<table>
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<th>Environment and Communities Scrutiny Committee</th>
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<tr>
<td><strong>Report Title:</strong></td>
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<td><strong>Meeting Date:</strong></td>
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<td><strong>Chairman:</strong></td>
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| **Presenting Officer:** | David Parish  
John Beard |
| **Purpose of Report:** | Flood risk management and community resilience was the subject of Motion 798 discussed at Full Council on 13th September 2017 and at the following Environment and Communities Scrutiny Committee meeting on 20th September 2017 it was agreed that it would be placed on the agenda for consideration today. |
| **Planned Dates** | N/a |
| **Background documents:** | None |
| **Appendices** | Appendix 1 Capital Funded Flood Alleviation Programme |
| **Recommendations** | To note the report |
2.0 Background;

2.1 In July 2007 Gloucestershire was at the centre of “the biggest civil emergency in British history” (Sir Michael Pitt, Learning lessons from the 2007 floods; June 2008).

2.2 Rainfall that would normally fall in a whole month fell in 24 hours on to saturated ground. Gloucestershire was one of the regions most affected by the summer floods. The loss of Mythe water treatment works left 350,000 people without mains water supply for up to 17 days. Castle Meads electricity substation was shut down leaving 42,000 people without power in Gloucester for up to 24 hours. Some 10,000 people were left trapped on the M5, and many other commuters were left stranded on the rail network. The impact of the floods rendered thousands of people temporarily homeless.

2.3 Contrary to the images portrayed widely in the media showing the expansive swathe of flood plains filled with floodwater alongside the Severn, the 2007 event actually demonstrated that the Severn is not the controlling, dominant flood risk factor in Gloucestershire. The greater flood risk to residents and businesses arises from the vast and complex networks of smaller watercourses which carry flows from the higher reaches and combine with concentrations of run off from fields and development in the lower lying areas.

2.4 The effects of surface water flash flood, high groundwater levels and inundation of an ageing sewerage system combine to create a significant flood risk which still affects many properties, the majority of which are situated within the settlements and urban areas. Of all the properties that were flooded in 2007 around 80% of them suffered flooding from surface water. Whilst many flood alleviation schemes have been implemented since 2007, particularly relating to fluvial flooding from the Severn, a majority of those properties that flooded in 2007 are still at risk of pluvial flooding, i.e. surface water.

3.0 Key policy developments post 2007;

3.1 The key policy developments at a national level following the 2007 event can be summarised as follows;

- Sir Michael Pitt carried out a review and consultation on flood risk management in the UK and the lessons learnt from 2007. In 2009 his report was published containing 92 recommendations to Government.
- The Local Government Flood Forum was formed in 2007 and Gloucestershire County Council (GCC) provided a leading role in its early stages.
- The Flood and Water Management Act (FWMA) was passed in 2010 based on the findings of the Pitt Review.
- GCC was made a Lead Local Flood Authority (LLFA) under the new FWMA 2010 with lead responsibility for flood risk management relating to surface water, ordinary watercourses and ground water. The Environment Agency (EA) was made lead authority for the management of flood risk from main rivers.
- The FWMA 2010 enabled the formation of a Regional Flood and Coastal Committee (RFCC) comprising membership from each of the LLFA’s in their region. Most of the county is in the English Severn and Wye RFCC region with the other parts of the county in the Thames and Wessex RFCC regions.

3.2 In 2015 LLFA’s were made statutory consultees to the planning process for major development. This requires the LLFA to assess and comment on developer’s
proposals for the management of surface water and associated flood risk on all major development.

3.3 The key policy developments at a local level following the 2007 event can be summarised as follows;

- GCC approved an increase in Council Tax to provide an annual flood alleviation revenue budget of £2.1 million, also referred to as the “Flood Levy”.
- In 2011 Surface Water Management Plans prepared for Cheltenham, Gloucester, Tewkesbury and Bishops Cleeve. These plans have provided essential data to enable the preparation of numerous flood alleviation and prevention schemes.
- In 2014 GCC published a Local Flood Risk Management Strategy outlining the priority areas at risk of flooding from surface water, ordinary watercourses and groundwater and the measures being taken to mitigate this risk.

4.0 Flood risk management roles and responsibilities;

4.1 The primary responsibility for safeguarding land and property in England lies with the owner. The responsibility for the maintenance of watercourses lies with the riparian landowner.

4.2 Successive governments have recognised the wider economic and social need to reduce the effects of flooding. Works have been carried out across the country to reduce flood risk using the public purse. There is no statutory obligation on any public body to carry out works to reduce flood risk or to maintain flood defences once these have been built.

4.3 Risk Management Authorities (RMA’s) include the EA, District Councils, Lead Local Flood Authority, Highway Authorities (i.e. GCC and Highways England), the River Severn Internal Drainage Boards and Water Companies. RMA’s have permissive powers to carry out maintenance and improvement works to reduce flood risk to people and property.

4.4 The Highway Authorities have particular duties for flood risk management on the public highway. This is a limited responsibility because it cannot reasonably be expected to prevent highway flooding in extreme rainfall events.

4.5 The EA’s powers are for watercourses designated by DEFRA as main rivers. GCC, acting as LLFA for the county, has powers to carry out works to reduce flooding from other, ‘ordinary’ watercourses, as well as surface water and groundwater. Ordinary watercourses include every river, stream, ditch, drain, cut, dyke, sluice, sewer (other than a public sewer) and passage through which water flows which does not form part of a main river.

4.6 By agreement with the LLFA, five of the District Councils provide the statutory consenting and enforcement functions of the Land Drainage Act 1991 and GCC delivers this role in the administrative area of Gloucester City Council. The Lower Severn Internal Drainage Board has taken on this remit for ordinary watercourses within their Drainage Board area. In addition to their role as a Risk Management Authority, the Internal Drainage Board’s role is also to manage land drainage within their area.
4.7 The English Severn and Wye Regional Flood and Coastal Committee, established by the EA under the FWMA 2010, brought together members appointed by LLFAs and independent members. These Committees help to provide governance for the EA’s Flood and Coastal Erosion risk management functions and cover all flood risks that are not the responsibility of the water companies.

5.0 Flood risk management in Gloucestershire since 2007;

5.1 Nationally, funding for Risk Management Authorities to manage flood risk is mainly provided by DEFRA as flood and coastal erosion risk management grant in aid (FCRM GiA). RFCC’s also raise a local levy to fund local priority projects and works in partnership with others. In 2015 the government allocated £2.5 billion for flood alleviation.

5.2 Locally GCC and the District Councils have allocated significant resources to flood risk management. The GCC Flood Levy and other “one off” revenue allocations in 2011 and 2014 have been used to help fund numerous flood alleviation schemes delivered by the EA and District Councils. The GCC Flood Levy of £2.1 million per annum has now been built into base revenue budgets and allocated to flood alleviation and highway drainage.

5.3 This has been particularly effective in providing “partnership” funding contributions to lever in DEFRA flood defence grant in aid and enabled the implementation of a number of large flood alleviation schemes.

5.4 Flood risk management is critical to the safety and accessibility of the highway network. The Department for Transport Design Manual for Roads and Bridges recommends that highway drainage should be designed to ensure no flooding occurs up to the 1 in 5 year return period rainfall event. Since 2007 a significant part of the GCC Flood Levy has therefore been allocated to improvements to highway drainage and higher frequency cleansing intervals at valley points and other critical locations.

5.5 Since 2007 there has been over £98 million of public/private investment in Gloucestershire flood alleviation projects. This has been mainly delivered by the EA and GCC and includes;

<table>
<thead>
<tr>
<th>Amount</th>
<th>Description</th>
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<tr>
<td>£13m</td>
<td>EA delivery of 18 new flood alleviation schemes to alleviate flooding to approximately 1,800 properties, including notable schemes at Horsbere Brook Attenuation, River Chelt channel improvements, Deerhurst Flood defences and Gates and Prestbury Flood Alleviation.</td>
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<tr>
<td>£1.43m</td>
<td>EA scheme to maintain, operate, improve and expand the flood forecasting and warning service which currently benefits over 6,000 properties. Includes new flood warning service for River Chelt at Cheltenham and River Frome at Stroud, Stonehouse and Chalford. This also includes the introduction and support of the Flood Warden scheme to help communities to plan and respond to flood risk.</td>
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<tr>
<td>£5.9m</td>
<td>EA maintenance of existing flood risk management defences, structures and channels which reduce the risk for thousands of properties across the county.</td>
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<tr>
<td>£58m</td>
<td>GCC revenue and capital spend on highway drainage improvements, flood damage repairs in the aftermath of the 2007 event and flood alleviation schemes, including partnership funding contributions towards schemes undertaken by other agencies. The most recent example is the completed flood alleviation scheme at Moreton in Marsh. A substantial part of this will have been sourced by government grant.</td>
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<tr>
<td>£20m</td>
<td>Utility companies have invested to improve their Gloucestershire infrastructure. Additional investment will have been made by the District Councils in Gloucestershire.</td>
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5.6 The investment in flood alleviation schemes to address fluvial flood risk, i.e. from main rivers, has been particularly effective. The EA has implemented a number of schemes mostly funded by DEFRA but with partnership contributions from GCC and is now focussing on property level protection (PLP) to address those properties still at risk from river flooding, i.e. where it has not been practicable to afford protection within the major schemes that have been undertaken. The EA have a project in progress to install PLP to protect the vast majority of the remaining properties that are still at risk of flooding from the River Severn.

5.7 The Stroud Valleys Rural Sustainable Drainage project is now in its 3rd year and has resulted in hundreds of small woody dams and similar interventions with the aim of holding back surface water running off the higher reaches above the Frome and its tributaries. This project has national recognition as a pathfinder attracting attention as a model of best practice. The project is funded by DEFRA and GCC.

5.8 The main and continuing challenge is to reduce flood risk from surface water, this is also referred to as flash flooding, ordinary watercourses and ground water. The nature of this problem is that the locations are more dispersed, more complex, more difficult to assess and affect four times as many properties than those affected by main river flooding. This statistic is reflected across England which has 3 million homes at risk from surface water flooding.

6.0 Current/Proposed GCC flood risk management schemes;
6.1 Work has started on a £2.5 million Flood alleviation scheme at Priors/Oakley in Cheltenham designed to significantly reduce flood risk for 179 homes. The scheme is funded by a £2 million DEFRA grant, £409k from GCC and £50k of RFCC Local Levy.

6.2 A £1.2 million package of measures at Bishop’s Cleeve is being prepared for implementation in 2019 and is expected to reduce flood risk for 91 properties.

6.3 A £385k culvert remediation scheme is underway at Slimbridge to protect 11 homes with funding from GCC, STW and DEFRA.

6.4 Property level protection schemes are planned at Churchdown, Brockworth and Whaddon in 2018/19 with funding from GCC, DEFRA and RFCC local Levy.

6.5 Further flood alleviation schemes are at the early stages of investigation and design at Podsmead, Hucclecote and Nailsworth.

6.6 The District Councils have numerous GCC funded schemes in the planning and design stages. Some of these schemes are linked to bids pending for European Structural Investment Funding.

7.0 GCC flood related funding 2017/18;

7.1 Revenue Funding

<table>
<thead>
<tr>
<th>Budget Head</th>
<th>Activities</th>
<th>17/18 Budget £</th>
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<tbody>
<tr>
<td>Flood Alleviation</td>
<td>LLFA Statutory Duties / staff costs</td>
<td>£241,746</td>
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<tr>
<td></td>
<td>Flood Alleviation Schemes</td>
<td>£347,461</td>
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<tr>
<td></td>
<td>Land Drainage Act Responsibilities</td>
<td>£110,000</td>
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<tr>
<td></td>
<td>Drainage Improvements RCCO* to GCC Highways</td>
<td>£500,000</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>1,199,207</strong></td>
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<tr>
<td>Drainage GH</td>
<td>Highway drainage maintenance</td>
<td><strong>1,877,534</strong></td>
</tr>
<tr>
<td>Capital Borrowing</td>
<td></td>
<td><strong>200,000</strong></td>
</tr>
<tr>
<td><strong>Total funded from Council Tax</strong></td>
<td></td>
<td><strong>3,276,741</strong></td>
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<tr>
<td>Corporate budget</td>
<td>RFCC Local Levy contribution</td>
<td><strong>318,362</strong></td>
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*Note: RCCO: Revenue contribution to capital outlay

7.2 Capital Programme

See spreadsheet in Appendix 1.

8.0 Flooding and Local Resilience

The Scrutiny enquiry into the Summer Floods of 2007 made recommendations to various organisations varying from Central Government to the People Recovery
Task Group set up to support those affected. The following changes have been made in Gloucestershire’s Emergency Planning arrangements:

8.1 A Resilient Emergency Management Centre and improved rest centre equipment availability

- New location for the Emergency Centre located on 2nd floor of Shire Hall
- Additional back up Emergency Centre located at Skillzone
- Additional Rest Centre boxes (admin support), beds and blankets held in each District council (funded by a Severn Trent Project)
- Regular exercises take place for setting up the Emergency Centre and District Rest Centres
- Learning from exercises lead to improvements in the setting up arrangements

8.2 Improvement in communication between agencies, elected members and the public

- GFRS now provide 24/7 GOLD Officer cover
- GCC Directors provide On Call Executive Lead Officers
- Operation Link Plan is in place that notifies all Local Resilience Forum (LRF) agencies of an issue and instigates a Tactical Co-ordinating Group / Strategic Co-ordinating Group if a multi agency response is required
- Ops link can also be used to keep agencies up to date with an issue even when no action is needed
- Common Information Picture (CIP) completed by CPT for all incidents and shared with partners
- LRF Warning and Informing Plan has been regularly reviewed and enhanced
- Protocol Officer identified and responsible for keeping elected members informed

8.3 Improve Major Flooding Emergency Plans and implement plans for flash flooding

- A LRF Multi Agency Flood Plan has been developed and approved by DEFRA and is regularly reviewed by LRF partners. District operational flood plans are in place and regularly reviewed.
- Environment Agency in partnership with Civil Protection Team (CPT) and relevant District Councils developed Rapid Response Plans for specific areas at risk of flash flooding including awareness raising with affected residents
- LRF Water Distribution Plan developed and regularly reviewed
- GFRS has trained water rescue teams and equipment

8.4 Promote and support improved community resilience

- LRF Multi Agency Community Resilience Group set up resulting in the following:
  o Are you Ready Booklet produced and distributed
  o Community Website with advice and Guidance developed
  o Support offered by Districts to Parish Councils
8.5 Improved access to information on vulnerable people within the affected areas

- On call welfare team arrangements in place with mechanism to identify vulnerable people in affected areas
- LRF Multi Agency Vulnerable People Plan developed, regularly reviewed and successfully implemented in real incidents

8.6 Improved information and training on the elected members role in an emergency

- The role of elected members is included in all LRF and District Food Plans
- Flooding included in Portfolio of GCC Cabinet member
- All elected members issued with Emergency Contact Phone cards
- Training offered to both County and District elected members (this may need a refresh)

9.0 Where are we now? Future issues/risks

9.1 Whilst extensive measures and precautions have been taken over the last 10 years it is still the case that many homes in the county remain at risk of flooding, this is mainly from surface water flash floods and flooding from ordinary watercourses.

9.2 The LLFA is a statutory consultee to the planning process and will continue to work closely with Local Planning Authorities to ensure future development does not increase flood risk. Planning policy also provides an opportunity to ensure that development is designed to provide greater resilience to increases in rainfall relating to climate change and thus reduce flood risk to both existing and proposed development in the same catchment over the lifetime of the development.

9.3 A study and report by Atkins Global in 2015 on behalf of GCC investigated 19 of Gloucestershire’s Parishes and Wards most at risk of flooding and where significant mitigation measures are yet to be undertaken. The report identified 6,041 properties at risk of flooding including 288 properties at very high risk, i.e. at 1 in 30 year risk. This report also identified potential flood alleviation measures to address these risks at an estimated combined cost of over £40 million.

9.4 To address this scale of risk and access the required funding it is essential that GCC continues to work closely with the EA to access DEFRA flood defence grant in aid and maximise this opportunity by using the Council’s flood revenue budget as leverage.