

Creating a better place



# FLOOD AND COASTAL RISK MANAGEMENT CANDIDATE PACK

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## ABOUT US

Wherever you look, and in places you can't even see, there's evidence of our work. It's our job to protect and improve the air we breathe, the water we drink and the ground in which we grow our food. With 13,000 employees and a budget of more than £1 billion annually, we work with industry, the public, farmers, community groups, local authorities and central government to 'create a better place' for people and wildlife – for present and future generations.

Since 1996 we've made astonishing progress, cleaning up rivers, reducing pollution, decontaminating old industrial land, controlling waste and cracking down on environmental crime. We work with government to shape policy. We've pioneered new approaches to regulating and advising businesses. And since 2000 we've reduced flood risk to more than 150,000 homes and businesses. However, the devastation of recent floods has highlighted the long-term problems presented by climate change and the pressure for development, while underlining why more than half of our budget is now spent on managing flood risk.

The future challenges are many and varied; a complex chemistry of environmental, social, economic and political concerns. As an efficient operator, modern regulator, influential advisor and effective partner, we've established the cornerstones for success. As an engineer looking for a new challenge, you can find your own success with us, and help protect the lives of millions.

# FLOOD AND COASTAL RISK MANAGEMENT

More than two million homes, over five million people and countless businesses are currently under threat from flooding. With a changing climate, rising sea levels and relentless development, the risk keeps rising. Flood and Coastal Risk Management has always been a big issue for us, but now it has centre stage and over half of our entire annual budget. Following the severe flooding in the summer of 2007, we've been given new challenges, bigger funding and a broader remit – including coastal management overview and erosion mapping responsibilities.

From the simplest sluice to the grand Thames barrier, from pumping stations to earth embankments, we look after 44,500 structures and 24,000 miles of defences across England and Wales, and are building around 200 new schemes each year. We're constantly improving our flood risk maps and 24-hour warning systems. We work with local authorities, utility companies and emergency services to minimise the risk to vital assets like substations, water treatment plants, hospitals and fire and police stations. And, less dramatically but just as crucially, our Development and Flood Risk teams are influencing planners and developers to prevent ill-advised building in high risk areas.

We can't change the weather, but we can create a climate of heightened awareness and responsible action. Over the last 100 years sea levels rose by around ten centimetres. By the end of this century a further rise of 100 centimetres is predicted. This could be described as a watershed moment in the history of Flood and Coastal Risk Management. The strategies we're putting in place now and in the near future must stand the test of time, and we've increased our annual budget for this from £500 to £800 million. Our thinking must hold water for the long term.

That's the challenge for our engineers.

**That's your challenge.**

## OUR SPECIALIST TEAMS

Within Flood and Coastal Risk Management there are eight different, but specialist teams that all play a key role in helping to protect the people of England and Wales from the threat of flood, coastal erosion and surface water drainage. This is your chance to find out more about them, from planning to support, there are many ways in which you can help.



# ASSET SYSTEMS MANAGEMENT

Our Flood and Coastal Risk Management system is made up of over 14,000 assets, which include earth embankments, culverts, pumping stations, flood walls and surge barriers. Our strategy is risk based and requires us to look at costs over the whole life of the assets and the flood risks associated with them. This helps us reduce flood and coastal risk, justify costs and identify future investment needs. Efficient flood defence improvement works enable us to do more for less and optimise public expenditure.

You will help us deliver our coastal and fluvial strategies as well as schemes resulting from fluvial and coastal plans; you'll also provide expert advice and guidance to local authorities and inland drainage boards. Obviously all of our work is designed to develop opportunities that reduce and manage flood risk.

You will need a thorough understanding of environmental issues, construction, risk assessment and Health and Safety to help us do this. You'll also need to be a great communicator, with a customer-focused approach and solid project management skills.

## ASSET INVESTMENT AND PLANNING

This team provides asset investment information for use by the Flood Defence committees to inform their decision-making; it also monitors the large regional budget in order to identify any required re-allocations or additional funding requirements to ensure most effective use of funds. Taking part in cross-team activities, the team seeks to influence customers and establish local partnerships to deliver common objectives.

Analysing data and preparing reports, you'll evaluate and decide on investment programmes and play a major role in projects that contribute to reducing flood and coastal risk. This is work that will have a major effect on the future safety of millions of people, homes and businesses. To do this effectively you must be able to provide accurate engineering and technical advice to flood defence committees and managers that will inform robust, prioritised investment decisions.

You'll need excellent technical knowledge and the rigour to analyse and interpret data with great precision. With superb communication skills, and the ability to write clear and persuasive reports, you should ideally have a civil, mechanical or environmental engineering degree, or amassed relevant experience. All these skills and more will help you to influence customers and establish local partnerships that help us achieve our goals.

# FLOOD RISK MAPPING AND DATA MANAGEMENT

Our Flood Risk Mapping and Data Management teams co-ordinate floodplain mapping and modelling projects and keep a close eye on all the flood data stored in the area. The work is a crucial part of Flood and Coastal Risk Management and ensures that the Flood Map is kept up to date, and that the best information is available for the public and for future flood management.

To help us do this you'll be involved in managing flood risk maps and data that inform Flood and Coastal Risk Management and our external partners. This will mean providing expert technical advice on a variety of Flood Risk Mapping and Data Management issues. You'll use the latest mapping techniques as you analyse and interpret data, and prepare reports with recommendations for the management team.

You should have a degree in engineering, geography or environmental science and either hold or are working towards a professional qualification such as Chartered or Incorporated Engineer, Chartered Environmentalist or Chartered Scientist. But most importantly you must be able to promote the efficient and effective use of our resources so that our projects are completed on time and on budget; this means working closely with other specialist teams to influence customers and establish local partnerships that help us achieve our goals.

# FLOOD INCIDENT MANAGEMENT

The Flood Incident Management team manages our flood warning service. This includes maintaining technical systems and duty teams to issue the warnings and also raise awareness about the warnings. The team maintains our flood warning database, identifies new flood warning areas and locations for new telemetry to improve the service, and works with the emergency services, local government and the armed forces to test our plans, co-ordinating our response to floods in order to minimise impact on life and property.

Your work will see you maintaining and improving our flood warning service, educating the public on what to do if they are at risk of flooding and liaising with our professional partners in formulating their emergency plans. You'll identify and develop business plans for the Flood Incident Management team, and help plan for incidents and co-ordinate your area's response to flood events, aiming to minimise the impact on life and property.

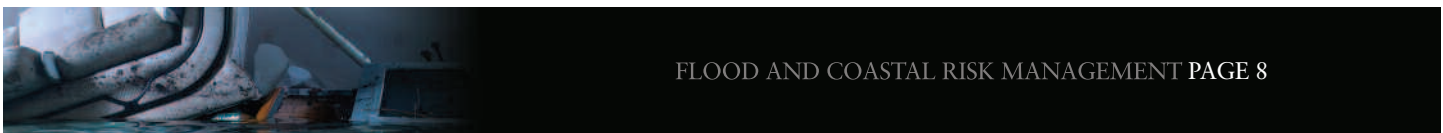
To do this effectively, you should have had exposure to project management and mapping techniques, while knowledge of hydrology, database management and GIS would be an advantage. You should have a degree in engineering, geography or environmental science and either hold or are working towards a professional qualification such as Chartered or Incorporated Engineer, Chartered Environmentalist or Chartered Scientist. You'll also need to be an excellent communicator to be able to effectively reach local communities to raise awareness of flood and coastal risk and promote the flood warning service.

# OPERATIONS DELIVERY TECHNICAL SUPPORT

Our Operations Delivery Technical Support team has a varied role, with the main focus being the management of flood defence improvement projects. Other aspects of the role involve planning both maintenance and improvement work and providing a technical level of support to the field based teams within Operations Delivery. The work covers routine maintenance and one-off construction projects including both supervision and delivery activities. The team also works with internal colleagues over the planning, programming and building of future improvement schemes.

What better use for your building and maintenance skills than to help us protect thousands of people from flooding? Your expertise will be used to solve a myriad of engineering problems and help our flood prevention measures deliver real value for money. You'll be involved in a programme of work and emergency responses that ensure our assets operate perfectly should a flood incident occur. This means helping the Operations Delivery Management team identify and develop business plans that ensure our flood risk assets perform to agreed standards.

To do this, you must be able to plan, allocate and control our resources effectively, maximising the use of people (including contractors), equipment and our allocated budgets – ensuring that our work is completed on time and on budget. This may also mean supporting the delivery of training and implementing processes that ensure all team members are competent and safe to carry out our work. You might be a civil, mechanical or environmental engineering graduate with experience in a related field, or an experienced construction professional or you could be a chartered member of CIWEM or ICE. What is important is that you have a customer-focused approach.



## REGIONAL STRATEGIC AND DEVELOPMENT PLANNING

Our Regional Strategic and Development Planning team is responsible for producing long term plans for the sustainable management of flood and coastal risk in the region. Working with Regional Government Offices, Regional Development Agencies, regional planning bodies, groups, and water companies, it provides the opportunity to influence the nature of long-term development through Regional Spatial Strategies and Development Frameworks.

This will be done by giving advice to committees and national, regional and area managers on a wide range of flood defence engineering issues, helping them to deliver effective strategic and development planning. Analysing and interpreting data, you'll prepare technical reports with recommendations for decision-making and report on the achievement of national targets.

A strong technical background, including flood management, environmental issues, flood hydrology and data management, would definitely be handy. Not to mention your excellent presentation skills, and your solid project management, mapping and GIS experience. It's essential that you have a full driving licence and the flexibility to take on a flood duty rota with some out of hours work.

## REGIONAL FLOOD FORECASTING

Our Flood Forecasting teams provide 24 hours a day, seven days a week monitoring and forecasting across England and Wales to ensure flood warnings are issued in a timely and reliable manner. The teams work with advanced technology including weather radar, telemetry, forecasting systems and mathematical models.

The safety of thousands will be in your hands, as you help deliver an accurate and timely flood forecasting service for your region. The forecasts you and your team provide will ensure we can respond quickly and effectively; you'll also inform the public through region-wide flood awareness campaigns. The result of your work will be that the Environment Agency and public are well informed and prepared in the event of flood.

Knowledge of hydrology and database management would be useful, but it's essential you have a full driving licence and can join a flood duty rota that will require out of hours work. You'll also support region-wide public awareness campaigns that encourage everyone to take action when flood warnings are in place – this is work that can quite literally save lives.



## ASSET MANAGEMENT

Our Flood and Coastal Risk Management service relies on tens of thousands of structures and hundreds of thousands of individual assets that work together to create flood defences that protect millions of properties from flooding. We own just over half the total number of assets. The remainder are owned by third parties (e.g. private individuals, companies, utilities and local authorities). These assets come in all shapes and sizes. They vary from barriers, pumping stations, earth embankments and concrete floodwalls down to small flap valves. But to give you an idea of the value (£) of these assets, it would cost us over £20 billion (at today's prices) if we had to replace all the assets we maintain.

You'll help to ensure we provide expert technical and specialist engineering advice and guidance to ensure the delivery of consistent, practical solutions and value for money. You'll work to develop systems, tools and processes to promote effective delivery of technical advice; help with interpretation of performance; and share knowledge with colleagues and external partners to increase our effectiveness and enhance our reputation.



## HOW TO APPLY

At the moment we are not actively recruiting but are accepting speculative applications for roles within our Flood and Coastal Risk Management specialisms. We are always looking to build on the talented teams that already work in these specialisms as the issue of flooding demands more and more attention. As a result we would welcome a speculative application from people like you who are passionate about preventing flooding. As soon as a vacancy arises your application will be considered.

If you have any questions, please email [fcrm@environment-agency.gov.uk](mailto:fcrm@environment-agency.gov.uk)

