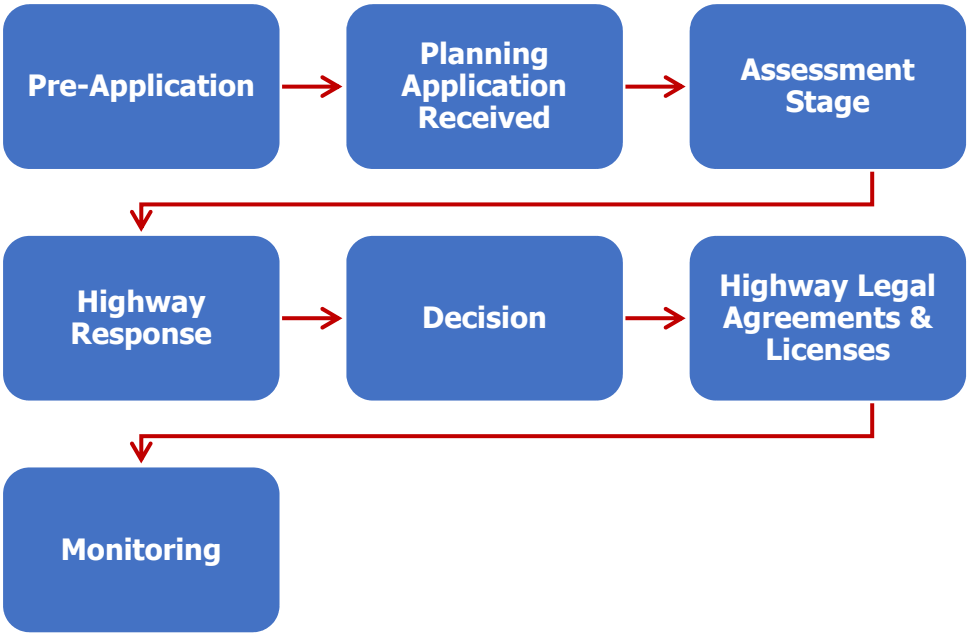


Figure 10.1 Key Highway Assessment Stages

Pre-Application

10.2.3 The Department encourages applicants to talk with us as early as possible when they are likely to need to consult the Department on a planning application. This will allow time for the Department to help designers to prepare all the information that we will need to fully consider the interaction of the proposed development with the highway network, and the suitability of any related actions proposed.

10.2.4 Effective pre-application engagement is essential in helping us meet statutory deadlines later in the planning process (see Appendix F Pre-Application Highways Advice).

10.2.5 Applicants should also review the access checklist in Appendix B.5.

Planning Application Received

10.2.6 Prior to undertaking the assessment, the Department will determine whether sufficient information has been provided by the applicant to fully consider the impact of the proposal on the highway network and its users. Failure to provide the requisite level of detail may result in the planning application being objected to.

10.2.7 The Department recommends that a planning application is accompanied by the relevant information shown in Figure 10.2 Information Requirement by Category.

10.2.8 The exact requirements for new developments will vary dependent on their type, size and location. MfMR groups development in to 4 categories: A, B, C and D (see Appendix F Pre-Application Highways Advice for details). The access, highway safety and transport information required for each development category can then identified from Table 3.1.

10.2.9 Information on each assessment can be found in Table 10.1, Table 10.2 and Table 10.3.

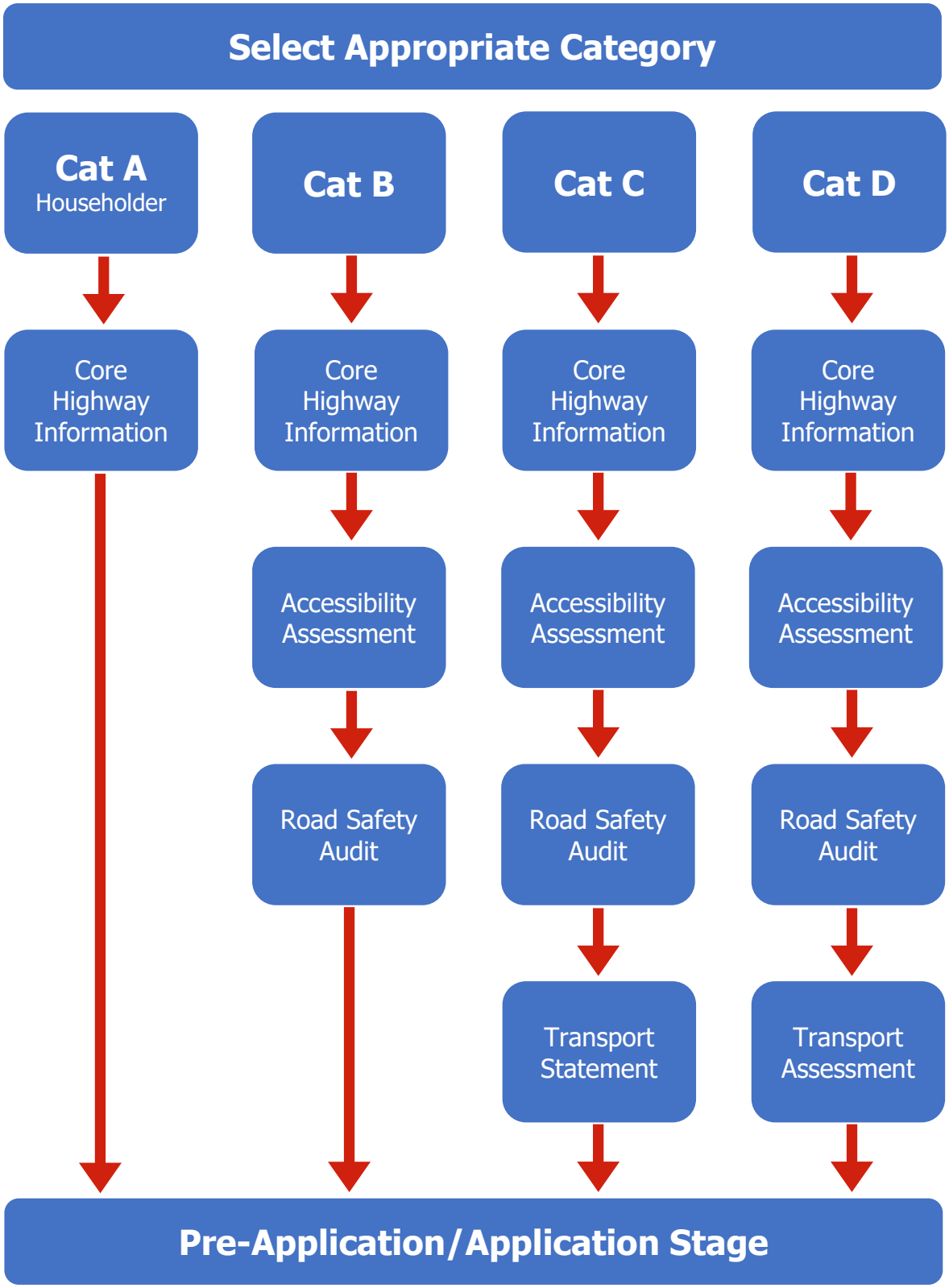


Figure 10.2 Information Requirement by Category

Core Highway Assessment Information – Minimum Requirements

The following core highway information is required for all planning applications (Category A, B, C & D)
A site location plan (scale 1:1250) with site extents indicated, including surrounding areas, road names and numbers
A description of proposed development, including schedule of uses
Site layout plans, including existing and proposed
Reference to supporting Strategic Plan and Local Plan policies
Summary of reasons supporting site access/highway works proposals, including a plan (scale 1:200 or 1:500) showing: • proposed carriageway widths • footway/footpath widths • junction radii • junction and visibility splays • proposed access width • parking and manoeuvring areas
A statement of current and proposed traffic moments

Table 10.1 Core Highway Information (Cat A, B, C, D)

The following additional information is required for planning applications (Category B, C & D only)
A schedule of existing uses, including planning history with planning application reference numbers
A parking plan for the site (see Appendix C Parking Standards)
An assessment of traffic generation and junction capacity
An accessibility assessment (see Section 7 - Accessibility Audit)
A road safety assessment (see Section 8 - Road Safety Audit)

Table 10.2 Additional Information (Cat B, C, D)

For proposals requiring a transport statement or assessment (Category C & D only)
A Transport Statement or Transport Assessment
The proposed trip rates supported with TRICS outputs and site selection methodology
The proposed traffic growth factors supported with growth factors and methodology

Table 10.3 Additional Information (Cat C, D)

Transport Statement /Transport Assessment

10.2.10 In assessing planning applications, the Department must safeguard the future accessibility, safety and sustainability of the Island's road network.

10.2.11 In exercising our network management role, the Department will seek to maintain the effective and efficient operation of our transport system. To facilitate this, the Department will require development that generates a significant amount of movements be supported by a Transport Statement or Transport Assessment. The size of development by type that either a Transport Statement or Assessment is required to support an application is given in Appendix G Highway Assessment Requirements of New Developments.

10.2.12 Developers should have regard to that guidance and should submit a Transport Statement or Assessment with an accessibility assessment (see Section 7 - Accessibility Audit) and Road Safety Audit (see Section 8 - Road Safety Audit).

10.2.13 However, the thresholds in Appendix G are not absolutes, and the Department may decide that a Transport Statement or Transport Assessment is required in order to better evaluate the effect of a proposal on highway capacity. The Department will notify the developer if this is the case and, where a Transport Statement or Assessment is required, the developer should agree its scope with the Department.

10.2.14 In some circumstances a Transport Assessment may be appropriate for a smaller development, while in others, a Transport Statement may be appropriate for a larger development than is suggested by the thresholds. Early pre-application discussions will help establish the level of assessment required.

10.2.15 For developments which will be brought forward in phases, this assessment should focus on the overall forecast demand of the development as a whole, not just the initial phases(s).

10.2.16 Assessments should be carried out for:

- the development and construction phase
- the opening year, assuming completion of the development and occupation
- either a date ten years after the date of registration of the associated planning application or the end of the Local Plan period (whichever is the greater)

10.2.17 The assessment at opening will be used for the determination of impact mitigation needs whilst the latter is necessary to determine the risk which will transfer to the Department.

10.2.18 Having established the need for a Transport Statement or Transport Assessment it is recommended that the scope of the assessment be agreed with the Department. Table 10.4 shows the typical traffic data needed by the Department to assess the traffic impacts of a proposed development.

Item	Comment
Study Area	To be agreed with the Highways Development Control Team and will be dependent on the scale, nature and location of the development site. Study area should include footways and cycle routes. Generally, study area will be a minimum of the site access points and the next junction along the highway network in either direction and/or all junctions where the development will lead to an increase of 30 or more vehicles in any one hour and/or any junctions that already experiences congestion.
Multi-modal Traffic Surveys	Traffic data up to three years old from approved studies previously carried out can be utilised subject to growth factors. New surveys should be carried out between March to June and September to November. Peak hour periods should be ascertained from traffic survey data.
Assessment Periods	Capacity assessments are required for the opening year of the development and five years from the opening date. Assessments that affect the Primary Highway network will require the opening year and ten year assessment.
Growth Factors	Vehicles use NRTF low. Cycling and walking to be agreed by the Department.
Trip Generation	TRICS database 85th percentile for all modes.
Trip Distribution	Existing vehicles turning movements, gravity model or isochronic distribution are all acceptable. Pedestrian and cycling to be agreed by the Department.
Capacity Assessment	Plans must be provided showing details of flare lengths, entry angles and visibility distances. Paramics Discovery, PICADY, ARCADY, OSCADY, LINSIG, or TRANSYT are acceptable but use must be first agreed with the Highways Development Control Team.
Crash Analysis	Analysis of three year recorded injury crash record within study area.
Environmental Assessment	Required when increases of over 20% are predicted, HGV movements are generated through on a local access road.
Mitigation Measures Requirements	Material impact on pedestrians and cyclists. Any queue length long enough to block another junction or traffic stream or, an increase in RFC above 0.85 or, an increase in DoS to above 90% or, a negative PRC value or, an unacceptable increase in average delay per vehicle or, an increase in PV2 value to 1.0 or above, or road safety problems arising from the development, or environmental issues arising from the development.

Table 10.4 Typical Data Requirements

10.2.19 The scheme promoter or designer will be responsible for obtaining the appropriate data on which to base the assessment. The Department maintains:

- a traffic flow database
- a road collision database
- Paramics Discovery Traffic Models for Douglas, Onchan, Castletown and Ballasalla Areas
- Pedestrian Environment Review Audit for all settlements

10.2.20 A fee will be charged for provision of the traffic survey, collision data and traffic modelling data.

10.2.21 The following main headings will be expected to be covered within any Transport Statement or Transport Assessment:

- non-technical summary
- existing conditions
- proposed development
- assessment years/analysis period
- development trip generation
- promoting sustainable transport choices
- transport impacts and mitigation measures

10.2.22 In all cases where a Transport Assessment or Transport Statement is needed, the Department will require the development to include measures to support sustainable transport choices. This will be secured by either a planning condition or a planning obligation under section 13 of the Town and Country Planning Act 1999. The measures may assist in reducing the scale of highway improvements required by reducing potential journeys by car associated with the development.

10.2.23 Further detailed guidance on measures to promote sustainable transport choices to developments can be found in Appendix B of Travel Plan Guidance (Policy and Guidance).

Assessment Stage

10.2.24 Where the Department consider the proposed development will:

- increase the risk and severity of collisions
- provide poor accessibility
- materially impact the capacity of the highway network

we will explain this to the promoter and/or the Planning and Building Control Directorate (PBCD) and work to explore alternative options and establish an agreed position. In circumstances where there remain several impacts that are considered severe we may recommend that the application is not approved until sufficient mitigation measures are put in place to reduce these impacts.

10.2.25 Scheme promoters should not assume that a departure from standard will be acceptable. This information will need to satisfy our appropriate operational and technical teams who

will be required to agree to the principle of any necessary departures from standards before the application can be granted. Full approval for departures from standard can only be given following the completion of detailed design.

10.2.26 Measures to address development impact on the highway network will normally be delivered by means of an agreement between the developer(s) and the Department, such as a Highways Act 1986 section 109A agreement or section 4 agreement. See also Section 12 - Highway Adoption and Improvements to the Existing Highway.

10.2.27 The information provided in support of a planning application will be reviewed by the Department to determine the type and scope of any mitigation measures needed. This process will be undertaken in conjunction with the PBCD.

10.2.28 When reviewing the supporting information, regard will be given to the Isle of Man Strategic Plan and supporting policy and standards documents, as well as the statutory requirements placed upon the Department.

10.2.29 The Development Plan and all material consideration will form the basis for the Department's response to a proposed development and, in particular, the type or level of mitigation that will be required.

10.2.30 Mitigation will only be required where the proposed development is likely to have an adverse impact on the transport network. Significant adverse impact on the transport network should be avoided and, wherever possible, alternative options which reduce or eliminate such impact should be pursued. Where adverse impact is unavoidable, measures to mitigate the impact should be considered. Where adequate mitigation measures are not possible, compensatory measures may be appropriate.

10.2.31 The Department will only recommend refusal of a planning application on accessibility, highway safety or highway capacity grounds where the residual cumulative impacts of development are severe.

Highway Capacity Enhancement

10.2.32 Where the overall forecast demand in the opening year of the development can be safely accommodated by the existing infrastructure, capacity enhancement will not be sought.

10.2.33 Capacity enhancement measures on the highway network will only be considered after the Travel Plan has been incorporated in the development proposal. While capacity enhancements should normally be addressed at the plan making stage, such measures may be considered at the time when individual planning applications are submitted, subject to the overriding principle that delivery of the adopted local plan proposals should not be compromised.

10.2.34 Where insufficient capacity will be available to provide for overall forecast demand in the development's opening year, the impact of the development would need to be mitigated to ensure that, at that time, the highway network is able to accommodate existing and development specific traffic.

10.2.35 Where a development is to be brought forward in phases, any need for related works on the highway network will be assessed at the point at which the final phase of

development is completed. However, it may be necessary or appropriate to implement some transport measures in line with the opening of certain phases of development according to the impacts generated at key stages of the development. Such measures may be identified through sensitivity tests.

10.2.36 The measures proposed must be sufficient to accommodate or offset the impact of development on the highway network and on its surroundings. Support will be given to appropriate mitigation measures that are fully funded by the development promoter.

Highway Response

10.2.37 Planning legislation requires the Department to be consulted in almost all circumstances before the PBCD determines a planning application. The PBCD seeks the Department's advice on the highway safety and transportation matters specific to those applications and this includes where necessary an assessment of accessibility. However, the Department has no power of direction and so can only recommend that the PBCD takes on board its advice before coming to a decision. The Department's advice is essentially non-binding on the PBCD although, should they decide to disregard this advice, any future defence of that decision would need to be undertaken by the PBCD.

10.2.38 The Department will provide the PBCD with the Department's response to the assessed transport impact in line with the principles in this chapter and in line with the statutory requirements. The Department's advice will reflect the Department's conclusions on the likely transport impact of the proposal, as a result of assessing the transport-related information provided with the application, and drawing on the Department's own expertise, knowledge and experience of the highway network and transport issues.

10.2.39 Where appropriate, the Department will recommend that one or more planning conditions be included in any planning permission granted, in order to address or reduce the effects that are predicted to occur. Wherever possible, the Department will make this recommendation in discussion with the applicant and PBCD.

The Department's Formal Responses to PBCD

10.2.40 Within 21 days of being consulted on a planning application we will respond in writing to the PBCD with a formal recommendation that will take one of the following four forms:

- no highway interests
- no objection to the planning application
- no objection to the planning application, but requesting conditions that should be attached to any planning permission
- objection to the planning application

10.2.41 For all but (1) above we will provide the PBCD with a statement explaining our position and the assessment and analysis behind it.

Planning Conditions to address Accessibility, Highway Safety or Highway Capacity Impacts

10.2.42 If the highway network can be cost effectively improved to limit the significant impacts of a development, the Department will consider recommending that a planning condition is attached to the planning permission to secure works being carried out on the public highway or other land in the applicant's control.

10.2.43 Planning obligations will only be sought where it is not possible to address unacceptable impacts through a planning condition; for example, to secure a financial contribution to works or services, or to secure the successful implementation of a Travel Plan. Whether dealt with by a condition or obligation it will be imperative that those works or services are capable of being delivered within the life of the planning permission. Sometimes no amount of work will make a sufficient difference, and/or the cost of works needed cannot be delivered by the value of the development.

10.2.44 Where mitigation or compensatory measures are considered necessary, the Department will seek to recommend that an appropriate condition is attached to any planning permission granted. If it is not possible to secure the necessary measures by way of a condition, the Department will recommend that a planning obligation is secured.

10.2.45 Conditions or obligations should specify the improvements required to make the development acceptable. Conditions or obligations may require that necessary mitigation measures be completed before first occupation of units on the site, or before work on the development site itself commences if construction traffic is a major issue. Obligations may also secure pooled contributions, especially in relation to large scale infrastructure improvements where the cost or effect of the mitigation is greater than could reasonably be secured from a single development site.

10.2.46 The Department is not the determining authority, and ultimately it is for the PBCD to decide whether or not the conditions recommended can be validly imposed.

10.2.47 In the event that planning permission is granted contrary to the Department's recommendation, the PBCD may include conditions dealing with highway safety, accessibility and/or transport issues that were not recommended by the Department. Conditions are sometimes imposed requiring further details to be submitted to and agreed in writing by the PBCD after the original granting of planning permission. This can create additional work for all concerned and it is preferable therefore for details to be submitted with the planning application, or at least to be submitted prior to the grant of planning permission. An applicant or developer who does not understand the requirements of a condition relating to highway matters is advised firstly to check the Department's recommendation.

10.2.48 Conditions imposed on the basis of the Department's recommendation may require the submission of further details for approval. This may be through an Application for the Approval of Reserved Matters following the grant of approval in principle (outline) planning permission, or it may be by means of an Application for Approval of Details Reserved by Condition imposed on either a full or outline permission (often referred to as Applications for the Discharge of Conditions). An applicant or developer may wish to seek

the Department's advice prior to submission of such details (assuming that the condition is imposed at the Department's request) in order to reduce the likelihood of the Department making an unfavourable response to the PBCD. However, there may be notes attached to the planning permission (decision notice) and these together with the other guidance in this document may be sufficient to avoid having to contact the Department in advance.

10.2.49 Conditions imposed can be formally challenged by making a planning application to vary or remove a condition. Applicants are reminded that there is no requirement for the Department or PBCD to seek approval from an applicant before recommending or imposing a condition, and the applicant's endorsement of/or objection to a condition does not make a condition any more or less reasonable.

10.2.50 Planning obligations will only be used where it is not possible to address unacceptable impacts through a planning condition. Planning obligations are agreements negotiated between the PBCD and persons with an interest in a piece of land (and/or developer), and are intended to make acceptable development which would otherwise be unacceptable in planning terms. Obligations can also be secured through unilateral undertakings by developers, although by their nature, the content of a unilateral undertaking might not be agreed by all parties including the PBCD and the Department. Planning obligations might be used to prescribe the nature of a development (e.g. by requiring that a given proportion of housing is affordable), to secure a contribution from a developer to compensate for loss or damage created by a development (e.g. loss of open space) or to mitigate a development's impact (e.g. through increased public transport provision). The outcome of all three of these example planning obligations should be that the proposed development concerned is made to accord with the Isle of Man Strategic Plan and other material considerations.

10.2.51 Planning obligations are unlikely to be required for all developments but should be used whenever appropriate it is however recommended that planning obligations are only sought where they meet all of the following tests. These are that a planning obligation must be:

- Necessary to make the proposed development acceptable in planning terms
- Directly related to the proposed development
- Fairly and reasonably related in scale and kind to the proposed development

10.2.52 The Isle of Man Strategic Plan and all material considerations will form the basis for both the Department's and PBCD's respective responses to a proposed development and, in particular, the type or level of compensatory or mitigation measures that will be required. Typically, mitigation could be required where the proposed development is likely to have a severe impact on the transport network and/or would result in breaches of statutory environmental limits.

Appeals

10.2.53 Procedural guidance can be found on the Planning and Building Control website.

10.3 Highway Legal Agreements & Licences

Works on the Highway

10.3.1 Construction work on an existing public highway is covered under Section 109A of the Highways Act 1986 and can be used to allow the developer to employ a contractor to carry out work on the existing public highway. Alternatively, developers may request that the Department undertakes the work (this is currently limited to traffic signal installations). The developer is urged to contact Department to seek advice about their expectations concerning the design, construction and supervision. This section of the Act also entitles the Department to seek expenses for future maintenance of the highway which is achieved through commuted sums.

10.3.2 It is important that developers understand that any proposed alteration to the highway must be approved by the Department. The approval will be contingent on the developer engaging with the Department; this engagement should take place in four stages.

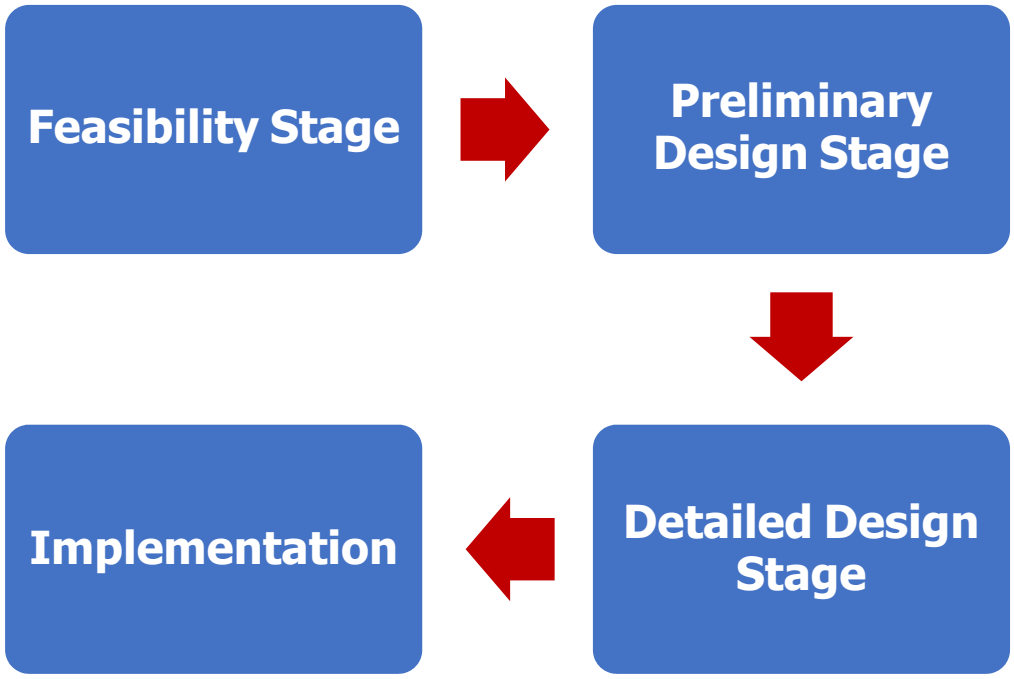


Figure 10.3 Engagement Stages

Feasibility Stage:

10.3.3 The general nature of any off-site highway works should be agreed prior to submission of the planning application. The Department will need to be satisfied that the proposed works will offset the highways and transport impacts of the development and are feasible within the land constraints of the development before it will recommend to Planning that the development is acceptable.

Preliminary Design Stage:

10.3.4 When the general scheme layout has been agreed at feasibility stage, the preliminary design for the scheme should be prepared and submitted to the Department. At this

stage, the designers should liaise with other parties, including utility providers, to ensure the design considers their requirements. The Department will then check the design.

Detailed Design Stage:

10.3.5 When the preliminary design has been approved, detailed design can proceed. Once all design checks and any stage 1 and 2 Road Safety Audits have been satisfactorily completed, and any amended details have been provided, the Department will issue technical approval for the scheme.

Implementation:

10.3.6 Construction of the works must not begin until:

- full planning permission for the development has been granted, including approval of any reserved matters relating to highway works
- the Department has provided technical approval
- the Section 109A agreement has been completed and signed and an appropriate surety put in place
- written confirmation has been provided by the developer that the Health and Safety Directorate has been informed who is the client for the works for the purposes of the Construction (Design and Management) Regulations
- all necessary fees have been paid
- the maintenance arrangements within the adoptable highway have been agreed

10.3.7 The Department will issue a provisional certificate of completion once:

- the highway works have been satisfactorily and substantially completed
- street lighting has been satisfactorily completed and electrical test certificates provided
- landscaped areas to be adopted have been fully planted and established
- the works have been jointly inspected and no significant defects identified
- a Stage 3 Road Safety Audit has been completed and all changes have been made satisfactorily
- a plan has been provided showing any areas of land to be dedicated as highway, along with highway boundary markers

New Streets and Roads

10.3.8 Developers are encouraged to create, wherever possible, street layouts to an adoptable standard that will be offered for adoption.

10.3.9 The adoption process is covered by a Section 4 agreement. This may include expenses for future maintenance, which will be payable through commuted sums. This approach provides flexibility to adopt non-standard layouts and materials without placing undue burdens on maintenance budgets.

10.3.10 Layouts must always be appropriate and acceptable on highway safety grounds for a street to be adopted. Prior to entering into a Section 4 agreement, full planning

permission for the development must have been received, including approval of any reserved matters relating to the road works. Full title to the land to be dedicated as public highway must also be proved, as well as the right to discharge surface water from the highway to an existing or proposed sewer or water course. Drainage proposals must have been approved by the relevant authorities. The design of the road works will need to be in accordance with MfMR and associated specifications and must be approved prior to commencement of construction.

10.3.11 The following standard checklist of information needs to be provided for technical approval as checking will only commence once all information has been received:

- general arrangement
- horizontal alignment
- vertical alignment
- standard details
- ground conditions
- drainage proposals
- landscaping
- street lighting

10.3.12 Technical approval will only be issued when all design checks are complete. This will include Stage 1 and 2 Safety Audits, which may be part of Quality Audits. They must be satisfactorily completed where necessary and any additional or amended details required will need to be provided and approved. After technical approval has been given, the specified number of copies of drawings must be provided.

10.3.13 If a developer or its contractor starts works prior to the above the Department may require additional material testing and core samples to be taken, at the developer's expense, to ensure the road has been constructed to a suitable standard. Without technical approval, the developer risks constructing a road that is not to an adoptable standard and having to replace this infrastructure at its own expense before the Department will adopt it as public highway.

10.3.14 MfMR Part Five details the requirements for Section 4 and Section 109A highway works agreements in more detail.

Monitoring

10.3.15 The developer will be responsible for maintaining the highway works for a minimum period, usually 12 months although an extended period may be required where soft landscaping is involved. This allows any defects in the works to become apparent after they are brought into use. The Department will issue a final certificate of completion when the following actions have taken place:

- at the end of the maintenance period a further joint inspection has been undertaken and any remedial works satisfactorily completed
- the highway works have been satisfactorily maintained during the maintenance period

- landscaped areas have been satisfactorily maintained during the maintenance period
- a copy of the provisional certificate of adoption for the drainage and sewers, as issued by the relevant water company, has been provided
- any commuted sums have been paid
- any other charges that are applicable have been paid, e.g. to cover the bulk clean and lamp change for illuminated signs or similar for street lighting
- where required, a Stage 4 Safety Audit has been satisfactorily completed
- as-built drawings have been provided
- the health and safety file, in line with Construction (Design and Management) Regulations has been provided
- the land dedication plan has been agreed
- all staff costs have been paid

10.3.16 After all the above have been completed to the Department's satisfaction, we will:

- issue a final certificate of completion
- cancel the surety bond
- formally adopt those areas dedicated as highway to be maintained at public expense

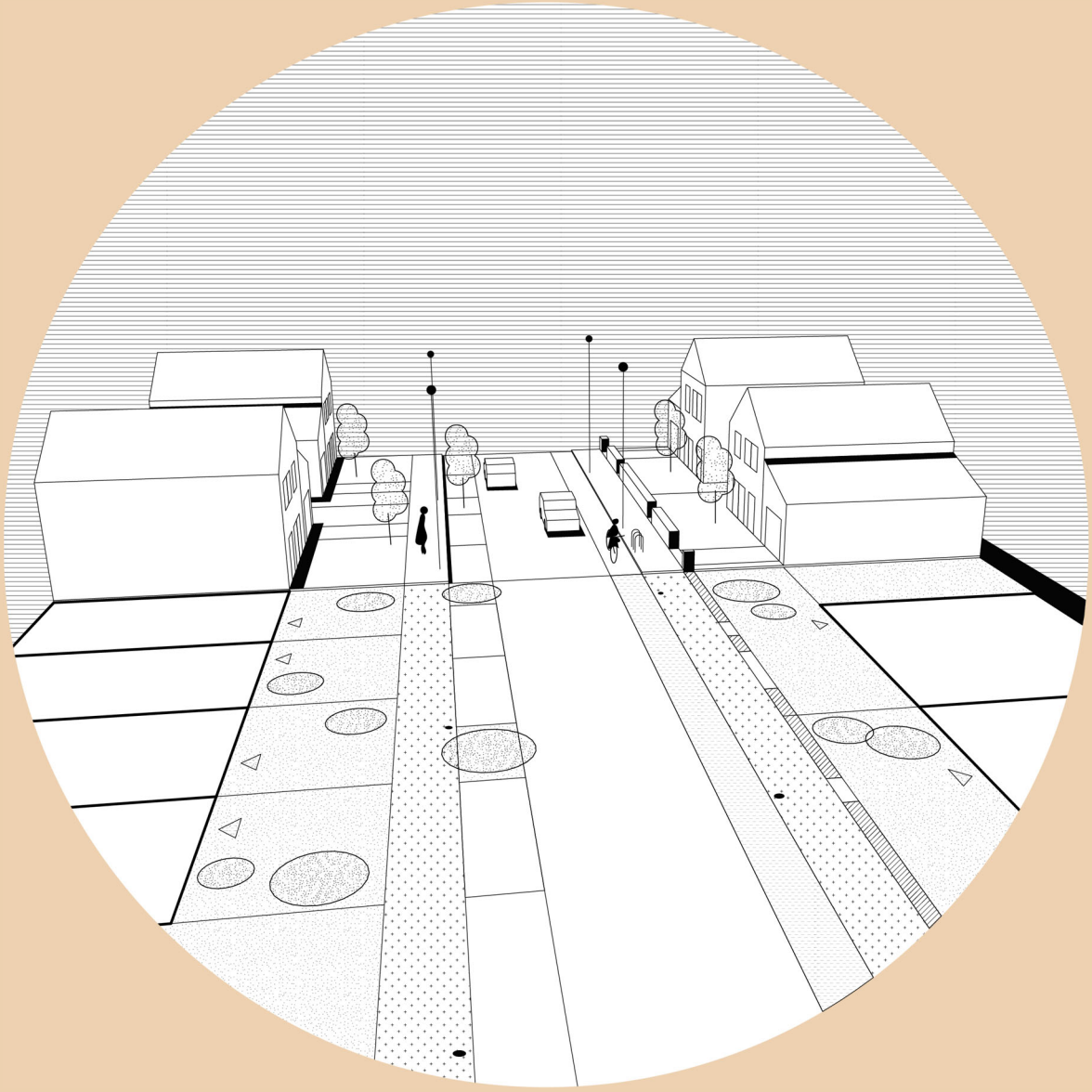
10.3.17 Other monitoring activities may also be linked to site-specific actions derived from contributions and Travel Plans, which may include surveys and confirmation that particular measures have been implemented.

10.3.18 It is important that the Department receives feedback from stakeholders, including occupants of new developments, so that MfMR can be further adapted to take account of examples of good practice. Where a Travel Plan is required as part of the development, this should include surveys of residents or other occupiers of the development concerned to enable feedback on the good and bad points of a development to be identified, informing future reviews of MfMR by providing a robust evidence base.

10.3.19 For some new developments, the installation of Automatic Traffic Count (ATC) sites might be required as part of the monitoring strategy for the Site Travel Plan. Where required, an ATC site should be installed to the specification set by the Department and the DMRB.

PART FIVE

DETAILED DESIGN AND IMPLEMENTATION



Section 11 - Construction Standards

11.1 Road Design

Introduction

11.1.1 The structural design of carriageways should be carried out in accordance with the Design Manual for Roads and Bridges (DMRB).

11.1.2 The design life is to be taken as forty years, unless formally agreed otherwise.

11.1.3 Structural design has two main elements

- foundation design
- pavement design

Foundation Design

Design Phase

11.1.4 For the design of the new road foundation, the Designer should refer to DMRB CD 225.

11.1.5 A geotechnical investigation should be undertaken along the route of the proposed roads to establish the Design California Bearing Ratio (CBR) and frost susceptibility of each subgrade type. Sampling/testing should be undertaken at frequencies to suit the anticipated ground and site conditions but the spacing should not be greater than 30 m, staggered across the width of the proposed highway corridor. On smaller sites, for example where the overall road length is less than 100 metres, a minimum of three samples/tests will be required.

11.1.6 The ground investigation report, including exploratory trial hole logs, in-situ and laboratory test results, together with the interpretation report used to establish the Design CBR value, must be submitted to the Department for review.

11.1.7 The Design CBR value should be established generally in accordance with the guidance given in DMRB CD225.

11.1.8 Unless the CBR value has been determined by approved laboratory tests, developers will be required to provide the maximum depth of subbase and capping layer, i.e. that corresponding to a CBR value of less than 2%.

11.1.9 In order that the finished road will not be damaged by penetrating frost action, all materials within 450 mm of the road surface shall be non-frost-susceptible. If the total construction depth is less than 450 mm, then unless the developer proves that the subgrade is non-frost-susceptible, the construction depth shall be increased to 450 mm, all in non-frost-susceptible materials.

11.1.10 Any capping layer shall consist of Class 6 F2 material in accordance with Clause 613 MCHW Vol 1 Series 600 or recycled material to the satisfaction of the Department.

Construction Phase

11.1.11 The developer shall demonstrate that the CBR value of the subgrade encountered during construction is at least equal to (or greater than) the Design CBR value. Where this is not achieved, the construction thickness may need to be increased. No reduction in the construction thickness will be considered if the in-situ CBR values at the time of construction are greater than the Design CBR value.

11.1.12 In-situ CBR testing shall be carried out at not greater than 30 m centres, staggered across the width of the road corridor. Acceptable in-situ CBR test methods include the TRL Dynamic Cone Penetrometer or Plate Bearing test.

Pavement Design

Design phase

11.1.13 For the design of the new road pavement, the Designer should refer to DMRB CD 226.

11.1.14 Typical standard construction details and standard cross sections of the various carriageway options are shown in our Standard Construction Details.

Modular Paving

11.1.15 Modular paving (block paving) other than in localised areas such as traffic-calming table-tops will not normally be permitted on Primary, District and Local roads.

11.1.16 Areas of modular paving should be designed in accordance with BSEN 7533: 'Pavements constructed with clay, natural stone or concrete pavers'.

11.1.17 The use of sand derived from the processing of china clay is not permitted, nor is the laying of paving blocks directly onto subbase within the carriageway.

Skidding Resistance and Polished Stone Value (PSV)

11.1.18 The skidding resistance of the finished surface of a carriageway surfaced with asphaltic materials is governed by the aggregate used in the surface course. The tables contained in the links below set out the minimum skid resistance and PSV requirements in the respective locations.

11.1.19 Guidance on skid resistance can be found in DMRB CS 228.

11.1.20 Guidance for PSV can be found in DMRB CD 236.

Kerbing, Channels, and Ramps

11.1.21 Kerb upstand is dependent on the type of road, as follows:

- all roads: 125 mm
- table top junctions and road humps: 50 mm
- shared surface roads and Mews Courts: 40 mm
- vehicle crossovers: 25 mm
- pedestrian crossing points 0-6 mm max

11.1.22 Where numerous vehicle crossing points are to be provided in a shared surface over a small area, the kerb upstand may be reduced to 25 mm over its whole length.

11.1.23 Kerbs to shared surfaces can either be formed with a bullnose kerb or with proprietary block kerbs.

11.1.24 To ensure compliance with equality legislation, consideration should be given to providing appropriate access points from the shared surface to adjacent property. Pedestrian access points should have a kerb upstand in accordance with current requirements (0-6 mm).

11.1.25 Measures should be introduced where necessary to prevent highway surface water runoff discharging onto private areas as a result of reduced kerb upstands. This is particularly important in shared space areas, where there is no separate footway between the carriageway and private drive.

Footways, Cycleways and Vehicle Crossings

11.1.26 The design of footways and cycleways shall be in accordance with DMRB CD 239.

11.1.27 The construction of vehicle crossing points over footways for residential use will be different than the standard footway construction as shown in our Standard Construction Details.

11.1.28 For industrial or commercial usage the footway crossover construction will be the same as that for the adjacent carriageway.

11.1.29 Wherever link footpaths intersect with carriageways, dropped crossings shall be constructed as shown in our Standard Construction Details.

11.1.30 Should it be deemed necessary, the Department will require intersecting barriers to be provided on link footpaths to prevent nuisance and danger by cyclists and motorcyclists.

11.1.31 Attention is drawn to requirements regarding safety and visibility where walls and boundary fences exceed 0.6 m high. For the purpose of road adoption, areas within a visibility splay are generally regarded as privately owned and will not be adopted.

11.1.32 More stringent standards may be needed where verge or footway widths are limited and/or where crossings are located on the insides of sharp bends.

11.1.33 For vehicle footway crossings on low-speed roads and in conservation areas, the use of materials which are more sympathetic to the physical environment is encouraged. Suitable materials are stone flags, natural stone kerbs and channels, concrete blocks or clay pavers.

11.1.34 Developers are reminded of the need to consult the various public utilities regarding their protection requirements in footway and verge crossings. All ducts under such crossings shall be regarded as pipes for highway purposes.

Statutory Undertaker Services

11.1.35 Advice on the positioning of underground utilities apparatus for new development sites is available from the UK National Joint Utilities Group Guidelines at:

http://www.njug.org.uk/publications/

11.1.36 The approved relative locations of the various services beneath a footway and a service verge, as agreed by the Manx Joint Utilities Group, are shown in our Standard Construction Details.

Bus Stops

11.1.37 Where bus stops are required, design guidance has been supplied by Isle of Man Transport and can be found in our Standard Construction Details.

11.2 Road Construction

Inspection and Testing

Materials and Workmanship

11.2.1 All materials and workmanship shall comply generally with the requirements of the DMRB and MCHW except where otherwise indicated in the MfMR.

Sampling and Inspection

11.2.2 Where directed by the Department, the developer will be required to submit representative samples of materials to be incorporated into the works. These will be subject to any tests considered necessary to prove their suitability. The Department may also take appropriate samples of materials for testing to ensure that they comply with this document. Any necessary testing carried out will be at the cost of the developer.

11.2.3 On completion of all works, copies of all inspection and test plans should be submitted to the Department.

Non-Standard Methods and Materials

11.2.4 The Isle of Man Government operates a policy of encouraging local industry, and in pursuit of this policy the Department may accept the use of certain materials which do not comply with a recognised standard. The Department may require testing, sampling and supplementary evidence to demonstrate compliance where non-standard methods or materials are proposed by the developer.

Order of Works

11.2.5 The programme for construction should follow the general order or work below:

1. all work within the area of carriageway construction below formation level such as drainage, installing statutory undertakers' mains and service cross-connections, manholes for future cabling and street lighting cross connections are to be complete before the construction of carriageway and footway commences
2. preparation of formation, gully connections, laying of subbase, kerbs* and channels*, base course and binder course
3. service connections and building works
4. street lighting installation

5. remedial works to binder course, kerbs and channels
6. lay surfacing course to carriageway and footways

*Unless it has been previously agreed that kerbing and channels can be deferred until building work has finished. In any event, kerbs and channels must be installed prior to final surface courses being laid

Inspection of Works

11.2.6 The developer, or their appointed representative, is responsible for the day-to-day supervision of the agreed works. Inspections will be carried out by the Department's representatives as work progresses to check that the works are being constructed in accordance with the agreed drawings and adoption requirements.

11.2.7 The Department representatives must be given access to the works at all times but these visits do not abrogate the developers responsibility for supervising the work and making sure that it is carried out in a safe and proper manner to the agreed specification. Developers must not regard the visiting Department's representatives as their unpaid Clerk of Works.

11.2.8 The Department should be notified at least five working days prior to the commencement of the following stages of work:

- entry to site
- commencement of highway drainage
- preparation of carriageway formation
- kerb construction
- carriageway base course
- carriageway binder course
- carriageway surface course
- preparation of footway formation
- footway surface course

11.2.9 If, as the result of failure to give adequate notice, the Department representative is unable to inspect construction of the works at any stage, the developer will be required to carry out tests, or uncover work, at his own expense to prove to the Department's satisfaction that the works comply with the appropriate standard.

11.2.10 If problems arise with the proposed works, the Department's representatives may discuss possible solutions, but it will remain the responsibility of the developer's representatives to ensure that the works are completed in accordance with the terms of the agreement.

Maintenance Period

11.2.11 The developer must notify the Department upon completion of the works, to arrange an inspection of the whole of the works prior to commencement of the maintenance period.

11.2.12 The maintenance period (usually twelve months) will not commence until the whole of the works put forward have been brought up to a satisfactory condition.

11.2.13 A further inspection of the works will be made prior to the expiration of the maintenance period and the developer will be notified of any remedial works required before formal adoption.

11.2.14 Immediately prior to the end of the maintenance period, the developer is required to ensure the following actions have taken place:

- all channels have been mechanically swept clean
- all roads, footways and cycleways have been swept clean, and are free from dust, mud and detritus
- any weeds within the hard areas of adopted highway have been removed
- all gully pots have been cleaned, and trapped gullies filled with clean water
- the developer has provided one copy of a CCTV recording of each highway drain run, accompanied by a detailed report showing the location, chainage, prevailing weather conditions, date and time of survey

Final Acceptance

11.2.15 The surface course to carriageways and footways should not be laid until all building works on the site are substantially complete.

11.2.16 If the binder course has been trafficked by site vehicles, any surface imperfections must be rectified prior to the placement of the surface course. If damage to the binder course exceeds 20% of the surfaced area, the complete binder course layer is to be removed and re-laid. On larger, multi-routed developments, the 20% standard will be applied to each individual road, path footway or cycleway and not to the site as a whole.

11.2.17 The Department will not accept scarring of any form, within the surface course to any highway surface.

11.2.18 In the event that such scarring does occur the Department reserves the right to have the faulty surface type within the whole development resurfaced.

11.2.19 If the scarring has occurred on a side road from a main road within the larger development the Department may, at its discretion, allow the resurfacing to stop at the next joint in the surface course.

11.2.20 If scarring is limited, the Department may at its discretion allow the developer to patch the surface course as required. The size and extent of any remedial work is to be agreed before rectification work begins.

11.2.21 Damaged kerbs, channels and edgings shall be removed and replaced. If this results in damage to the carriageway or footway surface this shall be repaired or replaced to the satisfaction of the Department.

11.2.22 Damage to footway surfacing after completion due to installation of sign poles, service marker posts and the like will be deemed as scarring to a finished surface.

Site Works

Temporary Diversion of Traffic

11.2.23 The developer will be required to construct temporary diversion ways to the approval of the Department wherever the works interfere with existing public or private roads or other ways over which there is a public or private right of way for any traffic. Diversions must be constructed in advance and should be regularly maintained.

Cleaning of Public Highways

11.2.24 The developer will be responsible for ensuring that all public highways adjacent to the development site are kept free of dust, mud and detritus.

Site Clearance

11.2.25 Site clearance works are to comply with MCHW Vol 1 Series 200.

Site Strip

11.2.26 All top soil and turf to a depth of not less than 300 mm should be stripped from beneath the whole area of the carriageway and footways, and any of this material which may be required for soiling verges, cuttings or embankments is to be stacked for re-use.

Earthworks

11.2.27 Earthworks are to comply with the requirements of MCHW Vol 1 Series 600.

Use of Pavement Surfaces by Construction Traffic

11.2.28 Construction plant used on pavements under construction should be suitable for the material, conditions and thickness of the courses it traverses so that damage is not caused to the subgrade or pavement courses already constructed.

11.2.29 The surface of the subbase material, prior to laying the bituminous material, shall not have any ruts exceeding 10 mm in depth, measured using a 3.0 m straight edge. Where rutting has occurred, the surface shall be re-trimmed prior to laying the base layer.

11.2.30 In the case of modular block paving, developers should defer block laying until the end of building work. In these circumstances, the procedure is to construct the carriageway up to binder course level, such that a viable running surface is provided for construction traffic.

Surface Dressing

11.2.31 Where a surface dressing is required either as a temporary running surface on base course material or as part of the finished surfacing to the surface course, it is to be laid in accordance with Road Note 39 7th Edition and the requirements of the Department.

Concrete and Roadworks

11.2.32 Developers should refer to MCHW Vol 1 Series 1000.

Natural Stone, Concrete, and Clay Paving

11.2.33 Guidance can be found at MCHW Vol 1 Series 1100.

11.2.34 Paving shall be laid in accordance with the relevant parts of BSEN 7533 'Pavements constructed with clay, natural stone or concrete pavers' to the required levels and falls shown on the drawings.

Kerbs, Footways, and Verges

11.2.35 Construction and installation should be in accordance with MCHW Vol 1 Series 1100.

11.2.36 Further information can be found in the our Standard Construction Details

Tolerance

11.2.37 The final surface must be within +/- 6 mm of true surface profile and should be 6 mm above any kerb or channel block or gully frame. Notwithstanding this tolerance, the maximum permitted upstand at a pedestrian crossing point is 6 mm and the developer must ensure that no water stands on the final surface, especially at pedestrian crossing points.

Soiling, Seeding and Turfing of Verges

11.2.38 Guidance for developers is available in MCHW Vol 1 Series 3000.

Protection to Existing Trees

11.2.39 Where there are existing trees on site which are to be retained, all tree protection measures shall be described in a tree protection plan. The plan should be implemented before there is any construction activity on site, including site clearance work.

Protection to Existing Infrastructure

11.2.40 Where the proposed work impacts on the existing roads and other infrastructure, the developer will be required to undertake a joint inspection prior to work commencing, and will be deemed responsible for any damage caused to the surrounding infrastructure as a result of their failure to protect the Department's assets.

11.3 Highway Drainage

General

11.3.1 Surface water drainage and foul sewerage are to be designed as separate systems.

11.3.2 There are two potential adoption authorities for drain and sewer systems:

- Manx Utilities adopts public sewers
- Department of Infrastructure adopts highway drainage systems

11.3.3 Public sewers are to be designed and constructed in accordance with the requirements of Manx Utilities. The developer must enter in to an agreement with Manx Utilities, in

accordance with current legislation and procedures. The Department is not party to this agreement but does require confirmation by the developer that an agreement is in place.

11.3.4 Highway drains only carry water running off adopted highways and must discharge to either:

- a dedicated highway drainage system
- a public sewer with the agreement of Manx Utilities
- a watercourse as designated under The Flood Risk Management Act 2013

11.3.5 It is not permissible to connect property drainage into a highway drain, or to connect highway drainage into a property drainage system.

11.3.6 Gullies for the purposes of collecting surface water run-off from the highway should be positioned within the highway boundary. Layouts with gullies positioned in adjacent parking areas will not be accepted.

11.3.7 Any necessary negotiations regarding discharge of water into private watercourses, or existing piped drainage systems, need to take due regard of riparian issues and the permission of the owners of the watercourses or piped systems, and needs to be determined to the satisfaction of the adopting authority before work starts on site.

Highway Drainage Design Principles

11.3.8 There is currently no requirement in Manx legislation to provide sustainable drainage systems (SuDS), as there is in UK law. Some SuDS may be considered for adoption, but due to their potentially high maintenance costs there may also be a requirement for commuted sums to be provided by the developer. Discussions should be held at a very early stage with the Department if there are proposals to use SuDS in the highway drainage systems.

11.3.9 The Department will not normally adopt soakaways as part of highway drainage. This is due to the anticipated higher maintenance costs, and potential capacity issues with unpredictable weather patterns in the future.

11.3.10 When considering highway drainage, the design should consider the following principles:

- storm water run-off rates and volumes discharged from highway drainage systems into existing drainage systems, whether watercourses or existing formal systems, should approximate to the site greenfield response over a range of storm frequencies of occurrence (return periods)
- managed run-off on site for extreme events

This may require:

- peak rate of storm water run-off to be limited
- volume of run-off to be limited
- assessment of overland flows and temporary flood storage across the site

11.3.11 Rainwater falling on to highway areas must be collected into a highway road gully or approved surface water proprietary system, and must not be allowed to discharge onto private areas. Similarly, private areas (forecourts, parking bays etc.) must not allow water

to run off onto the adopted highway areas, but should be collected within private drainage systems, and subsequently discharge into a private or public sewer, subject to agreement with Manx Utilities.

11.3.12 Under no circumstances will it be acceptable for a highway or surface water drain or sewer to be connected to a foul sewer system. All development must be constructed using separate foul and surface water drainage systems.

11.3.13 Highway drains carry only water running off adopted highways. They are to be designed in accordance with the DMRB CG 501, and the latest design manuals and guidance notes published by the Construction Industry Research and Information Association (CIRIA), notably 'Designing for exceedance in urban drainage – good practice' (C635).

11.3.14 The design of any highway drainage which the developer intends to be adopted by the Department must be approved by the Department before work proceeds.

Hydraulic Design

11.3.15 An appropriate flow simulation method based on the Wallingford Procedure should be used for hydraulic design unless otherwise agreed with the Department, e.g. in the case of small developments.

11.3.16 The system should be designed under pipe full conditions to accept the following design storm, i.e. without surcharging above pipe soffit.

Parameter	Requirement
Sites with average ground slopes greater than 1%	1 year
Sites with average ground slopes 1% or less	2 year
Sites where consequences of flooding are severe, e.g. existing basements or properties adjacent to new development	5 year
Impermeability	100%
Minimum velocity at pipe full flow	1 m/sec
Roughness value (Ks)	0.6 mm

Table 11.1 Drainage Design Parameters

Protection Against Flooding

11.3.17 A system should be designed not to flood any part of the site in a 1:30 year return period design storm.

11.3.18 Any underground storage to be constructed to attenuate the 1:30 event should be sited within the system being offered for adoption. Developers proposing to provide storage over and above the 1:30 year event should enter into early discussions with the Department.

11.3.19 All sewers are designed to not flood in a 1:30 year event, but they will be surcharged. Therefore, when calculating the 1:30 year storage volume for a site, the developer should consider the location of the storage tank for a free flowing discharge.

11.3.20 During extremely wet weather, the capacity of the surface water sewers may be inadequate, even though they have been designed in accordance with MfMR. Under such conditions, sewers may surcharge and surface water may escape from those manhole covers and gullies which lie below the hydraulic gradient. Checks should be made to ensure that an adequate level of protection against the flooding of properties internally is achieved and the design adjusted where the required flooding protection is not achieved. Designers should utilise the guidance in the CIRIA publication 'Designing for exceedance in urban drainage – good practice' (C635). This is particularly important on undulating or steeply sloping catchments.

11.3.21 In designing the drainage system, designers should also demonstrate flow paths and the potential effects of flooding resulting from storm events exceeding the design criteria.

11.3.22 Where there are flood risks associated with the site, it is the responsibility of the developer to liaise with the Department and the Land Drainage Authority (Manx Utilities) to ensure that all necessary measures are included in the design to prevent flooding of the development, as well as any situation downstream of the development which may have an increased flood risk due to the development. The developer will be required to prove that the measures incorporated in the design are effective, thereby ensuring that the development does not aggravate existing flood problems or create new flooding problems on or off the site.

Climate Change

11.3.23 Climate change is to be accounted for through the precautionary principles recommended in the National Strategy on Sea Defences, Flooding and Coastal Erosion. An additional allowance of **30%** over and above present day rainfall figures is required to account for long term climate change.

Highway Drainage Design Considerations

Alignment

11.3.24 Highway drains should be laid:

- in straight lengths
- to straight grades between manholes
- within the carriageway or verge

Minimum Pipe Size

11.3.25 The minimum pipe diameter for adoptable highway drains, other than gully connections, is 225 mm. The minimum size for a road gully connection is 150 mm. The maximum length for any gully connection is 12 m. Each gully must have its own connection into the surface water drain; one gully should not connect directly into another.

Minimum Pipe Depth

11.3.26 The minimum cover to pipes, measured from the crown of the pipe to the finished surface level, shall be:

- 1.2 m in carriageways and shared surfaces
- 0.9 m in footways, footpaths or verges

Road Gullies

11.3.27 On primary roads, gully spacing shall be calculated in accordance with the requirements of DMRB CD526. When checked for a 1 in 5 year storm, the allowable flow width parallel to the kerb at the kerb/channel interface shall be:

- 0.75 m in urban locations
- 1.0 m in rural locations.

11.3.28 Grating 'type R' shall be specified and assumed in hydraulic calculations.

11.3.29 On all other roads, where the carriageway crossfall is 1 in 40, gully spacing shall be in accordance with Table 11.2. The area indicates the maximum permissible areas to be drained.

11.3.30 When calculating the area drained, allowance should be made for runoff from adjacent footpaths, footways, verges and paved areas that fall towards the carriageway.

Longitudinal Gradient	Maximum Area (sqm)
1/200	75
1/100	90
1/80	105
1/60	120
1/40	150
1/30	170
1/20	200

Table 11.2 Maximum Gully Catchment Area

11.3.31 Irrespective of the above, spacing of intermediate road gullies must not exceed 50 m.

Gully Grating Characteristics

11.3.32 The gully grating and frame shall be class D400 with a minimum width of 450 mm and a minimum waterway area of 1200 cm^2. Frame depth shall be 150 mm. Frames may be kerb hinged or side hinged as appropriate to the traffic flow. The bars on gratings should be orientated to avoid being hazardous to cyclists.

11.3.33 Circular gullies gratings, and any other shapes that are highly asymmetric in a direction transverse to the kerb, are unacceptable. The kerb face of the frame should be placed hard against the kerb when fitted to the gully pot and brickwork.

Gully Locations

11.3.34 On residential developments sufficient gullies should be provided to comply with the requirements of Table 11.2.

11.3.35 Additional gullies will be required to prevent significant flows of water running across open areas of carriageway (for example at junctions or crossfall transition areas), and to prevent surface water from running on to private drives and forecourts.

11.3.36 Double gullies with separate connections should be provided at significant low spots i.e. low spots which will flood into private property or cause a traffic hazard if the gully blocks. Alternatively, a single gully can be provided together with two separate additional gullies 6.0 m either side of the low point.

11.3.37 Gullies should not be located adjacent to pedestrian crossing points. Where this is unavoidable due to other site constraints, they should be fitted with pedestrian friendly gratings. Gullies should be located immediately upstream of any pedestrian crossing point to reduce the risk of water ponding at the crossing location.

11.3.38 Gullies should not be located adjacent to vehicle crossovers where they would be subjected to vehicle overrun. Gullies should be located immediately upstream of any vehicle crossover.

Use of combined kerb and drainage systems

11.3.39 Gullies do not usually provide the best drainage solution for long lengths of very flat gradients. Further Information for the drainage of level or nearly level roads is given in TRL LR 602.

11.3.40 Where the proposed minimum longitudinal carriageway gradient is less than 1 in 100 for flexible surfaces or less than 1 in 80 for block paved surfaces, consideration may be given to the use of a combined kerb and drainage system. The Department may require payment of a commuted sum to cover any additional maintenance liability where a combined drainage system is proposed.

Gully Pots

11.3.41 Gully pots must be 450mm internal diameter and 900mm deep with 150mm diameter trapped outlet and manufactured in accordance with BS 5911 Part 230 or BS EN 295.

Chambers

11.3.42 Chambers shall be either manholes or catchpits, located at each change of alignment and/or gradient, at changes of pipe size, and at pipe connection points (other than gully tails). The maximum spacing between chambers shall be 75 m.

11.3.43 Catchpits must have a minimum sump depth of 600mm below the invert of the outlet pipe, and be in accordance with an approved detail.

Drainage Construction Details

11.3.44 Construction details for drainage should comply with Highway Construction Details in the MCHW Vol 3 F Series and our Standard Construction Details.

11.4 Highway Structures and Structures over the Highway

Technical Approval

11.4.1 Structures which may in any way affect the highway or the users of the highway, require consent, approval or licence from the Department.

11.4.2 All such proposed structures shall be subject to technical approval as set out in DMRB CG 300.

11.4.3 This may include structures proposed for adoption and also those associated with private developments way may affect the highway.

11.4.4 For the purposes of technical approval, structures are defined as:

- bridges carrying the highway over or under another feature
- bridges and culverts crossing the highway with a span greater than 0.9 m
- culverts running along a highway where the culvert has a span greater than 0.9 m
- footbridges and subways carrying pedestrian or cycle routes over or under another feature
- tunnels, culverts, walls and embankments where they meet the criteria for adoption set out below
- all retaining walls, whether retaining the highway or not, which are within 3.5 m of a highway, and which are, at any point, of a greater height than 1.0 m above the level of the ground at the boundary or the highway nearest that point, in accordance with the Highways Act 1986 s63

11.4.5 All highway structures must be:

- safe and serviceable in use
- fit for their intended function
- built to an appropriate standard
- constructed so that future maintenance requirements are kept to a minimum, by ensuring this is given full consideration at the earliest possible stage and then throughout the design process

11.4.6 The following are structures which may be adopted by the Department:

- road bridges and culverts with a span greater than 0.9 m
- walls and reinforced earth structures that support the highway and the retained height is greater than 1.5 m, are within a 1:1.5 slope from the edge of the highway, and are built upon the Department's land
- embankments supporting the highway and any toe walls at their bases

11.4.7 The following would not generally be adopted, but the approval process will need to be followed:

- walls and similar structures above the highway
- walls that support the highway but also form part of a building

11.4.8 All structures supporting the highway, whether they are to be adopted or not, are subject to the technical approval process and procedures.

Technical Approval Procedure

11.4.9 The technical approval procedure is contained within CG 300 Technical Approval of Highway Structures. This document forms part of the DMRB.

11.4.10 Technical approval will only be issued after all the procedures and standards have been met.

Design Requirements

11.4.11 Technical requirements for the design of highway structures will generally comply with the relevant standards and advice notes in DMRB and shall be constructed in accordance with the Specification for Highway Works SHW.

11.4.12 The design life for structures is to be taken as 120 years, unless formally agreed otherwise.

Categories and Proposals

11.4.13 Proposed Structures will be placed in one of four categories according to the criteria detailed within DMRB CG 300.

1. category 0 and 1 structures will require a combined design and check certificate
2. category 2 and 3 structures will require separate design and check certificates
3. category 1, 2 and 3 structures will require a full Approval In Principle (AIP) submission
4. category 0 structures that have departures from Standards may not require a full AIP submission. Developers must engage with the Department if the structure may fall within this criterion

11.4.14 Copies of relevant blank certificates can be found in DMRB CG 300.

Loading Standards

11.4.15 The design loading of the structures must be in accordance with the DMRB CG 300 and CD 350.

11.4.16 Provision for abnormal loads should be agreed with the Department at the Approval in Principle (AiP) stage.

Parapets

11.4.17 In general so as to not detract from the local environment, passively-safe street furniture shall be used wherever practicable to avoid unnecessary lengths of vehicle restraint systems.

11.4.18 Designers shall use DMRB CD 377 on routes with Annual Average Daily Traffic (AADT) flows above 5000 and a speed limit of 50 mph or more.

11.4.19 In other locations, vehicle restraint systems shall only be provided where deemed necessary following a risk assessment undertaken in accordance with 'Design & Maintenance Guidance for Local Authority Roads Provision of Road Restraint Systems on Local Authority Roads'. Routes with traffic speed limits of below 40 mph should only utilise vehicle restraint systems in exceptional circumstances.

Detailing

11.4.20 Cladding materials should be durable and tied in to the structure.

Consents

11.4.21 If consent is required from a Government or other public body and relevant owners and licensees, this must be received prior to technical approval for any highway structures being granted. Written evidence of relevant consents is a pre-requisite to approval being given.

Future Maintenance – Whole Life Costing

11.4.22 Payment of a commuted sum may be required for any highway structure that is to be adopted. Therefore the developer should consider the whole life cost of the proposed structure.

Access for Inspection and Maintenance

11.4.23 It is crucial that all structures are easily accessible to enable a comprehensive inspection.

11.4.24 Long culverts are categorised as confined spaces and these should have sufficient ventilation points within the construction. Highway retaining walls may require a 3.0 m maintenance strip between the wall and land outside the ownership of the Department.

Construction

11.4.25 The developer should not start construction on any structure which affects a highway, whether to be adopted or not, until approval specifically relating to that structure has been obtained.

11.4.26 The level of supervision and inspection required throughout construction will vary dependent on what is to be built, and whether the structure is to be adopted as part of the highway. This is entirely separate, and additional to, the supervision that the developer should undertake on the works.

11.4.27 Prior to adoption of a structure it is necessary for the developer to supply the Department with a copy of the Construction Compliance Certificate.

Health and Safety

11.4.28 It is important that all structures are compliant with the current CDM Regulations. This includes provision of full health and safety files (including an access and maintenance

manual) and as-built drawings. The developer must supply the Department with copies of the design calculations in an agreed format.

Structures over the Highway

11.4.29 When it is proposed to erect a building (including a bridge or gantry) or part thereof, which overhangs or bridges the adopted or adoptable highway, the Department's approval must be sought prior to Planning Approval being obtained.

11.4.30 Structures over the highway require a licence under section 69 of the Highways Act 1986. The licence will cover requirements for technical approval, structural inspection and maintenance, indemnities and removal of the structure at expiry of the licence. The licence must be in place before any works in the highway or on the structure (including foundations) commence.

11.4.31 On public highways, headroom and lateral clearances shall conform to DMRB CD 127 unless formally agreed otherwise.

11.4.32 Where the road is semi-public, such as a shared residents' parking area, criteria for such approval will be the headroom required for the highest vehicle likely to pass under the building. For most layouts, this will be a fire service vehicle. A realistic figure would be 4.5 m, although the height would be to some extent dependent on the nature and size of the building and is to be agreed.

11.4.33 Headroom over footways not subject to vehicle overriding may be reduced to 2.5 m. There will also be a requirement for any such structure to be set back from the edge of the carriageway. The following constraints may affect the extent of setback or vertical clearance:

- traffic visibility (forward visibility, access etc.)
- traffic signals and signage
- street lighting
- maintenance of, and future provision for highway infrastructure and drainage, public utility apparatus and vehicular or pedestrian restraint barriers

11.5 Street Lighting

11.5.1 Street lighting of public highways is the responsibility of local authorities. Any proposed lighting scheme must have the relevant local authority's approval before installation.

11.5.2 With the exception of Douglas Borough Council (DBC) and Onchan Commissioners, all local authorities' street lighting systems are managed by Manx Utilities, and street lighting systems should be designed in accordance with Manx Utilities requirements.

11.5.3 The standards currently in use by Manx Utilities are:

- BS EN 13201-2: 2015 Road lighting – Performance requirements
- BS 7671: 2008+A3:2015 Requirements for Electrical Installations. IET Wiring Regulations

11.5.4 Within the Borough of Douglas, DBC is the public lighting statutory authority. All public lighting designs must comply with DBC current specification in accordance with:

- BS 5489-1:2020 Code of practice for the design of road lighting
- BS EN 13201-2: 2015 Road lighting – Performance requirements
- BS 7671: 2008+A3:2015 Requirements for Electrical Installations. IET Wiring Regulations

11.5.5 Any planned public lighting designs or installations within the Borough of Douglas must be approved by DBC prior to work commencing.

11.5.6 A design service along with a full design and materials specification for public lighting is available from DBC Electrical Section.

Section 12 - Highway Adoption and Improvements to the Existing Highway

12.1 Highway Adoption - Section 4 Agreement

Introduction

12.1.1 Most roads in the Isle of Man are maintained at the public expense. Those that are not are known as unadopted roads, and there are two main types; those on new developments such as housing estates, and those which have existed for a long time.

12.1.2 Statutory provision does exist for unadopted roads to be adopted, enabling a road in private ownership to become a public road, ensuring it will be managed and maintained by the Department in perpetuity, as part of the public highway network.

12.1.3 New estate roads have long been considered for adoption via the Highways Act 1986, most commonly through agreements made under section 4 of the Act. A new road will be considered by the Department for adoption provided that it meets the necessary criteria.

12.1.4 The Highways Act 1986 also empowers the Department to make up a private street to a standard required for the road to be adopted. The cost of the work is apportioned to the property owners fronting, adjoining or abutting the road, although the Department may make a contribution.

Adoption Criteria

General requirements

12.1.5 The Department will adopt and maintain at the public expense all highway infrastructure that is deemed to offer sufficient benefit to the general travelling public, and which has been designed and constructed to appropriate standards in accordance with a previously approved layout.

12.1.6 Criteria for consideration include, but are not limited to:

- the proposed design and use of the highway
- the type and number of properties served by the highway
- the anticipated type and volume of traffic that will use the highway
- any future potential for the highway to be used as a through route for the public to access any subsequent adjacent development, and the suitability of the design to serve that purpose

12.1.7 The Department does not adopt all new roads and will not normally consider for adoption:

- a road that serves 5 properties or fewer
- a road where the highway drainage is connected to soakaways
- land that is used to attenuate surface water run-off

- areas landscaped for amenity purposes
- a road that serves non-residential properties, such as industrial units

Parking Areas and Lay-bys

12.1.8 The Department will normally only adopt parking areas and lay-bys that form an integral part of the highway and are intend to be used for casual parking. Dedicated spaces or spaces attributed to specific properties will not be adopted.

The Adoption Process

12.1.9 Where the criteria for adoption are met and a suitable layout and design can be agreed, developers will be invited to enter into an appropriate adoption agreement. The Highways Act 1986 details a number of methods by which the adoption of new roads, footways and paths may be secured, which are described below.

Section 4 Agreement

12.1.10 This is the preferred method of securing adoption of new highways. Prior to the start of a development, the developer may enter into a legal agreement with the Department under section 4 of the Highways Act 1986. This is usually referred to as a section 4 Agreement.

12.1.11 The developer agrees to construct the road to a specified standard and dedicate the road as a highway. The Department agrees to adopt the highway to be maintainable at public expense.

12.1.12 The section 4 agreement is supported by a Bond, typically provided by a bank, building society, insurance company or the National House Building Council (NHBC). The Bond would be used by the Department to fund the completion of all outstanding road works in the event that the developers fails to complete the road themselves.

12.1.13 The value of the Bond is calculated by the Department based on the estimated road construction costs. On larger developments, consideration will be given to splitting the work and associated Bond into discrete stages.

12.1.14 The proposed design, technical details and specifications must be in accordance with the Department's requirements, and must be agreed prior to any work commencing on site. See Section 4 Agreement Guidance.

12.1.15 Throughout the process of road construction, the materials and workmanship will be regularly inspected for compliance with the drawings and specification. A fee is charged to cover the Department's legal costs and expenses in undertaking inspection of the works.

12.1.16 The necessary road safety assessments must be undertaken at the appropriate stages, and at appropriate times throughout the process in accordance with the Department's policy and guidance.

12.1.17 Following completion of the work, the road is offered up for a final inspection. If the work is satisfactory, a maintenance period (normally twelve months) will commence, and the value of the Bond can be reduced to reflect the decreased level of risk. The developer remains responsible for the roads during this period, including their maintenance and

repair. The roads will be subject to a final inspection at the end of the maintenance period and, if they remain in a satisfactory condition, they will be formally adopted as highways maintainable at the public expense, and the Bond will be released.

12.1.18 The existence of a section 4 agreement is revealed on the Department's Highway Search form which makes prospective property purchasers aware that a Road Bond exists. This provides a level of certainty to buyers that the road will be completed.

Sections 94 to 98 – Private Street Works Code

12.1.19 Part VII of the Highways Act 1986 makes provision for the Department to carry out street works to make up an unadopted road. In this situation the associated cost of the work is apportioned to each owner of a property that fronts, adjoins or abuts such a road. In certain circumstances, some cost may be apportioned to properties which, whilst not directly fronting the road, have access to it and are thus likely to benefit from the works.

12.1.20 The Department will not normally consider street works unless at least 50% of the property owners agree to have the work undertaken, and the road adopted on completion.

12.1.21 The Department is empowered to bear a proportion of the expenses of street works, up to a maximum of 50% of the total cost, which results in a proportionate reduction in the liability of individual frontagers.

12.1.22 The procedure for carrying out street works is prescribed in the Act. After the works have been completed, the road becomes a highway maintainable at the public expense under section 3(2)(c) of the Act.

12.1.23 The Department's leaflet: Street Works A Guide gives further information.

Section 4 Agreement Guidance

12.1.24 The following guidance sets out the key elements for developers and their consultants for reference when making a formal submission for a section 4 agreement.

12.1.25 The Department encourages developers to undertake early discussions with all interested parties prior to submission of a planning application.

General Requirements

12.1.26 Before entering into a section 4 agreement, the developer must:

- obtain full planning permission for the development, including approval of any reserved matters relating to the works. Confirmation will be required that the submitted layout has planning approval and conforms to all planning requirements
- prove full title to any and all land to be dedicated as highway. Where the developer does not own the land, the land owner must be party to the Section 4 Agreement for the purpose of dedication
- confirm that there are no restrictive covenants assigned to the land relating to construction of a road

- provide evidence of all necessary easements. For example, any section of highway drain that is not positioned within the existing or proposed highway
- confirm that the drainage proposals are acceptable to Manx Utilities, and that the necessary agreements have been entered into. Only drains laid for the sole purpose of discharging surface water from the highway will be adopted. On new works, where private surface water run-off (e.g. roof or yard water) discharges into the highway surface water system, the status of the system changes from that of a highway drain to a public surface water sewer
- submit their proposals for technical review by the Department

Technical Review

12.1.27 The technical review process involves the developer or their agent submitting drawings, calculations, road safety assessments and other relevant information to the Department for acceptance. The review is an iterative process, and can typically take several months to complete. The timescale is dependent on the quality of the proposed design and the nature of the works.

12.1.28 Information should be submitted in both electronic and hard copy format.

12.1.29 All works should be prepared and designed in accordance with the following, as appropriate:

- Design Manual for Roads and Bridges DMRB
- Manual of Contract Documents for Highway Works MCHW
- MfMR
- The Traffic Signs (Application) Regulations 2003
- Construction (Design and Management) Regulations 2003
- Manx Sewers for Adoption

12.1.30 The following information should be submitted along with any other relevant supportive drawings, documentation and information to assess the proposed design:

- An Information Schedule
  - a 1:1250 scale Site Location Plan showing scheme extents, existing road network and north point (the scale of the plan may need to be revised to suit the size/nature of the scheme)
  - a topographical survey
- Detailed design – Carriageway:
  - a Stage 1 and stage 2 road safety audit or review (whichever is deemed appropriate) carried out by an accredited safety audit team that is independent from the designers, and in accordance with the Department's policy and guidance
  - 1:250 scale geometrical design plans, including a contoured plot of the carriageway surfaces to assist drainage check
  - longitudinal sections – scale 1:500 horizontal, 1:50 vertical with proposed levels, existing levels and chainage

- cross-sections — scale 1:100 horizontal, 1:100 vertical with proposed levels, existing levels and chainage
- typical construction details — scale 1:20 typically
- carriageway construction thickness design calculations using current and predicted traffic data contained in the Design and Access Statement or the Transport Assessment/Statement
- footway surface finishes including tactile paving layouts — scale 1:500 with 1:100 insets where required
- details of unusual or bespoke materials
- landscape drawings if applicable

- Detailed design – Drainage:
  - proposed surface water drainage layout showing road gully and manhole locations, and intended outfall location
  - longitudinal section of main drain runs — scale 1:500 horizontal, 1:50 vertical with proposed and existing invert levels, proposed and existing ground levels, pipe diameters, gradients and offsets/chainage
  - drainage design calculations showing assumptions for impervious areas, rainfall intensities and design return period for design and surcharge checks
  - ground investigation data and existing groundwater regime along proposed drain runs
  - Manx Utility Authority approvals for drainage outfalls
- Traffic signs, carriageway markings and traffic signals:
  - traffic signs plan and associated sign schedules
  - carriageway markings plan and associated schedule
  - electrical equipment/cabling plan (for bollards, lit signs, etc.) and power supplies
  - traffic signals layout plan showing pole locations, cable and ducting routes, chamber locations, detector loop locations, controller/feeder pillar positions, power supplies
- Statutory Undertakers Services:
  - existing statutory undertakers apparatus locations
  - proposed statutory undertakers apparatus diversion and/or protections
- Geotechnical Information:
  - initial ground investigation proposals
  - desk study information including preliminary borehole work ground investigation including detailed proposals with borehole locations, long sections and laboratory testing philosophy
  - factual report Interpretative report including calculations
  - earthworks design including drawings and specification and structural foundation design
  - specification and scheme specific appendices
- Any other information that Department may reasonably require

12.1.31 If appropriate soils data is not submitted with the application, a California Bearing Ratio (CBR) design value of <2% must be assumed in order to determine the required subbase depth.

12.1.32 CBR testing will be required to be undertaken on site as work progresses to confirm results of initial ground investigation work.

The Section 4 Agreement

12.1.33 The section 4 agreement will be drafted by the Department.

12.1.34 The following information should be submitted by the developer for inclusion with the section 4 agreement:

- A schedule of plans pertaining to the proposed works
- An A3 plan of the layout with planning approval showing the extent of the proposed highway to be adopted with:
  - carriageways, footways or shared surfaces coloured yellow
  - highway verges coloured light green
  - public open spaces (which will not be adopted by the Department) coloured dark green
  - highway only drainage coloured blue
  - traffic calming features coloured brown
  - additional highway structures coloured pink
- Name and address of the landowner
- Name and address of the developer
- Evidence of title to any and all land to be dedicated as highway
- Details of surety
- Details to allow calculation of the Bond including:
  - total length of carriageway finished in asphalt
  - total length of carriageway finished in block paving
  - total length of footways

12.1.35 Once the section 4 agreement has been compiled, the Department will normally send three copies to the developer for signature by the developer and the surety. All three signed copies should be returned to the Department for signature by an authorised person. The Department will retain one signed copy, and return two signed copies to the developer; one for retention by him and one for onward distribution to the surety.

Construction Work

12.1.36 The Department must be notified, in writing, at least five days prior to the commencement of any construction work.

12.1.37 Construction work should not commence until the section 4 agreement has been signed by all parties, and all fees and payments have been received by the Department.

12.1.38 Any work required to be carried out on the existing highway will require a separate section 109A Agreement.

12.1.39 The developer should construct the works strictly in accordance with the agreed drawings and specification. Any proposed changes must be submitted in writing and agreed with the Department before they are commenced.

Timescale

12.1.40 The works must be completed within the timescale specified in the section 4 agreement.

12.1.41 If the developer does not complete the works within the specified time limit, the Department may agree an extension of time of up to three years. This may require additional administration and inspection fees, and could necessitate an increase in the level of Bond in support of the agreement.

Part One Certificate

12.1.42 The Part One Certificate will be issued once the works listed in the schedule to the agreement have been satisfactorily completed. This is likely to include:

- all highway only drainage
- all other drainage within the highway
- all kerb foundations
- carriageway subbase
- carriageway base course

12.1.43 On issue of the Part One Certificate, the amount of Bond may be reduced by an amount specified within the agreement.

Part Two Certificate

12.1.44 The Part Two Certificate will be issued at the commencement of the maintenance period once:

- the works listed in the relevant schedule to the agreement have been substantially completed and found to be satisfactory
- any planted, grassed or landscaped areas that are to be adopted have been fully planted
- any variations to the areas originally dedicated as highway maintainable at public expense have been included in a supplemental agreement
- a stage 3 road safety audit or road safety review (whichever is deemed appropriate) has been completed and all recommendations addressed

12.1.45 On issue of the Part Two Certificate, the amount of Bond may be reduced by an amount specified within the agreement.

12.1.46 The developer is responsible for maintaining the road works for the maintenance period specified in the section 4 agreement (usually a minimum of 12 months).

Final Certificate

12.1.47 The Final Certificate will be issued once the following actions have taken place:

- any remedial works identified have been completed
- any commuted sums due have been paid
- a stage 4 road safety audit has been submitted if appropriate and all recommendations addressed

- suitable as-built drawings have been provided in the specified format
- the Health and Safety File, produced in accordance with the Construction (Design and Management) Regulations 2003, has been provided in the specified format

12.1.48 On the date of issue of the Final Certificate, the Department will:

- adopt all areas dedicated within the section 4 agreement to be maintainable at public expense
- write to the developer and the surety confirming that the Bond may be cancelled

12.1.49 If at the time of issue of the Final Certificate any plots of land remain undeveloped or any buildings remain uncompleted, the developer shall pay to the Department a sum estimated to be the cost of any remedial works likely to be needed following completion.

As-built Drawings and Information

12.1.50 Following construction of the works, drawings must be provided to confirm the 'as-built' layout. The drawings should accurately reflect what has been constructed on site and show gully locations, surface boxes and street furniture positions, and include any alterations to the agreed road layout.

12.1.51 Manhole record cards should be provided for all highway only drain runs.

Fees

12.1.52 The Department makes a charge for the work involved in:

- assessing the proposals submitted for technical review
- preparing and managing the section 4 agreement
- inspecting the works on site as construction proceeds

12.1.53 The charge is normally a fixed percentage of the estimated cost of the total roadworks, as calculated by the Department. An additional fee may be charged for any supplemental agreement, or if the works are not completed with the agreed time period.

Commuted Sums

12.1.54 The Department wishes to give developers flexibility in their choice of materials and layouts, and promote innovative design solutions, without placing undue burden on tax payers. The Department may therefore require commuted sums to be paid to cover future maintenance costs for such items as:

- highway structures
- traffic signals
- non-standard materials
- additional areas which are not required for the safe functioning of the highway
- non-usual or additional street furniture
- traffic calming features

12.2 Improvements to the Existing Highway – Section 109A agreement

Introduction

12.2.1 Where developments require the alteration of the existing public highway, an agreement under section 109A of the Highways Act 1986 will be required. Such an agreement provides a structured procedure for the technical approval and inspection of the works, and ensures that the integrity of the Department's existing assets is not compromised.

12.2.2 Where the scope of the works is small in nature and involves minimal disruption of the highway, the use of a minor agreement may be considered sufficient to minimise cost and streamline the process. Where works are of a more substantial nature and there is an associated section 4 agreement, or where the scope of the proposed work is extensive and potentially disruptive to the expeditious movement of traffic, a full section 109A Agreement will be required.

Technical Review

12.2.3 The following guidance provides details of Department requirements in respect of the construction of highway works and the technical details to enable the Department to accept the proposed highway works and for the section 109A Agreement to be progressed.

12.2.4 All works should be prepared and designed in accordance with the following, as appropriate:

- Design Manual for Roads and Bridges DMRB
- Manual of Contract Documents for Highway Works MCHW
- MfMR
- The Traffic Signs (Application) Regulations 2003
- Construction (Design and Management) Regulations 2003
- Manx Sewers for Adoption

12.2.5 The following information should be submitted along with any other relevant supportive drawings, documentation and information to assess the proposed design:

- An Information Schedule:
  - a 1:1250 scale Site Location Plan showing scheme extents, existing road network and north point (the scale of the plan may need to be revised to suit the size/nature of the scheme)
  - a topographical survey
- Detailed design – Carriageway:
  - road safety assessments of the appropriate type undertaken at the appropriate stages and times in accordance with the Department's policy and guidance

- 1:250 scale geometrical design plans, including a contoured plot of the carriageway surfaces to assist drainage check
- longitudinal sections — scale 1:500 horizontal, 1:50 vertical with proposed levels, existing levels and chainage
- cross-sections — scale 1:100 horizontal, 1:100 vertical with proposed levels, existing levels and chainage
- typical construction details — scale 1:20 typically
- carriageway construction thickness design calculations using current and predicted traffic data contained in the Design and Access Statement or the Transport Assessment/Statement
- footway treatments including tactile paving layouts — scale 1:500 with 1:100 insets where required
- surface finishes drawing — scale 1:500 or larger
- landscape drawings if applicable

- Detailed design – Drainage:
  - proposed surface water drainage layout showing road gully and manhole locations, and intended outfall location
  - longitudinal section of main drain runs — scale 1:500 horizontal, 1:50 vertical with proposed and existing invert levels, proposed and existing ground levels, pipe diameters, gradients and offsets/chainage
  - drainage design calculations showing assumptions for impervious areas, rainfall intensities and design return period for design and surcharge checks
  - ground investigation data and existing groundwater regime along proposed drain runs
  - Manx Utility Authority approvals for drainage outfalls
- Traffic signs, carriageway markings and traffic signals:
  - traffic signs and carriageway markings plan and associated sign schedules
  - electrical equipment/cabling plan (for bollards, lit signs, etc.) and power supplies
  - traffic signals layout plan showing pole locations, cable and ducting routes, chamber locations, detector loop locations, controller/feeder pillar positions, power supplies
- Statutory Undertakers Services:
  - existing statutory undertakers apparatus locations
  - proposed statutory undertakers apparatus diversion and/or protections
  - provision for statutory undertakers apparatus if site is to be developed
- Geotechnical Information:
  - initial ground investigation proposals
  - desk study information including preliminary borehole work ground investigation including detailed proposals with borehole locations, long sections and laboratory testing philosophy
  - factual report Interpretative report including calculations
  - earthworks design including drawings and specification and structural foundation design
  - specification and scheme specific appendices

- Any other information that Department may reasonably require

Construction of the Highway Works

Commencement

12.2.6 No construction work affecting the highway should commence until:

- A section 109A Agreement is in place
- Written confirmation has been received by the Department that the Health and Safety at Work Inspectorate have been notified that the developer is the client for the works for the purposes of the Construction (Design and Management) Regulations 2003
- Written notice has been received by the Department of the intention to commence construction, or begin it again, in accordance with the following:
  - works on the highway of ten or more days duration – three months' notice required
  - works on the highway of less than ten days duration – three weeks' notice required
  - temporary Traffic Regulation Orders (road closures etc.) – six weeks' notice required

Contractor Approval

12.2.7 Any works must be constructed by a government registered contractor (including sub-contractors) who has relevant experience and capabilities.

Contractor Insurance Indemnity

12.2.8 The Department must be indemnified against any claims by third parties arising from the highway works. The contractor must provide the Department with written evidence that they have a minimum of £10 million public liability insurance with no limit on the number of claims.

Pre-Start Meeting

12.2.9 A pre-start meeting should take place between representatives of the developer the contractor and the Department prior to any works taking place.

Timescale

12.2.10 Once work is commenced it is the responsibility of the developer to complete the works to the Department's satisfaction within a reasonable period in order to minimise any disruption to highway users.

Site Inspection

12.2.11 The developer/contractor is responsible for the day-to-day supervision of the highway works. The Department will only inspect the works to check that they are being constructed in accordance with the approved details, and the Department's requirements.

12.2.12 The Department representatives must be given access to the works at all times but these visits do not reduce the developers/contractor's responsibility for supervising the work and making sure that it is carried out in a safe and proper manner.

Health and Safety

12.2.13 All aspects of the Construction (Design and Management) Regulations 2003 must be complied with and the Department must be indemnified against all claims, liabilities and actions if they are not.

12.2.14 Full details of any traffic management proposals for the construction of the works should be submitted to the Department for approval. Submission date should be at least 6 weeks prior to date if temporary traffic regulation orders are required.

Completion of the Highway Works

12.2.15 When the works have been completed the developer should give notice to the Department and a provisional certificate of completion will be issued subject to:

- a stage 3 road safety audit or road safety review (whichever is deemed appropriate) has been submitted
- the works have been substantially completed to the Department's satisfaction
- landscaped areas, grassed areas, trees, shrubs etc. in visibility splays that are intended to be adopted by the Department have been fully planted and established
- a joint inspection between representatives of the developer, the contractor and the Department has been carried out and no significant defects have been identified; or any defects identified have been agreed in writing to be rectified to the Department's satisfaction

12.2.16 Upon issue of the provisional certificate of completion the Department will write to the Planning and Building Control Directorate confirming the highway works have been completed.

12.2.17 The developer will be responsible for maintaining the highway works for twelve months to allow for any defects in the works to become apparent after they are brought into use.

12.2.18 A final certificate of completion will be issued after the maintenance period has expired subject to:

- a joint inspection between representatives of the developer, the contractor and the Department has been carried out and any defects identified will be issued by the Department as a list of remedial works which then must be completed to the Department's satisfaction within an agreed time period
- the highway works and any new adoptable areas have been maintained to the Department's satisfaction during the maintenance period
- as-built drawings have been provided, preferably in an electronic form on CD
- the health and safety file, produced in line with the Construction (Design and Management) Regulations 2003, has been provided in an electronic form on CD
- a stage 4 road safety audit has been submitted if appropriate

12.3 Working in the Highway

Introduction

12.3.1 It is an offence under the Highways Act 1986 to carry out any works within the public highway without permission of the Department and no construction work affecting the highway can commence until the section 109A Agreement has been signed. It should be noted that Planning approval is not consent to work in the highway.

Work Within the Existing Highway

12.3.2 The Department will add proposed works to its 'Road Watch' notification platform to allow coordination with other schemes and utility works in the area.

Notice Periods

12.3.3 Notwithstanding any discussions that take place with representatives of the PBCD or the Department, the following notice periods for works affecting the highway should be borne in mind:

- works on the highway of ten or more days duration – three months' notice required
- works on the highway of less than ten days duration – three weeks' notice required
- temporary Traffic Regulation Orders (road closures etc.) – four weeks' notice required

Inspection of the Works

12.3.4 The Department representatives shall have unrestricted access to the site at all times whilst works are proceeding for the purpose of inspecting the works, and in accordance with site rules. Such visits do not absolve the developer from his responsibility for supervising the works and making sure that they are carried out in a safe and proper manner. Any unreasonable restrictions placed on the Department representatives may delay or even preclude certain roads from adoption.

12.3.5 Any works carried out and/or covered up without approval will be considered suspect and the developer may be required to open up the works, take cores or dig trial holes at his own expense to determine the quality of the work to the Department's satisfaction.

Temporary Access

12.3.6 No access to the site, other than that shown on the approved drawings, shall be provided from an existing highway without the Department's prior written approval and the agreement of any necessary temporary signing and the routing of heavy construction traffic to the site.

Notice Boards and Signs

12.3.7 No advertising/direction signs are to be erected on the public highway or within visibility splays or affixed to highway street furniture.

Scaffolding/hoarding

12.3.8 Any scaffolding/hoarding to be erected on the public highway will require a permit. A minimum of seven days' notice is required to process applications.

Occupation of the Highway

12.3.9 Occupation of the highway will require a permit. A minimum of seven days' notice is required to process applications.

12.3.10 The Department may charge for occupation of the highway.

Road Closures and other Temporary Traffic Regulation Orders (TROs)

12.3.11 A minimum of 6 weeks' notice is required by the Department to implement temporary Traffic Regulation Orders.

12.3.12 Where a road is to be closed, advance notification signs should be placed at the closure location at least one week before commencement of the closure.

Residents/Businesses Affected by the Works

12.3.13 Any residents and/or businesses that are in close proximity or are likely to be affected by the construction works should be notified in advance by way of a letter drop. The content of the letter and extent of distribution shall be agreed with the Department prior to delivery.

Traffic Safety and Management

12.3.14 Where the works involve any form of temporary traffic management it must be agreed in consultation with the Department and meet the requirements of Chapter 8 of the Traffic Signs Manual.

12.3.15 The costs of the provision of all temporary traffic management including roads signs, temporary traffic signals, and temporary Traffic Regulation Orders shall be borne by the developer.

12.3.16 Contact details of the nominated representative of the developer, who must be available at all times in case of emergency, must be provided to Department and the Police.

Private and Publicly Owned Apparatus, Service or Supplies

12.3.17 The developer should be satisfied as to the exact position of any statutory undertakers, other statutory bodies and other publicly and privately owned apparatus, services and supplies affected by the works and take all measures required for the management and protection of such apparatus.

12.3.18 The developer is responsible for all costs and arrangements for protecting, altering, removing or adding to any privately or publicly owned apparatus, service or supplies affected by the work.

12.3.19 The Department has the right to dictate the route to be taken when placing apparatus in the highway.

Damage to the Existing Highway

12.3.20 Prior to commencement of any works a joint inspection between representatives of the developer and the Department of the condition the existing footways/carriageways within the vicinity of the site should be carried out.

12.3.21 The developer is responsible for any damage to existing roads, footways, footpaths, public rights of way, verges, drains and apparatus caused by traffic conditions that have arisen from the transport of workers, materials or plant to or from the works, or because of the diversion of traffic from their customary routes as a result of the construction of the highway works. The Department is empowered to recover expenses incurred in repairing such damage under Section 7A of the Highways Act 1986.

12.3.22 The developer should temporarily sign and guard and/or repair and make good without delay all resulting damage to the satisfaction of the Department; or shall pay for the signing and guarding and/or repairs carried out on the instructions of the Department.

Cleaning of Vehicles and Site Maintenance

12.3.23 The developer must ensure that the site is maintained in a clean and safe condition and that all roads, footways etc. used by the public or for access to occupied dwellings are free from dust, mud and detritus.

12.3.24 The developer must ensure that vehicles leaving the site do not deposit mud or debris on to the highway and should provide such materials, labour and equipment to ensure compliance.

Skips or Material Deposited on the Highway

12.3.25 The placing of a skip or any materials on the highway will require a permit from the Department.

Road Openings

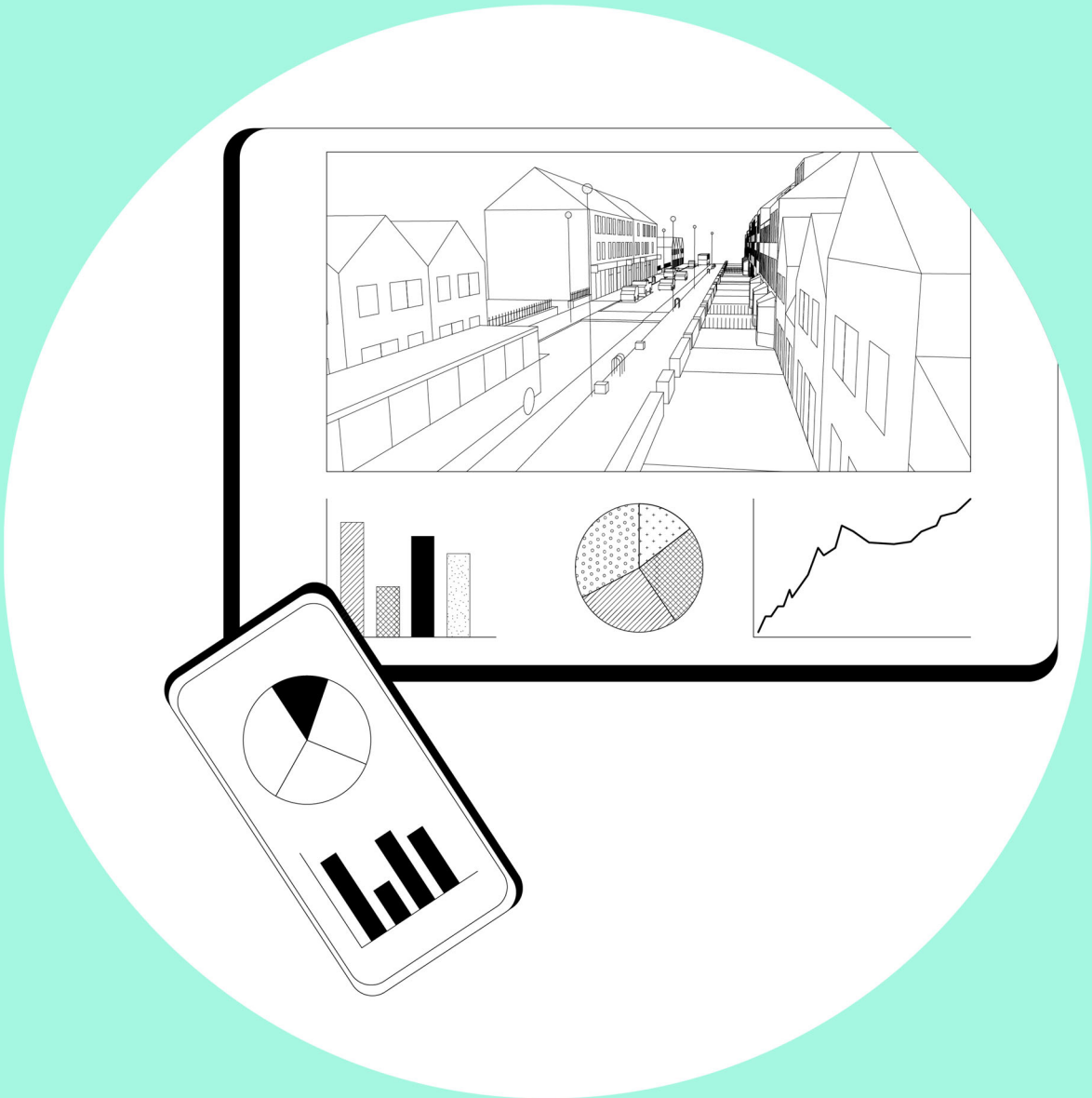
12.3.26 The term road opening refers to a situation where the public highway must be opened, or excavated, for the installation of a utility service such as water, drainage, telecoms, gas, etc.

12.3.27 The utility companies have a statutory right to install their services within the public highway, but they must inform and seek the approval of the Department before doing so (Highways Act 1986 s56 Road Works Code and Schedule 4).

12.3.28 The Department may also allow private services to be installed within the highway (Highways Act 1986 s75 Placing etc., of certain apparatus in or under highways, and Schedule 4).

PART SIX

MONITORING



Section 13 - Monitoring

13.1 Monitoring

13.1.1 The Department will monitor developments delivered using the policy and guidance contained within the MfMR in order to assess the effectiveness of the MfMR in achieving the Department's desired objectives and outputs.

13.1.2 The Department considers monitoring of the MfMR as a dynamic process which enables it to re-evaluate the policy and guidance contained within it and review the need for its component parts.

13.1.3 Monitoring of developments will be used to address the following implementation issues:

- whether new development delivered using the MfMR is supporting Government transport and spatial policies and related targets have been met
- what significant impacts new development is having on the social, environmental and economic characteristics of the area and whether these are as predicted by the accessibility and road safety audits
- whether MfMR needs amending because the guidance is not working as intended or because national policy has changed
- whether the way the guidance contained in MfMR is being implemented needs altering in order to ensure delivery

Glossary

Conservation Area – a statutory designation that can be applied to an area within a town or village that is of special importance due to the grouping of historic buildings within a particular setting.

Department of Infrastructure (the Department) – a department of the Isle of Man Government with statutory duties under various legislation for the management of the local transport network and for ensuring the safety of the public when using the network.

Developer – for the purposes of this document, the term developer is used to refer to any person or organisation proposing to undertake development, considering submitting a planning application, or implementing the development for which a planning approval has been obtained.

Development Plan – consists of a Strategic Plan and one or more Area Plans. It is the Department's intention to prepare four Area Plans for the South, East, North and West of the Island. Strategic, Area and Local Plans can be found in the Planning and Building Control Library.

Highway Services Division – a division of the Department of Infrastructure.

Planning and Building Control Directorate – the authority with statutory responsibility for the management of the planning process, including the determination of planning applications submitted for new development.

Area Plan – the plan for the future development of the local area, drawn up by the Planning and Building Control Directorate in consultation with the community.

Movement status – can be expressed in terms of traffic volume and the importance of the street, or section of street, within a network. Movement status should be considered in terms of all modes of movement, including vehicle traffic, pedestrian and cycle flows, and public transport. Movement status can vary along the length of a route.

National Heritage Area – any protected areas considered to be of national importance, further information on which can be found in the Conservation Policy.

Place status – denotes the relative significance of a street, junction or section of a street in human terms. The most important places will usually be near the centre of any settlement or built-up area, but important places will also exist along arterial routes, in district centres, local centres and within neighbourhoods. In new developments, locations with a relatively high place function would be those where people are likely to gather and interact with each other, such as outside schools, in local town and district centres and near parades of shops.

Planning and Building Control Directorate (PBCD) – regulates all built development across the Island with regards to planning permission, and has responsibility for all Island Building Control with the exception of the local authorities in Douglas and Onchan.

Road – a thoroughfare whose main function is to facilitate the movement of motor vehicles.

Road Safety Assessment – a procedure for evaluating a scheme to identify road safety problems and to suggest measures to eliminate or mitigate any concerns. It can take the form of a road safety audit, road safety review or road safety self-certification depending on the impact of the scheme on the highway network.

Road Safety Audit – an evaluation of a highway improvement scheme during design, at the end of construction, and post-construction, to identify road safety problems and to suggest measures to eliminate or mitigate any concerns. Road safety audits are undertaken by teams of specialists trained in the skills of collision investigation and/or road safety engineering.

Road Safety Review – an evaluation of a highway improvement scheme during design, at the end of construction and post construction, to identify road safety problems and to suggest measures to eliminate or mitigate any concerns. Road safety reviews are undertaken by a specialist trained in the skills of collision investigation and/or road safety engineering.

Road Safety Self-Certification – a basic road safety check of a highway proposal restricted to minor schemes that will have a low impact on the highway network.

Section 4 Agreement – an agreement entered into by the Department with a land owner and/or developer that sets out the obligations in relation to the adoption of highway and transport infrastructure resulting in the Department taking on future management responsibilities for the infrastructure.

Section 13 Agreement – an agreement entered into by the Planning and Building Control Directorate with a land owner and/or developer that sets out the obligations upon the parties in relation to a development that has secured planning permission. The obligations could involve physical works or financial contributions, depending upon the nature of the development, and the associated measures required to make that development acceptable to the Planning and Building Control Directorate and the Department.

Section 109A Agreement – a legally binding agreement between the Department and the developer to ensure that the work to be carried out on the highway is completed to the standards and satisfaction of the Department.

Street – Streets have an important public realm beyond those functions related to motor traffic. They are typically lined with buildings and public spaces and, whilst facilitation of

movement is still a key function, they normally support a range of social, leisure, retail and commercial functions.

Sustainable Drainage Systems (SUDS) – drainage systems designed to minimise the amount of water that leaves the area being drained through a range of techniques in order to retain water within a development site. This includes design and construction of sufficient storage capacity through the use of balancing ponds and wetland areas to reduce the impact of flooding.

Transport Assessment – a comprehensive and systematic process that sets out transport issues relating to a proposed development. It identifies what measures will be taken to deal with the anticipated transport impacts of the scheme, as well as measures to improve accessibility and safety for all modes of travel, particularly for alternatives to the car such as walking, cycling and public transport.

Unilateral Undertaking – a commitment by a landowner and/or developer to meet specific obligations in relation to a development that has secured planning permission. As with a section 13 Agreement, these obligations could involve physical works or financial contributions, depending upon the nature of the development and the associated measures required to be taken.

List of Appendices

Appendix A Contact List

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Email ..... highwaysdevelopmentcontrol@gov.im
Highway Services Division, Ellerslie, Crosby IM4 2HA 01624 850000
Email ..... enquiries@highways.gov.im

Department of Environment Food and Agriculture
Murray House, Mount Havelock, Douglas IM1 2QF
Planning 01624 685950
Email ..... planning@gov.im
Building Control 01624 686446
Email ..... buildingcontrol@gov.im

Isle of Man Fire and Rescue Service
Fire Brigade Headquarters, Tromode Road, Douglas IM2 5PA 01624 647300

Douglas Borough Council
Town Hall, Ridgeway Street, Douglas IM1 1EP 01624 696300
Email ..... enquiries@douglas.gov.im

Manx Utilities
P.O. Box 177, Douglas IM99 1PS 01624 687687
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Manx Telecom
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Manx Gas
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Sure
Atlantic House, 4-8 Circular Road, Douglas, IM1 1AG 01624 692233
Email ..... iomengineering@sure.com

Appendix B Access Visibility and Junction Layouts

B.1 Introduction

B.1.1 Good visibility is essential to the safe use of your access; for you to see and be seen.

B.1.2 Visibility splay or sight line is the term used for an area for seeing approaching traffic to the left and right when pulling out of an access to join the public road. Speed and features of the public road impact on the form of the visibility splay.

B.1.3 The visibility splay allows you to see other users of the public road and for them to see pedestrians, cyclists and vehicles exiting the access with enough reaction time to assess potential hazards and react accordingly.

B.1.4 The Department has requirements for both pedestrian visibility and vehicular visibility for developments requiring:

- a new access onto the highway
- changes to an existing access on to the highway
- relocation of an access
- increased or changed use of an existing access

B.2 Pedestrian Visibility Splays

B.2.1 You can work out pedestrian visibility splays by measuring 2.4 m from the road edge back to the centre of the access or driveway, roughly where you would be sitting in the driver's seat of a car. You then measure 1.5 m either side and then measure 2.4 m at a right angle towards the road.

B.2.2 Within the area, you must clear or reduce the height of any object to below 0.6 m so that the vehicle driver leaving the access can see clearly, over the top of the wall, sod bank, fence, or hedge and observe a child walking.

B.2.3 These requirements are illustrated in Figure B.1 and Figure B.2.

B.2.4 Where all or part of the visibility splay lies across land outside of the applicant's control, a relaxation to this requirement may be considered, depending on the frequency of vehicle movements, the amount of pedestrian activity along the footway, and the width of the footway.

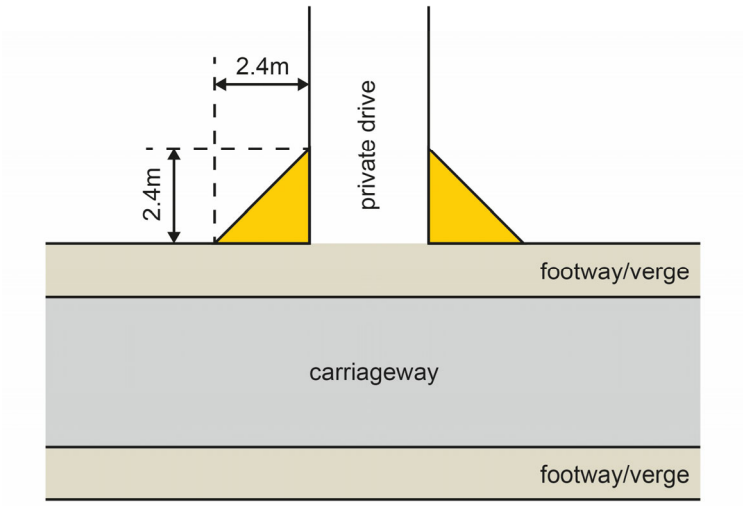

Figure B.1 Pedestrian Visibility Splay (2d)

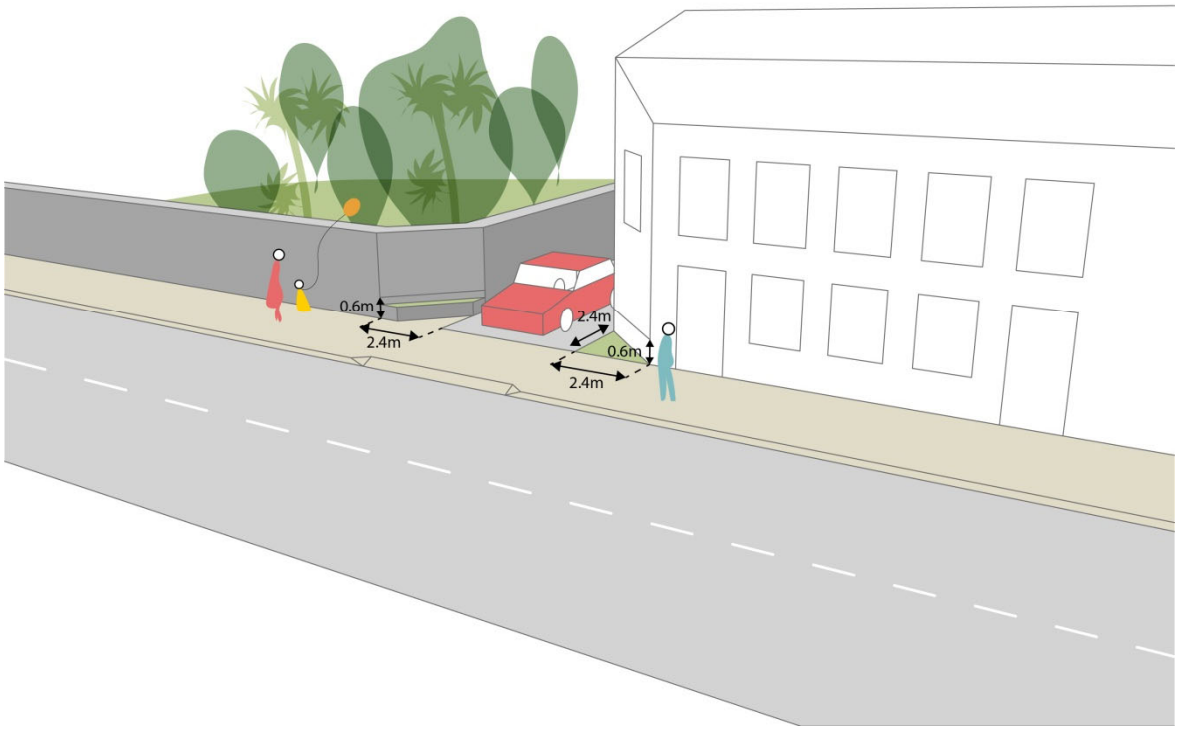

Figure B.2 Pedestrian Visibility Splay (3d)

B.3 Vehicular Visibility Splays

B.3.1 For vehicular visibility splays, you measure distances, known as the 'X' and 'Y' distances, at a height of 1.05 m to represent a car driver's eye level in a sitting position.

B.3.2 X is a fixed point measured 2.4 m from the road/kerb edge at the centre of the access or driveway, roughly where you would be sitting in the driver's seat of a car.

B.3.3 These requirements are illustrated in Figure B.3 and Figure B.4.

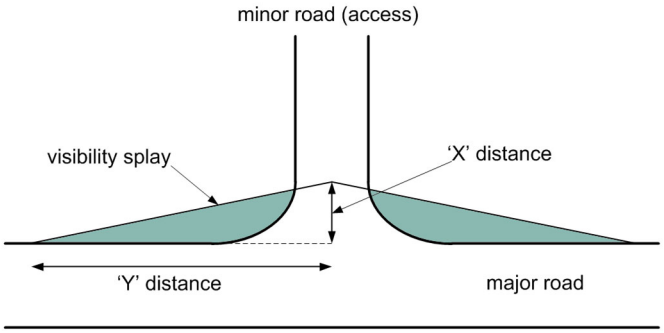

Figure B.3 Vehicular Visibility Splay (2d)

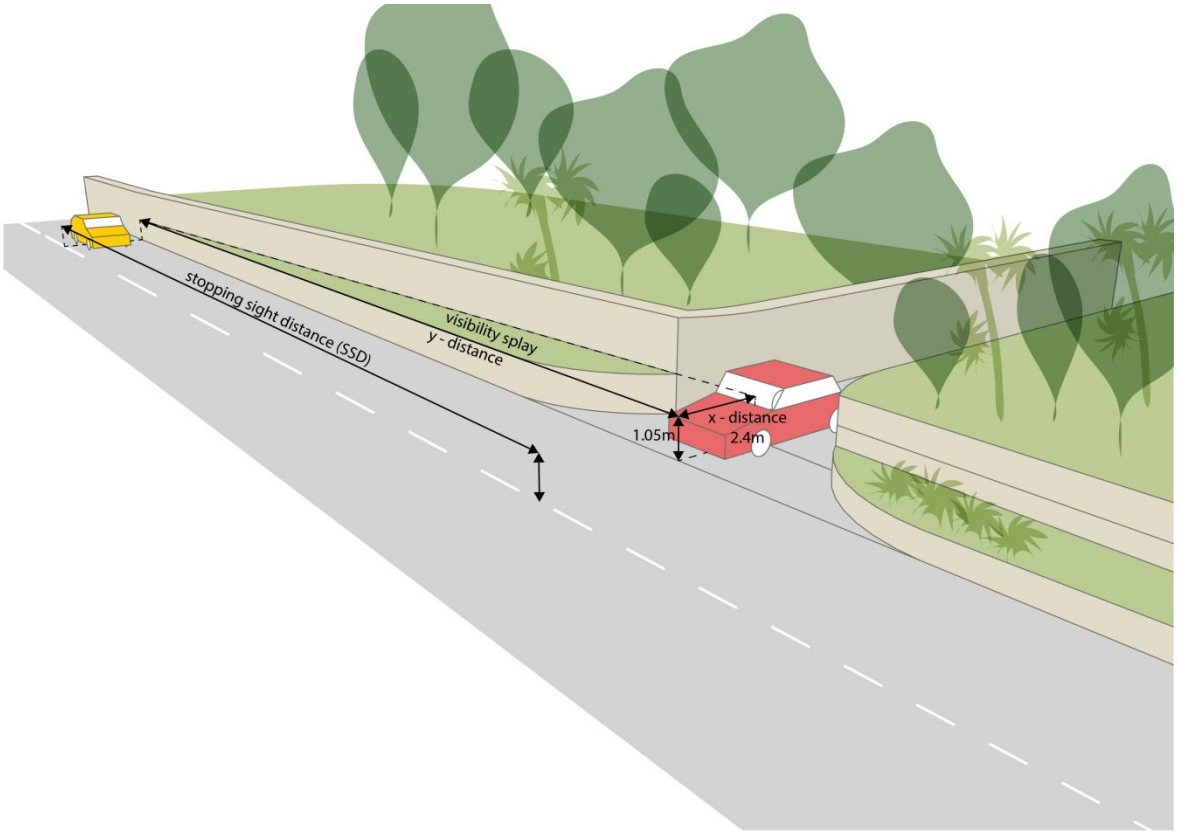

Figure B.4 Vehicular Visibility Splay (3d)

B.3.4 A minimum X figure of 2.0 m may be considered in some very lightly-trafficked and slow-speed situations, but using this value will mean that the front of some vehicles will protrude slightly into the running carriageway of the major arm. You must consider the ability of drivers and cyclists to see this overhang from a reasonable distance, and to manoeuvre around it without undue difficulty.

B.3.5 Y is the furthest point to the left and right where you can see to the nearest road/kerb/ verge edge. It relates to the speed of the road and provides the minimum distance to stop safely (the stopping sight distance; forward visibility). The Y distance can vary in length and position due to the location and road features, such as curves, hills, and speed limits. Typically, the higher the road classification and speed, the longer is the splay. This

is to allow more time for another road user to see you, and for you, your family or visitors to see them, and react to any potential incident.

B.3.6 You must clear or reduce the height of any object to below 1.05 m so that the vehicle driver leaving the access can see clearly, over the top of the wall, sod bank, fence, or hedge and observe approaching vehicles. Stepped and/or tapered boundary features may be appropriate.

B.3.7 When establishing the Y distance, you use site location and the 85th percentile measured speed or speed limit applying as set out below.

B.3.8 For road location, the following apply:

- at locations where it can be demonstrated to the satisfaction of the Department that the road or street is within a built-up area, or the place function outweighs the movement function, Column 1 of Table B.1 can be used
- if the speed on a built-up road or street exceeds 37.5 mph (60 km/h), or the road is outside the built-up area, the standards set out in Column 2 of Table B.1 must be used unless evidenced local interpretations are agreed by the Department as being more appropriate
- a location is 'built-up' when it relates to an area where there is development on at least one side of the carriageway, with accesses, junctions, activity and other features which will clearly influence driver behaviour and speed

85th Percentile Traffic Speed or Speed Limit (mph)	'Y' Stopping Sight Distance (m)	
	Column 1	Column 2
	Roads or streets in a built-up area	If speed on a built-up road or street exceeds 37.5 mph (60 km/h) or is outside the built-up area
10	11	
15	17	
20	25	
30	43	70
31	45	
37	59	
40		90
50		120
60		160

Table B.1 'Y' Stopping Sight Distance

B.3.9 Where actual speed falls between the given values the Y distance may be interpolated.

B.3.10 Where there is no signed speed limit, a traffic speed survey must be undertaken.

B.3.11 On some roads, such as single track, or minor roads, there may be too few traffic movements to achieve a valid sample. In such circumstances, subject to the Department's agreement, you may estimate the speed of traffic passing the site by conducting a practical drive past the site assessment, and providing the results.

B.3.12 Speed surveys can be undertaken by Highway Services for a fee; currently £150. If you undertake a speed survey, it must comply with DMRB, CA 185 Vehicle Speed Measurement.

B.3.13 The estimated speed, if lower than the speed limit, will require to be agreed by the Department and should be highlighted in your planning application submission.

B.3.14 The Department will not introduce a speed limit simply to facilitate a new access.

Bends

B.3.15 When there is need to locate the access on or near a bend in the road, the outside of a bend is the safest option, but not always possible. You will require extra visibility checks to make sure that an approaching vehicle on the main road is visible over the whole of the Y distance.

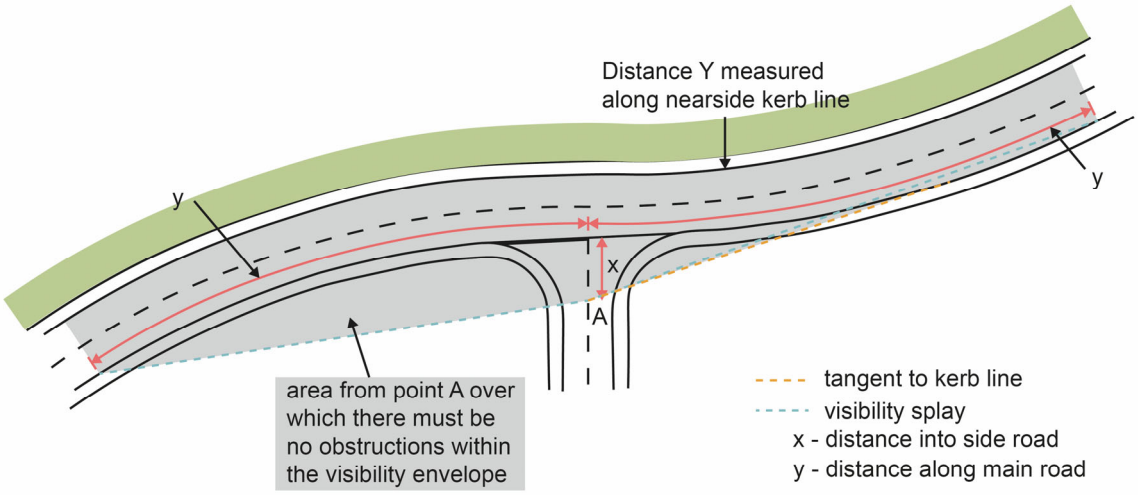

Figure B.5 Visibilty Splay; Access on or near a Bend

B.3.16 When the main road alignment is curved and the minor arm joins on the outside of a bend, another check is necessary to make sure that an approaching vehicle on the main arm is visible over the whole of the Y distance. This is done by drawing an additional sight line which meets the kerb line at a tangent.

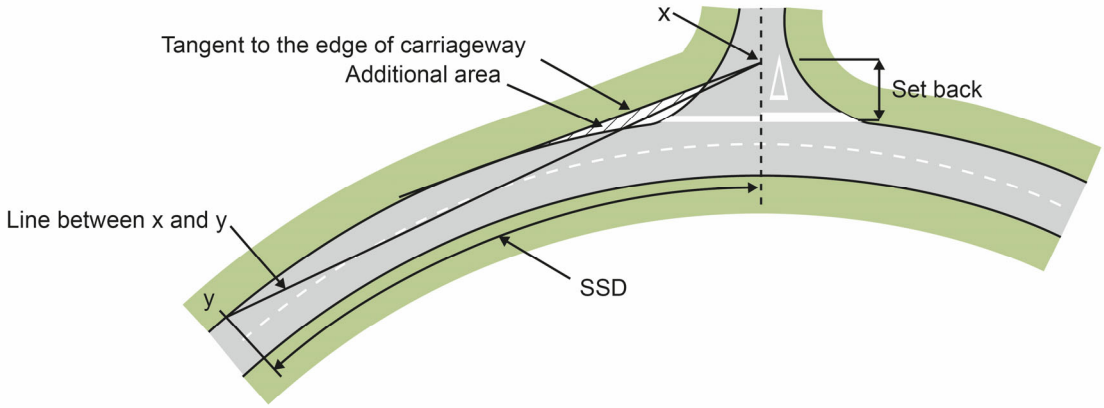

Figure B.6 Visibility Splay to Right; Access or Junction on Outside of Bend (2d)

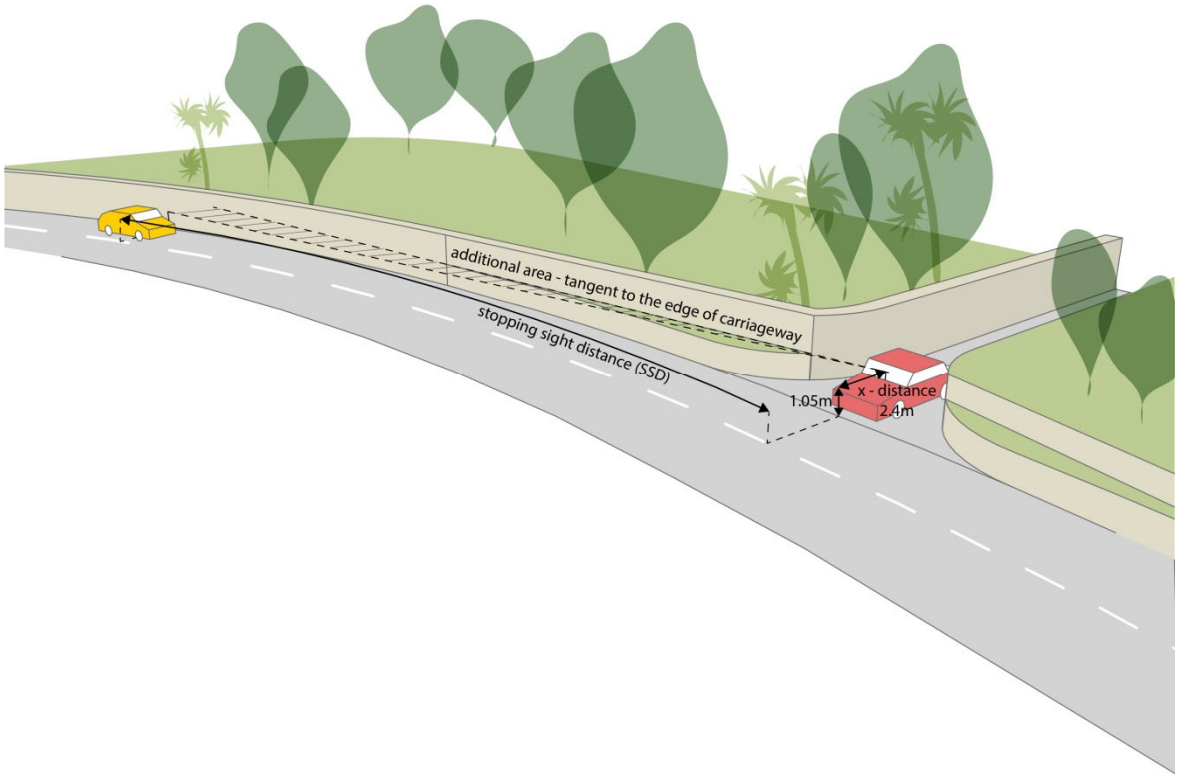

Figure B.7 Visibility Splay to Right; Access or Junction on Outside of Bend (3d)

B.3.17 For the offside, you will need to add an extra area on the inside of the main road curve formed by a line between points:

- X at a set-back of 2.4 m.
- V at offside edge of the road for length defined by the SSD from Table B.1.

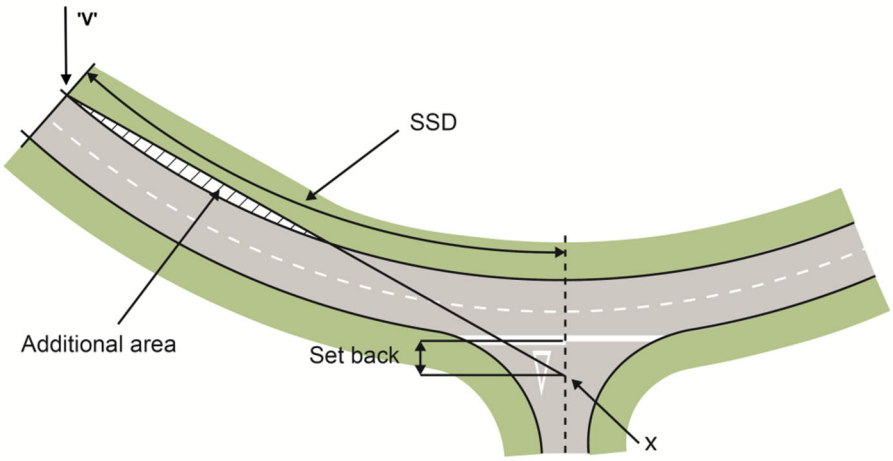

Figure B.8 Visibility Splay to Left; Access or Junction on Outside of Bend (2d)

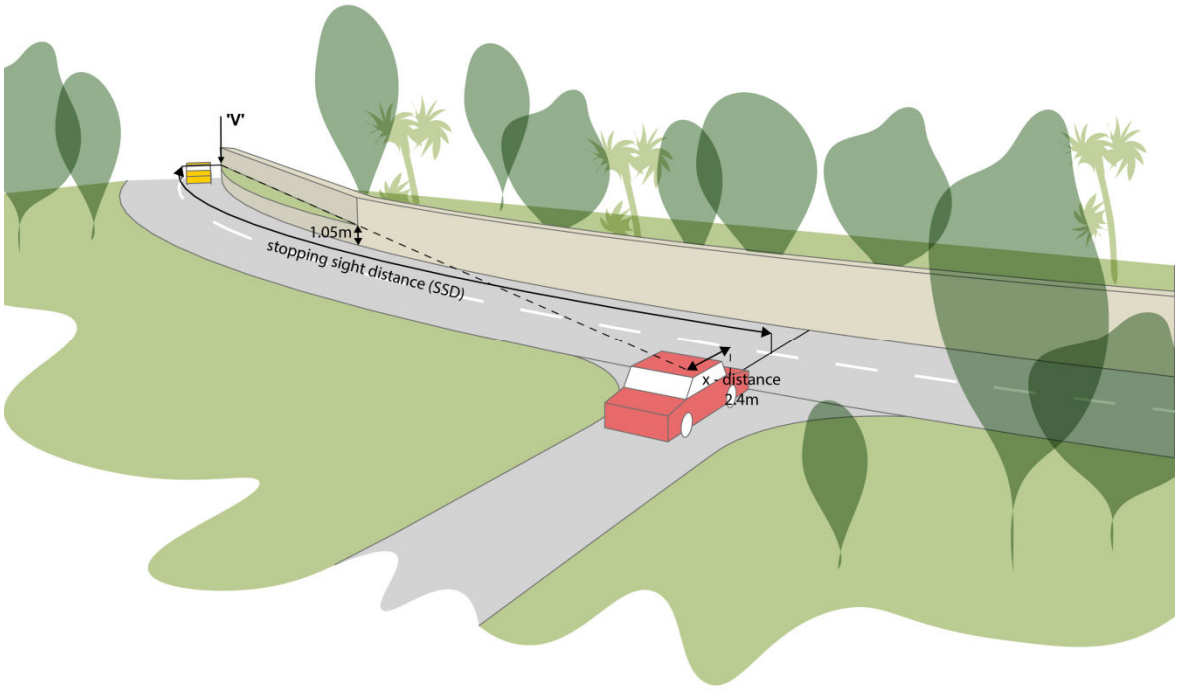

Figure B.9 Visibility Splay to Left; Access or Junction on Outside of Bend (3d)

B.3.18 In addition, you must provide forward visibility equal to the SSD from Table B.1 to allow an oncoming driver to stop safely should there be an object in the road. This is determined by drawing and measuring:

1. a line parallel to the inside kerb, 1.0 m into the carriageway
2. select required SSD from Table and measure along the vehicle path from tangent point A

3. divide the SSD into 3 m equal increments points and number in sequence
4. repeat around the curve finishing at a full stopping distance beyond the tangent point B
5. draw a line to join the increments with the same number 1 to 1, 2 to 2 etc.; the criss-crossed area to be kept clear of objects.

B.3.19 Examples are shown in Figure B.10.

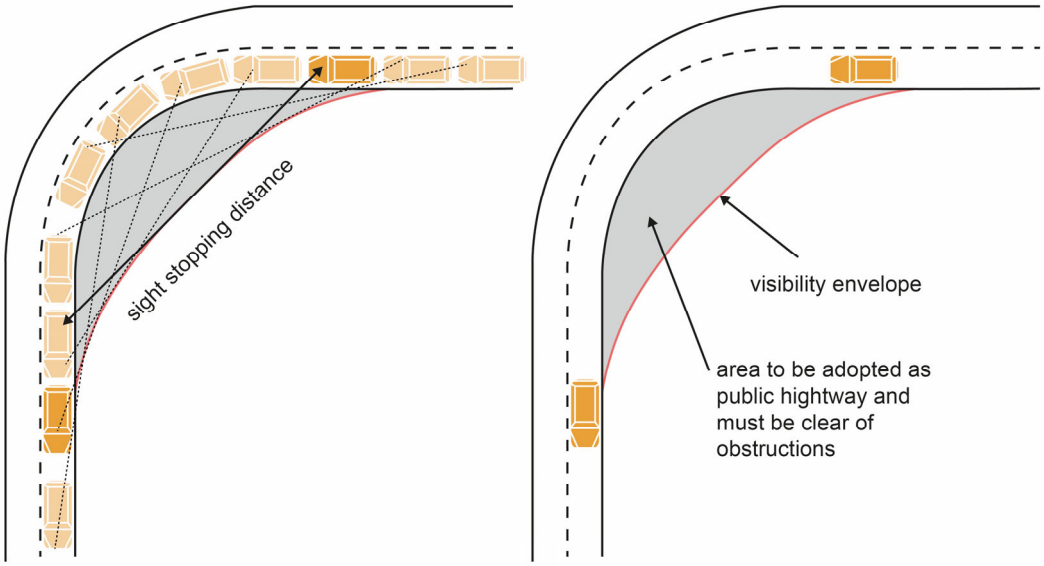

Figure B.10 Forward Visibility at Bend

Segregated Lanes

B.3.20 In some circumstances, it may be unlikely that vehicles approaching from the left on the main arm will cross the centreline of the main arm or opposing flows may be physically segregated at that point. If so, the visibility splay to the left can be measured to the centreline of the main arm.

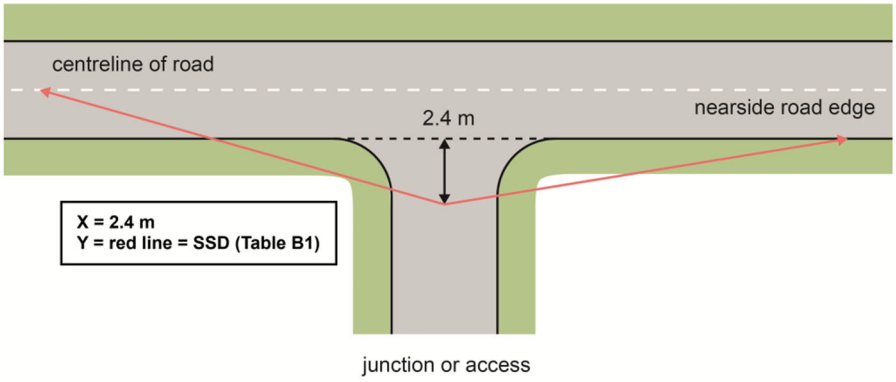

Figure B.11 Visibilty Spay to Left with Segregated Carriageway

Effects of Gradients on Visibility

B.3.21 When a minor road forms an uphill approach to the major road care should be taken to ensure that objects within the visibility triangle although less than 1.05 m above carriageway level do not interfere with visibility.

B.3.22 Additionally, where there are steep road gradients the SSD should be calculated as described in MfS.

Buses and HGV's SSD

B.3.23 MfS2 suggests that Bus/HGV SSD should not be assessed except where it is in excess of 5% of traffic flow.

Junctions

B.3.24 Other visibility may be necessary at nearby junctions and along the road to provide inter-visibility between vehicles using the minor road and those proceeding along the priority road. In particular, a vehicle waiting on the priority road to turn right into the access must be able to see oncoming traffic and be seen by following traffic. In these circumstances, the forward visibility depends on the same factors as the Y distance and the normal requirements are set out the Table B.1.

Parking and Street Furniture

B.3.25 Street furniture, such as street trees and lighting columns will often lie within the visibility splay and you should assess the impact of such obstacles. In general, occasional obstacles to visibility that are not large enough to fully obscure a whole vehicle or a pedestrian, including a child or wheelchair user, will not have a significant impact on road safety.

B.3.26 Parking in visibility splays in built-up areas is quite common, yet it does not appear to create significant problems in practice. Encroachment of a parking space into visibility splays should be avoided where practical. Defined parking bays can be provided outside the visibility splay, if required.

B.4 Access Layouts

B.4.1 The general rule is one access point to and from a property. More than one access point increases the potential for traffic conflict. Applications for two access crossings to a single property or a second access point where one already exists require you to provide strong evidence that it will add significantly to highway safety.

B.4.2 For such applications to be considered, the applicant will need to show:

- how a second access will add to the safety of the access arrangements
- why such added safety cannot be achieved from a single access, or by improving or repositioning an existing access

Distance from Road Junctions

B.4.3 An access should be located no closer than 11 m to a road junction, increasing to 17 m on major roads or near busy junctions to avoid a serious hazard. If the property is situated directly on the junction of two roads, it will generally be safer to situate the access on the minor, side road.

Geometry

B.4.4 The geometry of a single or shared private vehicular access to a property taking a direct access from a public road will need to be of sufficient size to accommodate the numbers and types of vehicles using the access in a safe manner and suitable for the road classification. It may require enhancement also to better accommodate pedestrians and cyclists.

Direct Accesses

B.4.5 For Primary and District roads (see the Road Hierarchy map showing the status of each road, downloadable from the Highway Services webpage) direct accesses shall only be used where access is to a single field or dwelling with less than 50 vehicle movements per week. You may provide a priority junction instead of the direct access.

B.4.6 Typically, the minimum width of a single access will range between 3.1 m and 6.0 m (see Figure B.12) depending on vehicle numbers and types.

B.4.7 Entry splays:

- for access to a single dwelling should be 1.0 x 1.0 m
- for access to a field should be 2.0 x 2.0 m

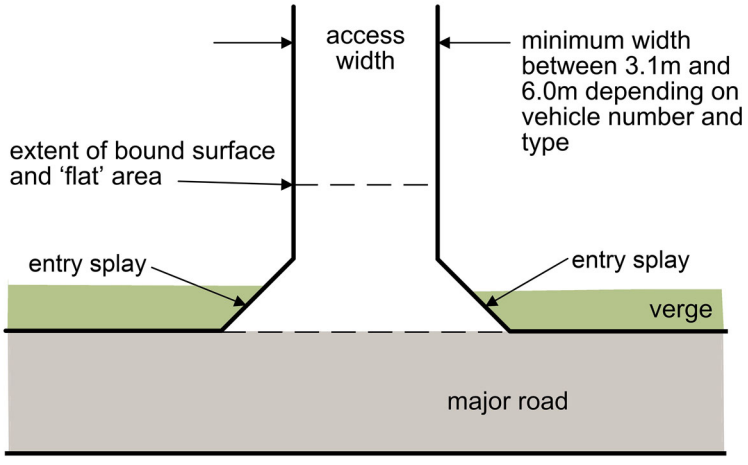

Figure B.12 Direct Access

B.4.8 You must provide an access of consolidated and bound surfacing material over at least the first 5.0 m (6.0 m for a field access) adjacent to the public highway to minimise the risk of loose material being carried onto the highway.

B.4.9 For field accesses, the additional provision of hardened strips will assist in the removal of mud from tyres and equipment prior to entering the road.

B.4.10 For direct accesses, it will be necessary to provide a relatively flat section on the final approach adjacent to the public road. This prevents drivers having to perform a 'hill start', reducing the risk of vehicles stalling or inadvertently rolling out into the public road.

B.4.11 The minimum length and maximum permitted gradient of this flat section is dependent on the access type and the status of the public road (in the road hierarchy) to which the access is to connect. The requirements are shown in Table B.2 and Table B.3.

Access Type	'Flat' Area Minimum length
Field/Agricultural Access	6.0 m
Single Dwelling	5.0 m

Table B.2 Direct Access Minimum Length Provision

Access Connection to:	'Flat' Area Maximum Gradient
District Road	4% (1:25)
District Road	4% (1:25)
Access Road	7% (1:14)
Local Access Road	7% (1:14)

Table B.3 Direct Access Maximum Gradient Provision

Gates

B.4.12 On all primary and secondary roads and other roads outside a built-up area all agricultural, industrial and residential entrance gates should be sited far enough from the edge of the carriageway to allow the largest vehicle likely to use the access to stop clear of the carriageway (and footway if one is present) when the gates are closed.

B.4.13 The vehicle to be accommodated is the largest type expected to use the access on a regular basis, which in the case of farm vehicles can include a trailer.

B.4.14 Gates must be hung so that they do not open towards the carriageway or, where this is not possible, sited so that when open they do not project into the public road area. Where there are paths, entrance gates may be set at the property boundary. Gates must open away from the public road.

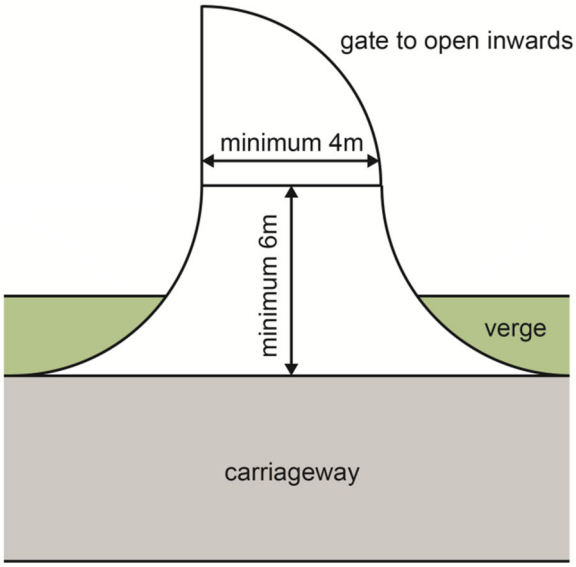

Figure B.13 Single Agricultural/Field Access and Gate (2d)

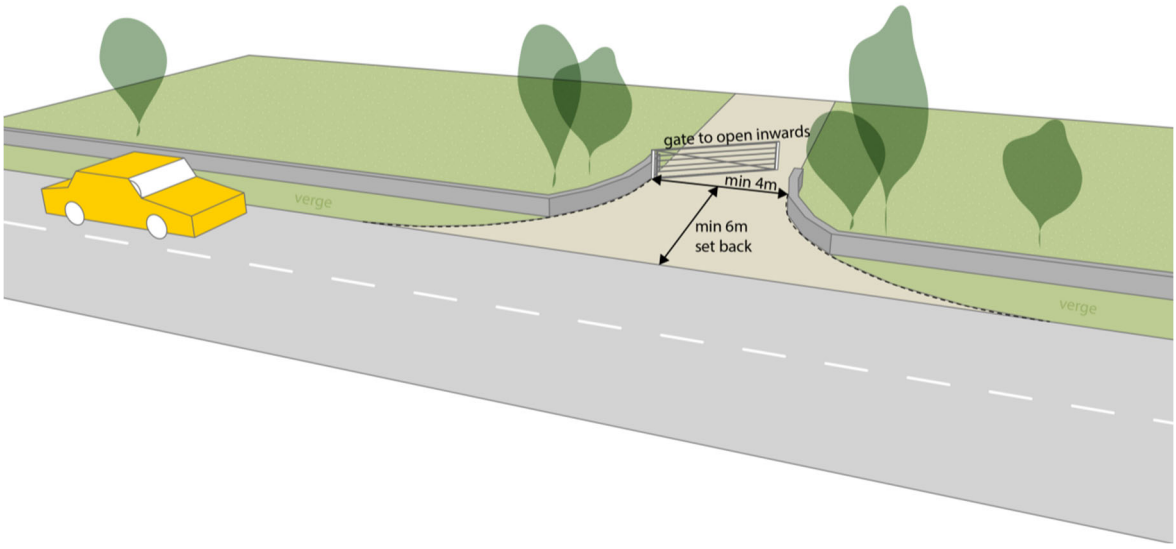

Figure B.14 Single Agricultural/Field Access and Gate (3d)

B.4.15 Where it is not possible to accommodate gates opening away from the highway, the setback should be increased to accommodate them being fully open without encroaching into the carriageway or footway if one is present.

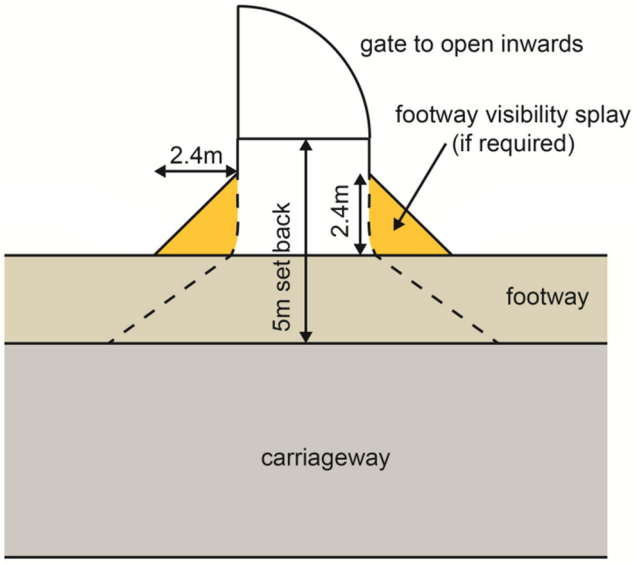

Figure B.15 Single Dwelling Access and Gate (2d)

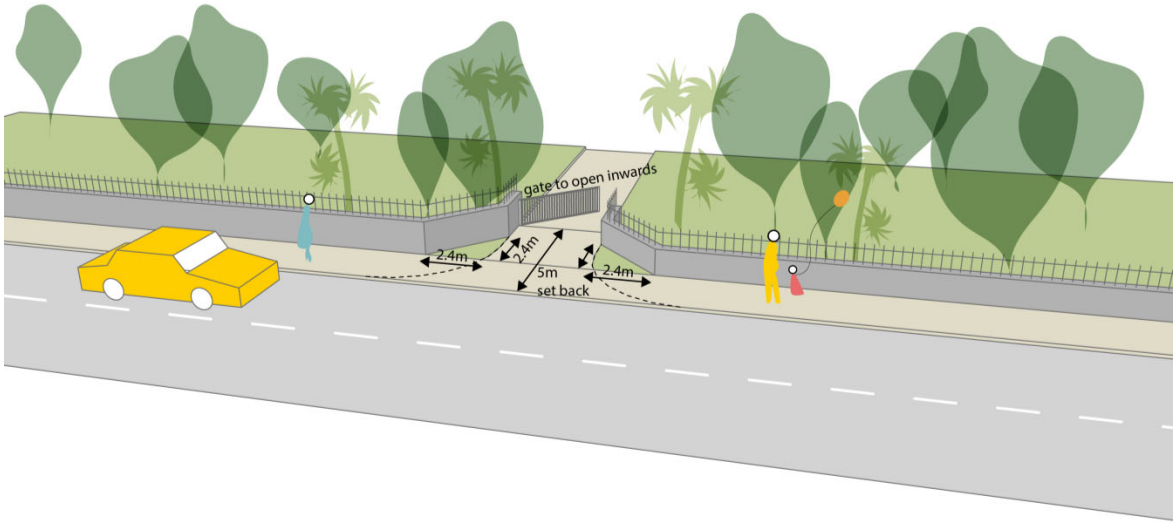

Figure B.16 Single Dwelling Access and Gate (3d)

B.5 Access - Planning Application Checklist

B.5.1 An applicant should consider the questions listed below prior to designing and submitting a planning application which includes any of the following:

- a new access onto the highway
- changes to an existing access on to the highway
- relocation of an access
- increased or changed use of an existing access

Site Details:

- is there a previous Application for this location?

  - if YES above give the application reference number if known
- address or grid reference at the access point to the public road
- do you propose a new private access from the public road?
- do you propose enlarging an existing private access?
- do you propose replacing an existing private access?
- do you propose sharing an existing private access?
- how many properties will the access serve?
- will the new access cross a footway?
- do you need to extend the existing footpath to join your development?
- are there underground services in the footpath or verge?

Details of the Public Road:

- is the Private Access located on a Primary or District road?
- what speed limit applies to this road/street?
- what is the assessed traffic speed near the access in mph?
- how close is the proposed access to a road junction in metres?
- are there listed structures or protected species or trees likely to affect visibility?
- is the proposed access close to a blind bend or crest in the road?

Visibility:

- what visibility distances will you be able to achieve from your access junction in metres?
  - looking left
  - looking right
- are the dimensioned visibility splays shown on the site plan?
- is the area of land within the visibility splays in your ownership or control and/or within the road boundary?
- do banks, walls or fences require setting back to provide the required visibility?
- do neighbouring properties obstruct visibility?

B.5.2 When submitting your planning application, you must show the visibility splays on a site layout plan or on a separate plan at a recognised scale, such as 1:200 or 1:500, indicating the local features, such as the road and the property boundary. You may shade the visibility splays, marked with the key distances, including the distance from the road / kerb / verge edge in the centre of the proposed entrance or driveway, and that distance of the splays in both directions.

B.5.3 Where visibility is obstructed by listed buildings, walls, or protected trees you should first consult DEFA Planning for advice.

B.5.4 You must demonstrate that you have and can maintain control over your visibility splay area. If the visibility splay falls outside of land edged in red or blue and/or the public road, intruding onto your neighbour's property you will need to discuss with your neighbour and come to an agreement to provide the visibility splay and retain it, such as

by a deed of covenant. Once provided, it will the owners/occupiers responsibility to keep visibility splays clear.

B.5.5 Where the occupiers of two adjacent properties share a driveway and wish to build a double width crossing to serve the two sites, one occupier should act on behalf of both parties.

Appendix C Parking Standards

C.1 Introduction

C.1.1 It is the intention of this document to provide simple, clear guidance and more certainty for developers on the requirements of parking provision in residential and non-residential developments.

C.1.2 A lack of adequate parking provision in residential and commercial environments can lead to overspill on to roads, streets and footways, causing issues, such as:

- access issues to properties
- increasing the risk of collisions
- creating difficult driving conditions
- blocking paths and obstructing pedestrians, especially those with reduced mobility
- obscured visibility at junctions
- congestion

C.1.3 If developers are considering deviating from the standards in this document it is important that they begin discussions at the pre-application stage of the development with the Highways Development Control Team.

C.1.4 The parking standards for each parking category are structured into three main areas:

- Parking Design Principles: This includes guidance to developers on the expected design of new parking bays including general parking (residential and non-residential), electric vehicle (EV) parking, cycle parking (long and short stay), motorcycle, parking and parking needs for those with reduced mobility
- Parking Quality Standards: This section includes the minimum required space size standards for residential and non-residential parking areas
- Parking Quantity Standards: This section includes the quantity of provision for general parking, cycle parking, motorcycle parking, EV parking and other parking at all new developments and extensions to existing developments

C.2 Cycle Parking

Design Principles

C.2.1 Providing an appropriate level of cycle parking in locations which are safe and secure and where people feel confident that they can leave their cycles, will help to encourage the uptake of cycling as a mode of transport. Conversely, providing poor quality cycle parking in poorly located areas can have an adverse impact on cycle uptake.

C.2.2 MfS highlights the importance of providing cycle parking within developments stating: "Providing enough convenient and secure cycle parking at people's homes and other locations for both residents and visitors is critical to increasing the use of cycles. In residential developments, designers should aim to make access to cycle storage at least as convenient as access to car parking".

C.2.3 To ensure that there is an adequate amount of well-designed cycle parking, this section sets out minimum parking standards for cycle parking in both residential and non-residential development as well specific design requirements. If a developer proposes to use different standards or designs for cycle parking, early contact with the Department is recommended.

C.2.4 The design principles for long-term and short-term cycle parking are set out below.

Long Stay Cycle Parking

C.2.5 Where cycles are expected to be unattended for periods in excess of 4 hours (such as for employment uses), the design principles which developers should follow include:

- long stay cycle parking should be provided in prominent locations which are under good natural surveillance and, ideally, CCTV surveillance to reduce the likelihood of vandalism and theft. Where possible, it should be provided in a secure compound within the premises
- cycle parking should be clearly signed from the public highway wherever possible
- cycle parking should be covered to be protected from all weather conditions
- cycle stands should be far enough apart from each other, and also from any wall, fence, etc. to allow users to park and lock their cycle with ease
- where cycle parking is in residential areas, it should be well lit and able to be viewed from residential dwellings
- cycle parking should be appropriately designed and located to protect the character and appearance of the area whilst fulfilling the intended purpose. In more sensitive locations a bespoke design approach will be required
- for convenience, and to encourage cycling, it may be preferable on a larger site to have clusters of cycle parking facilities rather than one central point
- for single residential properties, cycle storage can be within a garage, providing the garage meets the minimum size specified in the garage section of this document
- cycle parking for dwellings should not involve having to pass through the dwelling to access it
- where there are blocks of development including flats or where new residential dwellings do not have access to a garage, a 'Long Stay Gated Compound' should be provided or provision of cycle parking should be available within the building footprint. Access to the compound or storage area should only be provided to residents of the accommodation ideally through a pin code system

Short Stay Cycle Parking

C.2.6 Short stay parking must be close to the appropriate building entrances and closer than car parking. It must be secure, clearly visible, well signed and easily accessible. It will preferably be covered but not so as to compromise safety and security.

C.2.7 When designing short stay cycle parking, some of the design principles which developers should follow include:

- parking stands must be placed a minimum of 1.0 m apart. If any less than that, they can become awkward to use.

- parking stands must be fixed into the ground correctly
- parking stands should be accessible, convenient and sited as close as possible to the destination entrance
- there should be good natural surveillance
- parking stands should enable the cycle frame and at least one wheel to be locked (this is particularly relevant for Sheffield Stands)
- ensure that the area planned for parking is horizontal. If this is not possible then stands should be orientated at right angles to the slope to stop cycles rolling away
- ensuring that cycle parking (when in use) does not cause an obstruction to pedestrians
- for convenience, and to encourage cycling, it may be preferable on a larger site to have clusters of cycle parking facilities rather than one central point

Quality Standard

C.2.8 A Cycle Design Vehicle (CDV) of 2.3 m in length by 1.2 m in width will cover most situations. It must be used when designing facilities for cycles including all forms of cycle parking. However, additional width should be provided to allow user to place and secure their cycle at the stand.

C.2.9 Where cycle storage is provided within a standalone store or building, it must be designed for the exclusive use of cycles and maintained in perpetuity. Cycle storage areas should be conveniently located with level access and users should not have to negotiate more than one door with their cycle (with a minimum width of 1.2 m). Cycle Design Vehicle specific swept-path analysis is expected to demonstrate any proposed paths that are accessible for a CDV.

C.2.10 Where garages are not provided for single dwellings, a shed may be provided in lieu of this. For 1-2 bedroom properties, these must be a minimum of 2400 mm by 1800 mm. For larger properties, a shed of 3000 mm by 2400 mm should be provided.

C.2.11 Where cycle parking is provided to the rear or sides of a building, the access way should be a minimum of 1.5 m wide and for a length of no more than 10 m. For longer distances, a wider path is expected. Increased path widths may be required where paths adjoin buildings or boundary treatments.

C.2.12 Where rear storage is likely to be required, the access way is expected to be designed in from the beginning, thereby eliminating the need for cycles to traverse inside the property from rear to front (and vice versa). The same access way should follow the standards outlined above.

C.2.13 Cycle parking must be secure. The Isle of Man Constabulary recommend the standards contained in 'Secured by Design HOMES 2019'.

C.2.14 Secured by Design guidance documents provide a good level of advice for community safety and property security within the built environment. Compliance with that advice is a requirement where a developer of their client seeks to achieve the Secured by Design awards in respect of projects within the built environment. Unless otherwise stated by

statute or a requirement of the Planning Service for a particular area, Secured by Design guidance and advice is just that, guidance and advice.

Quantity Standard

C.2.15 Cycle parking requirement is given in Table C.1 and should be read as the minimum requirement.

C.2.16 A minimum provision of one cycle parking space per dwelling is recommended for residential developments. It is anticipated that, in the majority of cases, cycle parking can be adequately accommodated within garages, sheds or other secure storage areas, subject to sufficient internal space being provided. Details will be necessary of position and types.

Land use type	Sub-category	Short stay requirement (obvious, easily assessed and close to destination)	Long stay requirement (secure and ideally covered)
All	Parking for adapted cycles for disabled people	5% of total capacity co-located with disabled car parking	5% of total capacity co-located with disabled car parking
Retail	Small (<200 sqm)	1 per 100 sqm	1 per 100 sqm
	Medium (200-1,000 sqm)	1 per 200 sqm	1 per 200 sqm
	Large (>1,000 sqm)	1 per 250 sqm	1 per 500 sqm
Employment	Office/Finance	1 per 1000 sqm	1 per 200 sqm
	Industrial/ Warehousing	1 per 1000 sqm	1 per 500 sqm
Leisure and Institutions	Leisure centres, assembly halls, hospitals and healthcare	Greatest of: 1 per 50 sqm or 1 per 30 seats/capacity	1 per 5 employees
	Educational Institutions	—	Separate provision for staff and students. Based on Travel Plan mode share targets, minimum: Staff: 1 per 20 staff Students: 1 per 10 students
Residential	All except sheltered/elderly housing or nursing homes	—	1 per bedroom
	Sheltered/elderly housing or nursing homes	0.05 per residential unit	0.05 per bedroom
Public Transport Interchange	Standard stop	Upon own merit	—
	Major interchange	1 per 200 daily users	—

Table C.1 Cycle Parking Quantity Requirement

C.3 Electric Vehicles

Design Principles

C.3.1 The Department supports the 'modal shift' away from the private car to public transport, walking, and cycling. However, many trips will continue to be made by private car. Electric and low emission vehicles offer the possibility of making such trips more sustainable and support the Government's commitment to emission reduction. See Climate Change Isle of Man.

C.3.2 Advances in technology and reducing purchase costs are leading to electrically powered cars becoming more popular, and the Department actively supports and encourages the uptake of these vehicles.

C.3.3 The provision of Electric Vehicle charging points (EVCPs) within new development will be supported and often be expected to form part of the Travel Planning initiatives to improve air quality.

C.3.4 For the purposes of this document, an Electric Vehicle (EV) is considered as any road vehicle with a battery that is intended to be charged from mains electricity. Therefore, plug in hybrid, extended range EVs and pure electric EVs are all included under the definition of EV used in this document.

C.3.5 Currently there are three levels of charging capability:

- standard chargers are typically rated at 3 kw and can fully charge a vehicle in 6 to 8 hours and are best suited for overnight charging. This is the standard used for residential properties as they can be installed as part of the electricity supply without any additional capacity on a distribution board
- 'fast' chargers are typically rated between 7 kW and 22 kW and can fully recharge some models in 3 to 4 hours
- 'rapid' DC chargers are typically rated at 50 kW and can charge an EV to 80% charge in 30 minutes (depending on battery capacity)

C.3.6 In determining the appropriate power capability to install at a given parking space the main consideration is how long vehicles would typically be expected to park at that location. For example, charging infrastructure at places of work and retail developments would be expected to provide 'fast' charge capability, ideally at 22 kW, due to the shorter length of time for which a vehicle would typically be parked. 22 kW are three times as fast as 7 kW chargers.

C.3.7 Charge points at public parking spaces, for example at retail car parks or places of work, must be accessible to the general public and employees.

C.3.8 Management and maintenance arrangements for charge points in private car parks should be determined on a site by site basis to meet the needs of the users in question. A wide variety of options exist to control access to charge points and allocate electricity charges to individual users.

Connectivity to Local Energy Network

C.3.9 The connection to the local electricity distribution network should have sufficient capacity to enable all active EV charging points to operate simultaneously at the full power for which they are designed.

C.3.10 Where necessary, a full cabling network should be installed in the car parking area to support all active charging points.

C.3.11 Large developments with dedicated electricity sub stations should specify the substation to a sufficient capacity to fully cater for all EV charging requirements.

Quality Standard

C.3.12 EV parking spaces should be no smaller than the equivalent car parking space. However, there needs to be special consideration as they have different requirements to a standard parking bay. An EV parking bay must be of sufficient size to:

- ensure that electric vehicle charge points (EVCPs) are protected from collision
- ensure that the connecting cable can be accommodated within the bay

C.3.13 EV parking spaces should be signed and marked for 'Electric Vehicle Only' including painting the bay. It is an advantage that in ensuring that the 'Electric Vehicle Only' marking is visible in the space even when parked in.

Quantity Standard

C.3.14 It is expected that active EV parking spaces will be located in prominent positions in car parks in order to contribute to raising the profile of EVs. In public parking areas it would generally be expected that parking spaces with active charging provision are dedicated to EVs, with appropriate signage in place to deter the space being taken by other vehicles. However, in a large car park with multiple charge points it could be reasonable that only a proportion of active parking spaces are dedicated to EVs at the outset and that this is reviewed regularly through a Travel Plan or equivalent process.

C.3.15 It is important that the developer plan for the increased adoption of EVs. This is particularly important because passenger cars are often the only practical choice for residents living in some areas of the Island, particularly rural areas given that other sustainable modes of travel such as cycling and walking are difficult to adopt.

C.3.16 Residential parking (overnight) is likely to be the most common way of charging an EV and most residential properties with off-street parking are able to simply install an EVCP using a 3-pin plug as long as they have the necessary infrastructure (wiring) to do so (see passive charging infrastructure below). However, whilst those with off-street parking are able to easily charge their vehicles as long as the passive infrastructure is accessible, those without access to off-street parking, such as those in flats, require an amount of active and passive provision in new development as is set out in C.3.22.

C.3.17 EVCP standards are also set for non-residential development including charging at employment areas and charging in public spaces. Whilst residential charging should be the most common way of charging EVs, other means of charging such as charging at

work, whilst out shopping or at the cinema etc. still have their part to play in helping to top up charge and reduce range anxiety amongst EV owners. All schemes will be expected to provide EVCP provision unless they can demonstrate through discussion with the Department that this would compromise scheme viability.

EV Charging Point Provision

C.3.18 Equipment installation should accord with the Institution of Engineering and Technology (IET) Code of Practice for Electric Vehicle Charging Equipment. See: https://electrical.theiet.org/guidance-codes-of-practice/publications-by-category/electric-vehicles/.

C.3.19 Provision of charge points should be a combination of both active and passive charge points depending on the type of development. Details will be necessary of charger position and type.

C.3.20 Active provision is defined as an actual socket connected to the electrical supply system that vehicle owners can plug their vehicle into.

C.3.21 Passive provision is defined as the network of cables and power supply necessary so that at a future date a socket can be added easily.

C.3.22 In residential areas passive provision could be achieved by ensuring fuse boxes are properly located and include a wired circuit in a garage or at a location which is near to the driveway. This could be conditioned as part of the planning approval. For non-residential areas routing an empty cable conduit under the parking bays, ensuring this conduit connects to the mains supply so that at a future date above ground charging points can be installed with minimal disruption. In particular:

- all new dwellings that are to have a private drive or garage should have a passive charge point provision
- for dwellings served by parking courts, a passive charging point should be provided for each property's allocated parking space
- for high density developments with communal parking, 80% of bays should have passive charge point provision, 20% of bays should have active charge point provision

C.4 Motorcycle Parking

Design Principles

C.4.1 Motorcycle parking should be designed so that riders can adequately secure their vehicle. At developments where, long stay parking is likely, such as employment sites, motorcycle parking should be covered.

C.4.2 Motorcycle spaces should be provided in well-lit open areas where casual observance by passers-by may increase security. Surfaces on which motorcycles are to park should be flat and level and constructed with concrete to avoid surface failure from puncture by stands.

C.4.3 Further guidance can be found in Institute of Highway Engineers Guidelines for Motorcycling: http://www.motorcycleguidelines.org.uk/

Quality Standard

C.4.4 The basic dimensions of motorcycle parking spaces should be 1.4 m wide by 2.4 m long and provided with a secure anchor point at 600-750 mm from ground level onto which a wheel can be chained.

Quantity Standard

C.4.5 The number and location of motorcycle parking spaces proposed will vary with the nature of the development and whether likely use of the spaces will be for short or long stays. As a broad guide, motorcycle parking at a non-residential development should be provided for in the range of 5 10% of the total car parking (i.e. for a 100-space car park, between 5 and 10 motorcycle parking spaces should be provided). The developer should provide reasoned justification for the proposed level of provision within the Traffic Assessment or Traffic Statement, or as part of the planning application submission.

C.5 Parking for Disabled Users

Design Principles

C.5.1 Catering for the needs of people with disabilities is an important consideration in the design of new parking, whether in relation to residential or other forms of development. Hence it is important that disabled parking spaces are located where those with mobility impairments will find them most useful.

C.5.2 Disabled parking bays should be well lit, signed and marked with lines and the International Symbol for Access with the safety zone/aisle between each bay marked with hatching. Dropped kerbs should be provided where necessary and pedestrian routes to and from car parks should be free from steps, bollards and steep slopes and ideally located within 50 metres of the buildings entrance.

C.5.3 Guidance on the design and location of parking for mobility impaired people can be found in the UK Department for Transport (DfT) Traffic Advisory Leaflet (TAL) 5/95 'Parking for Disabled People' and the UK DfT report 'Inclusive Mobility'.

Quality Standard

C.5.4 On-street parking parallel to the kerb: within the marked parking space, a clear rectangular space should be provided which is a minimum of 6.6 m long by 3.6 m wide. This will provide sufficient room for the car door to be fully opened, enabling easier access.

C.5.5 It is recommended that kerbside parking bays should be sited where road gradient and camber are reasonably level, e.g. 1:50. A road with a steep camber causes difficulties for wheelchair users who have a side lift in their vehicle.

C.5.6 Where designated bays on-street are at a different level from the adjacent footway, dropped kerbs should be provided for wheelchair users, with appropriate tactile marking.

C.5.7 Off-street parking: bays should be a minimum of 4.8 m long by 2.4 m wide with additional space:

- where bays are parallel to the access aisle and access is available from the side an extra length of at least 1.8 m
- where bays are perpendicular to the access aisle, an additional width of at least 1.2 m along each side. Where bays are adjacent the same 1.2 m space can serve both sides. There should also be a 1.2 m wide safety zone at the vehicle access end of each bay to provide boot access or for use of a rear hoist

C.5.8 For buildings where it is necessary to make provision for a mini bus, for example a sports centre or care home, the minimum dimensions of the parking bay should be 6.0 m wide by 11.0 m long, to allow for the operation of a ramp to the rear or side of the mini bus with swept path analysis for turning

Quantity Standard

C.5.9 In order to meet the needs of people with disabilities and those with young children, 10% of all car parking spaces, including visitors parking within a residential development should be provided to mobility standards. No less than half of these spaces should be designated as being for the exclusive use of disabled persons.

C.5.10 On any development where fewer than 10 spaces are to be provided, at least one of the car parking spaces should be to mobility standard. A rounding up basis should operate for the provision of these spaces e.g. provision of 15-20 spaces should result in at least two of these being to mobility standard.

C.6 Car Parking – Residential On-street

Design Principles

C.6.1 On-street parking within the development can be formal or informal, one or both sides and parallel, echelon or at right angles, according to the overall design concept of the development

C.6.2 The best examples of on-street parking have three key elements:

- the way the blocks/bays are arranged
- the relationship between the buildings and the street
- the width of the street

C.6.3 Junctions and bends restrict the scope for on-street parking. The width of the street is critical in maximising parking. In traditional arrangements with segregation of vehicles and pedestrians, carriageway widths of 4.8 or 5.5 m do not meet residents' preferences for frontage parking on both sides of a road and often result in parking half on the footway and half on the road, causing danger and inconvenience to other users and problems providing bus services.

C.6.4 Layout designs must demonstrate that street widths are sufficient to accommodate on-street parking within the design.

C.6.5 Designing with emergency access in mind will also reduce problems associated with deliveries, removals and waste collection. Similarly, inclusive access can be undermined when people park on or across footways, and in other places that were primarily designed for non-vehicular movement. Vulnerable street users in particular often feel unsafe when this occurs. Parking Audits that make use of evidence from successful and unsuccessful schemes will help to reduce the likelihood of problems. Furthermore, they will reduce the possibility of additional maintenance costs arising from damage caused by inappropriate parking.

C.6.6 Bus routes, especially those that will be introduced after substantial occupation of frontage properties, must be safeguarded by positive design and/or enforceable waiting restrictions. Furthermore, they must be secured ahead of occupation such that residents know about such provision, rather than feeling at liberty to oppose their introduction. For example, the bus stops can be put in prior to occupation.

Traditional Streets

C.6.7 The design of traditional streets incorporating parallel parking may be possible within developments. Parking onto the footway impairs pedestrian passage and is a failure of design. Assuming parallel parking spaces 2.0 m x 6.0 m on both sides, the carriageway should be a minimum of 6.75 m wide where the central area (min 2.75 m over short sections) only needs to accommodate vehicle movement in one direction. This arrangement may require allocated space to allow vehicles to pass depending on its length, or the street designated one-way. Where two-way movement is required the central area should be a minimum carriageway width of 4.8 m, resulting in a minimum carriageway width of 8.8 m. Wider central areas will be required where larger vehicles are frequent or on bus routes. Payment of a Commuted Sum for future maintenance will be required for the additional width, if adopted by the Department.

C.6.8 There should be sufficient breaks in the parking to allow pedestrian crossing points, tree planting or bus stops as required. Kerb heights of 120 mm and restricted dropped kerbs discourage footway parking.

On-Street Parking Lay-bys

C.6.9 Where the roads widths required to enable traditional street parking cannot be achieved within the development it may be possible to fully integrate into the design, carefully located lay-bys, to minimise road and footway obstruction that might otherwise take place if no on-street parking were provided. These should be unrelated in location to neighbouring dwellings so as to remain available for any visitors.

C.6.10 The design of any parking must try and minimise the occurrence of indiscriminate on-street parking as this will not only obstruct the road and footways it will also interfere with sight lines and manoeuvring requirements. It is also important that the requirements of emergency and other service vehicles are catered for together with the needs of the disabled.

C.6.11 Bus routes within residential developments will require a minimum clear passage of 6.0 m (ideally 6.75 m) which must be available where on-street parking is proposed. Bus stops should be marked with pole/flag and road markings to ensure it is available and buses can pull up parallel to the kerb.

Shared Surface

C.6.12 Shared surface roads can offer opportunities for parking to be integrated within the street. However, without careful design, shared surfaces can lead to indiscriminate parking in residential developments, blocking of the footway strip and the narrowing of the road which hampers access by service and emergency vehicles. Shared surfaces should therefore only be used in appropriate circumstances and at low densities where the minimum on plot car parking and visitor car parking has been provided. On-street car parking should be discouraged in shared surface streets through good design, but where it is likely to take place the service strips should be paved rather than grassed.

Position and Lighting

C.6.13 Car parking areas should always be located in such positions that would encourage their use and have a positive impact on the streetscape. They should be designed with adequate lighting and other features, so that people feel comfortable using them, especially after dark. Position and types of lighting should be appropriate for the setting and context of the development proposal.

Unallocated Parking

C.6.14 In new developments, on-street parking 'visitor' bays can be incorporated into the overall width of the street i.e. the adopted highway, demarcated by paving, planting and trees. The use of delineated parking bays using different materials and texture of road surfacing can add to the overall design of the new housing.

C.6.15 Allocated parking cannot be provided within the adopted highway but unallocated spaces can be created within the highway for use by any highway user, including residents.

C.6.16 Where a residential development parking layout is incorporating on-street parking, the street must be wide enough to accommodate parking without compromising access by emergency/waste collection vehicles and must not impair visibility at junctions or on bends. The street must be wide enough to accommodate two lanes of traffic and the on-street parking space/layby.

C.6.17 On-street spaces upon public highways are always unallocated. However, they can be reserved for a particular purpose such as disabled persons or residents' parking through the making of relevant Traffic Regulation Orders. The costs associated with making such Orders will need to be funded by the developer.

C.6.18 Parking bays adjacent to the adoptable highway are the only type of parking area considered by the Department as adoptable. The number of bays will be dependent upon the overall parking requirements and layout for the development and the developer will need to provide reasoned justification to the Department for its proposed provision. The bays should be designed to fit well within the development layout, and consideration

should be given to the sub division of parking bays into smaller clusters using build outs with hard or soft landscaping.

Quality Standards

C.6.19 Residential on-street parking bays should have the following dimensions:

- when parallel and adjacent to a footway, they should be 6.0 m long and 2.0 m wide
- when parallel and adjacent to a boundary structure set back at least 1.8 m, they should be 6.0 m long and 2.0 m wide
- when parallel but adjacent to a boundary structure set back less than 1.8 m, they should be 6.0 m long and 3.2 m wide
- when at right angles to and contiguous with a carriageway they should be at least 6.0 m long and 2.6 m wide
- larger parking spaces should be provided for use by disabled people (see C.5 Parking for Disabled Users)

C.6.20 For bays at right angles to the carriageway there should be 6.0 m of vehicular use road surface in front of the parking space to allow for access movement. An additional 800 mm paved strip should be added to the width of any footway that abuts the back edge of a parking space, to allow for vehicular overhang.

Quantity Standard

Visitor Parking

C.6.21 Allowance should be made for visitor car parking. Generally, unallocated parking, including on-street provision, will be the best way to cater for visitor parking. A 0.25 space per dwelling allowance should be made of visitor parking. A lower value may be acceptable where a significant proportion of the total parking stock for an area is unallocated, or in locations such as town centres with good accessibility by non-car modes and where on-street parking is controlled. Generally unallocated visitor parking should be provided, where possible, in a clearly separate group to avoid the potential for residents 'adopting' spaces near to their properties.

C.7 Car Parking – Residential Off-Street

Design Principles

C.7.1 The suitability of the proposed residential car parking provision in terms of its design, size and number of spaces will be assessed by the Department as part of its response to a planning application. For an application to be acceptable to the Department, it should meet general design principles as well as meet the minimum size requirements set out in section on residential car parking size standards.

C.7.2 The general design principles which should be followed when considering the design and location of car parking are:

- access points to and from residential driveways and communal parking areas should be designed such that safe inter-visibility is afforded between vehicle drivers and pedestrians to allow greater awareness and reduce the risk of accidents
- vehicular driveways and car park spaces within communal parking must be able to accommodate a large car with wing mirrors extended as well as additional space to allow a driver and a passenger to open a door to the vehicle (these size standards can be seen Table C.2)
- the driveway or communal car parking surface used should ideally be permeable (or porous) to allow for the drainage of water such as permeable concrete block paving or porous asphalt
- new residential development will be expected to provide external charging points for electric vehicles.

Communal Parking

C.7.3 Allocated parking should generally be provided on plot wherever possible as this is the most convenient and secure arrangement and is, therefore, most likely to be used by residents.

Parking Squares

C.7.4 Squares and other spaces are especially good for parking in the wider context of creating a sense of place.

C.7.5 These are pedestrian/vehicle shared surfaces, often consisting of a junction of routes. A parking square should be directly fronted by buildings and be sited within 20 metres of the dwelling which they serve and linked to them by a safe and attractive route.

C.7.6 Car parking can be provided in those areas which are not occupied by the carriageway or footway. Parking requirements of the frontage dwellings can be accommodated within the square, with the remaining requirement between or behind the dwellings. The siting of trees and street furniture should be used to informally manage parking.

C.7.7 The parking area of squares will be subject to payment of a Commuted Sum for future maintenance if adopted by the Department. Private parking areas will not be adopted by the Department.

Rear Parking

C.7.8 In the move away from car focussed housing layouts there has been a focus on the use of rear parking courts. However, experience and research demonstrate that this approach has significant flaws. This can lead to inactive frontages, discouraging a sustainable movement hierarchy, and create safety and security problems both on-street and within the courtyard.

C.7.9 'Car parking: What Works Where' states: "Do not park in the back of the block until on-street and frontage parking permutations have been exhausted. Use of the mews or rear court should support on-street provision, not replace it."

C.7.10 Where rear parking is provided as a last resort, the following principles of place making must still be applied.

Parking Courts

C.7.11 Spaces within parking courts are too often not used and are often perceived as dangerous and insecure. Where parking courts are unavoidable they should be for small groups of dwellings and designed carefully, with connections to adjoining streets and places and be overlooked with direct access to/from the surrounding dwellings and have adequate lighting (dusk to dawn energy efficient lighting to appropriate levels that minimise light pollution). Bollard-type lighting is not usually recommended due to experience with maintenance, vandalism and inefficient performance. Boundary fencing should be designed to allow observation from dwellings over the parking spaces. They should be located where the demand for parking is and not located in inaccessible areas at the extremity of the development. Wheelie bin storage should be accessible and convenient enough to discourage bins being left in parking spaces.

C.7.12 Courtyards should normally accommodate a maximum of 10 spaces with sufficient space provided for tree and shrub planting to reduce noise disturbance. Designs should avoid leaving spaces likely to be used as play areas in the middle of courtyard parking places in the interests of the safety of those using such spaces and to reduce the likelihood of damage to parked cars. Private parking areas will not be adopted by the Department.

Mews Courts

C.7.13 Where rear parking is unavoidable a Mews form can be used to accommodate the vehicles. Car ports and/or garages can be provided under dwellings. Critical to the success of these arrangements is the quality of the amenity for residents, both internal and external.

Rear Gardens

C.7.14 The option of providing parking in rear gardens will not normally be acceptable due to significant disadvantages related to the arrivals and departures of residents and maintenance of motor vehicles which may disturb the quiet environment of private gardens.

C.7.15 Where such a provision may occasionally be acceptable it should be provided in addition to specified garden space.

Underground, Semi-basement and Undercroft Parking

C.7.16 For developments of higher dwelling density, it is unlikely that sufficient space for car parking can be provided by in curtilage and garage provision (without a detrimental effect on the quality of the development). Underground, semi basement or undercroft parking should be provided wherever possible.

C.7.17 Locating car parking either under buildings or above or below ground level can significantly improve the quality of a development.

C.7.18 The means of access to below ground level car parking must minimise impact upon the townscape.

C.7.19 Semi basement parking has advantages over underground parking as natural ventilation may be possible and by raising the building levels by half a storey, the residents at the lowest floor have a greater degree of privacy.

C.7.20 Designing undercroft parking requires careful design to ensure the design achieves an active frontage, such as accommodation and other uses facing the street.

C.7.21 Flooding is an important consideration when planning development. Whilst this is a planning issue, in terms of parking guidance, in a flood risk area underground parking is not advised. A detailed Flood Risk Assessment is required where basements or lowered ground levels are proposed, and for developments in areas shown on surface water flood maps.

C.7.22 If undercroft parking is considered in residential developments to elevate the living area then sustainable drainage systems (SUDS) and pollutant filters should be designed into parking areas to help address flooding and water quality. Information regarding where vehicles should be moved to and how warning is given in the event of a flood emergency should also be considered.

C.7.23 Design water levels in SUDS would need to be below floor level, taken to mean below the basement floor level. SUDS would therefore need to be very deep and therefore very large if they are open with gentle sloping sides. The impact of new car parking below ground level on sites of archaeological interest, including scheduled monuments, must be considered

Surfacing for Parking Areas

C.7.24 Parking areas should be surfaced with a high quality and robust, solid, bound material, such as black asphalt, resin bound gravel or block paving.

C.7.25 All surfacing should be of permeable construction, or drained to a soakaway within the site. New surfacing should prevent any surface water run off onto the public highway (including into road side ditches) or watercourses.

C.7.26 A consolidated and bound surface material suitable to bear weight and movement of size of vehicle expected to be using it can be used in conservation areas and urban extensions alike.

C.7.27 Loose material, such as gravel, can spill onto the highway, which can be a maintenance liability, unsightly and cause a hazard for road users. Where gravel is proposed there should be at least 5.0 m of a bound surface (asphalt or block paving) between the gravel and the highway boundary. Honeycomb meshes also help bind the gravel and hold it in place.

C.7.28 Concrete or plastic cellular grass pavers (sometimes known as ‘grasscrete’) are systems which allow grass to grow whilst reinforcing the earth to prevent compaction or churning from vehicle tyres. They offer a permeable surface as well as a soft natural green appearance, preventing the need for large expanses of orthodox hardstanding. These systems can be used for some secondary parking areas and accesses. They can provide

additional private parking without the need to hard pave entire front gardens. They are also an ideal surface for over spill parking areas.

C.7.29 If making new access into the garden across the footway or verge then it may be necessary for the kerb to be dropped and vehicular crossing of footway/ verge provided. This should be discussed with Highways Development Control team.

Quality Standards

C.7.30 Car buyers have been favouring larger SUVs and MPVs over recent years, but parking spaces have not increased in dimension; hence the Department recommends that the minimum size of car parking spaces should be as shown in Table C.2.

	Minimum Length	Minimum Width	Minimum Width if drive way provides pedestrian access
Driveway parking space	5.5 m	2.6 m	3.4 m
Driveway parking space adjacent to boundary	5.5 m	3.2 m	3.4 m
Driveway parking space in front of garage	6.0 m	2.6 m	3.4 m
Driveway parking space in front of garage adjacent to boundary	6.0 m	3.2 m	3.4 m
Driveway parking space in front of garage with entrance gates	7.0 m	2.6m	3.4 m
Driveway parking space in front of garage adjacent to boundary with entrance gates	7.0 m	3.2 m	3.4 m

Table C.2 Minimum Bay Size

Driveways

C.7.31 A simple driveway parking space without an associated turning area should be laid out so as to:

- enable any entrance gates to be opened inwards whilst a car is parked on the hard standing to prevent obstruction of the adjacent highway
  - the minimum recommended distance between the front of a garage and entrance gates is 7.0 m
- enable any garage door in front of the hard standing to be opened and/or a car to be parked without the car projecting on to the highway

- the minimum recommended distance between the front of a garage and highway is 6.0 m

- enable pedestrian movement past the car if the driveway provides the sole means of pedestrian access to the dwelling
  - if the driveway is to be used as both vehicular and pedestrian access to the dwelling, the parking area should have a minimum width of 3.4 m

Communal Parking Court

C.7.32 Communal parking courts should have an aisle width of 6.0 m; plus 3.0 m reversing area at the end of the aisle.

Gradient

C.7.33 The gradient of a private access must be in accordance with the requirements of Section B.4 Access Layouts where it adjoins the public highway.

Garages

C.7.34 Garages located on plots for individual properties should be sited so that:

- vehicles can park in front of the garage without obstructing the highway (including the footway). All garages should be set sufficiently far back from the highway boundary so that a vehicle can be parked in front of the garage (whilst garage doors are opened/closed) without causing any obstruction to the highway. All garages should therefore be set at least 6.0 m from the highway boundary
- the garage doors can be opened without the car being moved

C.7.35 Where garages are provided they should be constructed to the internal plan dimensions in Table C.3.

[7]

	Length	Width	Min Door Width
Standard Single	6.0 m	3.0 m	2.4 m
For use by mobility impaired	6.0 m	3.3 m	2.8 m
Standard Double	6.0 m	6.0 m	4.2 m

Table C.3 Garage Internal Dimensions

Quantity Standards

C.7.36 Provision of adequate parking within residential areas is a key aspect of any development proposal.

C.7.37 Minimum standards for the number of parking spaces required for new dwellings are set out in detail in Appendix 7 of the Isle of Man Strategic Plan.

Garages

C.7.38 Research indicates that approximately 75% of garages are not used to store vehicles. Modern car construction and security means that vehicles can usually be left outside all year round without particular risk of theft or damage from the elements. Garages also are often too small and/or are perceived as too inconvenient to make them attractive places for regular day to day parking. As a result, garages are most often used for purposes other than car parking (e.g. storage), or are converted to living accommodation. Subsequently, any additional household cars are parked on the street. For this reason, the Department when calculating parking provision will not include the garage unless:

- use of a proposed garage can be conditioned to be retained for the storage of a motor car or
- for larger dwellings (4 bed and above) where a double garage (not single) could be counted as the third allocated parking space

Garage Conversions

C.7.39 The Department will usually support proposals for garage conversions provided there is space for at least 2 cars to park clear of the highway following the loss of the garage. Any new hard standing should ideally be of a permeable surface.

C.7.40 Applications requiring planning permission will be expected to demonstrate the provision of substitute parking to offset the loss of the garage where necessary.

C.7.41 If a dwelling has no separate parking for cycles, this may affect the decision as to whether or not the garage should count towards car parking provision. Consideration should also be given to the installation of an electricity supply suitable for use for charging electric vehicles.

C.7.42 Proposed one plot 'in-fill' developments within an existing built-up area may not be able to provide adequate off road parking within the site. However, where those small developments are otherwise acceptable and are able to demonstrate that the use of informal on-street parking spaces will not cause detriment to highway safety or the flow of traffic, they may be considered acceptable by the Department.

Increased Parking Provision for Extended Homes

C.7.43 Proposals for household extensions which increase the number of bedrooms within a property will need to also provide additional parking within the plot where the increase in size materially increases the likely parking demand above the space currently available.

C.7.44 Where existing residential properties are being extended there may also be a requirement for increased provision. Based on the 'Residential Car Parking Research', the amount of rooms a dwelling has directly correlates with levels of car ownership. Therefore, it is necessary to increase parking provision in line with the standards above to ensure that there is sufficient space for vehicles to park without causing obstruction from parking on the street and on the footway.

Houses in Multiple Occupancy (HiMO)

C.7.45 Where houses have been subdivided for the individual use of three or more people it is considered to be a house in multiple occupancy. As these dwellings are often on established residential streets, they can have a detrimental impact on highway safety and the flow of traffic (including access for waste collection and emergency vehicles). HiMO should provide on plot parking at the ratio of 1 parking space per bedroom.

C.7.46 Where a proposal provides less than 1 on plot parking space per bedroom, the applicant may need to provide an up to date parking survey of the surrounding streets. The methodology of the parking beat survey must be agreed with the Department before it is undertaken.

Running a Business from Home

C.7.47 Where proposals are considered to require planning permission, the application will need to demonstrate that they will not result in significant detriment to highway safety or the free flow of traffic. Proposals should therefore demonstrate that the continuing residential parking needs of the property are maintained, as well as providing for the new commercial use in accordance with the standards in Appendix 7 of the Isle of Man Strategic Plan.

C.8 Car Parking Non-Residential

Design Principles

C.8.1 The suitability of the proposed parking area in terms of its design, location, layout and number of spaces will be assessed as part of the planning application. For an application to be acceptable to the Department it must meet general design principles as well as meet the minimum size requirements set out in C.8.3.

C.8.2 The general design principles which should be followed when considering the design and location of car parking are:

- ensuring the safety of all users including people walking in the parking area either to or from their vehicles. In larger car parks where space is designed in rows or blocks consideration must be given to drivers, as pedestrians, or pedestrian visitors and how they walk through the car park to their destination. Providing pedestrian facilities on desire lines with clear guidance for pedestrians may be required. This may be in the form of signed pedestrian walkways through blocks of parking at regular spacing with zebra crossing provisions and tactile paving at access roads. Consideration should also be given to cyclists and how they access facilities through parking areas and the potential requirement for shared facilities with pedestrians or where possible segregated routes
- access points to and from and also within the car park development should be designed such that safe inter-visibility is afforded between vehicle drivers and pedestrians to allow greater awareness and reduce the risk of accidents

- car parking should be designed with security in mind and parking areas should be visible from adjoining buildings and ideally located where people enter the buildings
- using permeable surfaces and incorporating sustainable urban drainage systems within the design of parking areas wherever possible
- all developments must be designed with usable parking space providing adequate length and width to manoeuvre and park without conflict with other vehicles (the minimum size standards are provided in C.8.3)
- provide convenient access for all users whilst prioritising the needs of pedestrians, cyclists, public transport users, people with a range of disabilities and reduced mobility as well as emergency and service vehicles

Quality Standard

Car Parks – Parking Bay Dimensions

C.8.3 The Department recommends that standard parking bays in car parks should be a minimum of 5.0 m long by 2.6 m wide to accommodate modern larger SUVs and MPVs.

C.8.4 The parking bay size will facilitate easier parking and faster parking for all types of passenger vehicles, therefore reducing the likelihood of overspill parking on to the adjacent highway.

Quantity Standard

C.8.5 Car parking standards for non-residential development can be found in Appendix 7 of the Isle of Man Strategic Plan.

C.8.6 Parking quantity standard for the following categories; cycle, motorcycle, electric vehicle charge points, disability spaces, coach and HGVs can be found in the appropriate section of this chapter.

Taxi Provision

C.8.7 The Department supports the provision of taxi ranks at public transport interchanges and other sites, such as hotels, hospitals and health facilities, large food, retail and residential block developments.

C.8.8 Taxi ranks should be positioned as close as possible to the buildings main entrance/exit and include a shelter where appropriate.

C.9 Coach Parking

Design Principles

C.9.1 Some types of development, such as schools and colleges, sports facilities and stadia, and tourist attractions, will require dedicated coach parking to be provided. The Department will not specify standards for the provision of coach parking, but will review requirements on a case by case basis. Early discussion between the developer and the Department is

recommended to discuss the methodology to be used to identify the appropriate coach parking requirement.

C.9.2 Where, due to limitations of the site, coach parking cannot be provided at the development itself, then suitable, safe and convenient drop off and pick up points will be required, and coach parking provided at an off-site location. Where this off-site location is not within the developer's control, some financial contribution may be required to secure the provision and operation of the coach parking facilities.

C.9.3 Developments likely to generate coach traffic, such as sports venues, public transport interchanges, schools and tourist attractions, should provide appropriate off-street parking facilities for the stopping, setting down and picking up of passengers, as well as turning facilities.

Quality Standard

C.9.4 Bay size 15 x0 m to meet legal maximum dimensions for non-articulated coaches allow safe manoeuvres, opening of doors, side and rear luggage lockers, safe pedestrian movements, extra space at sides where wheelchair bound and semi-ambulant passengers.

C.9.5 All coaches require to make left and right turns within two circles, inner of 5.3 m and outer 12.0 m radius.

Quantity Standard

C.9.6 The onus will be on the developer to demonstrate that the level and layout of the provision proposed is appropriate.

C.10 Commercial Parking (HGVs & LGVs)

Design Principles

C.10.1 Changes to driver regulations in recent years have placed a greater emphasis on the provision of suitable lorry parking facilities. At commercial developments, as well as designing for the access and manoeuvring of service vehicles, it may be that additional provision is required for lorries parking for a period of time whilst a driver is, for example, on a rest break.

C.10.2 Increasingly, lorry parking takes place on industrial access roads or in lay-bys. To ensure that it does not take place in environmentally unsuitable locations, developments that generate trips by HGVs must provide adequate lorry parking as well as HGV loading and unloading bays/areas.

C.10.3 On industrial and warehousing/distribution developments, appropriate provision should be made for HGV parking as required for the specific operation of the site. Provision should be assessed on a site by site basis, considering the proposed operations at the site and the space required.

C.10.4 For this reason, commercial vehicle parking spaces should be designed in relation to the proposed development. All proposals should demonstrate that the parking design meets the following criteria:

- will not conflict with other site requirements, e.g. landscaping, pedestrian access
- will not obstruct or impinge on the highway
- facilities should have a safe access from the highway
- the construction of the lorry parking area should be capable of taking the axle, steering and braking loads
- the parking area must be of a sufficient size and shape to minimise vehicle manoeuvring
- the parking area should be located so as to minimise noise and other nuisance and hazards to neighbouring development
- there must be sufficient capacity to cater for maximum demand generated by the development, with no overspill parking onto the adjacent highway
- drainage systems should be designed so as to minimise the risk of pollutants entering the highway

Quality Standard

C.10.5 Turning and manoeuvring areas for Heavy Goods Vehicles (HGVs) and Large Goods Vehicles (LGVs) should meet the minimum requirements specified by the Department.

C.10.6 Dimensions for commercial vehicle parking spaces vary depending on the type of vehicle. Typical parking space dimensions are shown in Table C.4.

	Minimum Length	Minimum Width
Car	5.0 m	2.6 m
Van	7.5 m	3.5 m
HGV Articulated	17.0 m	3.5 m
HGV Rigid	12.0 m	3.5 m

Table C.4 Commercial Vehicle Parking Space Dimensions

Quantity Standard

C.10.7 The Department will not set prescribed standards for lorry parking provision, but will expect developers to produce a reasoned justification for their proposed provision based on the factors listed above.

C.10.8 HGV movements generally relate to the retail uses, with regular deliveries, particularly to supermarkets. Proposals for developments that will receive deliveries via a HGV must ensure there is sufficient parking space for all the HGVs that are likely to be on site at any one point in time. It will not be acceptable for HGVs to be forced to temporarily park on the local road network (outside of a designated bay) due to insufficient parking on site.

C.11 Petrol Stations with Retail Provision

Design Principles

C.11.1 Where retail provision (often operating akin to a mini supermarket) is provided alongside a petrol station, parking challenges can commonly be experienced. This is often caused by customers who have filled up at the petrol station taking considerable time to shop and pay, whilst leaving their vehicle at the pump. Customers are unsure whether to move the vehicle to the retail parking area, having filled up with fuel. Equally, customers making a quick stop to the retail provision often park for ease and speed in non-designated spaces which prevent all petrol pump spaces being used immediately (i.e. they block vehicles in at pumps, thus leaving front pump spaces empty until the space behind has been vacated). Therefore, at peak times the parking provision will need to be well managed to avoid queuing on the local road network and causing safety concerns for passing traffic and pedestrians.

C.11.2 Where there is retail provision alongside a petrol station, consideration must be given to the provision of easily accessible additional parking for retail spaces along with signage promoting its use. It is important that the parking spaces for the retail provision are easily accessible and are preferably provided as close to the shop entrance as possible. Signage making it clear those spaces at the pumps can be vacated after fuelling (if supported by the operator) and requiring those using the retail provision only to park in the designed retail spaces is encouraged. Signage and road marking to prevent parking which results in blocking vehicles at pump spaces is required.

Quality Standard

C.11.3 The onus will be on the developer to demonstrate that the level and layout of the provision proposed is appropriate.

Quantity Standard

C.11.4 The onus will be on the developer to demonstrate that the level and layout of the provision proposed is appropriate.

Appendix D RSA Checklist

Type of scheme	Example	Safety Self Cert	Road Safety Review			Road Safety Audit				
			Stage 1*	Stage 2	Stage 3	Feasi-bility	Stage 1	Stage 2	Stage 3	Stage 4
New major roads	New bypass or major road link					✓	✓	✓	✓	✓
New minor roads	New individual road servicing a new development						✓	✓	✓	
New major junctions	New spine road for a development at intersection with existing road						✓	✓	✓	
New minor Junctions	New access road for cul-de-sac from minor road						✓	✓	✓	
Very extensive physical changes to horizontal or vertical alignment	Realignment of significant length of road						✓	✓	✓	
More extensive physical changes to horizontal or vertical alignment	Traffic calmed area, bend realignment, right turn lane with pedestrian refuges							✓	✓	
New traffic signals	New signalised junction, new signalised crossing, railway crossing						✓	✓	✓	
Zebra Crossing	New zebra crossing							✓	✓	
Extensive signing and lining	Route assessment, new footway layout, on-street parking layouts, maintenance schemes with renewed signing and lining			✓	✓					
Extensive roadworks	3 month duration lane closures and two-way lights, with a number of roadwork phases on a major road			✓	✓					
Minor roadworks	Week long lane closure and tidal flow on a minor 2 way road	✓								
Minor physical changes to horizontal or vertical alignment	Right turn lane with no pedestrian refuges, kerb build outs, radius alteration at junction			✓	✓					
Amendments to minor access to highway	Individual driveway modifications. Introduction of dropped kerbs on their own are examined on a case by case basis, many may only require highway inspector approval			✓						
Minor signs and lines	Warning signs and lining at intersection	✓								
Notes	*Stage 1 Road Safety Reviews are predominantly used only where schemes that require a road safety review are to be submitted as part of a planning application. In these cases a Stage 1 or combined Stage 1 and 2 Review is required.									

Table D.1 RSA Checklist

Appendix E Accessibility Audit

Printable checklists follow for:

- Accessibility for Walking
- Accessibility for Cycling
- Accessibility for Public Transport
- Accessibility by Vehicle and Parking

Accessibility for Walking Checklist		
Access Diagram		**Complies**
	Has a diagram been submitted which shows how people move to and through the development and how this links to the surrounding roads, footpaths and sight lines?	Yes/No
Access on Foot		**Complies**
Safety	Is there safe pedestrian access to and within the site, and for pedestrians passing the site (2 m minimum width footway on both sides of the road)? If no, application must address safe pedestrian access.	Yes/No
Location	For residential development: is it within 800 m of a district or local centre? Or for non-residential development: is the density of local housing (i.e. within 800 m) more than 50 houses per hectare?	Yes/No
Internal Layout	Does circulation and access inside the site reflect direct, safe and easy to use pedestrian routes for all, with priority given to pedestrians when they have to cross roads and cycle routes?	Yes/No
External Layout	Have all barriers to pedestrian access between site and local facilities been addressed i.e. dropped kerbs provided at crossing points or on desire lines; footway is at least 2 m wide; formal crossings provided where there is heavy traffic; no security concerns (e.g. due to absence of suitable lighting).	Yes/No
Links to Network	Are there links to the walking route network? If answer is No, please provide reasons why not.	Yes/No
Does development comply with all above criteria?		Yes/No
Comments or Action Required to Comply		

Accessibility for Cycling Checklist		
Access by Cycle		**Complies**
Safety	Is the development safe for cyclists turning into or out of the site or at road junctions within 400 m of the site? (e.g. no dangerous right turns for cyclists due to the level of traffic).	Yes/No
Cycle Parking	Does the development meet cycle parking standards in a secure location with natural surveillance or where appropriate contribute to communal cycle parking facilities?	Yes/No
Location	For residential development: is it within 1 km of a district or local centre? Or for non-residential development: is the density of local housing (i.e. within 1 km) more than 50 houses per hectare?	Yes/No
Internal Layout	Does circulation and access inside the site reflect direct and safe cycle routes, with priority given to cyclists where they meet motor vehicles?	Yes/No
External Access	Is the development within 400 m of an existing or proposed cycle route and/or is it proposed to create a link to a cycle route, or develop a route?	Yes/No
Facilities for Cyclists	If the development is commercial, does it include shower facilities and lockers for cyclists?	Yes/No
Does development comply with all above criteria?		Yes/No
Comments or Action Required to Comply:		

Accessibility for Public Transport Checklist		
Access by Public Transport		**Complies**
Location and access to public transport	Is the site within a 400 m safe and convenient walking distance of a bus stop?	Yes/No
	Does the site have direct and safe pedestrian routes to bus stops? i.e. dropped kerbs and footways not less than 2 m wide, formal crossings where there is heavy traffic and bus access kerbs.	Yes/No
Frequency of Public Transport	Will the site be served by public transport? If Yes, indicate frequency of service at development opening by ticking High, Medium or Low box.	Yes/No
	High (four or more bus services an hour serving the town centre and/or local centre between 7am and 7pm Monday to Friday).	
	Medium (two or three bus services an hour serving the town centre and/or local centre between 7am and 7pm Monday to Friday).	
	Low (less than two bus services an hour serving the town centre and/or local centre between 7am and 7pm Monday to Friday).	
Contribution to service enhancement	Does the proposal contribute to bus priority measures serving the site?	Yes/No
	Does the proposal contribute to improvements to bus stops in the vicinity and/or provide bus stops in the site?	Yes/No
	Does the proposal contribute to an existing or new supported bus service?	Yes/No
Does development comply with all above criteria?		Yes/No
Comments or Action Required to Comply:		

Accessibility for Vehicles		
Vehicle Access and Parking		**Complies**
Vehicles Access Circulation	Is there safe access to and from the Road?	Yes/No
	Can the site be adequately serviced?	Yes/No
	The safety and convenience of other users (pedestrians, cyclists and public transport) is not affected by the proposal?	Yes/No
	Has access for emergency services been provided?	Yes/No
	For development which generates significant freight movements, is the site easily accessed from the road (i.e. minimising the impact of traffic on local roads and neighbourhoods)?	Yes/No
Parking	Is the off-street parking provided as advised in section 5.3 Parking for that development type?	Yes/No
Does development comply with all above criteria?		Yes/No
Comments or Action Required to Comply:		

Appendix F Pre-Application Highways Advice

F.1 Introduction

F.1.1 The Department encourage applicants to talk with us as early as possible when it is apparent that they are likely to need to consult the Department on a planning application. This will allow time for us to help guide you to prepare all the information that the we will need to fully consider the interaction of the proposed development with the highway network, and the suitability of any related actions proposed. Effective pre-application engagement is essential in helping the Department to meet statutory deadlines later in the planning process.

F.2 Highway Pre-Planning Application Advice

F.2.1 The Department supports a co-ordinated approach to the design of new developments. Previous experience has shown that on those developments where the Department have been involved from an early stage, the proposals progress efficiently through the planning and designs stages and ultimately result in high quality developments. Where possible, other infrastructure providers such as Manx Utilities should be involved in such discussions to ensure that requirements in relation to service pipes, drainage and other infrastructure are built into design.

F.2.2 When contacted in respect of any development proposal, the Department will:

- advise the promoter whether the development proposal is likely to be of interest to us
- advise the promoter of known potential accessibility, road safety and highway capacity constraints to the development, and jointly explore potential solutions
- provide information on all relevant data and models, where this is available and relevant to the proposal
- review, comment on and, where acceptable, agree the applicant's methodology for assessing the likely impacts of the proposed development, as relevant to the highway network
- review, comment on and, where acceptable, agree the principles of the scale and nature of mitigation required
- identify any other elements of the development, or its likely impact, that might be of interest to us

F.2.3 Where it is likely that a proposal will be considered unacceptable in principle, The Department will provide guidance as to what, if any, steps could be taken to address the concerns that we have.

F.2.4 Depending on the nature of the site and the proposed development, the developer may submit a written scoping report or arrange a meeting with us. Where a meeting is arranged the Department would encourage other relevant parties to attend as necessary,

including the PBCD; we would particularly recommend this for larger and more complex sites.

F.2.5 Requesting pre-application advice is not mandatory but formal pre-application advice can be an effective means of gaining a good, early understanding of the development, its benefits, its likely impacts and its infrastructure needs. Consulting the Department will ensure that the accessibility assessment, road safety assessment and highway capacity assessment are appropriately scoped and based on the most relevant and up to date data.

F.2.6 The pre-application advice given by Department does not constitute a formal response to a planning application.

F.2.7 Any views or opinions are given in good faith, and on the best of ability, without prejudice to the formal consideration of any planning application, which will be subject to public consultation and ultimately decided by the Planning Authority.

F.2.8 You should therefore be aware that the Department cannot give guarantees about the final formal decision that will be made on your planning or related applications. However, the review response will form the basis of our consultation response to PBCD, who will determine any subsequent planning applications, subject to the proviso that circumstances and information may change or come to light that could alter the position.

F.2.9 Little or no weight will be given to the content of the Department's pre-application review response for schemes submitted more than 12 months after the date of the review response being given.

F.2.10 We cannot guarantee that any subsequent application you make will be valid or will get approval. However, the pre-application review we give you will aid this process significantly.

Confidentiality of Pre-Application Advice

F.2.11 Highway pre-application enquiries are treated as confidential. This means that they will not be discussed outside the Department. Information contained in the pre-application enquiry, however, may be discussed with other teams and departments within the IoM Government, particularly if it is relevant to providing the advice requested.

F.2.12 Please be aware that pre-application advice may be relevant should the Department be subject to any request under Freedom of Information legislation or General Data Protection Regulations. Correspondence relating to any pre-application enquiry will be only retained by the Department for 2 years, after which any pre-application discussion detail will be destroyed. Accordingly, if you were hoping to rely on pre-application discussion that is older than 2 years you will need to seek fresh advice.

F.2.13 A more comprehensive response is also likely to be provided if the Department is able to discuss the pre-application enquiry with the PBCD. However, this will only be done with express permission of the applicant, which can be given on the highway pre-application advice request form.

Department Responses to Pre-Application

F.2.14 The Department requires that a sufficient level of information is provided before a pre-application review is given or meetings are attended. This is to enable us to provide quality advice and guidance and ensure the meeting time is used effectively.

F.2.15 The following list is the requirement for information. You will be informed at the relevant stage of the process if additional information is required.

F.2.16 You must ensure that we receive all of the information 10 working days before a pre-application meeting otherwise the meeting may need to be rescheduled.

F.2.17 The more information that is provided to the Department the better able we will be to ensure that all the issues are identified early in the discussion process.

F.2.18 The type of response will be dependent on the type and size of the development. Refer to Appendix G to determine which band a development falls within and information required by the Department to undertake a pre-application assessment.

F.2.19 The following paragraphs outline what type of response can be expected for each application category. Where a proposal falls within more than one category, the higher of the categories would apply, and the corresponding higher level of advice would be provided.

Development Category A **Householder applications** **Applications requiring Core Highway Information**
Householder applications are those where proposals are being considered to alter or enlarge a single house, including works within the boundary/garden of a house (such as for garage conversions, extensions, and so on), but exclude the creation of additional buildings; and/or changes to vehicular access to and from the highway. Pre application advice for prospective householder applications would be provided without charge, but limited to one written response only. (Please also refer to the section: Disagreeing with pre application advice). The written response will include: • the highway policy position on the principle of development and access • advice on appropriate design standards and requirements • any relevant planning history specific to highways matters Site visits or meetings will only be undertaken if the information below is provided. In addition, preliminary design check of proposed highway works could be provided (however, this would simply be a check of compliance against current design and modelling standards, and will not necessarily mean that the scheme will be acceptable in context).
The following information is required for **Category A**: • a site location plan (scale 1:1250) with site extents indicated, including surrounding areas, road names and numbers • description of proposed development, including schedule of uses • site layout plans, including existing and proposed • reference to supporting Strategic Plan and Local Plan policies • summary of reasons supporting site access/highway works proposals, including plan (scale 1:250 or similar showing proposed carriageway widths, footway/footpath widths, junction radii, junction and visibility splays, proposed access width, and parking and manoeuvring areas) • current use (including access and traffic generation)

Table F.1 Develpoment Cat A

Development Category B **Applications requiring Core Highway Info + Accessibility Assessment + Road Safety Assessment**
Pre application review would be limited to one written response and include: • the highway policy position on the principle of development and access • advice on appropriate design standards and requirements (however, this will not include any design checking) • any relevant planning history specific to highways matters • where network improvements or contributions may be sought • whether or not a public right of way runs through the site Site visits or meetings will only be undertaken if the information below is provided. In addition, preliminary design check of proposed highway works could be provided (however, this would simply be a check of compliance against current design and modelling standards, and will not necessarily mean that the scheme will be acceptable in context).
The following information is required for **Category B**: • a site location plan (scale 1:1250) with site extents indicated, including surrounding areas, road names and numbers • description of proposed development, including schedule of uses • site layout plans, including existing and proposed • reference to supporting Strategic Plan and Local Plan policies • summary of reasons supporting site access/highway works proposals, including plan (scale 1:250 or similar showing proposed carriageway widths, footway/footpath widths, junction radii, junction and visibility splays, proposed access width, and parking and manoeuvring areas) • current use (including access and traffic generation) • schedule of existing uses, including planning history with planning application reference numbers; • parking plan for the site, including provision of parking for all forms of transport; • location plan of key services indicating locations of education, employment, food retail, non-food retail and health care facilities; • proposed traffic generation; • a road safety assessment (please refer to Appendix B) • an accessibility assessment

Table F.2 Development Cat B

Development Category C **Applications requiring Core Highway Info + Accessibility Assessment + Road Safety Assessment + Transport Statement**
Pre application review would be limited to one written response and include: • the highway policy position on the principle of development and access • advice on appropriate design standards and requirements (however, this will not include any design checking) • any relevant planning history specific to highways matters • where network improvements or contributions may be sought • whether or not a public right of way runs through the site • scope of the transport statement Site visits or meetings will only be undertaken if the information below is provided. In addition, preliminary design check of proposed highway works could be provided (however, this would simply be a check of compliance against current design and modelling standards, and will not necessarily mean that the scheme will be acceptable in context).
The following information is required for **Category C**: • a site location plan (scale 1:1250) with site extents indicated, including surrounding areas, road names and numbers • description of proposed development, including schedule of uses • site layout plans, including existing and proposed • reference to supporting Strategic Plan and Local Plan policies • summary of reasons supporting site access/highway works proposals, including plan (scale 1:250 or similar showing proposed carriageway widths, footway/footpath widths, junction radii, junction and visibility splays, proposed access width, and parking and manoeuvring areas) • current use (including access and traffic generation) • schedule of existing uses, including planning history with planning application reference numbers; • parking plan for the site, including provision of parking for all forms of transport; • location plan of key services indicating locations of education, employment, food retail, non-food retail and health care facilities; • proposed traffic generation; • a road safety assessment (please refer to Appendix B) • an accessibility assessment • information related to any necessary transport statement/assessment • proposed trip rates supported with TRICS outputs and site selection methodology • proposed traffic growth factors supported with growth factors and methodology

Table F.3 Development Cat C

Development Category D **Applications requiring Core Highway Info + Accessibility Assessment + Road Safety Assessment + Transport Assessment**
Applications of this scale will require a Transport Assessment and Travel Plan to be submitted as part of the planning application. In addition, it is also likely to be necessary to assess the highway impacts of development through the use of Paramics Discovery or junction modelling. The review would include: • the highway policy position on the principle of development and access • advice on appropriate design standards and requirements (however, this will not include any design checking) • any relevant planning history specific to highways matters • where network improvements or contributions may be sought • whether or not a public right of way runs through the site • scope of the Transport Assessment (including likely extents of assessment) • whether strategic modelling will be required, what the most appropriate platform will be. (Further and more specific information on modelling requirements should be sought from the HS) Site visits or meetings will only be undertaken if the information below is provided In addition, preliminary design check of proposed highway works could be provided (however, this would simply be a check of compliance against current design and modelling standards, and will not necessarily mean that the scheme will be acceptable in context).
The following information is required for **Category D**: • a site location plan (scale 1:1250) with site extents indicated, including surrounding areas, road names and numbers • description of proposed development, including schedule of uses • site layout plans, including existing and proposed • reference to supporting Strategic Plan and Local Plan policies • summary of reasons supporting site access/highway works proposals, including plan (scale 1:250 or similar showing proposed carriageway widths, footway/footpath widths, junction radii, junction and visibility splays, proposed access width, and parking and manoeuvring areas) • current use (including access and traffic generation) • schedule of existing uses, including planning history with planning application reference numbers; • parking plan for the site, including provision of parking for all forms of transport; • location plan of key services indicating locations of education, employment, food retail, non-food retail and health care facilities; • proposed traffic generation; • a road safety assessment (please refer to Appendix B) • an accessibility assessment • information related to any necessary transport statement/assessment • proposed trip rates supported with TRICS outputs and site selection methodology • proposed traffic growth factors supported with growth factors and methodology

Table F.4 Development Cat D

Timetable for Response

F.2.20 There are no statutory timescales for responding to pre application enquiries. The Department would aim to respond to most pre-application enquiries within 21 days. However, this timescale is given in good faith and would be dependent on the scale and complexity of the proposals.

What is Not Provided as Part of Highway Pre-Application Advice?

F.2.21 The Department will not provide a pre-application review over the telephone. Anybody requesting pre-application review over the telephone would be directed to the appropriate pre-application procedures.

F.2.22 The Department is unable to assist in designing a scheme as part of the pre application process. The reasons for this are two-fold. Firstly, under Construction Design and Management (CDM) Regulations, there are specific roles and responsibilities relating to Designers and as such the Department's Highway Development Control officers, whose role is to review planning applications, will not provide design advice. Secondly, should a planning application be submitted, the Department will be consulted on by the PBCD and it is important to maintain impartiality through this process.

F.2.23 The Department strongly recommends that applicants consider engaging professional highway or transport consultants to provide design services.

F.2.24 Pre-application advice will also exclude any agreement in principle on a proposal. This is because any prospective planning application will need to be judged on the basis of relevant guidance and policies at that time as well as the relevant local context at that time. Providing agreement in principle on a proposal at the pre-application advice stage would therefore be considered prejudicial.

F.2.25 Pre-application review will also exclude whether planning permission is likely to be given — this is a matter for the PBCD to decide.

Requests for Clarification Following Pre-Application Review

F.2.26 Once written pre-application advice is provided in accordance with the application category, the process is considered by the Department to be concluded. Requests for clarification would be considered on an individual basis.

F.2.27 Should revised submissions be made on the basis of initial pre-application advice (when follow up advice is requested or the development proposals change) then the Department would reserve the right to treat it as a new enquiry. This means that the target response time of 21 days would be re applied.

Disagreeing with Pre-Application Review

F.2.28 Pre-application review is provided with the intention of guiding a prospective applicant. Once the pre-application review is provided, it is expected the prospective applicants will

consider review recommendations for inclusion in a subsequent planning application rather than challenge them.

F.2.29 If a prospective applicant disagrees with the pre-application review provided by the Department then it is their prerogative to independently seek a second opinion and to present these within a planning application submission.

F.2.30 Pre-application advice provided by the Department is given in good faith, without prejudice, as an officer opinion on the basis of the circumstances and policies and the development proposals submitted at the time advice is provided.

Appendix G Highway Assessment Requirements of New Developments

G.1 Introduction

G.1.1 This classification system is used as the basis to identify what information is required by the Department to assess new developments

G.1.2 Table G.1 categorises developments in three categories, B, C, and D. The fourth category A is not included as this includes single householder applications only. The thresholds are for scenarios which would typically generate 30 two-way peak hour vehicle trips. Depending on the location of the development, 30 two-way peak hour vehicle trips would not necessarily cause a detrimental impact on the highway, but it is a useful starting point to commence discussions.

G.1.3 Table G.1 takes account of the difference in planning land use classes in the Isle of Man and the specific nature of highway conditions on the Island. It is to be followed in all scenarios unless the Department requests otherwise. For example, if a category B development shows higher traffic flows or larger impacts than expected, or is proposed in a problematic location, then we may require a TS, or occasionally a TA, to be prepared to examine the effects in more detail.

G.1.4 Table G.1 shows the proposed scale / size and nature of developments (planning land use classes) that define categories B, C and D. The thresholds identified apply to both new developments and existing developments with proposed extensions where the total floor space (or other units as applicable) of both the existing and proposed elements exceeds the thresholds. If a TA or TS was undertaken for the original development which is now proposed for extension, we will accept an update of the original TA / TS to include the proposed increased floor space.

	Land Use	Types of Development	Category B	Category C	Category D
1	Retail	Sale of all goods to the public including supermarkets, convenience stores, local shops, internet cafes and sandwich bars or other cold food stores that sell cold food to be consumed away from the premises	<250 sqm	>250 sqm <800 sqm	>800 sqm
2	Financial and Professional Services	Banks, building societies, bureaux de change, estate agents, employment agencies, betting shops and other professional services principally where services are provided to visiting members of the public except for health and medical services	<1000 sqm	>1000 sqm <2500 sqm	>2500 sqm
3	Food and Drink	Restaurants and cafes (where food is consumed on the premises), public houses, wine bars and drinking establishments but excluding hot food takeaways and internet cafes	<300 sqm	>300 sqm <600 sqm	>600 sqm
4	Hot Food Takeaway	Sale of hot food for consumption on or off the premises	<250 sqm	>250 sqm <500 sqm	>500 sqm
5	Offices	Excludes offices in the financial and professional services category	<1500 sqm	>1500 sqm <2500 sqm	>2500 sqm
6	Light Industry,	Laboratories, studios, and science parks	<1500 sqm	>1500 sqm <2500 sqm	>2500 sqm

	Research and Development				
7	General Industry	Includes special industrial uses and vehicle MOT & repair garages	<2500 sqm	>2500 sqm <4000 sqm	>4000 sqm
8	Warehouses, Storage or Distribution	Storage or distribution centres, wholesale warehouses and repositories	<3000 sqm	>3000 sqm <5000 sqm	>5000 sqm
9	Hotels	Hostels, motels, guest houses, boarding houses (temporary accommodation without provision of care)	<30 beds	>30 beds <50 beds	>50 beds
10	Hospitals and Nursing Homes	Provision of residential accommodation and care	<30 beds	>30 beds <50 beds	>50 beds
11	Boarding Schools and Residential Training Centres		<50 student	>50 student <150 student	>150 student
12	Institutional Hostels	Homeless shelters, accommodation for people with learning difficulties and people on probation	not applicable	<400 resident	>400 resident
13	Sheltered Accommodation	Accommodation with a facility for a warden or supervision for all users including the elderly and / or the disabled	not applicable	<50 beds	>50 beds
14	Extra Care Housing	Mixture of apartments for older people and care / nursing home, often with other care and community facilities	not applicable	<50 beds	>50 beds
15	Residential	Dwellings (including houses, residential terraces, apartments, bungalows and studios) for maximum of six people living together as a single household, for students or young people sharing a dwelling and small group homes for disabled people living together in the community	<50 units	>50 units <80 units	>80 units
16	Temporary Accommodation	Campsites, caravans, tents, park / mobile homes, log cabins, etc.	<5 units	>5 units	>30 units
17	Non-residential Institutions, Medical and Other Services	Clinics, health centres, crèches, day nurseries (for children and pets), day centres and consulting rooms (not attached to consultant's or doctor's house), museums, public libraries, art galleries, exhibition halls, non-residential education and training centres (schools and colleges), places of worship, religious instruction and church halls	not applicable	<1000 sqm	>1000 sqm
18	Assembly and Leisure Facilities	Including but not restricted to cinemas, dance and concert halls, meeting halls, sports halls and pitches, swimming baths, leisure centres, skating rinks, gymnasiums, bingo halls and casinos, conference and leisure facilities, wedding venues and other indoor and outdoor sports facilities	<500 sqm	>500 sqm <1500 sqm	>1500 sqm
19	Regeneration and Redevelopment	Proposals that will amend existing highway layouts	Discuss with Highway Services	Discuss with Highway Services	Discuss with Highway Services
20	Agriculture	Farms and ménages	Discuss with Highway Services	Discuss with Highway Services	Discuss with Highway Services
21	Sui Generis (Other) Uses	For example: retail warehouse clubs, amusement arcades, launderettes, petrol filling stations, taxi businesses, car/vehicle hire businesses and the selling and displaying of motor vehicles, nightclubs, theatres, builders' yards, garden centres, post offices, travel and ticket agencies, hairdressers, funeral directors, hire shops and dry cleaners	Discuss with Highway Services	Discuss with Highway Services	Discuss with Highway Services
Note: sqm is square metres based on the total gross floor area (gfa). The gfa of buildings includes all internal circulation areas, amenity spaces, corridors, stairways, etc.					

Table G.1 Development Categorisation

G.1.5 Offices that form part of other developments (i.e. less than 10% of the total gross floor area) are to be classed as ancillary offices to that particular land use and should therefore not be assessed separately as offices. This is likely to be prevalent for general industrial developments, warehouses and storage and distribution centres.

G.1.6 For mixed use developments which include more than one land use, the total of the individual elements should be added together and then assessed against the thresholds in Table G.1 to determine which category they fall within. Where this is not possible due to the land uses having different units in the table, it is recommended that the developer / transport consultant contacts the Department to discuss whether such reports are required.

G.1.7 In addition to Table G.1 above, Table G.2 identifies additional thresholds where developments will require further highway assessment information to take account of other factors that have the potential to adversely affect the operation of the existing adjacent highway network.

	Other Considerations	Category B	Category C	Category D
1	Any development that does not conform to the Isle of Man Strategic Plan 2016			✓
2	Any development that generates 30 or more two-way vehicle movements in any hour	✓		
3	Any development that generates 100 or more two-way vehicle movements per day		✓	
4	Any development proposing 100 or more parking spaces		✓	
5	Any development that is likely to increase accidents or conflicts among motorised users and non-motorised users, particularly vulnerable road users such as children, disabled and elderly people, cyclists and motorcyclists			✓
6	Any development generating significant freight or heavy goods vehicle (HGV) movements per day or significant abnormal loads per year as defined by Highway Services	✓		
7	Any development proposed in a location where the local transport infrastructure is inadequate. For example, substandard roads, poor pedestrian or cycle facilities and inadequate public transport provision			✓

Table G.2 Additional Development Considerations