

Made possible



FLOOD RESPONSE PLANNING PROPERTY RISK SOLUTIONS TECHNICAL GUIDE

How to create a site specific flood response plan

The intent of a Flood Response Plan is to commit to a best effort to reduce the impact of a flood.

You can minimise the potential damage of a flood with careful preparation and a good flood response plan. You do not need to engage in any form of active 'flood fight' during the event to prevent floodwaters from entering your site, or spend heavily on specialised equipment.

You can instead pre-plan a practical strategy to make best use of available staff, equipment and time. It is important your site has a full understanding of the flood scenario, including key vulnerabilities, available labour and physical resources. You should also consider the training requirements and the investment required.

QBE recommends any site within a 500-year flood zone should have a basic flood response plan. Additionally, sites within a 100-year flood zone should ensure they have a more detailed plan that is reviewed annually.

Flood response plan requirements

- A. Understand the nature of the flood and potential areas that could be affected.
 1. The source and direction of the flood.
 2. Weather events that may trigger flood and/or surface water inundation.
 3. Estimation of the time it would take for the site to be flooded from potential flood events. From this, an estimation of the time required to put in place the response plans and actions.
 4. The likely depth of water on the site and in low-lying areas (such as basements).
 5. The flooding likelihood. This is usually the flood return level.
 6. Estimation of how long water would remain in the facility.
 7. Estimation of the potential costs of damage and the impact to business.





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- B. Designate and clearly articulate in the plan who has the responsibility and authority to activate the plan and flood response. In addition, clearly define, designate and articulate who is responsible for implementing the plan and their authority to take the planned actions
- C. Within the plan, identify the particular actions that when deployed, will have significant impact over the whole site or affect key operations. This may include powering down of electrical power, shutdown of gas and other utilities. Ensure the person(s) responsible for such activities is clearly defined, designated and their authority reinforced. The procedures for powering down or shutting down sites and processes should be fully documented. This should include not only the task but also timing of the shutdown processes.
- D. Devise a plan to remove standing or ponding water in key critical areas such as basements, areas containing high value equipment, or ponding in the racking storage areas.
- E. Fully plan and document practices and procedures for relocating equipment and storage to higher levels.
- F. Ensure staff that have been designated specific roles and responsibilities understand their roles fully. The roles should be documented and training provided where necessary.
- G. Designate someone to monitor flood information official sources such as the government, local authorities, media and jurisdictional bodies.
- H. Identify (and consider retaining) key contractors and suppliers in case of flood. This includes but is not limited to: generator hire, emergency sump pumps, sandbags, mops, buckets, forklift trucks etc.
- I. Devise a clean-up plan for your site for after a flood situation. Your plan should consider issues such as potential contamination, clean up material and equipment, drainage requirements, consent for water release into waterways, repair of facility and equipment, power-up protocols, communication with authorities and best ways to restore business and minimise interruptions.
- J. Review and practice the plan annually.

Recommendation

QBE recommends any site within a 500-year flood zone should have a basic flood response plan. Additionally, sites within a 100-year flood zone should ensure they have a more detailed plan that is reviewed annually.

Flood Response Checklist

Take time before hand to evaluate when the pre-flood season activities should take place and also the realistic time needed to carry out the listed activities when flood is imminent, this will guide you in initiating these activities at the proper time.

| PRIOR TO FLOOD SEASON EACH YEAR | Date to be completed by | Done |
|---|-------------------------|--------------------------|
| Review the site's pre-prepared Flood Emergency Plan. (Include possible external exposures such as neighbouring facilities or access / egress issues during the flood). | / / | <input type="checkbox"/> |
| Ensure local flood area protections are in good condition - e.g. walk river banks berm, walls, levees, bridges and ensure these are in good condition and properly maintained. | / / | <input type="checkbox"/> |
| Check that local culverts, bridges and onsite drainage systems are unobstructed. | / / | <input type="checkbox"/> |
| Check condition of onsite flood protection features and equipment (including hand operated valves which may have seized or rusted & water removal equipment such as sump pumps). Make sure installation procedures are well practised. | / / | <input type="checkbox"/> |
| Check availability of sandbags and essential back up equipment such as diesel generators. Also check tarpaulins and blankets are in good supply and condition. List the priority areas for protection and ensure the basics such as proper construction of sandbag walls are well practised. | / / | <input type="checkbox"/> |
| Ensure all members of flood emergency team are fully briefed and each knowledgeable of their duties and responsibilities. | / / | <input type="checkbox"/> |
| BEFORE THE FLOOD - ON ALERT OF IMMINENT FLOOD CONDITIONS | Time needed | Done |
| Assign a person to monitor flood conditions and local conditions from government agencies, local authorities and onsite. Ensure this person has direct communication access to senior management, operations team and the flood response team. | | <input type="checkbox"/> |
| Ensure sandbags are available and ready to be deployed. | | <input type="checkbox"/> |
| Ensure flood doors and shields are installed at predefined locations. | | <input type="checkbox"/> |
| Check sump pumps and water removal equipment are ready, fuelled, and operational. | | <input type="checkbox"/> |
| Cover large stationary machinery and make sure they are anchored securely. | | <input type="checkbox"/> |
| Shut down gas and flammable liquid pipelines. | | <input type="checkbox"/> |
| Shut down key electrical supplies to minimise the threat of fire. | | <input type="checkbox"/> |
| Relocate to safe areas or higher place: <ul style="list-style-type: none"> On-floor storage in warehouse and yard On-floor equipment Vehicles - cars, trailers, tractors Water sensitive materials and equipment - such as drawing stores, files records, computer storage. | | <input type="checkbox"/> |

| BEFORE THE FLOOD - ON ALERT OF IMMINENT FLOOD CONDITIONS | Time needed | Done |
|--|-------------|--------------------------|
| Anchor outdoor tanks or fill them with water or product to prevent them from floating away. Ensure vent lines on active tanks are extended above maximum anticipated water level. | | <input type="checkbox"/> |
| Provide barricades for critical external equipment to prevent damage from floating debris. | | <input type="checkbox"/> |
| Lash down portable containers of flammable or combustible liquids. | | <input type="checkbox"/> |
| Check roof, yard and floor drains to ensure they are clear. Check throughout flood emergency that they are free from debris and blockages. | | <input type="checkbox"/> |
| Check that backflow preventers on drains are operational to prevent back flow through drains. | | <input type="checkbox"/> |
| Ensure salvage crew fully staffed, on alert and equipped to take action. | | <input type="checkbox"/> |
| Put contractors and equipment suppliers on alert (e.g. emergency diesel hire companies). | | <input type="checkbox"/> |
| Consider adequacy of security and surveillance and increase if necessary. | | <input type="checkbox"/> |
| Ensure the ability to maintain fire protection systems and that they are all in an operational state during the flood emergency e.g. install barriers around sprinkler risers and safeguard foam supplies. | | <input type="checkbox"/> |

| AFTER THE FLOOD - ACTIONS IMMEDIATELY AFTER THE FLOOD | Time needed | Done |
|---|-------------|--------------------------|
| Convene a meeting to coordinate action and salvage operations. Assess repair requirements, resources and business resumption plans / activities. | | <input type="checkbox"/> |
| Check structural integrity and stability of all buildings and structures. | | <input type="checkbox"/> |
| Check and assess all potential contamination situations and conditions. Make plans to clear up before other work begins. | | <input type="checkbox"/> |
| Remove ponding and standing water onsite. | | <input type="checkbox"/> |
| Clean and dry sensitive equipment - these should have been identified for priority treatment in the emergency plan. | | <input type="checkbox"/> |
| Deploy specialist team to safeguard and make good electrical equipment's and distribution systems. | | <input type="checkbox"/> |
| Begin de-humidifying operations. Dry wet building structures, materials and insulations. | | <input type="checkbox"/> |
| Ensure good workflow in the removal of wet debris and damaged material. | | <input type="checkbox"/> |
| Ensure all fire protection systems such as sprinkler systems are operational and continue to be so. | | <input type="checkbox"/> |
| Ensure all site safeguards are invoked, such as permit systems and contractor control. | | <input type="checkbox"/> |
| Check the condition of local structures that may have been affected or damaged by the flood e.g. blocked culverts, drains, bridges, overhead electrical systems, substations. | | <input type="checkbox"/> |
| Maintain good communication channels to all working parties and ensure all works are coordinated. | | <input type="checkbox"/> |