

# Keeping our drains flowing



In the central area of Cairns alone, there are 20,000m of culverts, 58,000m of open drains, 168,500m of pipes and 3,800m of waterways that require maintenance. This fact sheet provides an overview of drainage management in Cairns and surrounding areas: what Council does to maintain and improve drainage, major flood mitigation works, and what you can do to be prepared ahead of the wet season.

## Annual drainage maintenance and cleaning program

Council maintains over 260 drains and waterways, many of which are tidal. Annual inspections are carried out on most drains prior to the wet season to identify any flow capacity issues and drains are cleaned if required.

The capacity of drains can be significantly restricted by the invasion of vegetation, including mangroves. As mangroves provide fish habitat, there are limitations as to how tidal drains can be maintained. Council's Marine Plant Management Strategy, endorsed by the Department of Agriculture, Fisheries and Forestry, sets out how drain capacity is best maintained. Council can only dredge unlined drains between April and October due to fish breeding seasons.



## Emergency works

In addition to scheduled annual maintenance and cleaning, Council's Investigations Unit responds to unforeseen drainage issues as the result of extreme weather events and arranges for improvement works to be carried out. Hearing local knowledge and first hand experiences helps to plan for future drainage improvements.

### Did you know?

- Council spends on average \$5m per year on drainage maintenance.
- Pressure cleaning of the central Cairns underground drainage network costs \$200k per annum.
- It costs an average of \$250 per metre to clean major drains of sediment—nearly half the overall cost of the annual drainage program is associated with dumping that acid sulphate soil appropriately.
- Around 500 calls are received each year requesting assistance with drainage problems within central Cairns suburbs.
- Each month, about 20 to 30 shopping trolleys are retrieved from the central drainage system in Cairns.
- During and after periods of intense rainfall, work crews check 127 sites within central Cairns suburbs to make sure that grates are not blocked from debris being washed into the waterway systems from the surrounding hill slopes and properties.
- There are 185 gross pollutant traps (GPTs) in waterways around the region that catch litter and debris before it reaches the ocean—each one requires regular cleaning.



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Over the last five years, Council has spent a total of \$24.5 million on capital works drainage improvements. Significant flood mitigation works including a 100 megalitre detention basin and a series of levee walls have recently been completed in Kanimbla and Manoora. This \$9.7 million project has helped reduce flooding impacts to many properties in the Moody Creek catchment area. Other completed capital works projects include:

- **2016: \$340,000 Shaft St, Edmonton** - reconstruction of drainage lines;
- **2015: Barron Gorge Rd; Boulders Rd; McCoombe/Moody St** - culvert upgrades; **\$380,000** - stormwater drain relining program;
- **2012: \$1.5m Hillside Cl/Quarry St, Aeroglen** - upgrading pipes underneath Hillside Cl and through to the outlet in Quarry St;
- **2011: \$1.8m Glen Boughton St, Aeroglen** - upgrading existing concrete drainage channel in Palmerston St and a new drainage line underneath Hamilton St and Kennedy St, and across Palmerston St; **\$810k at Dillon Cl, White Rock** - concrete lined drainage channel; **\$230k Woodward St, Edge Hill** - new culverts between Jensen St and Nolan St;
- **2010: \$1.5m O'Learys/Hemmings Ck, Gordonvale** - duplication of culverts to mitigate flooding; **\$600k Harley St, Kamerunga** - increased existing capacity of drainage culverts; **\$320k Old Smithfield Rd, Freshwater** - reinstating concrete linings;
- **2009: \$1.4m Lake Placid Flood Mitigation Scheme** - series of levees and treatments near suburbs along the Barron River.



**What are tide gates?** Installed at the sea-facing end of a stormwater pipeline or waterway, tide gates can be hinged at the top allowing stormwater to pass freely into the ocean or creek. There are three sets of tide gates in central Cairns waterways and these are lowered into the waterway when very high tides (king tides) are forecast. As the tide height increases, tidal water pushes against the flap sealing it tightly and stopping saltwater from flooding low-lying areas of land. They are never locked into place but can always move in a downstream direction (ie. towards the ocean). When stormwater levels are higher than tidal water levels, they open wider allowing stormwater to flow to the ocean.

## CBD Flood Mitigation Scheme

This Scheme is part of a strategy which is aimed at reducing the impact of king tides and heavy rainfall on business and property in the CBD. During severe weather events, the underground pump station in Lake Street can move five cubic metres of stormwater per second into Trinity Inlet, which equates to a 1 in 100 year storm event. This major project has been undertaken in stages including:

- \$890k Wharf St upgrade (2006);
- \$9m Lake St pump station and associated drainage upgrades in Hartley and Wharf Sts (2009);
- \$1.5m Wharf St improvements (2011).

Additional stages will be carried out subject to funding. These include Marlin Parade pump station and associated drainage upgrade; and Hartley/Grafton St upgrade.



Lake St during king tide/  
intense rainfall event—  
then



Lake St—now

## What can you do to help?

If you live near a drainage easement, property owners should be aware that they may be held liable for damage caused by an illegal obstruction in an easement or drain. Therefore your assistance in checking and clearing any obstructions is appreciated. If you want to report drainage problems, please call Council's customer service team on 1300 69 22 47 or log your feedback online.

