

# **FLOOD RISK POSITION PAPER**

## **1. INTRODUCTION**

This paper describes the current planning policy position as it relates to flood risk in the Borough and sets the context for the forthcoming production of a Strategic Flood Risk Assessment, which is a government requirement of all local planning authorities and which will be the subject of a further paper later this year. It does not specifically deal with other Council flood-related responsibilities, such as emergency planning. It will be a part of the Local Development Framework evidence base contributing to future flood related policies.

It outlines the recently published major government reports which were stimulated by major national flooding events and then goes on to describe the relevant national and regional planning policy statements, the most important being Planning Policy Statement 25. It also outlines important flood related strategies that either have been produced or are currently in development by the Environment Agency and North West Regional Assembly.

Government policy considers that the climate is changing and that this change will impact on different parts of the country in different ways, including affecting our vulnerability to flooding. In general the country will experience both more short, high intensity rainfall and long duration rainfall. Winters will become wetter, the number of rainy days and the intensity of that rain will increase and sea levels will rise. All will have implications for both coastal and river flooding and local flash flooding. The frequency, patterns and severity of flooding are forecast to change and become more damaging, as was emphasised in the recent Pitt Review of the 2007 floods, mentioned below. Flooding is inherently difficult to predict in location, speed and depth as it can arise from many different combinations of factors.

There are different kinds of flood events, and these different types can occur in isolation or combination. For instance when river flow exceeds the capacity of its channel it will flood into the surrounding flood plain. Flooding can develop quickly or slowly depending on factors such as gradient and how fast water runs off into the surface watercourses. In large, relatively flat catchments river floodplains can store and gradually release floodwaters. In small, steep catchments local intense rainfall can cause local flash flooding that can quickly threaten areas downstream. If intense rain is unable to soak into the ground, for a variety of reasons, it can run off over the surface causing localised floods before reaching a river or other watercourse. This surface water runoff can be increased by man-made development and was a significant part of the major 2007 floods. In some areas underground permeable rocks can become saturated releasing water onto the surface as floods into intermittent channels, while in man made areas sewer channels can flood if heavy rainfall exceeds their capacity, or they become blocked. These floods in some cases can involve sewage and pollution as well as rainwater. Finally man-made structures such as reservoirs and canals, quarries and mines can be overwhelmed or fail.

## **2. NATIONAL STRATEGIES and RECENT REPORTS**

### **2.1 Making Space for Water – DEFRA 2005**

The Government's response to this wide ranging 2004 DEFRA consultation included several planning related reforms aimed at strengthening its flood risk elements. The first was the production of an updated policy guideline, now published as PPS25. This included support for Strategic Flood Risk Assessments, a strengthened role for the Environment Agency as a planning application consultee, a commitment to Sustainable Drainage Systems (SUDS) and a wider appreciation of the

many different sources of flooding. It also indicated that it would consider the position of privately owned sewers and whether they should be taken over by sewerage undertakers.

## **2.2 Future Water – The Government’s Water Strategy for England - 2008**

This strategy sets out the main Government priorities for future flood management and control, along with other wider water management issues. It relates closely to Making Space for Water and the interim findings of the Pitt Review. It emphasises the need to manage surface water in ways that do not overload the public sewers including the use of Sustainable Drainage Systems (or SUDS); it increases and clarifies the role of the Environment Agency in overseeing flood risk management and as a statutory consultee for planning applications in flood risk areas and is the strategic background to PPS25. It states that the Government will consult on how to give surface water management plans a stronger role in co-ordinating development and investment planning and sees local authorities as taking a central role in developing them. It states that the Government also intends to change householders’ permitted development rights with regard to front garden paving to only allow porous surfacing materials: it is also reviewing the right of new development to connect to the public sewerage system and seeking to resolve obstacles to the better take up of SUDS systems. This strategy also signals an intention to take private sewers and lateral drains that are connected to the public system into the ownership of the water and sewerage companies. It also emphasises the major features within PPS25 and indicates that it will be publishing flood adaptation toolkit guidelines later this year.

## **2.3 The Pitt Review (2008)**

Undertaken after the major UK floods of summer 2007 this Government sponsored review has recently been published. It includes many recommendations including a strengthened role for the Environment Agency and a clarification of the varying roles of the many bodies involved in flood management.

In terms of planning it recognises that a complete end to building in floodplains, as some have suggested, is unrealistic. It regards development control, using PPS25 (see 3.1 below), as central to managing flood risk and that if necessary it should be strengthened. It also recommended that householders should no longer be able to lay impermeable surfaces as of right on their front gardens and that Government also consider extending this to include back gardens too. It stated that the automatic right of new development to connect to existing sewerage should also be removed and that all local authorities extend home improvement grants to include flood resistance and resilience measures, such as door guards and air brick covers, for those properties within high risk flood areas. It also recommended that local authorities should promote flood resistance measures to local businesses. It also felt that flood resilience be included within updated Building Regulations. It also recommended that flood potential information currently held by reservoir operators should be released.

## **3. NATIONAL PLANNING POLICY**

### **3.1 Planning Policy Statement 25 (PPS25): Development and Flood Risk 2006**

This statement and its accompanying Practice Guide sets out how future flood risk will be addressed through the planning system. It aims to “ensure that flood risk is taken into account at all stages of the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk”

It outlines the various responsibilities of the complex array of different organisations involved in flood management. (These are outlined in some detail in Appendix 1 below). However it is worth mentioning that there is no general statutory duty on the Government to protect land or property against flooding and that landowners have the primary responsibility for safeguarding their land against natural hazards such as flooding.

Local planning authorities (LPAs) should consult the Environment Agency (EA) and other relevant bodies when preparing flood risk management policies. Their sustainability appraisals, land allocations and development control policies should be informed by an SFRA (see 3.1.3 below) carried out in liaison with the EA. LPAs must consult EA on all proposals, apart from minor development, within flood risk areas and on developments of over 1 hectare outside flood risk areas. If an LPA is minded to approve a development in the face of EA objections then the LPA must inform the Secretary of State for possible call in.

PPS25 states that local planning authorities should prepare strategies taking into account the following approaches:

### **Appraising Risk**

- Identify land at risk and the degree of risk of flooding from river, sea and other sources
- Prepare Strategic Flood Risk Assessments (SFRAs) as freestanding assessments of flood risk that contribute to the Sustainability Appraisal of their LDF spatial plans

### **Managing Risk**

- Frame policies for locating development which avoid flood risk where possible and manage any residual risk that cannot be avoided
- Only permit development in areas of flood risk where there are no reasonably available sites in areas of lower flood risk and the benefits of development outweigh the risks from flooding

### **Reducing Risk**

- Safeguard land from development that is needed for current and future flood management, such as flood storage areas or flood defences
- Reduce flood risk to and from new development through location, layout and design and incorporating sustainable drainage systems (SUDS)
- Use new development to reduce the causes and impacts of future flooding by means such as the re creation of natural flood plains and green infrastructure which can offer multiple benefits including flood storage

### **Partnership Working**

- Work effectively with the Environment Agency and other relevant authorities to ensure that the best use is made of their expertise

- Ensure that spatial planning supports wider flood risk management policies such as River Basin Management Plans and emergency planning.

PPS25s policies have material consideration force in deciding planning applications and may supersede existing plan policies.

It recommends that a “risk based approach” to flooding be applied to all levels of planning. This approach considers firstly that policies should avoid increasing the “sources” or causes of flooding, for instance by minimising run off from new development thus not causing increases in downstream flood risk. Secondly policies should manage the “pathways” of water movement and consider the effect that development will have on them and their ability to move and store flood waters. This could involve flood defence works and the location of multi functional green infrastructure that can combine leisure space with flood storage. Lastly policies should aim to reduce the consequences of flooding on the “receptors” of flooding, such as people, property and habitats, by avoiding locating them in inappropriate areas of flood risk.

To do this a picture needs to be built up of the local flood risk in a locality. PPS25 states that this should be done at a local authority level (either by individual authorities or several contiguous ones in partnership) through preparing a Strategic Flood Risk Assessment (SFRA), which is described in detail in the PPS25 Practice Guide. There are also Regional Flood Risk Assessments (RFRAs) which consider flooding at larger spatial scales and are the responsibility of regional bodies. These are applied to regionally significant developments.

The SFRA enables proposed development to be passed through a set of sequential tests to judge its vulnerability to flood risk and guide development into the most risk free locations. The SFRAs also should influence LDF land allocations.

### **3.1.1 The Sequential Test**

Briefly the Sequential Test (ST) uses Environment Agency Flood Maps as a base. These maps divide areas into three Flood Zones (Zone 3 is highest risk, Zone 2 of medium risk and Zone 1 all other land). The risks refer to river or sea flooding and ignore all existing flood defences. The information developed through the SFRAs also feed into this process, as they incorporate forward projections of future climate change. (The Flood Zones and the ST are described in detail in Appendix 2 below.)

The various Zones have flood risk probabilities attached to them. The ST then suggests appropriate development within these zones. Within Zone 1 all uses of land are deemed appropriate, with increasing restriction through Zones 2 and 3, with only the most water compatible, and essential infrastructure that could not be placed elsewhere, reserved for this Zone.

The overall aim is to steer new development to Zone 1, if no sites are available in this Zone then consider, taking into account the increased flood risk of this Zone and the vulnerability of the particular kind of development, a location in Zone 2. Only when there are no reasonably available sites in either Zones 1 or 2 should Zone 3 be considered

Attached to the ST is an “Exception Test” which should only be applied to areas containing large amounts of land in higher risk flood zones and where the ST cannot supply enough acceptable sites for necessary development.

This test allows some forms of development which have failed an ST to be passed provided they: provide wider sustainability benefits that outweigh the flood risk; be on developable previously

developed land and only not so if there is no reasonable previously developable land available and a more detailed site specific flood risk assessment prepared by the developer (a Flood Risk Assessment or FRA (see 3.1.5 below) must demonstrate that such a development will be safe without increasing flood risk elsewhere. (see Exception Test in Appendix 2)

PPS25 describes a variety of flood risk assessment documents each of which operate at different spatial scales. At the regional level there is a Regional Flood Risk Appraisal (RFRA), in terms of Ribble Valley this is the responsibility of the North West Regional Assembly in conjunction with the Environment Agency (EA). At local planning authority (LPA) level and in more detail the relevant document is the Strategic Flood Risk Assessment (SFRA) prepared by the local authority and advised principally by the EA. Finally at a site specific level is the Flood Risk Assessment. These should be submitted with a planning application by the developer in consultation with the LPA.

### **3.1.2 Regional Flood Risk Appraisal (RFRA)**

Within PPS25 RFRA's are prepared by regional planning bodies (in Ribble Valley's case this is the North West Regional Assembly) in conjunction with the Environment Agency (EA). They show the broad spatial distribution of flood risk, suggested policies for flood risk to be incorporated in the Regional Spatial Strategies (RSS) and suitable locational guidance criteria for flood risk management in high risk areas, including the consideration of regionally significant uses. They also highlight issues that LPAs will need to take account of in their SFRA's (see 3.1.3 below). The RFRA's are informed by the existing EA Flood Maps and other EA plans such as Catchment Flood Management Plans and River Basin Management Plans (both mentioned below). The current RFRA for the North West is due for publication at the same time as the Regional Spatial Strategy.

### **3.1.3 Strategic Flood Risk Assessment (SFRA)**

PPS25 tasks LPAs with producing Strategic Flood Risk Assessments (SFRA's) for their areas, in consultation with the Environment Agency and others, such as local authority emergency response functions and relevant drainage bodies (in Ribble Valley's case this is United Utilities).

The SFRA will be initially used to refine information on the various parts of the area that are at risk from various kinds of flooding, such as river floods, or surface water flooding and also build in the predicted future impacts of climate change. The SFRA can then be used to inform policy options for future flood risk management and inform the Sustainability Appraisal of various Local Development Framework (LDF) documents. It will be the basis against which the Sequential and Exception Tests (see 3.1.1 and Appendix 2) of proposed planning applications and development plan land allocations will be made.

PPS25 recommends a staged approach to SFRA's; in areas where flooding is not a major issue and where development pressures are low, a less detailed Level 1 SFRA may be appropriate. Where this shows that land outside the flood risk areas cannot cope with the anticipated level of development a more detailed Level 2 SFRA may be required. In either case there should be sufficient detail to allow a Sequential Test of all possible development sites. The SFRA should be completed in parallel with the development of options for the allocation of land for development. For housing this should be done through the Strategic Housing Land Availability Assessment (SHLAA).

It is anticipated, after preliminary discussions with the Environment Agency, that we will prepare a scoping study on local flood risk that will lead to a Level 1 SFRA.

The key outputs of a Level 1 SFRA are:

- Plans showing the LPA boundary, main rivers, ordinary watercourses and flood zones and all previously allocated development land and possibly sites to be considered for future development
- An assessment of the implications of climate change for flood risk at allocated development sites over an appropriate time period. Currently the EA Flood Maps do not take climate change into account. PPS25 Guidance suggests (3.83) that climate change factors may best be defined at a regional level, presumably through the RFRA. And also in Annex B of PPS25 itself. This climate change factoring will also be relevant to FRAs (see 3.1.5 below)
- Areas at risk from non river flooding such as surface water and groundwater flooding
- Flood risk management measures, including the standard and location of infrastructure and the coverage of flood warning systems
- Locations where development may increase flood risk elsewhere
- Guidance on the preparation of FRAs for allocated development sites
- Guidance on the applicability of sustainable urban drainage systems (SUDS) at key development sites

Where a Level 1 SFRA demonstrates that land in Flood Zone 1 (land at the least risk of flooding) cannot accommodate the anticipated level of development then further work and data collection will be needed to complete a Level 2 SFRA

### **3.1.4 SFRAs and Surface Water Flooding**

Surface water flooding develops quickly and is difficult to predict. It is the result of natural and man-made drainage systems being temporarily overwhelmed with a volume of rainfall. Most of the major flooding in 2007 was due to surface water flooding and climate change predictions indicate that this kind of flooding is likely to become an increasing problem. The SFRA should, among other things, identify surface water drainage issues and recommend relevant management measures. This should inform land allocations, Sustainability Appraisal of development plan documents and development control policies along with all other aspects of the SFRA.

Surface water management is a developing area of flood risk management. If a new development cannot be located away from a surface water flood risk area then sustainable drainage systems (SUDS), such as permeable pavements, will be needed to control the water at source and prevent excessive runoff. PPS25 requires local planning authorities to promote SUDS techniques and encourage the use of SUDS in their local development documents.

SFRAs should provide baseline information on where flooding from surface water and run off is a problem now and may be in the future. They should identify any areas with critical drainage issues, in which case a Surface Water Management Plan may need to be commissioned.

The SFRA will go beyond the river flood information currently included on EA Flood Maps held by the LPA and which are currently used to assess flood vulnerability of sites. The SFRAs will also

be used in conjunction with wider River Basin Management Plans (see 4.3 below) being produced by the Environment Agency and due for completion in 2009.

### **3.1.5 Flood Risk Assessments (FRA)**

FRAs are site-specific flood risk assessments to be prepared by the developer as part of planning applications for sites in areas of flood risk and should make clear all the flood risks associated with a development. Their preparation should be indicated within LDF policies. If a proposed development is identified in a Local Development Document (LDD) which has been supported by an SFRA it will already have been through the sequential flood test process and the developer can rely on the results of that testing, if the development type accords with the LDD.

If the development is not in accordance with the LDD or the sequential and exception tests have not been applied to the LDD and the site is in a flood risk area then the developer will need to produce an FRA.

PPS25 also contains advice on how to manage flood risk through the design of development where there are no suitable alternative options including site layout including, directing the most flood vulnerable elements towards those areas of the site at least risk and using lower lying land as a multi purpose flood storage and green amenity space. Other design elements include raised floor levels, ground floor flood compatible uses such as car parking, with residential elements at first floor level and individual flood gates across doorways and air brick covers.

## **4. REGIONAL and SUB REGIONAL PLANNING POLICY and OTHER STRATEGIES**

### **4.1 Regional Spatial Strategy – The North West Plan (RSS) (2008)**

The RSS deals with flood issues within Policies EM5 “Integrated Water Management” and EM6 “Managing the North West’s Coastline”, the latter dealing with coastal flooding, of less relevance to Ribble Valley.

EM5 maintains that plans and strategies should have regard to the following:

- EU Water Framework Directive which directs the production of River Basin Management Plans
- Water Company Asset Management Plans
- Regional Flood Risk Appraisal (RFRA)

It emphasises that Local Planning Authorities (LPAs) should manage flood risk by working with Water Companies (in Ribble Valley this is United Utilities) and the Environment Agency when planning the location and phasing of new development. This development should be located where there is spare capacity within the existing water supply and wastewater treatment, sewer and strategic surface water mains networks. Where this is not possible then new infrastructure must be provided without environmental harm.

It goes on to state that LPA land allocations should comply with the PPS25 Sequential Test (see PPS25 3.1 above and Appendix 2) and allows departures from this only in the exceptional cases as described within PPS25. It also states that for those exceptional developments which must be placed within high flood risk areas that there be sufficient flood mitigation measures in place. It goes on to emphasise that all new development should incorporate sustainable drainage systems and water conservation and efficiency measures and encourages that these be retrofitted within existing developments.

It also underlines the need for sub regional or District level Strategic Flood Risk Assessments (SFRAs) to be produced, guided by the Regional Flood Risk Appraisal (RFRA).

#### **4.2 Regional Flood Risk Appraisal (RFRA) – Environment Agency**

As mentioned above in PPS25 (within section 3.1.2) RFRAs lay out the regional flood risk situation and the North West RFRA will be published at the same time as the Regional Spatial Strategy.

#### **4.3 River Basin Management Plans- Environment Agency**

Produced as a part of the EU Water Framework Directive they set out in general terms how the water environment will be managed and give a structure to future decision making. They contain a summary of a basin's characteristics, including any significant pressures and impacts on water bodies and an economic analysis of water use. They establish a strategic plan for the long term management of a basin; set out objectives for the water bodies within it, including water quality measures, and sets out broad measures to achieve these. It also acts as a reporting mechanism for EU scrutiny.

The Environment Agency is charged with producing them in consultation with liaison panels and the plans are reviewed every six years. The Ribble Valley and its rivers are a part of the North West River Basin District. The draft plan for this Basin will go out to consultation in December 2008 with the final plan due in late 2009.

#### **4.4 Ribble Catchment Flood Management Plan (draft) - Environment Agency 2008**

The Ribble Catchment Flood Management Plan (CFMP) is a high level strategic plan produced by the Environment Agency (EA) in partnership with local authorities and other bodies. It contains policies to manage flood risk in the whole River Ribble catchment, which includes a significant part of the Borough, over the next 50 to 100 years. It includes an Action Plan laying out how its policies can be achieved. These policies take into account the likely future impact of changes in climate and the effects of land management. The CFMP does not aim to identify specific measures to manage flood risk, as these will be progressed through more detailed studies. It has an initial 6 year implementation period. It is described in more detail in Appendix 3 below.

The CFMP acknowledges that climate change is likely to lead to bigger and more frequent floods and goes on to state that flooding cannot be completely eliminated but can be managed to minimise risk. It goes on to establish, for particular parts of the catchment, whether action should be taken by EA and others to increase, decrease or maintain the current level of flood risk.

In more detail it brings together a variety of data including topographical, land use, hydrology, historical flood information and current flood risk management information to try to predict likely future changes. It then goes on to develop a set of future scenarios based on these likely changes which describe the likely future flood risks facing the area. Having done this the Plan then develops a set of generic policy options, each evaluated against a set of environmental, social and economic objectives.

It then assigns a "Preferred Policy" from this set to each particular geographic sub area (or Policy Unit) of the catchment and goes on to describe in its Action Plan how this policy will be delivered through actions by relevant partner organisations. The CFMP will inform the production of Strategic Flood Risk Assessments.



Those Policy Unit areas lying within Ribble Valley and their chosen Preferred Policy options are outlined below together with any actions that involve the local planning authority.

### **Upper Ribble and Hodder Unit Policy Action**

Promote flood resilience measures to those properties that are at risk of flooding, where flood defences are not economically viable. This should build on the experience of pilot schemes in the region which have provided the installation of flood proof doors, hard flooring and elevated power points to enable residents to recover more quickly from flood events. These actions are given a Medium Priority to the achievement of the policy aim. These measures would be implemented as part of the Building Control function.

### **Bowland Fell**

No intervention but action to increase flooding to deliver habitat improvement and a reduction in overall flood risk

### **Clitheroe Policy Unit Actions**

#### Action 1

Emphasises the need for a SFRA to help minimise flood risk to future development in the town from all sources. Exceptionally, where development is at risk, appropriate flood mitigation measures will be implemented and residual risks fully considered by . This action is given a High priority as essential to the delivery of the policy aim.

#### Action 2

Also given a High Priority is the need to promote the application of rigorous planning control for any new development on floodplains in and around Clitheroe using the principles in PPS25 and encourage the implementation of Sustainable Drainage Systems (SUDS). These considerations are already incorporated into the Local Planning Authority Development Control system.

### **Calder and Lower Ribble Policy Areas**

Action to be taken to stop flood risk increasing

## **5. LOCAL PLANNING POLICY and OTHER FLOOD RELATED BODIES**

### **5.1 Ribble Valley Districtwide Local Plan (1998)**

There are no specifically flood related policies within this plan as the issue is covered sufficiently by national policy. The proposals map of this plan identifies areas at risk from flooding, however these are based on dated information for today's needs.

## **5.2 Highway Drainage and Flooding – Lancashire County Council**

As mentioned in Appendix 1 below drainage from and under roadways and highways can be a potential source of flooding. Responsibility for public highway drainage within the Borough lies with Lancashire County Council (LCC) as the highway authority. There are no roads within Ribble Valley area that fall within the responsibility of the Highways Agency, which is responsible for major routes. A detailed description of the County Council's responsibilities is available in Appendix 4 below.

In general LCC aims to clear surface water from carriageways, footpaths and cycleways in order to prevent flooding and to prevent the unauthorised discharge of water from private land or unadopted highways onto a road where it would pose a danger or cause damage. It also has a duty to prevent the unauthorised runoff of highway surface water onto residential or commercial property or highway runoff flooding private land.

## **5.3 Surface Water and Sewer Flooding – United Utilities**

United Utilities (UU) is responsible for all public sewers within the Borough, which take both rainfall running off from buildings and land through none highway related drains and also other types of foul sewage to treatment works prior to being cleaned and then returned to the environment. Currently once planning permission is given the sewerage undertaker has a statutory duty to allow connection to the water mains and public sewer. As mentioned above the Government is currently reviewing whether to change the automatic right of a permitted development to connect to the public sewers. Sewer undertakers are not statutory consultees of planning applications. UU maintain an internal Flood Register of properties with historic flooding problems.

UU support the principle of SFRA's and their role in the planning process but at present it is unable to release detailed data on potential flooding from the public sewerage system. UU will at present release only very limited information based on 4 digit postcode based lists of properties that have flooded in the past as a result of hydraulic inadequacy of the sewer network and that were reported to UU but have not yet been resolved. This current information may only be of limited use in the SFRA process.

## **5.4 Reservoir Flooding – United Utilities**

UU is also responsible for the Stocks Reservoir site within the Borough and maintains a Flood Inundation Plan for the site. It can advise on whether proposed development sites fall within an inundation zone.

## **5.5 Private Sewers**

There are a number of private sewers in the area of which there is limited knowledge. Where private sewers cause flooding of a public highway then Highway Authorities have a right to deal with the problem. However there does not appear to be a comprehensive database of any flooding risks, nor does there appear to be any organisation charged with compiling one. As mentioned above the Government is currently reviewing whether to take all private sewers into public control

### Relevant Bodies and Their Roles

#### 1. DEFRA

DEFRA has overall policy responsibility for flood and coastal erosion in England. It funds the Environment Agency and grant aids other bodies in improvement works. Funding is apportioned through a strict set of criteria. DEFRA does not build defences nor direct authorities on specific projects. It is developing a new strategy for flood and coastal erosion risk management for the next 20 years called “Making Space for Water”.

It aims to reduce flood risk by:

- Discouraging inappropriate development in areas at risk from flooding
- Encouraging adequate and cost effective warning systems
- Encouraging adequate technically, environmentally and economically sound and sustainable flood defence measures

#### 2. DCLG

Is responsible for spatial planning including design and flood resilience through its Building Control function

#### 3. Environment Agency (EA)

A non departmental body under DEFRA it performs the lead role in providing flood risk management, with statutory responsibility for flood management and defence and advises the planning system on flooding issues. At a strategic level it provides relevant planning authorities with advice on the preparation of RFRA's and SFRA's and is a statutory consultee on local planning policy documents and planning applications, strategic environmental assessments and environmental impact assessments. It also advises on FRA's.

It also has duties to provide flood warnings and to exercise a general supervision over all matters relating to flood defence, including ordinary watercourses. Its current five year strategy for flood management shows how it will work with other bodies and how it will use the increased government funding.

The EA's flood defence functions are carried out through Regional Flood defence Committees and to carry out its functions the EA has these powers:

- Maintain or improve Main Rivers
- Maintain or improve sea and tidal defences
- Install and operate flood warning equipment
- Control actions of riparian owners and occupiers which may interfere with drainage
- Supervise internal drainage boards

#### 4. Local Authorities

Have permissive powers to carry out works on ordinary watercourses for certain purposes and often have their own regulations and byelaws affecting what can and cannot be done. They can control the culverting of watercourses. During a flood they are the emergency body supplying aid to

householders. Works on any watercourse may require planning permission from the local authority as well as consent from the EA.

## **5. Highways Authorities**

Local highways authorities (in Ribble Valley this is Lancashire County Council) have responsibility for managing road drainage from local . The Highways Agency is responsible for trunk roads. There are no roads in the area that are the responsibility of the Agency

## **6. Sewerage Undertakers**

Have general responsibility for surface water drainage from development via adopted sewers. In Ribble Valley's case this is United Utilities.

## **7. Reservoir Undertakers**

Certain reservoir undertakers are required to produce emergency contingency plans. The presence of reservoirs should be recognised in RFRA's, and SFRA's and FRA's. United Utilities are responsible for the Stocks Reservoir in Ribble Valley.

## **8. Emergency Services**

Local resilience Forums, which include representatives from EA, local authorities and the emergency services consider flood risks, and emergency services should be consulted in planning policy formulation and applications where emergency evacuation needs are important..

## **9. The Insurance Industry**

Increased flood risk will attract higher insurance costs or even the withdrawal of cover. Those proposing development in high flood risk areas should consult the industry in advance to clarify such matters. The Industry may also make representations about individual applications or general development locations.

## **10. Owners of land near water have:**

The right to protect their property from flooding and erosion

A responsibility to accept flows through their land

A responsibility to maintain the bed and banks of the watercourse

### **The Sequential Test and the Exception Test (Source PPS25, DCLG)**

#### **The Sequential Test**

D1. The risk-based Sequential Test should be applied at all stages of planning. Its aim is to steer new development to areas at the lowest probability of flooding (Zone 1).

D2. The Flood Zones are the starting point for the sequential approach. Zones 2 and 3 are shown on the Environment Agency Flood Map<sup>18</sup> with Flood Zone 1 being all the land falling outside Zones 2 and 3. These Flood Zones refer to the probability of sea and river flooding only, ignoring the presence of existing defences.

D3. Regional Flood Risk Appraisals (RFRA) (see Annex E) will refer to Environment Agency Flood Maps and will utilise further information such as Strategic Flood Risk Assessments to allow flood risk to be taken into account in a broad regional context (see Annex E para. E4).

D4. Strategic Flood Risk Assessments (SFRAs) (see Annex E) will refine information on the probability of flooding, taking other sources of flooding (see Annex C) and the impacts of climate change into account. The SFRA will provide the basis for applying the Sequential Test, on the basis of the Zones in Table D.1. Where Table D.1 indicates the need to apply the Exception Test, the scope of the SFRA will be widened to consider the impact of the flood risk management infrastructure on the frequency, impact, speed of onset, depth and velocity of flooding within the Flood Zones considering a range of flood risk management maintenance scenarios. Where a SFRA is not available, the Sequential Test will be based on the Environment Agency Flood Zones.

D5. The overall aim of decision-makers should be to steer new development to Flood Zone 1. Where there are no reasonably available sites in Flood Zone 1, decision-makers identifying broad locations for development and infrastructure, allocating land in spatial plans or determining applications for development at any particular location should take into account the flood risk vulnerability of land uses and consider reasonably available sites in Flood Zone 2, applying the Exception Test if required. Only where there are no reasonably available sites in Flood Zones 1 or 2 should decision-makers consider the suitability of sites in Flood Zone 3, taking into account the flood risk vulnerability of land uses and applying the Exception Test if required.

D6. Within each Flood Zone, new development should be directed first to sites at the lowest probability of flooding and the flood vulnerability of the intended use matched to the flood risk of the site, eg higher vulnerability uses located on parts of the site at lowest probability of flooding.

See website for further details on Flood Map. [www.environment-agency.gov.uk/maps/info/floodmaps/?lang=e](http://www.environment-agency.gov.uk/maps/info/floodmaps/?lang=e)

D7. The preparation and review of Regional Spatial Strategies (RSSs) and Local Development Documents (LDDs) should be used to review existing and proposed development in order to allocate land in lower flood risk zones suitable for existing vulnerable uses already in medium and high flood zones, and in doing so, to realise opportunities arising through redevelopment to improve the sustainability of communities.

D8. When seeking planning permission for individual developments on sites allocated in development plans through the application of the Sequential Test, informed by a SFRA, developers need not apply the Sequential Test, but should apply the sequential approach (see para. 14) to locating development within the site. The plan should specify requirements for Flood Risk Assessment (see Annex E)

### **Table D.1: Flood Zones**

**(Note: These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences)**

#### **Zone 1 Low Probability**

##### **Definition**

This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%).

##### **Appropriate uses**

All uses of land are appropriate in this zone.

##### **FRA requirements**

For development proposals on sites comprising one hectare or above the vulnerability to flooding from other sources as well as from river and sea flooding, and the potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off, should be incorporated in a FRA. This need only be brief unless the factors above or other local considerations require particular attention. See Annex E for minimum requirements.

##### **Policy aims**

In this zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development, and the appropriate application of sustainable drainage techniques.

#### **Zone 2 Medium Probability**

##### **Definition**

This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% – 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% – 0.1%) in any year.

##### **Appropriate uses**

The water-compatible, less vulnerable and more vulnerable uses of land and essential infrastructure in Table D.2 are appropriate in this zone.

Subject to the Sequential Test being applied, the highly vulnerable uses in Table D.2 are only appropriate in this zone if the Exception Test (see para. D.9.) is passed.

##### **FRA requirements**

All development proposals in this zone should be accompanied by a FRA. See Annex E for minimum requirements.

### **Policy aims**

In this zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area through the layout and form of the development, and the appropriate application of sustainable drainage techniques.

### **Zone 3a High Probability**

#### **Definition**

This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

#### **Appropriate uses**

The water-compatible and less vulnerable uses of land in Table D.2 are appropriate in this zone.

The highly vulnerable uses in Table D.2 should not be permitted in this zone.

The more vulnerable and essential infrastructure uses in Table D.2 should only be permitted in this zone if the Exception Test (see para. D.9) is passed. Essential infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood.

#### **FRA requirements**

All development proposals in this zone should be accompanied by a FRA. See Annex E for minimum requirements.

### **Policy aims**

In this zone, developers and local authorities should seek opportunities to:

- i. reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of sustainable drainage techniques;
  - ii. relocate existing development to land in zones with a lower probability of flooding;
- and
- iii. create space for flooding to occur by restoring functional floodplain and flood flow pathways and by identifying, allocating and safeguarding open space for flood storage.

### **Zone 3b The Functional Floodplain**

#### **Definition**

This zone comprises land where water has to flow or be stored in times of flood. SFRAs should identify this Flood Zone (land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1%) flood, or at another probability to be agreed between the LPA and the Environment Agency, including water conveyance routes).

#### **Appropriate uses**

Only the water-compatible uses and the essential infrastructure listed in Table D.2 that has to be there should be permitted in this zone. It should be designed and constructed to:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows; and
- not increase flood risk elsewhere.

Essential infrastructure in this zone should pass the Exception Test.

## **FRA requirements**

All development proposals in this zone should be accompanied by a FRA. See Annex E for minimum requirements.

## **Policy aims**

In this zone, developers and local authorities should seek opportunities to:

- i. reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of sustainable drainage techniques; and
- ii. relocate existing development to land with a lower probability of flooding.

## **Table D.2: Flood Risk Vulnerability Classification**

<b>Essential Infrastructure</b>	<ul style="list-style-type: none"><li>• Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk, and strategic utility infrastructure, including electricity generating power stations and grid and primary substations.</li></ul>
<b>Highly Vulnerable</b>	<ul style="list-style-type: none"><li>• Police stations, Ambulance stations and Fire stations and Command Centres and telecommunications installations required to be operational during flooding.</li><li>• Emergency dispersal points.</li><li>• Basement dwellings.</li><li>• Caravans, mobile homes and park homes intended for permanent residential use.</li><li>• Installations requiring hazardous substances consent.</li></ul>
<b>More Vulnerable</b>	<ul style="list-style-type: none"><li>• Hospitals.</li><li>• Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.</li><li>• Buildings used for: dwelling houses; student halls of residence; drinking establishments; nightclubs; and hotels.</li><li>• Non-residential uses for health services, nurseries and educational establishments.</li><li>• Landfill and sites used for waste management facilities for hazardous waste</li><li>• Sites used for holiday or short-let caravans and camping, <b>subject to a specific warning and evacuation plan.</b></li></ul>
<b>Less Vulnerable</b>	<ul style="list-style-type: none"><li>• Buildings used for: shops; financial, professional and other services; restaurants and cafes; hot food takeaways; offices; general industry; storage and distribution; non-residential institutions not included in 'more vulnerable' ; and assembly and leisure.</li><li>• Land and buildings used for agriculture and forestry.</li><li>• Waste treatment (except landfill and hazardous waste facilities).</li><li>• Minerals working and processing (except for sand and gravel working).</li><li>• Water treatment plants.</li><li>• Sewage treatment plants (if adequate pollution control measures are in place).</li></ul>

### **Notes:**

1) This classification is based partly on Defra/Environment Agency research on Flood Risks to People (FD2321/TR2)<sup>21</sup> and also on the need of some uses to keep functioning during flooding.

2) Buildings that combine a mixture of uses should be placed into the higher of the relevant classes of flood risk sensitivity. Developments that allow uses to be distributed over the site may fall within several classes of flood risk sensitivity.

3) The impact of a flood on the particular uses identified within this flood risk vulnerability classification will vary within each vulnerability class. Therefore, the flood risk management infrastructure and other risk mitigation measures needed to ensure the development is safe may differ between uses within a particular vulnerability classification.

## **Water-compatible Development**

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.



- Sand and gravel workings.
- Docks, marinas and wharves.
- Navigation facilities.
- MOD defence installations.
- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.
- Essential ancillary sleeping or residential accommodation for staff required by uses in this category, **subject to a specific warning and evacuation plan.**

**Table D.322: Flood Risk Vulnerability and Flood Zone ‘Compatibility’**

<b>Flood Risk Vulnerability Classification (see Table D2)</b>	<b>Essential Infrastructure</b>	<b>Water Compatible</b>	<b>Highly Vulnerable</b>	<b>More Vulnerable</b>	<b>Less Vulnerable</b>
<b>Flood Zone 1</b>	Development appropriate	Development appropriate	Development appropriate	Development appropriate	Development appropriate
<b>Flood Zone 2</b>	Development appropriate	Development appropriate	Exception test required	Development appropriate	Development appropriate
<b>Flood Zone 3A</b>	Exception test required	Development appropriate	Development should not be permitted	Exception test required	Development appropriate
<b>Flood Zone 3B</b>	Exception test required	Development appropriate	Development should not be permitted	Development should not be permitted	Development should not be permitted

<sup>22</sup> This table does not show: the application of the Sequential Test which guides development to FZ1 first, then FZ2, and then FZ3; FRA requirements; or the policy aims for each Flood Zone.

<sup>23</sup> Developable sites are defined in Planning Policy Statement 3 (PPS3) *Housing* as those sites which should be in a suitable location for housing development and there should be a reasonable prospect that the site is available for, and could be developed at the point envisaged.

<sup>24</sup> Previously-developed land definition (commonly known as Brownfield Land). See Annex B of Planning Policy Statement 3 *Housing*.

## The Exception Test

D9. For the Exception Test to be passed:

a) it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a SFRA where one has been prepared. If the DPD has reached the ‘submission’ stage – see Figure 4 of PPS12: *Local Development Frameworks* – the benefits of the development should contribute to the Core Strategy’s Sustainability Appraisal;

b) the development should be on developable<sup>23</sup> previously-developed land or, if it is not on previously developed land<sup>24</sup>, that there are no reasonable alternative sites on developable previously-developed land; and

c) a FRA must demonstrate that the development will be safe, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

D10. The Exception Test should be applied by decision-makers only after the Sequential Test has

been applied and in the circumstances shown in Table D.1 when ‘more vulnerable’ development and ‘essential infrastructure’ cannot be located in Zones 1 or 2 and ‘highly vulnerable’ development cannot be located in Zone 1. It should not be used to justify ‘highly vulnerable’ development in Flood Zone 3a, or ‘less vulnerable’; ‘more vulnerable’; and ‘highly vulnerable’ development in Flood Zone 3b.

D11. The Exception Test should be applied to LDD site allocations for development and used to draft criteria-based policies against which to consider planning applications. Where application of the Sequential Test indicates it needs to be applied, this should be done as early in the plan-making process as possible – in LDDs, including Supplementary Planning Documents (such as site development briefs). This will minimise the need to apply it to individual planning applications.

D12. Where the Exception Test has been applied in LDD allocations or criteria-based policies, the local planning authority should include policies in its LDDs to ensure that the developer’s FRA satisfies criterion c) in para. D9. The Environment Agency and other appropriate operating authorities such as Internal Drainage Boards should be consulted on the drafting of any policy intended to apply the Exception Test at a local level.

D13. Compliance with each part of the Exception Test should be demonstrated in an open and transparent way.

D14. Criterion b) of para. D9 reflects the Government’s commitment to making the most efficient and effective use of land in line with the principles of sustainable development. Reflecting this, Planning Policy Statement 3 (PPS3): *Housing* sets out the Government’s objectives for a flexible, responsive supply of land for housing which gives priority to the use of previously-developed land for development. However, flood risk should be taken into account in determining the suitability of the land for development.

### **Ribble Catchment Flood Management Plan (draft) - Environment Agency 2008**

The Ribble Catchment Flood Management Plan (CFMP) is a high level strategic plan produced by the Environment Agency (EA) in partnership with local authorities and other bodies. It contains policies to manage flood risk in the whole River Ribble catchment, which includes a significant part of the Borough, over the next 50 to 100 years. It includes an Action Plan laying out how its policies can be achieved. These policies take into account the likely future impact of changes in climate and the effects of land management. The CFMP does not aim to identify specific measures to manage flood risk, as these will be progressed through more detailed studies. It has an initial 6 year implementation period.

The CFMP acknowledges that climate change is likely to lead to bigger and more frequent floods and goes on to state that flooding cannot be completely eliminated but can be managed to minimise risk. It goes on to establish, for particular parts of the catchment, whether action should be taken by EA and others to increase, decrease or maintain the current level of flood risk.

In more detail it brings together a variety of data including topographical, land use, hydrology, historical flood information and current flood risk management information to try to predict likely future changes. It then goes on to develop a set of future scenarios based on these likely changes which describe the likely future flood risks facing the area. Having done this the Plan then develops a set of generic policy options, each evaluated against a set of environmental, social and economic objectives.

It then assigns a “Preferred Policy” from this set to each particular sub area (or Policy Unit) of the catchment. The individual Policy Units, their Preferred Policies and the justifications for the policy selection are shown in Table 6.2 (see pages 92- 96 of the Plan). Section 6 also lays out a Strategic Environmental Assessment (SEA) of the Preferred Policies.

The Plan then goes on to describe in its Action Plan how its Policies for each part of the catchment will be delivered. This is broken down by Policy Unit, and includes the Preferred Policy and a set of prioritised Actions, each allotted to a relevant partner organisations which are tasked with delivery. Those Policy Unit areas lying within Ribble Valley and their chosen Preferred Policy options are:

#### **Upper Ribble and Hodder**

No active intervention (including flood warning (there are no flood warning areas in this unit) and maintenance), continue to monitor and advise.

#### **Bowland Fell**

Take action to increase the frequency of flooding to deliver benefits locally or elsewhere (which may constitute an overall flood risk reduction, for example for habitat inundation). There are no flood warning areas in this part of the catchment.

#### **Clitheroe**

Preferred policy is to take further action to reduce flood risk in this area. There is a risk of flooding in parts of the town which will increase unless action is taken. These actions should be informed by a Strategic Flood Risk Assessment (SFRA) which is the responsibility of the local

authority. The SFRA will steer development clear of existing and future floodplain and minimise flood risk to it.

### **Calder**

The preferred policy here is to continue with existing or alternative actions to manage flood risk at the current level. This is a mostly rural area with a few isolated flood risk areas. However flood risk will rise in the future and therefore actions will need to be taken to return this risk to its current level. This unit contains the Whalley Flood Warning Area.

### **Lower Ribble**

The preferred policy is to take further action to sustain the current level of flood risk into the future in response to potential increases in risk due to urban development, land use change and climate change. This is a mostly rural area with a few isolated flood risk areas, one of which is the Ribchester and Samlesbury Flood Warning Area.

#### **Implications for Ribble Valley**

As mentioned above, some of the Policy Units above have delivery Actions relating to them which Are, either in part or whole, the responsibility of the local authority as a partner body. Other actions are the responsibility of other organisations such as the EA. Those specifically relating to planning are:

### **Upper Ribble and Hodder Unit Policy Action**

For this area it will be important to promote flood resilience measures to those properties that are at risk of flooding, where flood defences are not economically viable. This should build on the experience of pilot schemes in the region which have provided the installation of flood proof doors, hard flooring and elevated power points to enable residents to recover more quickly from flood events. These actions are given a Medium Priority to the achievement of the policy aim. These measures would be implemented as part of the Building Control function.

### **Clitheroe Policy Unit Actions**

#### **Action 1**

Produce a Strategic Flood Risk Assessment (SFRA) for Clitheroe to help minimise flood risk to future development in the town from all sources. Exceptionally, where development is at risk, appropriate flood mitigation measures will be implemented and residual risks fully considered. This action is given a High priority as essential to the delivery of the policy aim. The production of a SFRA is a responsibility of the planning function of the Council as stated in Planning Policy Statement 25 (PPS25) Development and Flood Risk 2006. Its production will demand resources including specialist consultancy input

#### **Action 2**

Also given a High Priority is the need to promote the application of rigorous planning control for any new development on floodplains in and around Clitheroe using the principles in PPS25 and encourage the implementation of Sustainable Drainage Systems (SUDS). These considerations are already incorporated into the Local Planning Authority Development Control system.

## **Highways Drainage Responsibilities (Source- Lancashire County Council Highways Maintenance Plan 2008 – 09)**

### **5.4 Highway Drainage Systems**

#### **5.4.1 Objectives for Maintenance and Improvement of Highway Drainage Systems**

5.4.1.1 To provide for the safe operation of the highway network by:

- Ensuring that surface water is removed from carriageways, footways and cycleways as quickly as possible to prevent ponding and flooding that could cause a danger to the public;
- Preventing by the use of appropriate enforcement action, or by direct action where enforcement action is not possible or practicable in terms of obviating danger to the public, the uncontrolled discharge of water from private land or unadopted highways onto the highway such as might cause a danger to the public by the formation of ice, erosion of surfaces or accumulations of debris.

5.4.1.2 To promote journeys by alternative forms of transport by improving facilities for pedestrians and cyclists by reducing the extent to which water collects on the highway during or following rainfall.

5.4.1.3 To provide and maintain drainage systems in a manner consistent with the principles of sustainability and effective asset management, including:

- Preventing water from soaking into road foundations such as to cause structural damage;
- Preventing the unauthorised discharge of highway surface water run-off into residential or commercial property such as might cause nuisance or damage;
- Preventing the unauthorised discharge of highway surface water run-off such as might cause flooding of private land adjacent to the highway;
- The use, in appropriate circumstances, of sustainable drainage systems on new development sites and highway improvement schemes;
- Where practicable, taking reasonable precautions to prevent pollution of watercourses;
- Ensuring that ditch cleaning operations are undertaken with due regard to the ecology and biodiversity status of the adjoining verge and private land.

#### **5.4.2 Service Inspections for Highway Drainage Systems**

5.4.2.1 The Council does not undertake formal Service Inspections (see Section 4.1). A number of features relating to network serviceability are, however, inspected as part of Highway Safety Inspections.

- Blocked gullies;
- Ironwork rocking under load;
- Gully gratings with bars which are parallel to the carriageway;
- Missing covers.

5.4.2.2 In addition to Safety Inspections, detailed inspections will be prompted by a number of circumstances:

- Inspections carried out as part of a NRSWA inspection;
- Ad-hoc inspections required by perceived conditions;
- Investigatory inspection prompted by service user enquiry;
- Investigatory inspection prompted by feedback from routine maintenance operations.

### 5.4.3 Highway Drainage Systems Maintenance Categories

Maintenance of Highway Drainage Systems is defined operationally by the following maintenance categories:

- Drainage Cleaning (see Section 5.4.5);
- Drainage Repairs (see Section 5.4.6).

### 5.4.4 Priority Rating for Highway Drainage Works

Table 5.4.1 indicates a priority-rating matrix to enable the comparison of drainage problems for allocation of resources. Departures from the priority rating matrix are permitted following a risk assessment having regard to:

- Relative severity of problems under considerations;
- Seasonal variations in potential for formation of ice;
- Action necessary to promote delivery of the Council's objectives for integrated transport, e.g. excessive ponding adjacent to a bus stop or a heavily used footway, ponding over an extensive proportion of a cycle-lane etc;
- Frequency of flooding;
- Number of householders, pedestrians and motorists affected by the problems under consideration;
- Revenue costs of response to flooding incidents e.g. placing signs, road closures, sandbagging etc.

### 5.4.5 Operational Policy and Standards for Drainage Cleaning

#### 5.4.5.1 Definition of Activity

- The cleaning of gullies, catchpits or manholes that are the responsibility of the highway authority, the sole purpose of which is to remove water from the highway. (If the drainage system carries roof water or water from private properties, that system is the responsibility of other authorities. In these cases the highway authority is responsible for highway gullies and gully connections only);
- The testing, rodding and jetting of the highway drainage system. This includes drains, gullies and their connections, inspection chambers, interception pits, piped ditches, grips, kerbed offsets, carriageway drainage on structures and the drainage of subways. The cleaning of drainage installed outside the highway boundaries under licence or easement should be included. Cleaning includes excavation, backfill and reinstatement necessary to jet a gully connection that does not have a rodding facility;
- The maintenance of ditches and grips through the removal of silt, vegetation growth and damage to allow free passage of water from the highway. Except when required in an emergency situation, maintenance should be confined to those ditches that are the responsibility of the highway authority. Roadside ditches are generally the responsibility of the adjacent landowner;
- The clearance or replacement of filter media as necessary to maintain the effective operation of filter drains and soakaways;
- The clearance of silt and vegetation from culverted watercourses and associated debris screens for which the highway authority is responsible. Generally, the highway authority is responsible for culverted watercourses passing under the highway except where it can be shown that another person or authority is responsible. Culverts with a clear span exceeding 1.2m (masonry culverts), 1.3m (concrete box), 1.4m (pipes), or multiple conduits with a waterway cross-sectional area exceeding 2.2 m<sup>2</sup> are defined as highways structures and maintained in accordance with the operational policy for highways structures.