



population of 98,000, used 200 tonnes of sand in 24,000 bags. Cologne (population 955,000) used 60,000 bags. Most of these sandbags must be available in store before the flood starts and arrangements should be made with the manufacturers for further supplies to be made available as the flood progresses. In the same flood the town of Koblenz had to augment its emergency stocks by another 26,000 bags.

Other flood-fighting equipment that is needed and must be available includes boats and high-wheel trucks. Staff must be available to use this equipment. Untrained volunteers and personnel from the armed services can be used for unskilled work such as sandbagging, but they must be supervised by properly trained personnel.

The flood forecasting centre has to keep operating throughout the flood. This will require emergency electricity supplies and communications facilities in case the normal services are lost. The forecasts are a vital tool for the management of the flood, indicating problem areas and enabling the use of scarce resources to be planned. The operation of facilities such as flood control reservoirs needs forecasts to plan releases and the telemetry system also provides feedback on their effect.

The media provide a valuable channel of communication with the public during the emergency. The emergency is an important news story, which the media are anxious to follow so there is a predisposition on their part to broadcast news of the flood. Media relations need to be planned in advance. The media will want to interview senior personnel and this has to be included in their work plan for the emergency. During the Great Flood on the Mississippi in 1993 the United States National Weather Service, which forecasts rivers as well as the weather, found that senior officers, who saw their job as directing the forecasting teams, were so much in demand from the media for interviews that they had little time to spend with their forecasters. This problem needs to be tackled from the beginning and allowance made in these officials' schedules for media interviews. The impact on public perception of the presence of a senior official at an interview is sufficiently important to warrant this use of their time. There also need to be proper arrangements for deputies to take over the management role if senior officers are unavailable, whether this is because of media interviews, illness, or some other reason.