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Standard Operating Procedure

Flash Flooding and River Floods

Technical Services Division

This Standard Operating Procedure has been authorised by the Technical Services Manager/City Engineer for Launceston City Council

1. Objective

To provide a procedure whereby Council employees react in a consistent and planned manner in order to minimise the impact of flash or river flooding upon the community and its facilities.

2. Flood Warnings

Some warning of flooding in progress will be provided by the local community or Council employees in the field who witness localised flooding.

In the event of much larger floods resulting from upstream flooding of the river catchments, warnings in advance of impending floods will be provided by the Bureau of Meteorology by means of faxed bulletin sheets to the fax machine in the Technical Services Division, Town Hall Annex, number (003) 371-396.

3. Flood Co-ordinator for Council

A flood event, be it localised flash flooding or a river flood, occurring within the municipal area of Launceston City Council requires a co-ordinated response by the Council.

The Technical Services Manager/City Engineer or his delegate is the Flood Co-ordinator. In the absence of this officer, the seniority for automatic appointment as Flood Co-ordinator is:-

Ken Hose Engineering Manager, Hydraulic Services Engineering Manager, Works Randall Langdon Engineering Manager, Transp. & Dev. **Damien Naughton** Senior Engineer, S & CD Graeme McArthur Senior Engineer, D & WS Haydn Betts Senior Engineer, Planning Terry Eaton **Engineer Operations, Roads** Tony Petrusma Engineer Operations, Hydraulic Services Colin Moes

When flash flooding is imminent, the most senior of the above officers will automatically assume the role of Flood Co-ordinator until such time as a more senior officer arrives and assumes this function.

4. Use of Council Resources

Council's resources may be used to assist in a community crisis or emergency and will be utilised should the event escalate to a declared state of emergency or disaster under the Emergency Services Act 1976.

Council has also agreed to assist adjoining Councils to combat emergencies/disasters by providing resources, where practicable and with the authorisation of the City Engineer, when requested by that Council through its Local Co-ordinator for the State Emergency Service. (Resolution of the Council Meeting of 5th March 1991)

In allocating resources, such as trucks to carry sand bags, trucks to assist with evacuations, etc., no Council employee should be required to undertake a task that involves them in personal danger and also which is beyond their normal area of expertise. As an example, in the latter case, for instance, more danger can be created by using unskilled plant operators to operate machines.

Commonsense will be required in the application of resources. The Mayor and City Manager should be advised, as soon as practicable, when resources are used in such a situation. The objective behind the use of Council resources is to help the community in any reasonable manner. As Council resources are limited, they must be applied for the greatest good, so residents and businesses are expected to help themselves. Some decisions may be controversial, when reviewed with the benefit of hindsight, so keep notes of why certain decisions were made, and the expected outcome.

Job Numbers

When a "community emergency" is declared by the Flood Co-ordinator, and/or indications are that the event will require significant resource allocation (manpower and equipment) to assist, there will be a funding requirement to pay for them. Job Numbers for this purpose are available under TSD Budget allocation: Divisional Overhead - Community Emergency.

The cost centre is 4054.001.9, and a new suffix should be added for each event. The description will be the date on which the number is raised.

eg. 4054.001.9 - Community Emergency 16.05.93 is the suffix for the costs associated with a major storm, for instance, that occurred on 16th May 1993.

5. Roads under water

Warning signs should be placed at appropriate locations to warn the motoring public. Council is responsible for roads under its jurisdiction, and the Department of Transport and Works for those under its control. It may be necessary to remind DTW of their role at an early stage in proceedings for each flooding event.

Where it is considered necessary for a road to be closed, for instance, where there is a washout or alternatively the water is too deep to be safely traversed by the average motorist, then Tasmania Police should be advised as a matter of urgency in the interests of public safety. The Police may well ask Council to carry out the closure with appropriate signing and markers. Don't wait to get back to the Depot to report the need for a closure, use the two-way radio and ask the Operations Room personnel (or Day & Nite Security base staff) to notify Police. They can then relay whether you should take action to physically close the road.

Make a note of the times of these various actions. This may be required as evidence if a serious accident occurred at that location.

Trigger events for some closures likely to occur are listed in Schedule 1 appended.

6. Flash Flooding Problems

Experience has shown that at times of flash flooding, storm water inlets are likely to be covered quickly by debris brought down with the flooding.

Schedule 2 appended lists some of the pipe inlet grates that need to be checked and cleared where necessary, and rechecked in case later blockages occur.

7. Stability of Farm Dams

In event of reports of potential failure of farm dams that may result in downstream flooding and damage, the Rivers & Water Supply Commission shall be advised.

Contact phone number: Work: (003) 362 513 - Neil Drury

After hours: (003) 431 876

The Commission is responsible for approval of farm dam construction, and, as a consequence, is the responsible authority for advising on the structural integrity of dams during periods of crisis. The Commission officers should advise Council and the Police of any adverse impact upon the Council road system; advise DRT if its roads are affected; and advise downstream properties likely to be affected in event of a dam breach, so that they can take appropriate action. Such advice is to be relayed to the relevant Council roads officers, as listed above, as well as Tasmania Police.

8. Properties likely to be affected on Flood Plains

Schedule 3 appended lists the properties and occupiers who should be contacted and notified if their property is likely to be threatened by flooding.

9. Relocation of animals from property to be flooded

There is a moral responsibility to notify owners or occupiers of properties likely to be flooded where there are animals that could be endangered. Council is not responsible for relocating endangered animals.

10. Supplies of Sand Bags

Sand bags will often be required during flash flooding as well as during major flooding events.

Launceston Flood Protection Store

The Launceston Flood Protection Store in Lindsay Street contains about 46,000 hessian sand bags in packs of 1000.

The S.E.S. controls 10,000 of these bags which are part of the decentralised natural disaster reserve maintained by the Commonwealth through Emergency Management Australia (EMA). EMA has authorised the State Emergency Service to issue these bags, if required, provided that the replenishment action is taken without delay.

It needs to be remembered that most of these bags will be required in the event of a major flood in Launceston itself, therefore, be careful to ensure that adequate stocks are retained. Replenishment takes time and, if too many are given out to those in need upstream, they are unlikely to be replaced before they are required in Launceston. This may seem harsh to those in need,

however, they should be taking measures in advance by carrying their own stocks to protect themselves, with Launceston providing a top-up service only.

Engineer Operations - Hydraulic Services is responsible for the replacement of sand bags taken from the Launceston Flood Protection Store. The bags in the Launceston Flood Protection Store are treated to delay rotting. Engineer Operations - Hydraulic Services is replacing the bags at the rate of 3,000 p.a. which gives them a nominal life of 15 years. When new bags are purchased the packs must be marked on at least 2 opposite sides with the date of delivery in 300 mm high letters (e.g. spray paint 16-05-94). This will ensure that there is a ready supply of useable bags. Use the oldest bags first.

Contacts for access to the sandbags are:-

<u>Working hours</u> 7.30 a.m. to 4.30 p.m.

Senior Storeman - 371-180 or 371-245.

After hours Engineering Manager Works - 371-245 or

982-281.

The bags can usually be loaded onto a vehicle within 30 minutes of the initial telephone call.

Please note a 1000 pack of bags weighs 140 kgs and requires at least 4 strong men to lift it. If large quantities of bags were to be loaded then use the forklift from the Stores.

Charles Street Depot

The Stores also keep at least 1000 sand bags on hand for small jobs. These are more readily available during working hours. The Stores will also keep on hand 120 filled sand bags (4 pallet loads each about 1200 kgs).

The bags will be filled with <u>dried</u> sand and should be used in the first instance in flash flooding situations. Note the Stores forklift is on hand to facilitate easy loading.

200 empty sand bags are usually available in one of the Sign Store cupboards. The AHES/Miscellaneous Duty Officer has a key to this Store along with Engineering Manager Works. Small amounts of sand are available from adjacent to the Surveyor's Hut in the Charles Street Depot or in the bins at the rear of the Newstead Depot.

11. Contact with the Media

At various stages of a major event it may be necessary for the Flood Coordinator to contact the media (radio, television and newspaper) in order that the community be kept informed of anything that may adversely effect them.

The media contact numbers are kept up-to-date in a list inside the red Emergency Management Plan folder for Launceston, marked "DISPLAN" on its spine. The list is in Section 11 of this Plan.

Copies of DISPLAN can be found in the offices of TSM/CE, EMHS/DCE and EMW.

12. Reporting of the event

Reporting of the event may be used for two reasons. The first is for potential insurance claims and will be required to establish Council's position and whether or not it has any liability.

The second is for reference data for future flood planning.

Responsibility for reporting will fall on those charged with various tasks where they see matters that could be important to record. Commonsense will be a large part of this when it comes to flood planning matters, however as a guide, levels of floods at various stages of a major event at specific locations that can be clearly identified afterwards for survey levelling purposes. Photographs can be extremely useful but remember to write the location and any other relevant data on the back as soon as photos are developed. Take notes when the photo is taken just as a prompt for later. A photograph without details is not very helpful. Time when the photo is taken is essential in flood events, so that the level recorded can be related to the stage of the flood at that time.

13. Storm Damage Operations

Emergency Management Australia, formerly known as the Natural Disasters Organisation, released in 1991 an Australian Emergency Manual entitled "Storm Damage Operations".

Supervisors of Council personnel engaged in storm damage operations should ensure that they and those employees involved are familiar with techniques described in the manual.

Sheet 1 of 2

Trigger events for road closures

Not yet available
Hoblers Bridge Road will be overtopped about 3 hours after the North Esk reaches 3.2 metres at Corra Lynn, under average tide, barometric pressure and wind conditions. The flooding period will be earlier if arriving on a rising tide.
Henry Street will be overtopped about 3 hours after the North Esk at Corra Lynn reaches 2.4 metres on the gauge board. Flooding may occur at Henry Street even if the North Esk is not in flood. Circumstances for this include a barometric pressure at about 980 hPa or less, strong north to north-westerly winds, high tide and minor flooding in the South Esk River. Under average tide, pressure and wind conditions, With high tide, the Corra Lynn level drops to 2.1 metres. With high tide and north west winds, Corra Lyn level drops to 1.9 or 2.0 metres. NB: Fixed signs are available at Henry St.
Not yet available
Not yet available
Not yet available

Schedule 1 continued

Sheet 2 of 2

Trigger events for road closures

 Opossum Road 		
at Jinglers Creek:	Not yet available	
Beams Hollow:	Spill level at Trevallyn Dam 423 ft 6 inches; Guide is 860 cumecs over Trevallyn Dam. Also, if no	
	flood in Meander River, South Esk level at	
	Longford is 4.94 metres.	

Sheet 1 of 3

Flash flooding problem areas List of pipe inlet grates to be checked

Kings Meadows/Youngtown:

- KM High School, the twin 1800 dia pipes
- Ernest Street, one at Flats above, and the other in Ernest Street
- Ernest St next to No.62, 3 grates
- Detention basins (currently under construction)
- 48 Gascoyne St, twin gully pits
- · Guy St, 200 metres to left of school front gate, grate
- Guy St, behind Meadow Mews
- YMCA
- Merino St, southern end of school grounds, grates
- Dunnivan St in paddock behind children's swing

Ravenswood:

- 38 Pioneer Pde, Ravenswood, twin culverts in reserve
- 35 Castlemain Road, grate at top end of reserve
- 12 Lambert Street, culvert opposite
- · Henry St east end
- 165 Ravenswood Rd, creek below Coca Cola
- 12-14 Warring Street, culvert in reserve, grate
- Faraday Street, linking Ravenswood and Waverley, several large culverts

St Leonards/Norwood/Glenwood Road area:

- 17 Binalong Ave behind Dean's property at 24 Benvenue Road, Council easement top end of reserve, grate
- 389-391 Blessington Road, culverts
- 427 Blessington Road, gully pit
- Station Rd, near picnic ground and railway crossing
- Glenwood Rd bridge
- Opossum Rd near HEC sub-station, 2 culverts, Jinglers Creek

Schedule 2 continued

Sheet 2 of 3

Flash flooding problem areas List of pipe inlet grates to be checked

Punchbowl:

- Blamey Road bridge and grate
- Morshead Street bridge

Elphin/East Launceston:

- 33 Cypress St, 2 gully pits
- Elphin Rd at Scotch Oakburn, 3 gully pits
- 58a Elphin Rd, opposite Dowling St, 2 gully pits

Trevallyn:

- Gorge Rd, 2 gully pits behind stone entrance to Gorge Reserve
- Trevallyn Bowls Club, 2 grates left of end of drive
- 53 Gorge Road, School easement grate
- 47 Forest Rd
- 55a Forest Rd
- 41a Little Trevallyn Rd, creek gate
- 45-61, 95-117 West Tamar Rd, easements
- South Esk Road at North Bank, surcharging manhole

West Launceston:

- Upper York St grate, cnr Edward Street
- 4-8 Bourke St, 3 gully pits
- Outram Street, near Corin St, gully pit
- Gully pit Peel St
- Brougham St steps, gully pit
- Upper Brougham gully pits near Woods Reserve, gully pit
- Peel Street, far end, western culvert

Prospect:

Bertha Street, Hume & Kerrison

Schedule 2 continued

Sheet 3 of 3

Flash flooding problem areas List of pipe inlet grates to be checked

Central City:

- · Bathurst St, Brickfields, gully pits
- · Lawrence Vale Rd, near Talbot Road, gully pit
- 97 Frankland St, gully pit behind Barrengers
- Park St, near pump station, gully pit
- 112 Welman, corner Adelaide St, grate

Invermay:

- Goderich St, pipe opposite Dry Street
- Dry Street, Inveresk Hotel, 3 gully pits
- 44 Invermay Road, Sam's Supermarket, inside shop
- 56 Bryan St east, gully pits
- · Invermay Road, White City, gully pit
- McKenzie Street at A.J.Woodburn boundary, drain

Newnham:

- 31-33 Snow St, grate outfall, Georgetown Rd
- Georgetown Road, north of Notley, drain opposite Besser Brick factory
- Pinkie Farm Creek, at Parklands Parade
- Viewbank Road, approximately No.180, grate in reserve, and drains near Franmaree Road
- End Hume Street over rail line
- Russell Plains Rd
- Camira Court

NOTE:

Those shown in bold must be checked first, as they are the ones most likely to cause initial problems.

List of properties and occupiers to be contacted

phone: 993 316 Home
314 160 Work
ph: 431 111
(A/H 317 645)
phone: 393 800
(A/H 936 647)
phone: 372 211
phone: 263 444
phone: 318 822
phone: 317 602
phone: 448 160
or 441 583
phone: 314 153
phone: 391 261 Home
260 666 Work

Trigger events, including implementing of the Launceston Flood Plan

Bureau of Meteorology definitions of flood events for the South Esk River at Launceston:-

Minor Flood: 420 cumecs (cubic metres per second)

Moderate Flood: 1500 cumecs

Major Flood: 2000 cumecs

Triggers

800 cumecs at Trevallyn: Port of Launceston Authority to be advised

of window of opportunity to move vessels in

Home Reach area of Tamar River.

1500 cumecs: Alert Engineering Manager Hydraulic

Services of need to prepare for Flood Plan

implementation.

2000 cumecs: Implement Flood Plan.

Photographs as record of flooding

Reference: Section 12, Reporting of the event

The following is a guide as to what should be photographed to provide suitable evidence of the flooding. Commonsense will be a large part of this when it comes to flood planning matters.

- Record location, date and precise time of every photograph. Do this
 by numbering photos taken on a piece of paper or pad, to be
 submitted to the Chief Drafting Officer when the film is submitted for
 processing, or after processing when it is filed in Technical Services
 Division records. Numbers can be related to description after the
 event to ensure their correctness.
- Levels of floods at various stages of a major event at specific locations that can be clearly identified afterwards for survey levelling purposes.
- Date and time when the photo is taken is essential in flood events, so that the level recorded can be related to the stage of the flood at that time.
- Take notes when the photo is taken just as a prompt for later.
- A photograph without details is not very helpful.

Specific locations to photograph:-

- Alexander Suspension Bridge, First Basin, southern abutment
- Kings Bridge, southern abutment
- · Charles Street Bridge, midspan and abutment
- · Black Bridge, midspan and abutment
- Hart Street, any flooding of No.77
- Hoblers Bridge Road, west of of rail crossing
- Station Road bridge piles, upstream and downstream

Flash Flooding and River Floods

Duty Card No.1

Position:

Flood Co-ordinator (FC)

Responsible to:

Technical Services Manager (TSM) (or City Manager in TSM's absence)

Tasks:

Sheet 1 of 2

- 1. Ensure that appropriate actions are taken by Council to assist the community in a flood situation.
- 2. Ensure that all Council officers with responsibilities under the Standard Operating Procedures, Flash Flooding and River Floods, are advised of the event.
- 3. Ensure that flood warnings received at the fax machine (number 003-371-396) located in the Technical Services Division are distributed promptly to:-
 - Technical Services Manager/City Engineer
 - Engineering Manager, Hydraulic Services
 - Engineering Manager, Works
 - Senior Engineer, Drainage & Water Supply
- 4. Advise Mayor and City Manager as soon as practicable.

Duty Card No.1 continued:

Tasks: Sheet 2 of 2

- 5. Ensure establishment of liaison with Tasmania Police.
- 6. Ensure Job Number under Cost Centre 4054.001.9 is obtained from Assistant Accountant (Ext 153) for resource allocation (manpower and equipment).
- 7. Ensure Council resources are allocated.
- 8. Ensure information on road closures is passed expediously to Tasmania Police by Engineering Manager Works.
- 9. Ensure a log of all actions is maintained.
- 10. Ensure all potential farm dam failures notified to Council are reported to the Rivers & Water Supply Commission.
- 11. Provide media releases to inform community of flood situation.
- 12. Ensure that Flood Plan is invoked in accordance with trigger events in Schedule 4.
- 13. Ensure that relevant reports of the event are prepared at its conclusion in accordance with Section 12.
- 14. Arrange a debriefing discussion with appropriate personnel to establish if changes are needed to the Standard Operating Procedure.

Flash Flooding and River Floods

Duty Card No.2

Position: Engineering Manager, Hydraulic Services (EMHS)

Responsible to:

Flood Co-ordinator (FC)

Tasks:

- 1. Ensure that forward planning for, and maintenance of, the flood levee system of the City is carried out on an on-going basis. Responsibility for this task is to TSM/CE.
- 2. Monitor river flooding events through the Senior Engineer, Drainage and Water Supply and and advise the Flood Co-ordinator when the trigger events in Schedule 4 are likely to be, or have been, reached.
- 3. Invoke the Flood Plan in accordance with the trigger events in Schedule 4.

Flash Flooding and River Floods

Duty Card No.3

Position:

Senior Engineer, Drainage & Water Supply (SE/D&WS)

Responsible to:

Flood Co-ordinator (FC)

Tasks:

1. Ensure that contact is made with properties and occupiers likely to be threatened by flooding as per Schedule 3.

Refer also to Duty Cards Nos. 6 and 8

- 2. Report to the Rivers & Water Supply Commission all potential farm dam failures that have been notified to Council.
- 3. Assume the role of Flood Warning Officer, as outlined in the Flood Plan, to monitor flood levels in the North and South Esk Rivers, and advise Engineering Manager Hydraulic Services when the trigger events in Schedule 4 are likely to be, or have been, reached.
- 4. Ensure that photographs, for record purposes, are taken where practicable at appropriate times and locations during the event.
- 5. Co-ordinate and prepare the report for major flooding events. The report is to include storm data and incident details from Operations' log in the Operations Room. A copy of this report is to be forwarded to Plant Administrative Officer for insurance records.

Flash Flooding and River Floods

Duty Card No.4

Position:

Engineering Manager, Works (EMW)

Responsible to:

Flood Co-ordinator (FC)

Tasks:

Sheet 1 of 2

- 1. Ensure that resources are provided as necessary.
- 2. Ensure that any such resources allocated use the special job number if it has been raised. This number is not to be confused with the cost of rehabilitating roads damaged by flooding. These can be found under cost centre 4627 and should only be used under the direction of EMTD.
- 3. Ensure that Tasmania Police are advised when roads should be closed. Trigger events for road closures are listed in Schedule 1.
- 4. Ensure that Council placement of warning signs and closures are actioned as required.
- 5. Ensure confirmation of road closures to Tasmania Police.

Duty Card No.4 continued:

Tasks:	Sheet 2 of 2
. 45.16.	

- 6. Ensure that Council staff expediously report information on the need for road closure (eg wash-outs, water across road, landslide, etc).
- 7. Ensure maintenance of an occurrence log.
- 8. Ensure that photographs, for record purposes, are kept at appropriate times and locations, during the event, where practicable. Liaise with Senior Engineer Drainage and Water Supply to ensure that there is suitable coverage.
- 9. Liaise with Department of Transport and Works regarding its responsibilities.

Flash Flooding and River Floods

Duty Card No.5

Position: Engineer Operations, Hydraulic Services (EOHS)

Responsible to: Flood Co-ordinator (FC)

Tasks:

- 1. Ensure that stock of sand bags is kept at the required operational level, on a routine basis.
- 2. Co-ordinate localised flash flooding operations until such time as the Flood Co-ordinator takes over. This will be dependent upon the degree of the flooding event and the resulting workload on EOHS.
- 3. Liaise with State Emergency Service in relation to Commonwealth Government decentralised supply of sand bags.
- 4. Co-ordinate and prepare the report of flash flooding events. The report is to include storm data from SED&WS and incident details from Administrative Officer, Operations' log in the Operations Room. When these events occur after hours the Sewer/Miscellaneous Duty Officer is responsible for keeping the log of incident details. A copy of this report is to be forwarded to Plant Administrative Officer for insurance records.

Flash Flooding and River Floods

Duty Card No.6

Position:

Public Request Officers

Responsible to:

Flood Co-ordinator

Tasks:

- 1. During office hours, expeditiously distribute copies of all flood warnings from the Bureau of Meteorology to:-
 - Technical Services Manager/City Engineer
 - Engineering Manager, Hydraulic Services
 - Engineering Manager, Works
 - Senior Engineer, Drainage & Water Supply

Outside normal hours the Flood Co-ordinator is to ensure distribution of flood warnings.

Flash Flooding and River Floods

Duty Card No.7

Position: Administrative Officer, Operations

Responsible to: Flood Co-ordinator

Tasks:

1. Ensure that pipe inlet grates listed in Schedule 2 are checked, cleared and rechecked to minimise blockages.

Flash Flooding and River Floods

Duty Card No.8

Position:

City Inspector

Responsible to:

Flood Co-ordinator

Tasks:

1. Ensure that notification is made to owners of property likely to be threatened by flooding where animals could be endangered.

Refer also to Duty Card No.3

Flash Flooding and River Floods

Duty Card No.9

Position: Sewer/Miscellaneous Duty Officer

Responsible to: Flood Co-ordinator

Tasks:

1. Keep the Operations' log, of incident details, in the Operations Room when these events occur after hours.

Flash Flooding and River Floods

Duty Card No.10

Position:

Chief Drafting Officer

Responsible to:

Flood Co-ordinator

Tasks:

1. Liaise with the Senior Engineer Drainage & Water Supply and Engineering Manager Works to ensure that there is as reasonable a photographic record of flooding as practicable in the circumstances. This may necessitate sending draftsmen/engineering assistants to record specific events. Risks to personal safety are not to be taken by any employee in recording such events.

Refer to Schedule 5 & Section 12.

- 2. Ensure that photographic records of flood events have sufficient data recorded on each photograph to be able to identify it specifically by date, time and location, without any doubt, as they may be required as evidence in court.
- 3. Ensure that photographic records of flood events are properly recorded and filed.

S.O.P. Distribution List

For full copy of S.O.P.

CM
TSM/CE
EMHS
EMW
EMTD
SE/S&CD
SE/D&WS
SE/P
EO/HS
EO/R
EE for filing within TSD
Tasmania Police
State Emergency Service

For copies of Duty Cards & appropriate Schedules

Card No.6 Public Request Officers
Schedule 2 & Card No.7 Administrative Officer. (

Schedule 2 & Card No.7 Administrative Officer, Operations

Card No.3 & Card No.8 City Inspector

Card No.9 Sewer/Miscellaneous Duty Officer

Card No.10 Chief Drafting Officer