HAMPSHIRE COUNTY COUNCIL

Report

Committee:	Economy, Transport and Environment Select Committee
Date:	15 September 2015
Title:	Catchment-based Approach to Flood Risk Management in Hampshire
Reference:	6931
Report From:	Director of Economy, Transport and Environment

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1. Purpose of Report

1.1. The purpose of this report is to update the Committee on the work undertaken as part of the Test and Itchen Pilots (TIPs) and the steps being taken to further develop a catchment-based approach to managing flood risk across Hampshire.

2. Contextual Information

2.1. The Flood and Water Management Act 2010 (FWMA) placed a number of duties on Hampshire County Council as the Lead Local Flood Authority (LLFA) for the county, including a duty to prepare a strategy for managing flood risk that is posed by surface water and ground water.

2.2. Hampshire's strategy, known as the Local Flood Risk Management Strategy (LFRMS), was adopted by the County Council in July 2013 together with its associated high level action plans. A full update of the strategy was scheduled for 2017 in order to coincide with a review of Hampshire's 2011 Preliminary Flood Risk Assessment (PFRA). That assessment, required under the 2009 Flood Regulations, involved high level screening and the compilation of information on significant local flood risk. Both Hampshire's LFRMS and the assessment can be viewed on Hantsweb, together with further information on flood risk management.

2.3. The Government is now reviewing the Flood and Water Management Act 2010 (FWMA), as is standard practice for all Acts of Parliament five years after their enactment. Findings from the FWMA review are expected in the Autumn although, so far, there has been no indication there will be any significant changes to what is expected in terms of flood risk management strategies.

2.4. Whilst Hampshire's LFRMS has provided a useful plan for identifying historical flood areas and areas at future risk within local administrative boundaries, the flooding over recent years has encouraged new ways of working that takes a more holistic approach to managing flood risk. Rather than being limited to

plans and activities determined around administrative boundaries, this new holistic catchment-based approach (see Section 3 below) engages communities and flood risk management partners on a range of activities around the catchment areas of natural drainage basins, irrespective of administrative boundaries. For example, the Test catchment-based pilot seeks to manage flood risk from all the tributaries extending from the River Test, and includes sub-catchment areas such as the Bourne Rivulet. A similar pilot has been developed around the River Itchen. An update on the progress of those pilots is set out in Section 5 of this report.

2.5. There are two stages to developing and embedding a catchment-based approach. Stage one has involved the production of a policy framework which is set out in Appendix 1. Starting with the Test and Itchen pilots, and following the guidance in the policy framework, catchment plans and actions can be developed as part of this initial stage. The plans should cover the background to the specific catchment, the level of flood risk within the catchment, based on modelling and information from historical events, and an estimate of the potential damage in relation to flood risk.

2.6. Stage two is to update the current LFRMS and ultimately replace it by producing a Flood Risk Management Framework that contains the new policy framework, the catchment plans, and the requirements of the Flood and Water Management Act embedded in the current strategy.

3. The Catchment-based Approach

3.1. Following the severe flooding in 2013/14, the County Council quickly established two areas of study around the River Test and the River Itchen as pilot areas, to work more holistically with other authorities and agencies and to improve co-ordination of actions, moving the management of flood risk within Hampshire from a ward/district based approach to a catchment area based approach. This shift in approach was approved by Cabinet in December 2014, recognising that measures in one part of a catchment can affect flood risk in another part hence the importance of promoting an integrated multi-agency response, in active partnership with local communities.

3.2. The approach also recognises the likelihood of future ground water flooding events. Therefore, the Test and Itchen pilots are seeking to adapt their local environment to become more resilient. Central to this thinking has been the importance of local alleviation measures, maintaining the integrity of the transport system, and supporting and promoting property level protection measures by the local community.

3.3. Since December 2014 significant work has been undertaken to establish the catchment-based approach. Both pilot studies have multi-agency involvement to identify and implement a suite of realistic measures to manage the risk of flooding from all sources. Rather than a piecemeal approach to individual flooding events, this approach considers the interaction of flooding events within the catchment areas and seeks to identify measures that manage the risk as a whole.

3.4. Expected outcomes from developing the catchment-based approach include:

- A better understanding of the complexity of flood risk management in Hampshire, in particular the combination of groundwater flooding with other sources of flooding;
- A well developed central evidence base, built on recent flooding events;
- Joint strategic priorities agreed and flood mitigation and alleviation measures identified and embedded into existing work programmes;
- More joined up programmes of work across different partner and agency organisations which together can better manage flood risk;
- More effective presentation of evidence to help secure national grant and other funding needed to deliver flood alleviation schemes.

3.5. Hampshire's ambition to further develop the catchment-based approach for managing flood risk across the county is attracting national interest. Last month the Executive Member for Economy, Transport and Environment, together with the Deputy Leader, discussed this approach with the new chairman of the Environment Agency, Sir Philip Dilley, as the County Council is keen to build on the good local relations it has with the Environment Agency.

4. The Policy Framework

4.1. The policy framework is set out in Appendix 1. It has been developed following work in the Test and Itchen pilots (TIPS), with input from the Test and Itchen project group and the Hampshire Strategic Flood and Water Management Technical Delivery Group.

4.2. The framework provides guidance on how to develop a catchment-based approach within an individual catchment area and which organisations and groups should be involved in developing catchment plans.

4.3. It makes clear that, when considering flood risk measures, there are likely to be a range of measures and options of varying in size, scale and complexity that may be appropriate. The framework provides general guidance about the potential suite of measures that could be implemented and how the current funding mechanisms relate to the scale and type of measures available for consideration.

4.4. The framework sets out a hierarchy of potential interventions, acknowledging that some actions require more resources and funding than others and might be spread over different timescales, depending on their complexity. This hierarchy or tiered approach is summarised below: -

- ***Local actions by the community*** – such as property level protection or setting up Flood Action Groups to establish response plans
- ***Small scale works -*** *led by communities but supported by the County Council and other Risk Management Authorities (RMAs) e.g. ditch clearance, funding bids for equipment, and works through existing maintenance budgets*
- ***Small scale flood alleviation works*** *– co-ordinated by a RMA but with works undertaken by local residents, for example where the County*

Council has co-ordinated work undertaken by the parish council and local residents on ordinary watercourses and overland flow routes.

- ***Large scale flood alleviation schemes -*** *led and run by RMAs, such as the engineering solutions at Hambledon.*

4.5. The policy framework emphasises the concept of a suite of measures and the fact that smaller local actions can be undertaken in a shorter timescale by individuals/communities or potentially within existing work programmes, whereas larger, more complicated measures, require a longer lead in time and will be more dependent on external funding being available.

4.6. The policy framework makes clear that a range of agencies and authorities, as well as local communities, have a role in mitigating flood risk and also the importance of taking a broader view about the mechanisms of flooding and how the impacts can be reduced.

4.7. Whist the policy framework sets out the overall approach, individual catchment plans and actions will need to be developed over time with all partner organisations and agencies contributing to the process.

5. Test and Itchen Catchment Plan progress

5.1. Following the initial work within the catchment pilot areas, including site visits to individual communities and the establishment of flood action groups, work to identify actions within the short, medium and longer-term timeframes has now commenced.

5.2. There are now a series of action plans covering the River Test and River Itchen catchments, developed by their respective pilot groups and agreed with the authorities as the best way forward. A number of actions have been progressed across the catchment areas. Short-term actions already undertaken include:

- Investigations and inspections to facilitate more substantial work programmes through funding routes, for example those around Romsey and Winchester;
- Support to local communities in developing flood action groups to prepare for emergencies;
- Work with riparian owners to clear ditches and improve existing structures, specifically in areas such as the Bourne Valley and Romsey'
- Works to existing infrastructure under maintenance programmes
- Early discussions about combining areas into one work package

5.3. Running parallel to this work is the continuing day to day work on flood risk management such as flood investigations, assessing and consenting work to ordinary watercourses, and the prioritisation of Hampshire's flood alleviation projects. These projects are funded through the Flood Defence Grant in Aid (FDGiA) and Local Levy, with their prioritisation being determined by the Regional Flood and Coastal Committees.

5.4. The next step to progress the Test and Itchen catchment plans is to revisit the communities with the latest action plans and discuss implementation.

5.5. It is proposed to complete the Test and Itchen catchment plans, including the initial action plans, by the end of January 2016. For the time being, these standalone plans will sit below the current LFRM strategy.

6. Local Flood Risk Management Strategy (LFRMS) update

6.1. As indicated earlier, phase two of developing the catchment-based approach is to update the existing LFRMS and to ultimately replace with a Flood Risk Management Framework that contains the new policy framework, the catchment plans, and the requirements of the Flood and Water Management Act embedded in the existing strategy.

6.2. The updated version will need to cover the requirements of the Flood and Water Management Act 2010 and review the risk assessments from moving from a ward-based to a catchment-based approach.

6.3. There are a number of factors that will impact on the update to the LFRMS and are likely to significantly alter any resource or skill requirements. The factors include:

- Requirement to provide a Strategic Environmental Assessment (SEA) as previously required for the LFRMS
- Possible change in requirements of the FWMA 2010 following the review which is due at the end of 2015 and what this might mean for the work already undertaken in the published LFRMS
- Risk assessments undertaken will need to be updated to include more up to date information and move from ward based assessment to a catchment assessment.
- Reprioritisation based on the updated assessments across the whole of Hampshire and information on the likely costs within the catchments.

6.4. The programme for updating the LFRMS will be developed towards the end of 2015 but it is unlikely to completed before July 2017 given it will need to incorporate any new requirements following the Government's review the Flood and Water Management Act (FWMA) and needs to coincide with the update of the Preliminary Flood Risk Assessment.

7. Conclusions

7.1. The policy framework aims to support the expansion of the catchment-based approach to flood risk management in Hampshire.

7.2. The approach aims to bring together all areas of flood risk management work undertaken by a number of different teams within Hampshire, such as highways, flood and water management team, and the emergency planning team to provide a comprehensive picture of how the County Council manages flood risk. It is also aims to support a more holistic and co-ordinated approach by the County Council and partner organisations.

7.3. Catchment plans and their lower-level action plans aim to better mitigate flood risk by providing a realistic suite of measures.

7.4. As the programme develops the County Council will work with partners and local communities to develop additional catchment plans for other major rivers that run through Hampshire.

Appendix 1: Policy Framework Document for the Catchment Approach

Policy Framework: Catchment Approach

Purpose of this document

This document sets out Hampshire County Council's (HCC) approach to managing flood risk on a catchment-based approach. It provides guidance on how this approach should be implemented along with who needs to be involved with the process.

It also provides information as to how, in terms of Flood Risk Management (FRM) HCC will fulfil its role as the Lead Local Flood Authority (LLFA) as defined within the Flood and Water Management Act (FWMA) 2010.

This framework should be read in conjunction with the Local FRM Strategy and between them they provide the overarching catchment approach framework to be followed when implementing FRM measures within Hampshire.

Aims of the catchment approach

The aim of the approach is to look at a whole river catchment, or sub-catchment and identify areas that are at risk and that have experienced flooding in recent events.

The catchment approach, although based around river catchments, has been developed to support the work being undertaken by authorities within the same catchment, and provide an understanding of how the catchment floods, which has not been based on administrative boundaries or flooding sources.

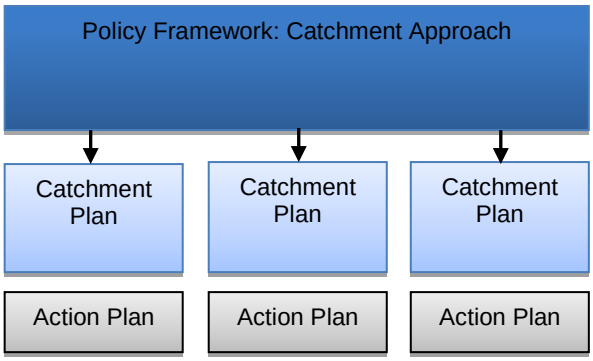

Figure 1: Catchment approach framework

The aims of FRM within Hampshire, using the catchment approach, to:

- Use this document as the framework for managing flood risk within Hampshire on a catchment basis
- Take hierarchical approach to interventions and measures to reduce flood risk, recognising that one single solution is not appropriate in all situations
- Work more effectively with partners, understanding each others roles and share responsibility to develop appropriate flood risk mitigation on a catchment basis

Outcomes of the Catchment Approach

- Further understand the complexity of flooding within Hampshire. In particular the combination of groundwater flooding with other sources of flooding.
- Build on recent flood risk events to develop a central evidence base.

- Agree and set joint priorities for action at a strategic level to ensure that flood mitigation and alleviation measures are embedded into existing programmes of work.
- Present evidence in such a way that helps to identify benefits to deliver realistic measures and help inform emergency responses.
- Identify a range of measures to reduce flood risk and work to join up programmes of work within different organisations.
- Link with other work streams outside flood risk management.
- Deliver FRM measures through natural processes.

Working with Others

It is widely recognised that flood risk is complicated, and that it is necessary to have a wide range of different organisations involved in the process.

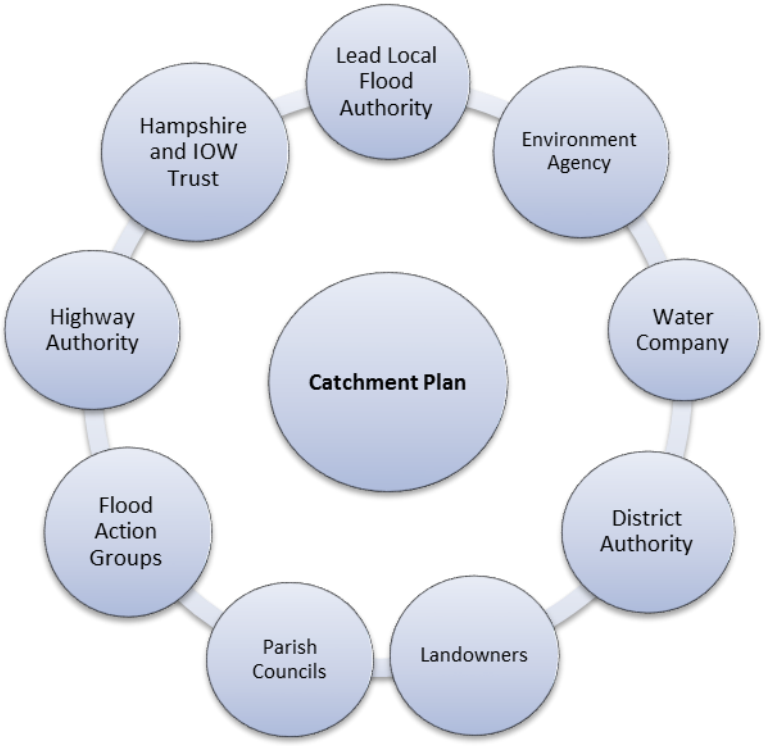

Figure 2: Partnership group

We will aim to work with other authorities at the catchment level as well as local flood action groups to develop suitable plans. Governance of the catchment approach and action plans will be based on partnership working.

Each catchment will have its own set of partners and lead authority and this is likely to vary from one catchment to another depending on the nature and type of catchment, and choices of potential mitigation measures.

Types of flood risk mitigation

There is a suite of measures and actions that can be included within any action plan (Table A refers). These can include 'soft' actions, such as improved processes and information sharing between organisations and community engagement, as well as 'harder' engineering solutions.

Timescales

It is acknowledged that the differing elements of this suite of measures are likely to have different timescales to implement which will be dependent on complexity, nature and priority within the catchment plan. As part of the catchment approach, each measure will be given a timescale based on the definitions below.

- **Short term actions** (within the next financial year) are likely to be those that are relatively easy to undertake such as those that require slight changes to existing practices and those that do not require any additional or third party funding.

- **Medium term actions** (1 to 6 years) are those that require funding above initial short-term actions, or those that are not as easy to undertake as they require more work to complete.

- **Longer term actions** (6+ years) are those that are likely to have significant technical and/or funding requirements going forward. These are actions such as flood alleviation or major infrastructure work that have been identified within the plans.

Hierarchy of interventions

It is acknowledged that some actions require more resources and funding than others and that they can be spread over different timescales based on their complexity, as demonstrated by figure 3 below.

HCC will work with other authorities and organisations to consider measures in a hierarchy.

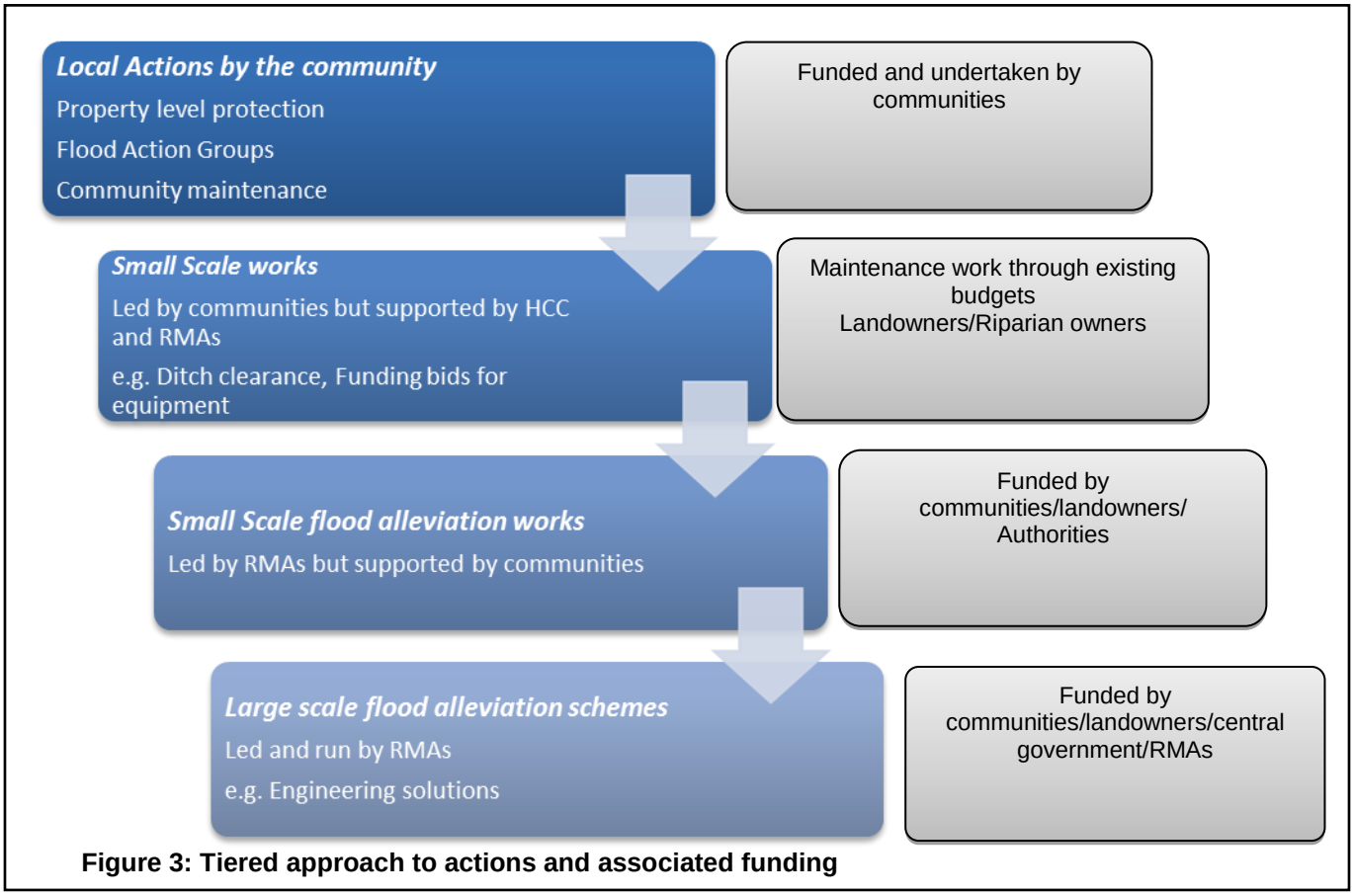

Figure 3: Tiered approach to actions and associated funding

The tiered approach allows a range of measures to be looked at within a community and develop the short, medium and long term approach to managing flood risk.

Monitoring of the Catchment Plans

The monitoring of the action plans will be the responsibility of all authorities and organisations within the working group. It is proposed to continue working groups to carry forward any actions and to highlight issues around delivery. Each action has been provided with a lead authority and in some instances the action falls to the residents or community groups.

Development of Individual catchment plans

The following provides the stages that will be undertaken to develop individual catchment plans and the associated action plans. Throughout the process it is important to engage with the local community. The catchment plan provides the information of flood risk within the catchment. This would include information on flood risk, the impact of that risk within the catchment, existing measures or schemes and any particular key issues. It provides a pre-cursor to the Action plan, which is the list of specific actions.

Establish working group

Through the Hampshire Strategic Board and Technical flood group the catchment will be identified. The initial information on the potential for this approach could come from a number of different groups and organisations. Any flooding within a catchment is likely to have multiple sources of flooding and require a number of different measures. The co-ordinating authority and organisations that would need to be on the working group for that specific catchment will be identified.

The working group may develop and change over time depending on the type of measures and issues identified.

Gather data/information on the flooding mechanisms – walkover

Existing information and data on the area and its flood risks will be gathered by the working group and a gap analysis will be undertaken. Where substantial additional information is required further funding and extended timeframes will need to be agreed by the working group.

An important part of the data and information gathering stage is to collect information from the local community. However, the most suitable method for undertaking this will be dependent on a number of aspects; mechanisms could include meeting with the community to discuss issues, undertaking river walkovers and distributing flood risk questionnaires.

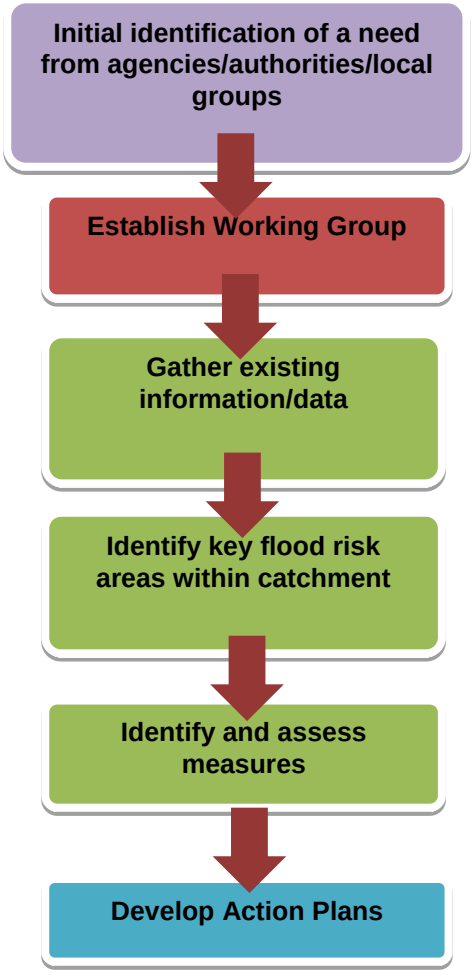

Figure 4: Catchment Plan Process

Identify key flood risk areas/issues within the catchment

Using the information gathered and local knowledge, the working group will form a 'baseline' of information and knowledge across all partners. This will identify obvious measures that can be undertaken and work that already has been commenced or completed, along with options for potential medium and longer term measures that would need to be integrated with the catchment plan.

This should also identify the key areas of flooding within the catchment and lead to the drawing up of an initial action plan.

It should also be used to identify where further data gathering work may be required – such as more surveys/flood modelling and mapping to better understand the risks and mechanisms of flooding. This additional work may also form part of the actions within the action plan.

Information on the flooding extent and the impact will need to be quantified where possible to support any funding proposals, both internally and for external sources. It will also need to assess the impacts of a catchment approach and demonstrate an understanding of how works affect the whole catchment.

Identify and assess measures

At this stage it is important to identify the measures throughout the catchment and to make an assessment of the potential benefits that might be realised through implementing these proposals. Measures will need to be appropriate to the flooding mechanism and where early actions, such as maintenance works, can be completed relatively quickly these should be progressed.

Develop Action Plan

The working group will need to work with local residents to develop an initial action plan. This will identify:

- Individual measure or intervention and the location within the catchment
- Lead and contributing organisations/groups
- Potential timescales
- Source of funding
- Issues and constraints associated with the delivery of each measure

The development of a specific action plan is important to focus delivery and to understand the timescales and potential constraints, however these are based on information and resources available at that time, therefore changes will need to be incorporated into the action plans over time. The plan will remain a live document and will require monitoring.

Mitigation measure	Description	Timescales	Constraints/suitability
Changes to land use management	The changing of existing land use management within a catchment to alter runoff characteristics to reduce flood risk downstream and reduce erosion and silt.	The initial action will require negotiation with landowners as changes to practices may incur costs for the individual. The changes need to be considered over the longer term.	Requires agreement from landowners to undertake changes to practices and to maintain these changes over the longer term.
Storage of water within the upper catchment	The attenuation of flood water/overland flows in the upper catchment, in the form of attenuation ponds or tanks, to slow down flow to reduce flood risk downstream.	This will require negotiation with the landowner and may require engineering works that need to be designed and funded over the longer term.	This may require changes in land form or construction of flow controls to enable the water to be stored in a suitable location. To be suitable it requires overland flow in the upper catchment to be contributing to the flood risk downstream and a suitable location within the catchment to store the water.
Maintenance of existing systems	Changes to existing maintenance schedules or enhancement to deliver efficiencies. Potentially involving more community involvement in undertaking maintenance. Can include rivers, ordinary watercourses, highway drainage, sewers and private drainage.	Changes could be undertaken as part of existing workload. Where the responsibility lies with a riparian owner the timescales may be extended.	Requires an investigation to ascertain the location and condition of the system. Any changes will need to be balanced against risk/cost if undertaken as part of the existing budget.
Improvements to the existing infrastructure	Upgrading or changing existing drainage systems to improve conveyance or storage capacity. Including the retrofitting of Sustainable Drainage Systems (SuDS) where applicable and opportunities through new development.	Funding of improvements and understanding the mechanisms are likely to require further investigation and extending any timescales into a medium term	Any improvements will need to be funded either by individuals/local communities as they extend beyond the usual maintenance. It is not always suitable/possible to upgrade existing systems, for example highway drainage is often heavily constrained by built development and services within the ground.
Changes to the built form	Changing some of the existing built form to direct flood water to more suitable locations or into existing drainage systems. These can include raising/changing kerbs, building and removing walls/structures to direct flow. This should also be considered through proposals for new development.	Small measure may be able to be undertaken relatively quickly when work is being planned in specific locations. It may also form part of wider measures undertaken across the region. In respect of new development timeframes rely on the timescales of those proposals.	More suitable for localised works in specific locations. Requires flood water to flow over ground.
Property level protection	Protection measures that are specific to individual properties, such as property groundwater pumps, flood barriers, air brick covers etc.	These 'quick wins' can be achieved within short timeframes, but require funding.	The individual property has to be suitably structurally sound and will require a survey. The type and nature of flooding may not be suitable for these types of measures.
Flood Plan	A local flood plan, that sits below and feeds into any multi-agency plans, that provides actions to take before and during a flood event.	Residents have ownership of the plan and can prepare, maintain and test this plan relatively quickly.	Requires the local community to undertake take actions before and during a flood event in order to be effective.
Engineered Flood Alleviation Schemes	A large scale engineered flood alleviation scheme to reduce flood risk within a specific location.	Longer term required for feasibility and funding options to be considered.	This may not be suitable for all locations and will need to be justified through a cost/benefit analysis.

CORPORATE OR LEGAL INFORMATION:

Links to the Corporate Strategy

Hampshire safer and more secure for all:	no
Corporate Improvement plan link number (if appropriate):	
Maximising well-being:	yes
Corporate Improvement plan link number (if appropriate):	
Enhancing our quality of place:	yes
Corporate Improvement plan link number (if appropriate):	

Other Significant Links

Links to previous Member decisions:		
Title	Reference	Date
Response to the Flood investigation in Romsey and Sub-catchment Flood Risk Management	5957	11 July 2014
Update on Managing Flood Risk in Hampshire	6243	15 December 2014
Direct links to specific legislation or Government Directives		
Title		Date
Flood and Water Management Act 2010		8 April 2010

Section 100 D - Local Government Act 1972 - background documents

The following documents discuss facts or matters on which this report, or an important part of it, is based and have been relied upon to a material extent in the preparation of this report. (NB: the list excludes published works and any documents which disclose exempt or confidential information as defined in the Act.)

Document	Location
None	

Impact Assessments

1. Equality Duty

1.1. The County Council has a duty under Section 149 of the Equality Act 2010 ('the Act') to have due regard in the exercise of its functions to the need to:

Eliminate discrimination, harassment and victimisation and any other conduct prohibited under the Act;
Advance equality of opportunity between persons who share a relevant protected characteristic (age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, gender and sexual orientation) and those who do not share it;
Foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

Due regard in this context involves having due regard in particular to:

a) The need to remove or minimise disadvantages suffered by persons sharing a relevant characteristic connected to that characteristic;
b) Take steps to meet the needs of persons sharing a relevant protected characteristic different from the needs of persons who do not share it;
c) Encourage persons sharing a relevant protected characteristic to participate in public life or in any other activity which participation by such persons is disproportionally low.

1.2. **Equalities Impact Assessment:**
This report provides information on current procedures for the select committee to consider. No changes are proposed in this report, therefore an impact assessment has not been undertaken. If any changes are recommended by the Select Committee as a result of this item, their impact will be considered when the recommendations go to the decision maker.

2. Impact on Crime and Disorder:

2.1. This report provides information on current procedures for the select committee to consider. No changes are proposed in this report, therefore an impact assessment has not been undertaken. If any changes are recommended by the Select Committee as a result of this item, their impact will be considered when the recommendations go to the decision maker.

3. Climate Change:

a) How does what is being proposed impact on our carbon footprint / energy consumption?
b) How does what is being proposed consider the need to adapt to climate change, and be resilient to its longer term impacts?

This report provides information on current procedures for the select committee to consider. No changes are proposed in this report, therefore an impact assessment has not been undertaken. If any changes are recommended by the Select Committee as a result of this item, their impact will be considered when the recommendations go to the decision maker.