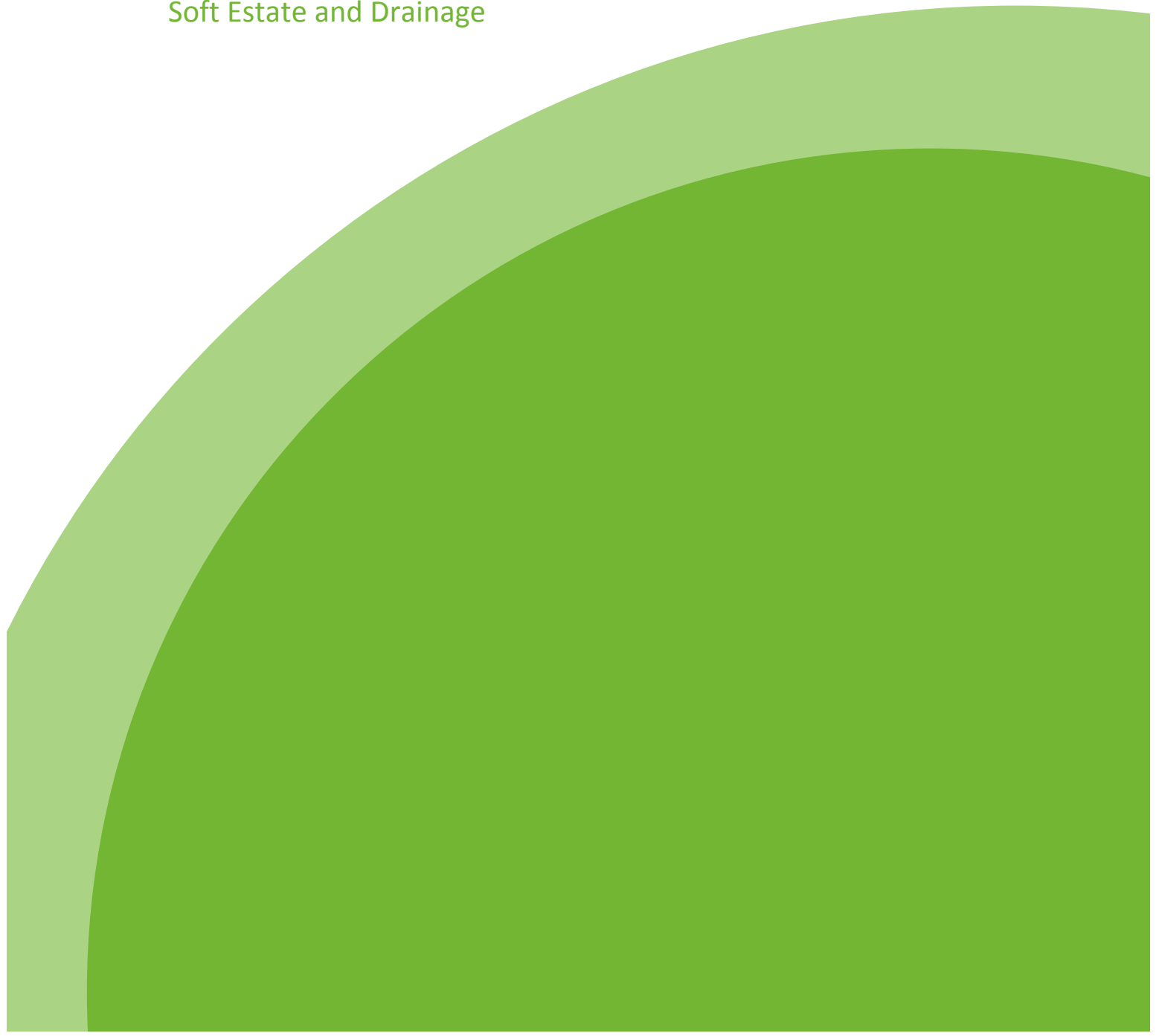




Network Maintenance Management Plan

Annex F:

Soft Estate and Drainage



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F.1 Soft Estate

Soft estate surrounds much of Central Bedfordshire Council's highway, footway and cycleway network, and can contain a variety of natural assets such as Roadside Nature Reserves and Sites of Special Scientific Interest. The nature of the asset is varied, as it can range from close cut grasses on visibility splays, to hedges and wooded areas contained within highways boundaries.

PROWS, irrespective of surface type, are not included within the Soft Estate in this Annex.

Maintenance of such a varied asset needs to be considered as there is a wide array of management techniques ranging from:

- Urban and rural road verge grass cutting
- Maintenance of Roadside Nature Reserves
- Tree and hedge maintenance
- Weed control

F.1.1 Soft Estate Defect Categories

Defects associated with any aspect of soft estate are to be assessed with reference to the Risk Matrix from the NMMP Core document 12.0 Defect Categorisation. When assessing the level of harm the defect may give rise to, all users of the full width of the highway shall be considered including cyclists, equestrians and other non-motorised users, as well as disabled and elderly users.

From NMMP Core Document 12.0 - Defect Categorisation:

Degree of Deficiency	Timeframe for action
Category 0 Defects	Emergency make safe response in 2 hours
Category 1 Defects	These require prompt attention and will require a permanent repair to be made within 5 working days of the defect being assessed.
Category 2 Defects	All other defects. These will be prioritised and considered for repair within planned programmes of work.

The condition of Soft Estate asset items to be considered as a defect shall be:

Feature	Defect Category
Landscape areas, hedges and trees	Risk to Highway user
	Potential for service interruption
	Quality of user experience



F1.1.1 Definition of Soft Estate Defects at Investigatory Level

Feature	Examples of Soft Estate Defects at investigatory level
Landscape areas, hedges and trees	Obstruction of visibility and signage, particularly at bends and junctions
	Hazardous trees and branches (including those outside, but within falling distance of the highway)
	Growth of weeds injurious to human health
	Leaf and fruit fall causing slippery surfaces
	Root growth causing Cat 1 surface irregularity
	Depressions on natural, bare earth or vegetated surfaces, a hole in the surface, where material has been lost and where the dimension of the hole in two perpendicular directions exceeds 250mm and the depth exceeds 250mm.

Where we have identified an issue with indiscriminate parking, we will issue a standard letter referring to the Traffic Management Act 2004 (part 6 Civil Parking Offence).

F.1.2 Network Inspections

The Network Inspection regime shall be subject to an annual review.

Objective	Contribution
Highway Inspections	To comply with statutory obligations
	To meet the user's needs for safety
Area Team Inspections	To ensure availability
	To achieve integrity
	To maintain reliability
Tree Surveys	To minimise cost over time
	To maximise value to the community
	To maximise environmental contribution

All information from the network inspection regime, together with any immediate or programmed action, including nil returns, shall be recorded. Such information shall, whenever systems are available be recorded in a GIS format to allow it to be used in the review of the maintenance strategy, practices and the development of works programmes. Accurate recording of inspection results are crucial in assisting a defence against any third party claims.

Inspections should identify all defects likely to create danger or serious inconvenience to users of the network and the wider community.

F.1.2.1 Highway Inspections

The type and frequency of Highway Inspections shall be as per the Carriageway, Footway, Cycleway or Public Right of Way network upon which, or adjacent to which, the Soft Estate asset is to be found. These types and frequencies are in the NMMP Annex A: Carriageway document A.3.2 and NMMP Annex B: Footways Cycleways and PROW B.4.1.

Highway inspections shall be undertaken to identify defects likely to create danger or serious inconvenience to users of the network or the wider community. The risk of danger is assessed on site using the Risk Matrix in NMMP Core Document 12.0 and categorised so as to allow for an appropriate priority response.

F.1.2.2 Area Team Inspections

Area team inspections should be strongly focused on ensuring that the network meets the needs of users and comprise more detailed specific inspections of particular highways elements, to ensure that they meet the levels of service defined in the Highways Asset Management Policy. These inspections may be undertaken in response to:

- Community concern
- As a result of incidents or extreme weather conditions
- In light of monitoring information, such as an abnormally high occurrence of damages claims

Dependent upon the degree of deficiency, each identified defect shall be assessed for action through either Reactive or Planned works.

F.1.2.3 Network Surveys - Trees

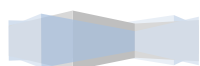
Trees are inspected by the Area Team Tree Officer every five years as a minimum; this period however may be reduced on the advice of an arboriculturalist.

More information regarding the maintenance strategy for trees can be found in the forthcoming Tree Policy Document.

F.1.3 Reactive Maintenance

For all Soft Estate defects, a risk based approach will be undertaken, preferably by an officer on site. Using the Risk Matrix in the NMMP Core Document 12.0, the defect will be allocated a category and an appropriate response.

Having confirmed that a tree or vegetation represents an immediate or imminent hazard (category 0 or 1 defect) it shall be rectified as follows:



- Traffic control measures shall be put into place to guide vehicular and pedestrian traffic safely around the tree, as soon as is practicable and in accordance with Section 150 of the Highways Act 1980, Central Bedfordshire Highways shall remove the obstruction arising from the tree or the whole tree, or if out of hours, make safe, and remove any arisings from site.

Where the tree is found to be in the ownership of an adjacent landowner, Central Bedfordshire Highways shall seek to recover all reasonable costs in making the tree safe under Section 154 of the Highways Act 1980.

The emergency cutting of areas of road verges deemed to be a safety hazard to highway users, such as visibility splays are carried out on behalf of CBC Highways by Waste Services Team.

F.1.4 Planned Maintenance

Planned maintenance of the soft estate is managed and delivered partly by Central Bedfordshire Highways and also by Waste Services Team. It is targeted at two areas:

- Meeting the need identified through highway inspections
- Preventative maintenance, working ahead of highway inspections when budgets allow to address defects while they are in their 'infancy'.

Where an identified defect falls outside the described types the responsible officer shall undertake the measures to repair defects prior to it deteriorating to become a hazard or in line with the appropriate time scale target.

F.1.4.2.1 Highway Verges (Grass Cutting)

The highway verges are managed and cut by CBC Waste Services. They are cut three times per year. The first two are one metre swathe cuts with the final cut of the year being a full width of the verge.

CBC also devolves the grass cutting service to Town and Parish Councils applying to do so, ensuring that they understand their duty of care e.g. road safety and traffic management, and have the proper identification.

F.1.4.2.2 Roadside Nature Reserves and SSSI's

The Council has identified as Roadside Nature Reserves areas of roadside verge that have high value of flora and fauna. These are recorded and shown on GIS and are indicated on site by means of marker posts. Cutting will be carried out on identified Roadside Nature Reserves, which are signed on site as such, as directed by the Council's Ecologist.

No cutting, apart from emergency visibility work, shall be carried out on SSSI verges without first contacting the Council's Ecologist.

F.1.4.2.3 Boundary Hedges & Trees

In most cases, it is the duty of the adjoining landowner to maintain hedges and boundary trees alongside and integral to the boundary of the highway.

Powers under Section 154 of the Highways Act 1980 shall be used to ensure that hedges and roadside trees do not present a danger to users of the highway. This includes trees on private land that if falling will do so on the public highway.

F.1.4.2.4 Highway Trees

The Area Team Tree Officers will carry out inspections of all Highway Trees and identify any necessary work to minimise the risk of the trees becoming a hazard to users of the highway.

Any subsequent tree works are to be prioritised according to the Risk Matrix e.g. imminently dangerous etc.

The Tree Officer will confirm if any highway trees are protected e.g. Tree Preservation Orders or within conservation areas.

Any tree work commissioned will ensure that access underneath is within current guidelines e.g. that tree crowns are raised above the highway – Highways 5.5m and Footways 3.0m.

Any such actions shall take account of the Wildlife and Countryside Act 1981 in avoiding the cutting of hedges and trees between March and September [for the benefit of nesting birds] unless there is an emergency safety issue.

F.1.4.2.5 Highway Weeds

CBC Waste Services have an annual highway weed spraying programme and undertake three treatments per year.

The use of weed killers and pesticides must be approved for use in on Public Highways and comply with all relevant and current legislation e.g. DEFRA and HSE Code of Practice for Weed Control in Amenity Areas. It should be used strictly in accordance with the manufacturer's recommended application e.g. MDS and COSHH assessment.

F.1.4.2.6 Noxious or Injurious Weeds – (Weeds Act 1959, Wildlife and Countryside Act 1981)

Central Bedfordshire Highways shall aspire to identify and maintain data upon infestations of the following species:



- Japanese Knot Weed
- Giant Hogweed
- Himalayan Balsam
- Ragwort
- Broad Leaf Dock
- Curled Dock
- Creeping or Spear Thistle

The Authority has a statutory responsibility to control such species under the Weeds Act 1959 and the Wildlife and Countryside Act 1981 as altered by the Countryside and Rights of Way Act 2000; it shall be rectified as follows:

“... Measures shall be considered, and enacted where reasonable, to remove or manage the cause of future risk. These may require the action of other parties, such as adjacent landowners...”

F.2 Highways Drainage

Highway drainage should help to fulfill the following objectives:

- Prevent injury or damage caused by hazardous surface water
- Prevent highway surface water flooding adjacent properties
- Prevent blockages in associated highway drainage systems with consequential flooding

Highway drainage requires regular routine maintenance to ensure that all systems are working effectively. The highway drainage system includes the positive drainage systems of varying types from gullies and piped systems to grips. These are all designed:

- To prevent flooding, ponding and seepage, and keep the carriageway, cycleway and footway as free of standing water as possible;
- To ensure surface water falling on the highway enters the drainage system or natural watercourse as speedily as possible; and
- To keep the underlying road structure as dry as possible.

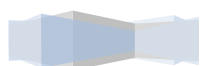
Central Bedfordshire Council has a varied selection of drainage assets which it maintains as part of the highways network, these include, but are not limited to approximately 20'000 grips, 45'000 drainage gullies, 500km of drainage ditch, 124 catch-pits and 23 balancing ponds.

Legislative Requirements

Developments in legislation and regulatory governance have also been updated to encompass the future predictions of climate change. These have placed new responsibilities on local highways authorities. The new legislative documents with which the council has a responsibility to comply with in its duties are:

- The Water Framework Directive (2000);
- The Groundwater Directive (2006);
 - The management of Flood Risks Directive (2007); and
 - Flood and Water Management Act (2010) as updated in 2012

The Floods and Water Management Act 2010 (updated 2012) places a duty upon authorities to collect data, understand flood risk and react proportionately. Therefore, following a flood event long-term alleviation measures shall also be assessed via revenue maintenance programmes or capital improvement projects. In some instances alleviation measures may require the action of other parties, all in line with responsibilities established by the Land Drainage Act.



F.2.1 Defect Categories of Drainage

For all drainage defects, a risk based approach will be undertaken, preferably by an officer on site. Using the Risk Matrix in the NMMP Core Document 12.0, the defect will be allocated a category and an appropriate response.

Where defects with potentially serious consequences for network safety are made safe by means of temporary signing or repair, arrangements should be made for a special inspection regime to ensure the continued integrity of the signing or repair is maintained, until a permanent repair can be made.

From the NMMP Core Document 12.0 – Defect Categorisation:

Degree of Deficiency	Timeframe for action
Category 0 Defects	Emergency make safe response in 2 hours
Category 1 Defects	These require prompt attention and will require a permanent repair to be made within 5 working days of the defect being assessed.
Category 2 Defects	All other defects. These will be prioritised and considered for repair within planned programmes of work.

In the defence of third party claims for damage to property or personal injury it is vitally important to demonstrate that Category 0 and 1 defects are treated as above and records are kept of inspections.

F.2.1.1 Examples of Defects in drainage at an Investigatory Level

- Blocked gullies or connections
- Blocked offlets
- Blocked grips
- Standing water
- Broken gully grates
- Collapse

F.2.2 Inspections of drainage

All information from highway inspections, together with any immediate or programmed action, including nil returns, shall be recorded. Such information shall, whenever systems are available be recorded in a GIS format so that it may be utilised together with other relevant information in the review of the maintenance strategy, practices and the development of works programmes. Accurate recording of inspection results are crucial in assisting a defence against any third party claims.

F.2.2.1 Highway and Area Team Inspections

Inspections are designed to identify all defects likely to create danger or serious inconvenience to users of the network and the wider community. The degree of deficiency shall be assessed using the Risk Matrix in the NMMP Core document. A risk based approach to both Highway and Area team inspections would identify the risk associated with inadequate serviceability, for example:

- Gullies, grips and ditches, which may be obstructed by the growth of vegetation or damaged by traffic;
- Culverts under roads which may be affected by blockage, subsidence or structural damage;
- Other piped drainage which may be affected by blockage or subsidence;
- Surface boxes and ironwork for both drainage and non-drainage applications, which may be affected by subsidence or obstructed access.

Area Team inspections of drainage systems should ideally be undertaken during or immediately following periods of heavy rain.

Fundamental in the development of a risk based approach is the identification of areas that may be particularly susceptible to the risk of flooding, either from topological factors outside of the highway or from frequent silting of systems

F.2.2.2 Asset Inventory Survey

Asset inventory surveys are quick field surveys that either identify the location of priority assets or confirm the validity of existing inventory records. The surveys are selective and will, year on year, compile an updated account of the drainage asset and condition.

F.2.3 Drainage Maintenance Types

Maintenance is to be targeted at two areas. Firstly at meeting the need identified through highway inspections and secondly, at preventative maintenance, to address defects while they are in their 'infancy'. This secondary role can only be tackled after having addressed all identified Highway inspection defects within a field of work and then only if and when budgets allow.

Whenever possible, all measures taken shall be in the form of a permanent repair. Where necessary, the Internal Drainage Board will be consulted.

Usually the responsibility for the maintenance of ditches lies with the adjoining landowner. This is unless land has been purchased to construct a new road, and any ditches constructed as part of that scheme remain within the public highway.



However, the Highway Authority also has powers under Section 100 of the Highways Act 1980, to scour, cleanse and keep open all drains (including ditches) on or adjacent to the highway for the purposes of draining the highway. Clearance work may be carried out on a reactive basis as a result of inspection. Exercising these powers does not release the adjoining owners of their responsibilities.

Following a flood event, long-term alleviation measures shall be focused on the public highway surface water system, which may in part be sited outside the limits of the public highway. In some instances alleviation measures may require the action of other parties, all in line with responsibilities established by the Land Drainage Act and the use of CBC's powers under the Highways Act 1980.

F.2.3.1 Reactive Maintenance

For all drainage defects a risk based approach will be undertaken, preferably by an Officer on site. Using the risk matrix in the NMMP Core document, the defect will be allocated a category and an appropriate response.

F.2.3.1.1 Gullies and Grips

The majority of reactive maintenance is the clearance of blocked gullies and grips.

F.2.3.1.2 Manholes, Catch-pits & Soakaways

Central Bedfordshire Highways will cleanse manholes and catch-pits only on a reactive basis. At those areas susceptible to silting, the manholes and catch-pits may be included on a routine annual cleanse.

F.2.3.1.3 Pipes & Culverts

Central Bedfordshire Highways will cleanse pipes and culverts where required.

F.2.3.2 Planned and Programmed Maintenance

Programmed works shall be prioritised via Central Bedfordshire Highways' assessment matrix (see Appendix 1 below). This document contains a variety of parameters based on hazard, damage to property and affect upon the area caused by flooding, the process will also refer to fluvial (river) and pluvial (ground water) flood risk maps (as produced by the Council's Flood Risk Management team) so as to introduce a proactive approach to flood risk management. It should also be noted that the Act encourages the employment of sustainable methods of drainage as far as reasonably practicable.

Any new or improvement works should take into account the potential for extra capacity requirements as a result of climate change.

Where appropriate, consents will also be sought from the relevant authority such as the Internal Drainage Board (IDB) for working in water courses managed by them, or from the Environment Agency for discharging into soakaways and water courses. In either case this may involve monitoring the condition and quality of the water course or groundwater.

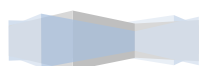
F.2.3.2.1 Road & Footway gullies

Central Bedfordshire Highways maintains a data-led, risk based, gully emptying programme. It does this via a recorded list of vulnerable, or 'problem' gullies, which are routinely found to be full of detritus or frequently called in by members of the public. Such gullies are cleaned three times annually.

The remaining, non-vulnerable, gullies receive cyclic treatment once every three years.

F.2.3.2.2 Roadside Grips

Grips will be re-cut as required by inspection, but they may also be referred to the capital drainage programme as a project of coordinated grip and or ditch clearance.



Appendix 1: Example Flood Scoring Matrix

Assessment only to be made for schemes with a projected cost above area team discretionary spend level. Confirm Y / N					
Assessment to be made after previous attempts to jet / clean any existing positive drainage have been exhausted. If flooding source emanates from adjoining land, eg. main river, watercourse or field flooding then assessment to be made after resolution of third party involvement.					
Assessment Date					
Site Location					
Town / Parish					
Road No					
Road Name					
From					
To					
Description					
Category	Sub Category	Category Score		Actual	
	Only apply worst case per property. Include wash from Highway flooding if applicable				
Property Flooded (internal)	Residential, Private / Public Buildings. Health Risk.	50 per property			
Property Flooded (external)	Property Inaccessible, Structure in Contact with Flooding.	20 per property			
or Property Flooded	Garage or Outbuildings	15 per property			
Land Flooded	Residential Gardens, Temporary Bldgs, Private Land	10 per property			
or Land Flooded	Farmland, Open Space, Public Land	5 per location			
	Only apply worst case per location. Include wash from Highway flooding if applicable				
Carriageway Flooded	Impassable or Danger to Life (loss of control / ice). (per location /	50			
or Carriageway Flooded	Passable. Carriageway over 30mph limit.	10			
or Carriageway Flooded	Passable. Carriageway up to 30mph limit	5			
Cycle / Footway Flooded	Impassable to Property (per location / site)	15			
or Cycle / Footway Flooded	Passable	10			
LTP 3 Objective A	Maintain the ease of access to employment.	5			
LTP 3 Objective D	Maintain access to healthcare (hospital & GP).	5			
LTP 3 Objective E	Maintain access to food stores & local services	5			
LTP 3 Objective F	Maintain access to leisure, cultural & tourism facilities.	2			
LTP 3 Objective G	Maintain efficient & reliable transportation of freight.	5			
LTP 3 Objective J	Reduce the risk of people being killed or seriously injured	Primary consideration			
		Sub-total		0	
Frequency of Flooding	Once per year	no addition	Delete note applicable		
Frequency of Flooding	2 - 4 times per year	sub-total x 0.25		0	0
Frequency of Flooding	More than 4 times per year	sub-total x 0.5		0	0
Duration of Flooding	Up to 34 day	no addition			
Duration of Flooding	34 - 3 days	sub-total x 0.25	0	0	
Duration of Flooding	More than 3 days	sub-total x 0.5	0	0	
	per location				
Carriageway Hierarchy	Local Road and Unclassified (UC)	no addition			
Carriageway Hierarchy	Non Principle (B&C)	sub-total x 0.25	0	0	
Carriageway Hierarchy	Principle (A)	sub-total x 0.5	0	0	
COST ESTIMATE		Total Score		0	

Appendix 2: Version Control

Version	Author	Checked	Approved	Comment
16 th Nov 2017	C Nicol	J Cross		Revised draft for Committee

Contact us...

Për Informacion Per Informazione Za Informacije नगरवारी लष्टी برای اطلاع
المعلومات معلومات کے لئی তথ্যের জন্য Za Informacja

by telephone: 0300 300 8000

by email: customer.services@centralbedfordshire.gov.uk

on the web: www.centralbedfordshire.gov.uk

Write to Central Bedfordshire Council, Priory House,
Monks Walk, Chicksands, Shefford, Bedfordshire SG17 5TQ