REPORT TO:	Cabinet
DATE:	25 November 2009
SUBJECT:	Climate Change and Inland Flooding in Sefton
WARDS AFFECTED:	All Wards
REPORT OF:	Alan Moore, Strategic Director of Regeneration and Environmental Services
CONTACT OFFICER:	John Baker – Drainage Services Manager Tel: 0151 934 4202
EXEMPT/ CONFIDENTIAL:	No

PURPOSE/SUMMARY:

The purpose of this report is to identify the effects that climate change may have on inland flooding in Sefton and identify changes and improvements that if implemented now will reduce these effects now and in the future.

The Overview and Scrutiny Committee (Regeneration and Environmental Services) considered the matter on 20 October 2009 (Minute No. 32 refers) and request Cabinet to consider revenue growth of £122k in drainage budgets, in particular for land drainage, during the 2010/11 budget process.

REASON WHY DECISION REQUIRED:

This information will help in the process of making sustainable management decisions in connection with drainage infrastructure flood risk improvements to combat the effects of climate change.

RECOMMENDATION(S):

That Cabinet :

a) Note the contents of the report and:

b) Support the proposals in items 4.1, 4.2 and 4.3, and consider revenue growth of £122k in drainage budgets, in particular for land drainage, during the 2010/11 budget process.

KEY DECISION:	No
FORWARD PLAN:	No
IMPLEMENTATION DATE:	Following expiry of the call-in period for the minutes of this meeting

ALTERNATIVE OPTIONS:
To ignore the potential risks of climate change and the need to adapt the drainage infrastructure to meet it, will substantially increase the flood risk and thus damage to the social, economic and environmental well being of Sefton's population.

IMPLICATIONS:

Budget/Policy Framework:

Financial:

No actual financial implications attached to this report, but Overview and Scrutiny Committee are requesting Cabinet to consider a future revenue increase to drainage budgets of £122k as part of the 2010/11 budget process.

CAPITAL EXPENDITURE	**2009/10 £**	**2010/11 £**	**2011/12 £**	**2012/13 £**
Gross Increase in Capital Expenditure				
Funded by:				
Sefton Revenue Resources (Coast Protection Revenue Budget 2010/11)				
Specific Capital Resources				
REVENUE IMPLICATIONS				
Gross Increase in Revenue Expenditure				
Funded by:				
Sefton funded Resources				
Funded from External Resources				
Does the External Funding have an expiry date? Y/N		When?		
How will the service be funded post expiry?				

Legal: None

Risk Assessment: As detailed in the report

Asset Management: As detailed in the report

CONSULTATION UNDERTAKEN/VIEWS
FD 147 - The Finance and Information Services Director has been consulted and his comments have been incorporated into this report.
ENVIRONMENTAL PROTECTION
COASTAL DEFENCE

CORPORATE OBJECTIVE MONITORING:

Corporate Objective		Positive Impact	Neutral Impact	Negative Impact
1	Creating a Learning Community		✓	
2	Creating Safe Communities		✓	
3	Jobs and Prosperity		✓	
4	Improving Health and Well-Being	✓	✓	
5	Environmental Sustainability	✓		
6	Creating Inclusive Communities		✓	
7	Improving the Quality of Council Services and Strengthening local Democracy	✓		
8	Children and Young People		✓	

LIST OF BACKGROUND PAPERS RELIED UPON IN THE PREPARATION OF THIS REPORT

Sefton Policy for Land Drainage Flooding

Report to Scrutiny and Review 27 November 2007 & 5 February 2008

Report to Cabinet Member Communities 23 April 2008

Coastal Defence Report On Climate Change and the Sefton Coast.

1.0 Introduction

1.1 There have been a number of reports presented to various committees and to Cabinet that were either specific to climate change or that included climate change implications and proposals to tackle it.

1.2 Some dealt with how Sefton as a community can mitigate climate change through behavioural changes or by reducing its carbon emissions thus reducing its carbon footprint. Suggesting that this could be achieved through initiatives such as energy use reductions, recycling and through green transport initiatives.

1.3 Others considered how Sefton needed to understand what the future evolution and impacts of climate change will have on our environment, adapting where possible through for example, changes in how the Planning Department deals with inappropriate developments in flood risk areas or by protecting existing assets.

1.4 A more recent report introduced climate change in a corporate context and made some initial recommendations in relation to actions that the Council needs to undertake to progress a step change in response to climate change. There are three key areas to climate change;

- "MITIGATION" this seeks to reduce the change itself through the reduction of climate change gases being emitted into the atmosphere (i.e. Carbon Strategy).
- "ADAPTATION" where the impacts of climate change are assessed (particularly warmer temperatures and increased rainfall / storminess) and suitable anticipatory action is taken to adapt to them, such as emergency planning, relocation of assets, sea defences, changes in building design, sustainable urban drainage systems and such like.
- "OPPORTUNITIES" to be identified as part of the change process. A key example is the work on the Visitor Economy in Southport.

1.5 National Indicator 188, Planning to Adapt to Climate Change, has been adopted by the Local Strategic Partnership. This seeks to ensure Sefton's preparedness to manage risks to services, the public, local communities, local infrastructure, businesses and the natural environment from a changing climate. The indicator is self assessed and ranges from 0: - Baseline to 4: - Implementation, monitoring and continuous review. The target agreed with Government Office NW is to achieve level 3: - Comprehensive action plan and prioritised action in all priority areas by the end of the current Community Strategy. Failure to fulfil this indicator will impact upon the Comprehensive Performance Assessment rating for the Council. Achieving Level 3 on NI 188 within this time scale and the continued success of the Carbon Management Plan will require action by all.

1.6 This report will identify how through 'adaptation' and 'opportunities', in relation to the existing drainage network, Sefton could be better prepared to deal with the climate changes that mitigation is already too late to affect.

1.7 Recent changes in climate, particularly in the North West have included: -

- Average mean temperatures rising by about 2.65°C over the last century.
- The 1990's being globally the warmest decade in the last century with 1998 being the hottest year on record.
- Seasonal rainfall has varied by as much as 15% from the average in the last 30 years.
- Decreases in summer rainfall during the last century of up to 20%.
- Increases in high intensity winter rainfall having been experienced since the 1960's.
- Increases in flooding of some major rivers in the region in the last few decades.
- Sea levels around Liverpool having risen by about 60mm in the last 50 years and 100mm over the last 100 years.

1.8 Predicted changes based on medium global emission rate increases which may affect the climate of the United Kingdom include:-

- Warming in the North West, which will increase mean winter temperatures between 1 and 3°C and in summer between 2.6 and 4.1°C by the 2050's. While by the 2080's summer mean temperatures across the North West may have risen between 2 and 5.9°C.
- More warming in summer and autumn than in winter and spring.
- Winters will become wetter than at present by up to 26%, whilst summers will most likely become drier.
- This contrast between winter and summer climate will increase with time. Winters will become wetter and summers drier.
- Sea level rises of up to 26cm by the 2050's and 43cm by the 2080's

1.9 The predicted changes are based on the Governments own UK Climate Impacts Programme and the most recent predictions from UK Climate Projections 2009 (UKCP09), which has produced a series of potential climate change scenarios based on differing global emission rates from low to high. There are a large number of uncertainties associated with predicting the outcome of these scenarios, which create limitations on the accuracy of the predictions. However, although there are clearly a large number of potential consequences of climate change with differing degrees of likelihood associated with them, changes will occur and Sefton must be ready.

1.10 In the past 24 months parts of the UK has again seen some of the worst flooding for many years. The Governments response to the 2007 floods was to task Sir Michael Pitt with carrying out a review of the flooding emergencies and report his findings and make recommendations. The review contained a large number of recommendations and following consultation these have since increased, the final report recommendations have been accepted by government and a draft Bill to support some of the recommendations has been recently published for consultation and is likely to enter the statutes in Spring 2010.

2.0 Present Situation

2.1 Members are already aware that although a continuing problem throughout the Borough, flooding in Sefton had occurred mostly only as isolated problems but that the flooding in 2008 which occurred, following the wettest January on record, affected a much larger area of the borough and for a longer period than previously, creating widespread disruption and public concern. This change in the weather patterns is the first signs of the future effects that climate change is likely to cause in Sefton.

2.2 At present the Council's response to flooding problems involves the annual pre-emptive cleansing of gullies and associated assets, reduced from twice-yearly due to budget issues. Additionally, some planned maintenance of watercourses in Formby is undertaken and investigations into general flooding problem are carried out. An increase in the land drainage budget of £20k this financial year has enabled some further watercourse maintenance to be considered in other areas of the Borough and is a positive step for the future.

2.3 With the recommendations of the Pitt Review and the guidance supplied by government with the draft flood and water Bill, the Council will be expected to take a more proactive role in flood resilience and protection. Leading on local flood risk management in general and in particular in the management of surface water flooding and drainage at a local level. A separate report to the Cabinet Member Communities on the implications of draft Bill for Sefton is being prepared and will be presented in the Autumn. However, the Government has suggested that they anticipate that Local Authority's **'…will invest £100,000 annually in mitigation measures for surface run-off and groundwater which will produce a real benefit for local flood risk.'**

2.4 The Strategic Flood Risk Assessment (SFRA) is being progressed by the Planning Department to comply with Government advice and guidance as set out in Planning Policy Statement 25 (PPS25), supported by the Drainage Services Unit, The objective of this SFRA is that it be used as a tool to allow planning authorities to take a more proactive approach to future development by identifying those areas at risk from sources of flooding.

2.5 Where the Authority is involved in improvements in the drainage network either through its own works or that of developments, the opportunity to increase the capacity of the existing drainage networks or any additions to it, in line with recommended guidance, are encouraged. However, there are cost implications to this course of action and these will have to be met from the available funding which may limit the works that can be accommodated.

3.0 The Future

3.1 The Council's lack of investment in its drainage systems, brought about by budget constraints and savings, will need to continue to be reversed to enable the drainage systems to be better able to deal with the effects of the changing weather patterns already being experienced as a result of climate change. Also, as recommended by the Pitt review, it may need to undertake a more pre-emptive

view of the maintenance of surface water systems, such as highway drainage network, strategic critical watercourses and culverts beneath the public highway.

3.2 As previously identified, Sefton funds the planned maintenance of strategic watercourses in Formby, which Members reinstated some time ago with an additional annual budget provision of £25k. However, the regular maintenance of strategic watercourses in other parts of the Borough has never been undertaken, even where Sefton has responsibilities to do so, such as with the Pool Watercourse in Southport.

3.3 Strategic watercourses exist within the Thornton/Lunt Area, Aintree, Melling, Maghull/Lydiate and parts of Southport. The exact locations and conditions of which are largely unknown. This years land drainage budget increase will enable some of these to be investigated and an annual maintenance regime implemented.

3.4 The Environment Agency has recently funded an investigation into the surface water/land drainage system in Formby to enable it to be accurately mapped and the opportunity to apply for similar funding for further investigations in other parts of the Borough has been taken. This may lead to improvements or mitigation works to deal with identified flooding hot spots. Also, an additional application for funding to undertake improvements to the pumping capacity of the land drainage pumping station at Lunt was also approved by the Environment Agency and this work has also now been completed.

3.5 It is intended to continue to work closely with the Environment Agency and to take advantage of any funding opportunities as they arise. However, there are no guarantees that such funding, which is limited and distributed on a priority basis, will necessarily come to Sefton.

3.6 Culverts beneath the public highway network, which were constructed as part of development of the highway, are deemed to be part of the structure of the public highway and hence need to be regularly inspected and maintained to prevent catastrophic failure and the resulting flooding and traffic disruption. The location of and condition of many of these culverts are unknown but many are believed to cross beneath the principal road network.

3.7 Future highway schemes such as the Thornton/Switch Island Link Road, will need to be designed to allow for climate change and will generate large quantities of surface water run-off that will need to be disposed of in a sustainable manner.

4.0 **Proposals**

4.1 In order to properly manage its current and emerging issues discussed in the report above, it is suggested that where possible consideration be given to reinstate drainage funding stream budgets back to the levels in 2004/05, which will allow an increase in the number of flooding problems that can be tackled. Additionally, a further future increase of up to £50k in the land drainage allocation should also be considered, as part of the budget setting process, to enable further strategic watercourse maintenance to be undertaken across Sefton in line with the Pitt Review recommendations.

Drainage Function	2004/05 Budgets £k	2009/10 Budgets £k	Proposed Future Budgets £k
Highway Drainage	275	250 (45K offered as a saving last year)	275
Land Drainage	105	123	170
Gully Cleansing	272	222	272
Total	652	595	717

4.2 That a database of highway culverts is established and a sustainable programme of regular inspections and subsequent maintenance is established as part of the existing highway structural maintenance regime.

4.3 Additionally, it is proposed that when approving new developments, designing new drainage systems or where improvements are undertaken on existing drainage systems, any recommended allowances/increases to compensate for future climate change predictions are included. However, as identified earlier in 2.5, there are cost implications to this course of action and these will have to be accommodated from within the available funding, This may limit the quantity of work that can be undertaken.

5.0 **Recommendations**

That Cabinet :

a) Note the contents of the report and:

b) Support the proposals in items 4.1, 4.2 and 4.3, consider revenue growth of £122k in drainage budgets, in particular for land drainage, during the 2010/11 budget process.