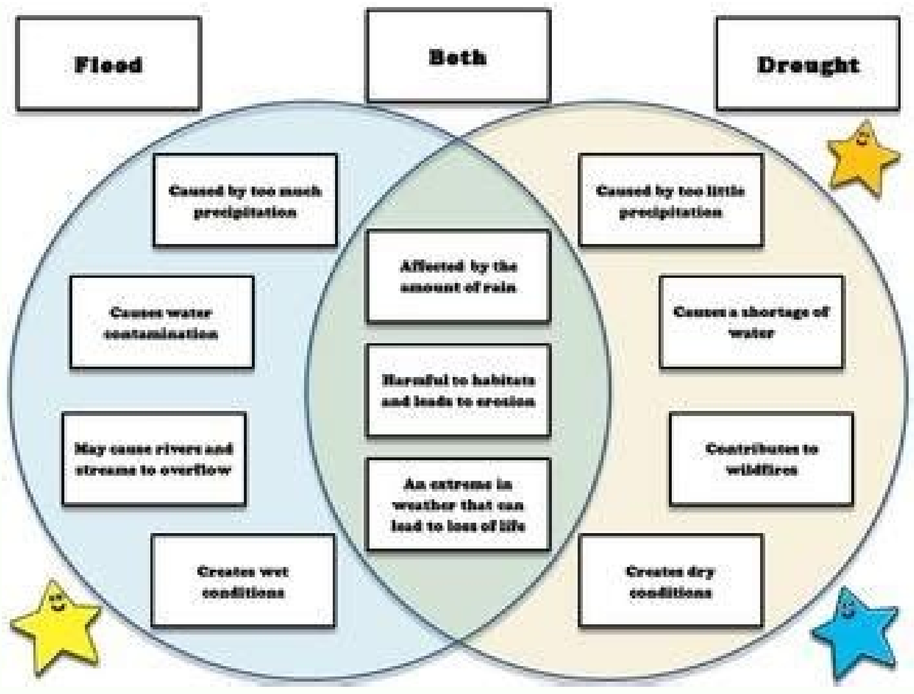
Flood risk assessment report pdf



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A REVIEW ON APPLICATIONS OF FLOOD RISK ASSESSMENT

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ABSTRACT

A disaster is a sudden occurring dreadful event which can disrupt the functioning of community or society and causes great loss of life and property. There are two types of disaster – Natural disaster and Man-made disaster. When disasters occur due to natural forces they are called natural disasters, over which man has hardly any control. Some common natural disasters are earthquakes, landslides floods, droughts, cyclones, etc. These disasters cause enormous loss of life and property. Floods are one of the most common natural disasters occurring in many parts of the world every year. Floods have been a recurrent phenomenon in India and cause huge losses to lives, properties, livelihood systems, infrastructure and public utilities. India's high risk and vulnerability are highlighted by the fact that 40 million hectares out of a geographical area of 3290 lakh hectares are prone to floods (Prafulla Kumar Panda, 2014). Floods occur due to heavy rainfall within a short duration of time in a particular region which causes the rivers and streams to overflow. But Floods are not always caused by heavy rainfall. They can result from other phenomena, like snowmelt, steep slopes, impermeable rock, too much wet and saturated soil, or compacted or dry soil. And, floods near to the coastal areas are increasing because of increase in global warming.

KEYWORDS: *Natural Disasters, Floods, Global Warming*

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INTRODUCTION

Flood Types

Floods are of several types such as River flood, Coastal flood, Storm Surge, Inland flood, Flash flood, and urban flood. River flooding occurs when water levels in rivers, lakes, and streams rise and overflow on to the surrounding banks, shores, and neighboring land. The water level rise could be due to excessive rain from tropical cyclones, snowmelt, or ice jams. In Coastal floods, simply the coast is flooded by the sea. The cause of such a surge is a severe storm. The storm wind pushes the water up and creates high waves. Heavy rainfall and lower elevation also play a factor in coastal water flooding up on land. Storm surge flooding happens during a storm, cyclone, or hurricane. It is a massive wave of water that sweeps on to land. Lastly, Storm surge flooding was severe in New Orleans during Hurricane Katrina in 2007. Inland flooding is the technical name for ordinary flooding that occurs in inland areas, hundreds of miles from the coast. It causes due to persistent rainfall, surface runoff, slow- moving tropical cyclones, rapid snowmelt, ice jams. Flash flood is the most

Other information for the reporting of the assessment (Art No.2)

Basic data of the reporting (Art. 4 No. 2a)

Topic	Description of the data source
Topography and land use	WFD
maps of the river basin district at the appropriate scale including the borders of the river basins, sub-basins and, where existing, coastal areas, showing topography and land use	WFD
position of water courses and their general hydrological and geo-morphological characteristics	WFD
Flood plains as natural retention areas(verbal and maps)	New: Flood plains in not populated areas

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Learn how to prepare for a flood, including how to create a plan, supplies you'll need, and getting your home ready. GeoSmart offers Flood Risk Reports to support planning applications, property transactions and insurance for architects, planning consultants and developers, and the legal market. FloodSmart Flood Risk Assessments For architects, land surveyors and developers it can be essential to provide a flood risk assessment alongside planning permission applications. They support the site assessment development applications by looking at the risk and impact of flooding on a development site, helping to analyse the potential issues with building on sites, such as local areas having an increased chance of flooding. For a development to take place, the flood risk assessment should prove that the site will remain safe in the future, taking the added effects of climate change into account when measuring the safety. When risks are found, the flood report can provide possible solutions to the risk of flooding on the development, helping you to plan and safely bypass these risks. Looking for the right Flood Risk Report package for you? At GeoSmart, we have four assessment options, with all giving clear flood management options and fast delivery times to help you prepare to manage risks that may occur on developments. Find out more about our different report options below. FeaturesFloodSmartFloodSmart PlusFloodSmart ProFloodSmart GroundwaterSuitable for Flood Zone11, 2 and 31, 2 and 3Professional opinion from expert flood risk consultantsConsultation with regulatorsFast delivery time (working days)**5-1020-3020-305-10Review of strategic flood risk assessment (SFRA)Clear Flood mitigation and management options£5 million PISupports Architects, Developers, Planning Consultants and the Legal MarketEnvironment Agency model data analysisFlood levelsEnvironment Agency Flood DefencesSite VisitGeoSmart Groundwater Flood Risk MapAnalysis of borehole logsReview local groundwater data *1 Pricing based on site size, location & complexity. **2 Expedited turnarounds are available on request At GeoSmart, we have a team of qualified report writers to help give you reliable and clear reports that can assist planning applications. We provide quality training to our employees to help understand your queries and support both you and your client. We also provide £5m of PI cover for all reports and services. Find out more about our flood risk assessments. Flood Risk: Development proposal on former farmland, ShropshireWe were asked to assess the potential significance of flood risk to land upon which a two house residential development was being proposed on a site formerly used as a battery hen farm in east Shropshire. Read moreCoastal Flood Risk Assessment - GrimsbyGeoSmart was instructed to undertake a FloodSmart Plus report on behalf of a client to assess the nature and potential significance of coastal flood risk to land upon which a group of residential houses was being proposed in Grimsby. Read moreFlood Risk: New Dwelling Close to the River ThamesWe were instructed on behalf of a client to assess the nature and potential significance of flood risk to land near the River Thames, upon which a new residential dwelling was being proposed. Read more For further information see our knowledge hub "During the conveyancing process for my current house purchase, I was extremely concerned to find the general search results revealed the house was at 'moderate risk of groundwater flooding'. I was unable to get any further information from anyone until I contacted GeoSmart. The staff I spoke to were friendly, helpful, efficient and extremely knowledgeable. The information provided was very site specific and focused. The staff member who talked me through the information and maps provided was very knowledgeable, answered all my questions and allowed me plenty of time to discuss issues. Thanks to GeoSmart for their great service." "We were impressed by the speedy, well-informed service and personal contact that we received. The report was thorough and comprehensive. We will certainly use GeoSmart's services in the future" "I would like to say that dealing with GeoSmart was a seamless experience from beginning to end - thank you for that" "Everyone involved from initial approach to receipt of report was knowledgeable, efficient and focused" "Great service! Extremely fast and the report was very detailed and well received by the planners. Many thanks GeoSmart, we will definitely use your services again" Michael Eyres Partnership LLP "The service was great, fast and efficient. Everyone we talked to was very helpful and the details were well received by the planners" Solid Digital Marketing Ltd "The service for a Phase 1 Contaminated Land Study was excellent, fast and efficient! GeoSmart were willing to assist despite the extremely tight timescale to work with. We will definitely consider using your services again" "Efficient and friendly service, GeoSmart provided a clear and concise report within the timescales advised. Great service and I would have no problem recommending" "We are very pleased with the service provided by GeoSmart. Their reports have been used to assist with numerous planning applications and have always been delivered to budget and on-time, much to our clients' appreciation. We look forward to working with GeoSmart on future projects" Planning & Development Associates "The service provided was efficient and friendly. From the first phone call to GeoSmart they provided a clear, professional approach to my request within the timescales advised. Great service and I would have no problem recommending" Our flood risk assessment reports will provide you with detailed analysis of the flood risks at your site, helping you to prevent, mitigate or prepare for potential flood events. Our decades of experience and extensive environmental knowledge allow us to assess flood risk and develop suitable flood mitigation and drainage strategies, in order to support a planning application, comply with conditions and regulations and ensure adequate due diligence. Assess Flood Risk - Desk studies comprising in-depth research of flood risk in a specified area, including analysis of data obtained from the Environment Agency, Local & National Authorities, Strategic Flood Risk Assessments and Detailed Terrain Model (DTM) LiDAR topographical surveys. Support Planning Applications - Flood risk assessment reports, including Sequential & Exception Test and flood mitigation strategies, to protect against potential flooding and to support your planning application or comply with planning conditions. Flood Mitigation & Sustainable Drainage - Combining our flood and environmental expertise with detailed quantitative flood modelling allows us to develop solutions to flood risk and surface water drainage issues that mitigate against future flood events. I contacted Oakshire to complete a flood risk assessment to accompany a planning permission application. The comms were rapid and informative, cost of the service was highly competitive and timeframe to complete the work was 2 working days. Couldn't ask for more! Thank you. Hope the rest of my PP goes as smoothly..! - Mrs McCormick Our Flood Risk Assessment Services Preliminary Flood Risk Assessment - Our Preliminary Flood Risk Assessments aim to develop a detailed assessment of the site and establish the context, setting and suitability of proposed development, by conducting desk studies to collate information from the Environment Agency, Local and National Authorities and Strategic Flood Risk Assessments. This information is also used to apply the Sequential Test & Exception Test, a standard requirement for most flood risk assessments for planning permission. Information obtained from sources including the Environment Agency, Local & National Authorities, Strategic Flood Risk Assessments, Detailed Terrain Model (DTM) LiDAR topographical surveys and Ordnance Survey is analysed to determine the likely extent of flooding and the potential depth of such flooding, along with a qualitative assessment to determine the risk to a site and suitable flood mitigation measures. If the Preliminary Flood Risk Assessment shows the flood risk to be acceptable or easily mitigated, this may be the only stage necessary, however, where there is shown to be a higher risk of flooding, further assessment may be needed. Detailed Flood Risk Assessment - While desk studies provide vital site specific flood risk data and analysis, as well as providing the required information to support a planning application or due diligence, more detailed analysis may be required to further assess the flood risk, minimum required floor levels and flood evacuation plans. Therefore, we also carry out Detailed Flood Risk Assessments to produce models of water flow and drainage at a site, identify the ground conditions and better understand where potential floods are likely to occur. We can use this information to produce for you a clearly laid out and detailed flood risk survey, providing additional information to inform project development and flood mitigation. Flood Mitigation Options Appraisal - Following the assessment of the nature and extent of flood risk at a site, through a preliminary or detailed flood risk assessment, it may be necessary to identify suitable mitigation measures and provide a strategy for the implementation of suitable flood mitigation options. Utilising industry leading quantitative flood modelling, we're able to determine which flood mitigation options are most appropriate for the site, taking into account estimated costs, practicality and regulatory implications. Flood Warning & Evacuation Plan - The objective of a Flood Warning & Evacuation Plan is to provide a means by which those living or working at a development shall be made aware of the flood hazard, and to identify any procedures that will enable them to avoid being directly exposed to the hazard in any future flood events that may affect the site. Our Flood Warning & Evacuation plans include desk studies and a review of any previous investigations to develop a detailed assessment of the site location, setting, vulnerability and flood risk. This information is then used to assess the level of flood risk and the impact on development, the availability of safe access and egress for residents and emergency services to allow us to outline a strategy for the implementation of flood evacuation measures, including appropriate flood warning, resilience and recovery measures to reduce the impact of a flood event. Sustainable Drainage Options Appraisal (SuDS) - Conducted to identify and assess viable measures for sustainably managing the risk of surface water, Sustainable Drainage Options Appraisals are commonly used to support planning applications for proposed development or to improve existing conditions on a site. Combining construction expertise and quantitative surface water modelling, including supporting calculations, we're able to determine appropriate sustainable drainage measures for reducing surface water risk on and off-site, taking into account estimated costs, practicality and regulatory implications. Ask a question → Planning Permission - If a planned development is within an area of higher flood risk you may be instructed, often through the implementation of planning conditions, by the local authority to show that you have taken necessary precautions to protect the building from flooding. These precautions can include alterations to floor heights, material use and other flood resistant products. We carry out flood risk assessments, including applying the Sequential Test & Exception Test, with the aim of supporting proposed planning applications or complying with planning conditions, allowing you to focus on other aspects of your project. Our extensive practical experience, and variety of construction partners, allows us to design and manage the implementation of a range of flood protection measures and Sustainable Drainage Systems (SuDS) to work alongside our flood risk assessment report. Due Diligence - Growing urbanisation has led to an increase in impermeable surfaces and resulting flooding events. This decreased permeability along with an increase in extreme weather events means that drainage infrastructure is vital and previous infrastructure may no longer be sufficient, resulting in many areas now at risk of flooding. Flood risk assessments are crucial in a range of industries, particularly construction, so if you're looking to develop on land potentially at risk from flooding, a thorough assessment of the potential risks and resulting impact on future flood risks will need to be carried out. Flood Risk Assessment Case Study - We're proud to have had the chance to work for EMEC Ecology, a subsidiary of Nottinghamshire Wildlife Trust (WLT), to support redevelopment work at the Attenborough Nature Reserve in Nottingham. In order to conduct this Flood Risk Assessment, we first assessed the risks to the site from river flooding from the River Trent and its many tributaries, surface water flooding in nearby urbanised areas with limited permeable surfaces, groundwater flooding in areas with a shallow water table and permeable underlying soil and sewer flooding. There are many areas in Nottingham that benefit from flood defences, including the Trent Left Bank Flood Alleviation Scheme which was funded by DEFRA and built by the Environment Agency, that protects the site and thousands of others located north of the River Trent. A detailed analysis of the impact of potential sources of flooding and any flood defences that may be in place was essential in order to determine the risk of flooding at the site. Oakshire Environmental recently carried out a Preliminary Flood Risk Assessment for us at EMEC Ecology. They were extremely efficient, responsive and provided an on time service. Would definitely recommend and will certainly use them in the future. Thanks to Joe and Louis for working to our tight deadline! Meet Our Flood Risk Consultants Consultants - Supervised by our Chief Technical Officer, Louis Turner, our fully comprehensive flood risk assessment reports, are carried out by highly qualified consultants, combining over 30 years experience with recognised in-depth technical qualifications in identification of environmental and flood issues. Management - Our wealth of experience in project management, logistics and environmental consulting allows us to provide an efficient, friendly and high quality flood risk service for our clients. As a company, we believe that helping clients achieve their goals while simultaneously protecting the environment is a true "win-win" situation. Partners - Our experienced, professional and qualified construction and consulting partners further extend the range of environmental services we are able to provide. These partners help us produce highly detailed and thorough flood risk assessments. Contact Us - Contact us for an informal discussion about your requirements, alternatively, if your requirements are more complex, or you're looking for more information about our flood risk assessments, also known as a flood consequence assessments in Wales, or our company, a more formal consultation may be necessary. Following initial consultation we can provide an outline proposal detailing how we can help and the costs involved. If you need help or have a question, let us know and we will endeavour to respond same day. By sending this form you agreeing to our Privacy Policy and for the personal data entered above to be saved to allow us to properly respond to your enquiry. Data is not shared with third-parties.

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