



FLOOD WARNING SYSTEM for the BRISBANE RIVER BELOW WIVENHOE DAM TO BRISBANE CITY

This brochure describes the flood warning system operated by the Australian Government, Bureau of Meteorology for the Brisbane River below Wivenhoe Dam to Brisbane City. It includes reference information which will be useful for understanding Flood Warnings and River Height Bulletins issued by the Bureau's Flood Warning Centre during periods of high rainfall and flooding.



Brisbane City, Wednesday afternoon on the 12th of January 2011, before the Thursday morning peak.

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(Last updated May 2011)

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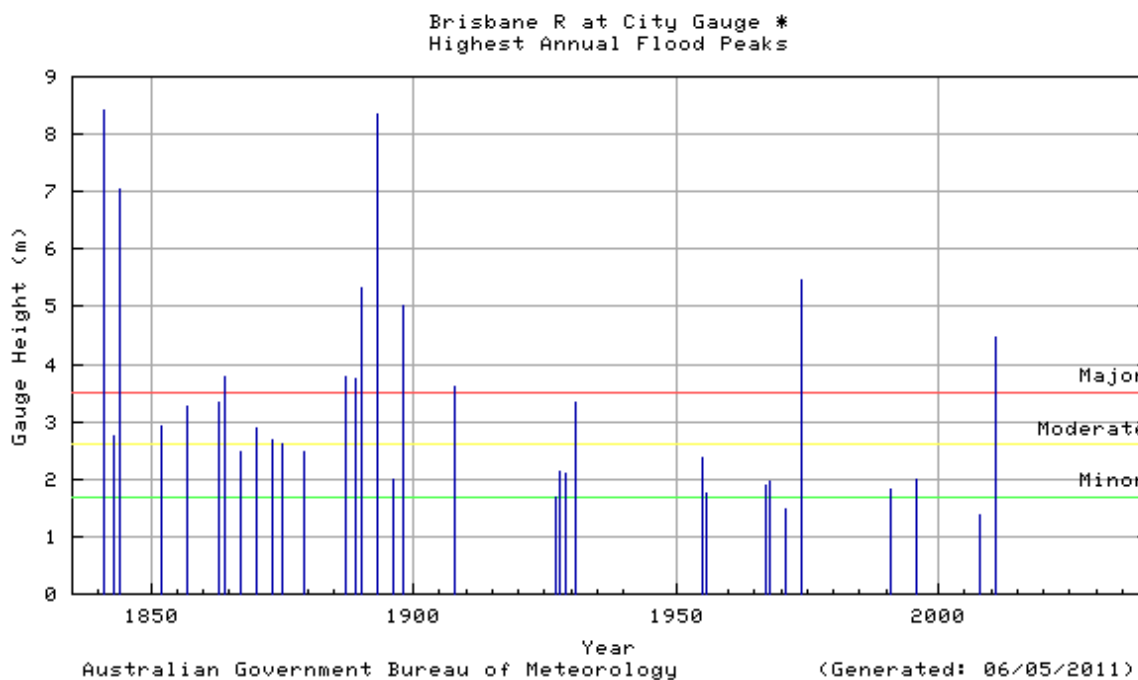
Flood Risk

The Brisbane River catchment covers an area of approximately 15,000 square kilometres of which about half is below Wivenhoe Dam. The Lockyer-Laidley Valley drains into the Brisbane River just downstream of Wivenhoe Dam near Lowood. The second major tributary, the Bremer River, flows into the Brisbane River at Moggill. Heavy rains in these areas can cause severe flooding of rural districts in the Lockyer and Bremer Valleys and along the Brisbane River. Severe flooding of the Cities of Ipswich (refer to brochure for the Bremer River) and Brisbane has occurred on several occasions. Although Wivenhoe Dam significantly reduces the frequency of flooding in Brisbane City, major flooding can still occur.

Flooding in the Brisbane City area can also be caused by local creeks including Oxley and Bulimba Creeks on the southside, and Kedron Brook, Moggill and Enoggera Creeks in the northern and western suburbs. During intense rainfalls, the suburban creeks rise very quickly and can cause significant flooding of streets and houses.

Previous Flooding

Flood records for Brisbane extend back as far as the 1840's and indicate that the city has a long history of flooding. The largest flood of the 20th century occurred in January 1974, rising to a height of 5.45 metres on the Brisbane City Gauge at the river end of Edward Street. The flood caused widespread damage in Brisbane, affecting at least 8,000 properties. The most recent major flood occurred in January 2011, when the river peaked at 4.46 metres. Although lower than 1974, this flood also caused widespread property damage.



Flood Forecasting

The Bureau of Meteorology, in association with the South East Queensland Water Corporation (SEQWater) and the City Councils of Brisbane and Ipswich (BCC and ICC), operate a flood warning system for the Brisbane River basin using data from the rainfall and river height network shown on the map. The network is made up of manual rainfall and river height observers as well as automated telemetry equipment.

The flood warning system has been upgraded in recent years by the Bureau, SEQWater, BCC and ICC with the installation of many ALERT flood warning stations. These provide early warning of heavy rainfalls and river rises throughout the catchment and enable more accurate and timely response to impending river and creek flooding throughout the Brisbane Valley.

Local Information

The Brisbane City is responsible for the detailed interpretation of flood warnings into depths and areas of inundation in the City and the management of flood response activities as a part of its counter disaster responsibilities.

Brisbane River ALERT System

The Brisbane River ALERT flood warning system was completed in the early to mid 1990's as a co-operative project between the Bureau of Meteorology, the South East Queensland Water Corporation, the Brisbane City Council and the Ipswich City Council. The system comprises a comprehensive network of rainfall and river height field stations located throughout the Brisbane Valley and in the Brisbane and Ipswich metropolitan areas. They report via VHF radio to base station computers located in SEQWater, Brisbane and Ipswich Council offices and the Bureau of Meteorology in Brisbane. The field stations send reports for every one millimetre of rainfall and every 50 millimetre change in river height.

The base station computers located in the SEQWater and Council offices collect the data and have software that displays it in graphical and tabular form. The data is also received by the Bureau's Flood Warning Centre where it is used in hydrologic models to produce river height predictions.

Flood Warnings and Bulletins

In consultation with the SEQWater and the Brisbane and Ipswich City Councils, the Bureau's Flood Warning Centre issues Flood Warnings and River Height Bulletins for the Brisbane River basin regularly during floods. They are sent to radio stations for broadcast, and to the Councils, emergency services and a large number of other agencies involved in managing flood response activities.

Flood Warnings and River Height Bulletins are available via :

Radio

Radio stations, particularly the local ABC, and local commercial stations, broadcast Flood Warnings and River Height Bulletins soon after issue or as part of their news services.

Local response organisations

These include the Councils, Police, and State Emergency Services in the local area.

Internet/World Wide Web

Flood Warnings, River Height Bulletins and other weather related data is available on the Bureau's Web page at <http://www.bom.gov.au> . The Queensland Flood Warning Centre website is <http://www.bom.gov.au/qld/flood> .

Telephone Weather

Flood Warnings are available through a recorded voice retrieval system, along with a wide range of other weather related and climate information.

Main Directory	Phone	1900 955 360
Flood Warnings	Phone	1300 659 219

Telephone Weather Services Call Charges:

1900 numbers: 77c per minute incl. GST; 1300 numbers: Low call cost - around 27.5c incl. GST.
(More from international, satellite, mobile or public phones)

Interpreting Flood Warnings and River Height Bulletins

Flood Warnings and River Height Bulletins contain observed river heights for a selection of the river height monitoring locations. The time at which the river reading has been taken is given together with its tendency (e.g. rising, falling, steady or at its peak). The Flood Warnings may also contain predictions in the form of minor, moderate or major flooding for a period in the future. River Height Bulletins also give the height above or below the road bridge or causeway for each river station located near a road crossing.

One of the simplest ways of understanding what the actual or predicted river height means is to compare the height given in the Warning or Bulletin with the height of previous floods at that location.

The table below summarises the flood history of the lower Brisbane River catchment below Wivenhoe Dam to Brisbane City. It contains the flood gauge heights for selected significant floods.

For further information, please refer to similar brochures issued for the Upper Brisbane River above Wivenhoe Dam and for the Bremer River.

River Height Station	Feb 1893	Feb 1931	Mar 1955	Jan 1974	May 1996	Feb 1999	Feb 2001	Nov 2008	Jan 2011
Gatton	16.33	9.14	9.14	14.63	11.40	8.50	9.55	7.60	15.38
Laidley	-	-	-	-	8.50	-	8.50	6.10	8.85
Lyons Bridge	-	-	17.46	16.54	16.41	12.55	13.26	13.12	17.50
Lowood	26.39	18.49	18.14	22.02	12.38*	10.87*	10.45*	-	-
Mt Crosby	32.00	21.78	20.72	26.74	14.10	-	8.55	8.29	26.18
Ipswich	24.50	15.47	13.82	20.70	11.31	6.85	6.28	10.00	19.25
Moggill	24.50	15.40	13.70	19.95	7.10	3.58	-	4.37	17.87
Jindalee	17.90	9.60	7.30	14.10	4.55	2.25	-	-	12.90
Brisbane City	8.35	3.32	2.36	5.45	2.10	1.41	-	-	4.46

All heights are in metres on flood gauges.

[*] Height is from the Lowood automatic station. Please note that some of the above heights have been estimated.

Historical flood heights for all river stations in the Brisbane River flood warning network, as shown on the map, are available from the Bureau of Meteorology upon request.

BRISBANE RIVER CATCHMENT - ASSESSMENT OF THE FLOOD POTENTIAL

Major flooding requires a large scale rainfall situation over the Brisbane River catchment. The following can be used as a rough guide to the likelihood of flooding in the catchment :

Brisbane River:

Average catchment rainfalls in excess of 200-300mm in 48 hours, may result in stream rises and the possibility of moderate to major flooding and local traffic disabilities throughout the Brisbane River catchment.

Brisbane Metropolitan Creeks:

Average catchment rainfalls in excess of 35mm in 3 hours, may result in stream rises and the possibility of minor flooding and local traffic disabilities in the Enoggera, Breakfast, Moggill and Bulimba Creeks and Kedron Brook. Whilst average catchment rainfalls in excess of 100mm in 3 hours may result in stream rises and the possibility of major flooding and local traffic disabilities.

However, in the Oxley Creek catchment average catchment rainfalls in excess of 100mm in 6-12 hours may result in stream rises and the possibility of major flooding and local traffic disabilities.

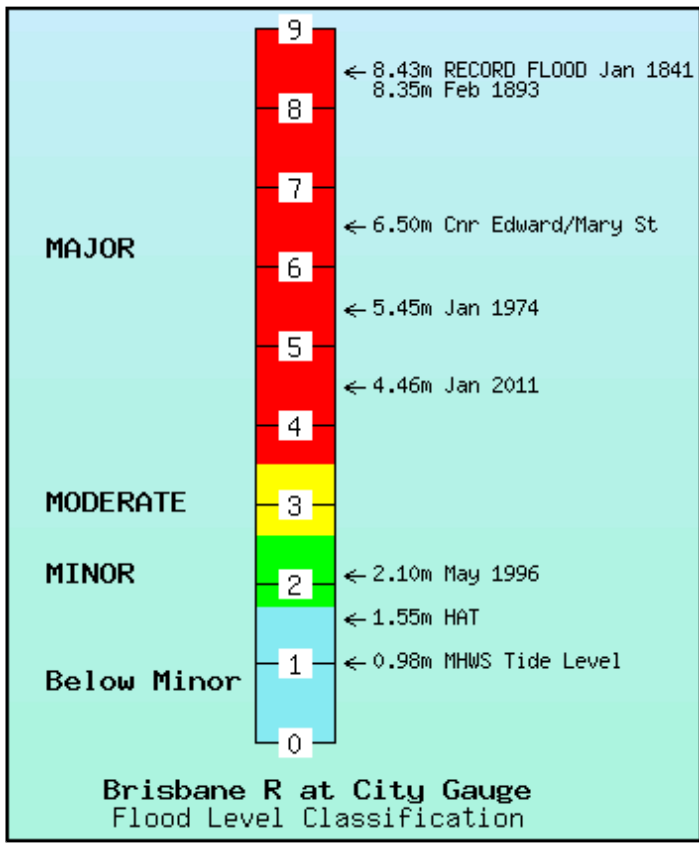
Flood Classifications

At each flood warning river height station, the severity of flooding is described as minor, moderate or major according to the effects caused in the local area or in nearby downstream areas. Terms used in Flood Warnings are based on the following definitions.

Major Flooding : This causes inundation of large areas, isolating towns and cities. Major disruptions occur to road and rail links. Evacuation of many houses and business premises may be required. In rural areas widespread flooding of farmland is likely.

Moderate Flooding : This causes the inundation of low lying areas requiring the removal of stock and/or the evacuation of some houses. Main traffic bridges may be closed by floodwaters.

Minor Flooding : This causes inconvenience such as closing of minor roads and the submergence of low level bridges and makes the removal of pumps located adjacent to the river necessary.



Each river height station has a pre-determined flood classification which details heights on gauges at which minor, moderate and major flooding commences. Other flood heights may also be defined which indicate at what height the local road crossing or town becomes affected by floodwaters.

The table below shows the flood classifications for selected river height stations in the lower Brisbane River catchment below Wivenhoe Dam to Brisbane City.

River Height Station	First Report Height	Crossing Height	Minor Flood Level	Crops & Grazing	Moderate Flood Level	Towns and Houses	Major Flood Level
Gatton	3.0	3.90 (B)	7.0	13.0	10.0 (d/s)	18.3	15.0 (d/s)
Laidley	5.0	8.50 (B)	5.0	8.5	6.0	9.0	7.0
Lyons Bridge	4.0	10.10 (B)	10.0	-	11.5	-	13.0
Lowood	4.0	6.70 (B)	8.0	18.0	15.0	21.0	20.0
Mt Crosby	10.0	12.35 (B)	11.0	13.0	13.0	-	21.0
Ipswich	4.0	24.88 (B)	7.0	7.0	9.0	7.4	11.7
Moggill	-	-	10.0	-	13.0	-	15.5
Jindalee	-	-	6.0	-	8.0	-	10.0
Brisbane City	-	-	1.7	-	2.6	-	3.5

All heights are in metres on flood gauges.

(B) = Bridge (A) = Approaches (C) = Causeway (X) = Crossing (d/s) = Downstream

The above details are correct at the time of preparing this document. Up-to-date flood classifications and other details for all flood warning stations in the network are at:

<http://www.bom.gov.au/hydro/flood/qld/networks/index.shtml>

Catchment Map showing the lower Brisbane River flood warning network

Click here to view map as: [PNG](#) [PDF](#) (436K bytes)

For further information, contact:

The Regional Director, Bureau of Meteorology, GPO Box 413, Brisbane Q 4001

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