

# **APPENDIX B: HISTORICAL NEWSPAPER ARTICLE REVIEW**

Trove (trove.nla.gov.au) is an online resource of historical newspaper articles and is provided by the National Library of Australia. Trove was a primary resource for this study in determining historic flood behaviour for model verification. This appendix provides key exerts from historic publications describing flood behaviour in the Darling Harbour and City Area catchment study areas.

# Border Watch (Mount Gambier, SA) - Thursday 24 April 1947 p9 Article.

Sydney was literally swamped on Tuesday (22/04/1947) when more than for inches of rain fell between dawn and dusk.

In one hour, 180 points fell in Sydney. It was Sydney's third damaging storm within a week.

In other parts of the city, especially at Circular Quay, workers had to wade through water more than a foot deep.

# Barrier Miner (Broken Hill, NSW) - Saturday 21 March 1914 p4 Article.

A severe lightning storm followed by a tremendous downpour of rain was experienced in the city last night (20/03/1914).

The main streets were flooded. Circular Quay, shortly before midnight, being between three and four feet under water.

Traffic in the streets was seriously affected, in Pitt Street in particular.

# Evening News (Sydney, NSW) - Thursday 1 August 1878.

We venture to say that the oldest inhabitant of Sydney will tax his memory in vain to find a parallel for the rainstorm that fell in Sydney today. In less than a quarter of an hour from the commencement of what we call nothing less else than a deluge, a boat might have been pulled along Pitt Street from Market Street to King Street, and in King Street from Pitt Street to George Street.

Market Street from Elizabeth Street to Pitt Street was flooded by the rush of storm water from Hyde Park.



# Evening News (Sydney, NSW) - Thursday 4 October 1877.

Flood waters rushed in large volumes down Park and Market Streets, flooding the sewers in George and Pitt Streets. So great was the rush of water of water that the pathways in Pitt Street were covered for some time.

# The Advertiser (Adelaide, SA) - Saturday 2 March 1912.

As a result of the torrential rain which occurred in the city yesterday (01/03/1912) afternoon considerable damage was done in Pitt Street and the lower parts of George Street and Haymarket by floodwaters.

At Haymarket the water was 4 feet high in some premises.

# Kalgoorlie Miner (WA) - Tuesday 11 March 1913

Amongst the places in the city which suffered most through the storm was the drapery establishment of McCathie, Ltd., in Pitt Street.

### Goulburn Evening Penny Post (NSW) - Monday 31 January 1938

In Pitt Street many basements were under water.

In one hour, from 6.30 am, 250 points were registered at the official registry and it is the highest number of points on the meteorological records.

# Examiner (Launceston, Tas) - Thursday 16 June 1949.

Advocate (Burnie, Tas) - Thursday 16 June 1949.

### Both references report:

Sydney, Wednesday (15/06/49) – The heaviest June rain in Sydney for more than half a century.

For the 24 hours ended 9am, 477 points of rain were registered.

As hundreds sought shelter from the rain, a serious crush occurred, and people were forced out in the rain and into water 9 inches deep.

All traffic was halted at the corner of Liverpool and Elizabeth Streets, where a huge lake had formed.



# Morning Bulletin (Rockhampton, Qld) - Thursday 16 June 1949.

# Townsville Daily Bulletin (Qld) - Thursday 16 June 1949

# Both references report:

Between 8am and 9am (15/06/19), 267 points fell.

A tram was derailed when storm waters ripped up the rail in Pitt Street.

City streets were flooded to depths of up to 5 ft. The deepest flood in low-lying city streets was in Ultimo Road near Broadway where flood waters surged 5 ft deep.

# The Argus (Melbourne, Vic) - Thursday 16 June 1949.

Water cascading from Hyde Park (on 15/06/49) stopped another line of trams in Elizabeth Street.

# The Brisbane Courier (Qld) - Wednesday 5 April 1905.

Concerning the causes which lead to the floods in the neighbourhood of Darling Harbour on Saturday last:

Firstly a high tide at Darling Harbour prevented the escape of the flood waters, and caused them to back up the sewers.



COMMUNITY CONSULTATION C-1

# **APPENDIX C: COMMUNITY CONSULTATION**

The primary mode of community consultation was the delivery of Community Questionnaire. A copy of each of the 6 pages of this questionnaire is provided.





# Sydney CBD and Darling Harbour Catchments Flood Study

**EUFSYDNEY** 



The City of Sydney is preparing a flood study for the Sydney CBD and Darling Harbour areas and we would like your help.

The study will tell us about the type of flooding issues in the catchment and help us better plan for and manage any flood risks.

Good management of flood risks can help reduce damage and improve social and economic opportunities.



Sydney2030/Green/Global/Connected

city of villages



# To access the questionnaire online visit

# cityofsydney.nsw.gov.au









# Management of land

Under the NSW Government Flood Prone Land Policy, management of flood prone land is, primarily, the responsibility of councils.

The policy specifies a staged process (see stages 1 – 5).

The City will follow this process in order to manage the floodplain in your area.

# Stages 1 - 5

- The Data Collection
- 2. Flood Study (current)
- 3. Floodplain Risk Management Study
- 4. Floodplain Risk Management Plan
- 5. Implementation of Plan

# Objectives

- Investigate historical flooding in the catchment areas.
- Develop a computer simulation of flooding that can be used to predict the size and extent of future floods.
- Provide the City with the necessary information to make effective investments in flood management in the future.

For further information please contact

BMT WBM Pty Ltd Simon Kovacevic Phone: 02 8987 2900

City of Sydney Shah Alam Phone: 02 9288 5925

Email: salam@cityofsydney.nsw.gov.au

### Study area and flooding issues

The Sydney CBD and Darling Harbour catchments include the suburbs of Millers Point, Dawes Point, The Rocks, Sydney, Pyrmont, Ultimo, Haymarket and Surry Hills.

The overall catchment areas total about 506 hectares lying within the City of Sydney Local Government Area. Land uses within the catchments include residential, commercial and industrial properties as well as parklands.

In the past, flooding in the Sydney CBD and Darling Harbour catchments has caused property damage and posed a hazard to people close to the main drainage channels or drainage paths.

Flooding may also occur along natural depressions and near stormwater pits.

The City is trying to measure and understand the extent of these types of flooding within the Sydney CBD and Darling Harbour.

# The Flood Study

The Sydney CBD and Darling Harbour Catchments Flood Study will be based on historical data and includes a computer simulation that represents flooding in your area.

Information from the study will help future planning in the City of Sydney LGA.

After the Flood Study, a Floodplain Risk Management Study and Plan will be prepared. This will investigate specific flood management solutions.

## Can you please help us?

We want your comments about previous flood experiences.

The local knowledge of residents and business operators and any personal experiences of flooding are an important source of information. We are especially interested in historical records of flooding such as photographs, flood marks or observations that residents may have.

This information will help the City better understand how floods happen in the catchments and lead to better management of flood hazards.

Please complete the questionnaire and return it in the reply paid envelope, or complete it online (preferred) at cityofsydney.nsw.gov.au

### Floodplain Management Committee

A Floodplain Management Committee has been established and we are seeking representatives of your community for these catchments. Meetings will be held quarterly and will be about one to two hours long. The committee will oversee the floodplain management process and help with reviews.

The Flood Study is due for completion in June 2014.

The community will be invited to view and comment on the draft study when it is placed on public exhibition.



COMMUNITY CONSULTATION C-4

# **Sydney CBD and Darling Harbour Catchments Flood Study**

# Community questionnaire

The City of Sydney is carrying out a flood study for the Sydney CBD and Darling Harbour catchments. Your local knowledge of the catchment and personal experiences of flooding will help us to undertake this flood study.

We appreciate you taking the time to assist us.

1	4	١.

Your details	
	Flood Study is to identify the nature of flooding in your catchment area to enable the City to better understand, plan and tial flood risk. We may contact you to discuss some of the information that you provide.
Name:	
Address:	
Email:	
Contact Phone Nu	umber:
2	
How long hav	ve you lived at the above address?
Months:	Years:
3	
Are you awar	re of stormwater flooding from streets or channels in your catchment? (Please tick one)
Aware	Some Knowledge Not Aware
4	
Have you ever in this area?	er been inconvenienced by uncontrolled floodwater/stormwater from streets or channels
Yes	□No
If yes, please give n	more details in the space provided on the next page.



COMMUNITY CONSULTATION C-5

	olled floodwater/stormwater inconvenienced you?
Daily routine was aff	ected (e.g. it was difficult to get to work)
Safety was threaten	ed
Access to property	was affected (e.g. driveways or roads flooded)
Property and/or its o	ontents were damaged
Business was unabl	e to operate during the flooded period
Other (please speci	ý)
Can vou rememb	per when this happened?
□yes	
□No	
	Time:
	r other property been flooded because of uncontrolled floodwater/stormwater annels in this area?
Yes	□No
If yes, where was your p	property flooded, and when did it happen? (You may tick more than one)
Frontyard or backya	rd
Garage or shed	
Residential (below f	oor level)
Residential (above f	loor level)
Commercial (e.g. sh	ops, above floor level)
Commercial (below	floor level)
Industrial (e.g. facto	ries)
	letails)
Other (please give of	



Have you experienc	ed flooding on your street?	
Yes - across one or both k	anes of traffic	
Yes - minor along gutters		
□No		
If yes, does this occur regular	rly, i.e. several times a year?	
Yes	No	
7		
If you have experien	ced flooding, what other are	as have you seen flooded?
Residential or commerce	ial	Description:
Roads or footpaths Address:		Description:
Parks Address:		Description:
Other (give details) Address:		Description:
8		
Did you notice any o		water inlets that were blocked during the flooding?
∐ Yes	∐No	
If yes, please provide detail	A Comment of the Comm	
Partially blocked  What was causing the bloc	Fully blocked	
9		
Do you have any evi	dence of past floods (e.g. pl	notos, video footage, watermarks on walls or posts)
Yes	□No	
If yes, please provide more	information:	



10			
Do you have any more information you think might help the study?			
11)			
Are you interested in taking part in the floodplain risk management committee? The committee will oversee the floodplain risk management process. Meetings will occur quarterly and will take 1-2 hours at a time.			
☐ Yes ☐ No			
If yes, please provide your contact details in Question 1 for our staff to contact you.			
Thank you for providing this information. Please remember to place all pages in the reply paid envelope and send to BMT WBM Pty Ltd by 21 June 2013. A representative from BMT WBM may contact you in the near future to discuss your response.			
If you are willing to share photographs and video of flooding with the study team, these can be returned with this form or emailed to SydFlood@bmtwbm.com.au			
Privacy notice The information obtained from the Sydney CBD and Darling Harbour Catchments Flood Study questionnaire will be used by staff at the City of Sydney and BMT WBM only. Supply of this information is voluntary. Access to, or correction of information should be addressed to the promoter (see over). The information will be stored on Council's file for the duration of the project.			



PIT INLET CURVES D-1

# **APPENDIX D: PIT INLET CURVES**



PIT INLET CURVES D-2

Figure D-1 Pit Inlet Capacity Curves for Selected Nominal Lintel Lengths (Lintel only)

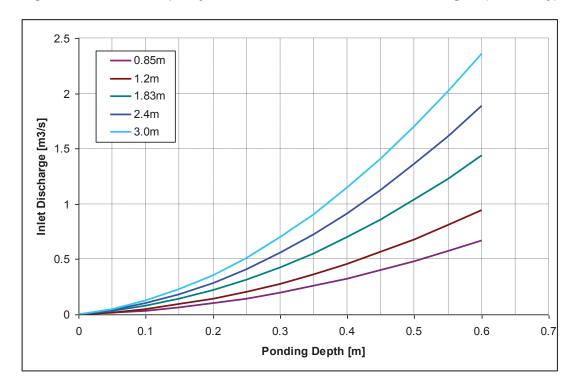
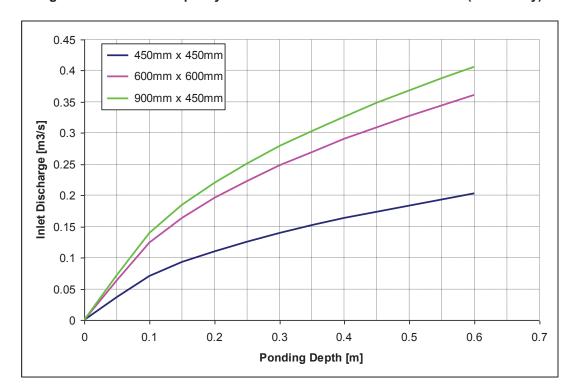


Figure D-2 Pit Inlet Capacity Curves for Selected Grate Dimensions (Grate Only)





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