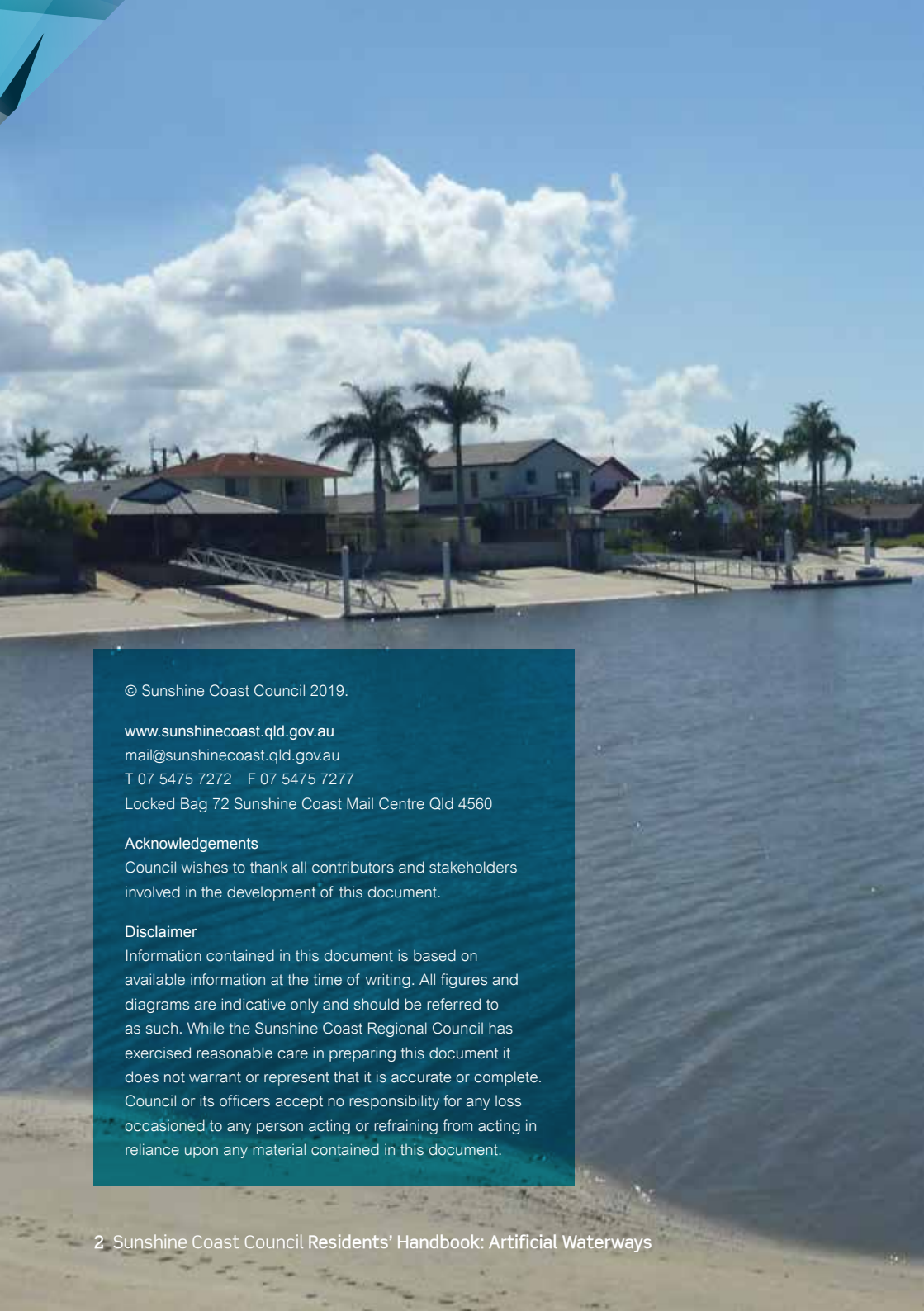



Sunshine Coast Council
Residents' handbook:
Artificial waterways

April 2019





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Disclaimer

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A message from the Mayor



The healthy waterways that run through our region are an integral part of our enviable healthy, smart, creative Sunshine Coast lifestyle.

We know they are loved by our residents and visitors and it's vital we ensure they are well looked after so they can be enjoyed in the years to come.

Keeping our waterways clean and well-maintained is something council strives to do – but to achieve truly healthy waterways we need ongoing help from our residents, especially those who live adjacent to our many created waterways.

It really is a team effort.

This handbook answers some common questions about how residents can help in this important task, as well as information about how artificial waterways function and what is required to improve and maintain these systems.

It's important to highlight that this handbook is not intended to provide legal, engineering, building or other professional advice and should not be used as a substitute for residents seeking their own independent advice.

I encourage you to familiarise yourself with this guide and help us continue to keep our Sunshine Coast waterways as a highlight feature of our region.

Mayor Mark Jamieson

Introduction

The quality of our beaches, waterways (both natural and artificial), constructed lakes and wetlands is integral to our lifestyle, and for the enjoyment of all users we need to ensure they are adequately maintained and protected.

Artificial waterways can be separated into two different types, tidal and semi-tidal.

Artificial tidal waterways

The Mooloolah River's associated canal system is a good example of a tidal waterway. Tidal waterways are directly controlled by tides and are owned by the state government and usually managed by state government agencies. Council's role in relation to these assets is detailed in the relevant sections of this document.

Semi-tidal artificial waterways

These systems are influenced by the ebb and flow of tides to varying degrees and managed by tidal control structures e.g weirs, pumping system, open pipes and penstocks.

Semi-tidal artificial waterways, e.g. Lake Parrearra, Pelican Waters Northern Lake, are usually registered as an individual land parcel (i.e. a Lot/Plan is registered on title), either as reserve land (as per Parrearra Lake) or freehold land (as per Pelican Waters Northern Lake).

This handbook covers both Sunshine Coast tidal and semi-tidal artificial waterways.



Artificial tidal waterways

- Lamerough Canal
- Minyama Canal
- Mooloolaba and Maroochy Canals
- Currimundi and Wurtulla Canals
- Residential areas of the Mooloolah and Maroochy Rivers.

Semi-tidal artificial waterways

- Pelican Waters
- Lake Magellan
- Parrearra Lake
- Twin Waters
- Lake Kawana
- Brightwater
- Sunshine Cove
- Mountain Creek Lake 1 (Moana)
- Mountain Creek Lake 2 (Munbilla).

Artificial waterways are a shared responsibility; all property owners, including council, have specific roles and responsibilities when it comes to managing artificial waterways. A range of legislation determines how they should be managed.

Where the waterway is managed under the State Land Act, there is generally a management plan in place to identify roles and responsibilities of all lake users.

Further information is provided in the maintenance sections of this handbook.

Improved environment

Maintaining water quality

The water quality of our tidal and semi-tidal waterways directly impacts our way of life. To improve water quality, council is undertaking a range of functions including:

- street sweeping of roads that discharge into the systems
- installing and maintaining litter baskets in all stormwater pits
- improving litter collection from parks adjoining the waterways
- collecting inorganic litter from the waterways
- monitoring water quality to identify pollution 'hot spots'
- undertaking a range of related partnership actions with the community.

How you can help

To improve water quality, council asks for your assistance with the following:

- pick up litter before it enters the waterways
- use organic or low phosphorous fertilisers
- use pesticides and herbicides sparingly
- compost or dispose of lawn clippings and garden waste properly
- wash your car on the grass and not the street or driveway
- don't pour oil, paint, cleaners or chemicals into the drainage system
- dispose of pet faeces correctly
- don't discard rubbish into the waterways.





Non-native vegetation growing in artificial waterways negatively impacts native fish habitat and inhibits dredging practices.

To keep the foreshore clean:

- don't plant any grasses, shrubs or trees within the systems
- remove all vegetation growing within the canal.

This is especially important for pest plants, which can spread rapidly along our waterways. If in doubt please call council's Customer Contact Centre on 07 5475 7272.

'Non-native vegetation growing in artificial waterways negatively impacts native fish habitat and inhibits dredging practices.'



Maintenance

Dredging and maintenance

A local government must maintain and keep clean artificial waterways in their area. Examples may include:

- maintenance dredging (beach nourishment)
- rock wall maintenance
- scour protection maintenance
- de-silting
- geotextile bag replacement.

Each system has a different construction profile which are available from Council upon request.

The purpose of council's dredging program is to provide safe navigation in accordance with the state legislation.

Beaches are for the protection of the revetment walls, which are the property owners' responsibility to maintain.

Council's dredging program occurs in most cases between three and four years except for areas of high maintenance, e.g. areas of deposition or erosion which may require more frequent dredging.

There is an ability for residents to undertake private works, at their cost, and by an approved dredge operator, where the request is outside of council's service levels (3-4 years) and not a legislative requirement of Council.



A well-maintained profile



Dredging Operations



As part of this program (except when urgent action dictates otherwise), residents will be consulted if unwanted or unlawful structures or vegetation need to be removed from both the tidal and semi-tidal systems.

Council may, as part of the programed maintenance work, carry out this work, but residents are encouraged to clean up their water frontages to assist.

All structures beyond the property boundary require the approval of council. Property owners should contact council's Customer and Support Services on 07 5475 7526 for detailed information regarding council's requirements prior to the commencement of any works.

'The purpose of the council's dredging program is to provide safe navigation in accordance with the state legislation.'



Beach after general maintenance

Maintenance continued

Stormwater control

Stormwater drainage is a joint responsibility.

Council is responsible for providing stormwater and road drainage systems, and residents are responsible for the run-off from their properties.

Direct discharge into canals and lakes is only permitted in certain areas. Council's Customer Contact Centre 07 5475 7272 can advise if this is permitted in your area and the appropriate method of discharge.

Run-off from properties includes roofs, swimming pools, grassed and paved areas, boat ramps and other structures.

Council has improved stormwater drainage management through the following initiatives:

- expanding the existing drainage systems for better stormwater control
- installing water retention basins and silt traps in certain stormwater systems.





Only in permitted areas residents can reduce the effect of surface run-off from their own property by taking the following measures:

- provide drainage to minimize water discharge onto beaches only in permitted areas, e.g. installing stormwater pipes in the beach to below low tide
- provide proper drainage for run-off from boat ramps, steps and decks; these are a major cause of beach erosion
- place rubble drains inside revetment walls to lower the water table and reduce surface run-off

- property owners with a pontoon need to be particularly vigilant with stormwater management as beach slumping below pontoons can cause structural failure
- maintain wall weep holes.

Stormwater management on properties is the sole responsibility of residents, however council can provide advice on request.



Inadequate stormwater drainage results in beach erosion.



Good stormwater drainage means no beach erosion.

Revetment walls and beaches

Revetment walls – general

Revetment walls divide private property and public land.

Property owners are responsible for maintaining these walls and should note the following:

- the purpose of revetment walls is to protect a particular property and maintenance responsibilities lay with the property owner
- if the property owner has concerns, it is their responsibility to consult with a suitably qualified professional engineer to assess and report on the structural integrity of their revetment wall
- revetment walls have an engineered design life and require regular inspection and proper maintenance to prevent structural deterioration
- the body corporate has responsibility for revetment walls that benefit community title developments
- council maintains revetment walls that protect areas enjoyed by the public. e.g. parks

- where the property fronts an artificial waterway, maintenance of the banks beyond the boundary of private property is performed by council
- council may serve a notice to rectify a failed revetment wall where it believes a hazard exists.

Generally the construction of a waterfront revetment wall (including modifying shape, position or materials) will require approval under state legislation and/or the local planning scheme.

Property owners should contact council's Customer and Support Services on 07 5475 7526 before making modifications to revetment walls. Officers will provide free and clear specific advice about whether a development application is required.

If a development application is required, officers can provide initial advice on:

- the process
- statutory requirements
- state government agency consultation
- pre-lodgement approvals
- applicable fees.



Concrete revetment walls

Concrete revetment walls are designed differently for many of the waterways. The loss of sand on either side of the wall can affect stability. Maintenance should include cleaning out weep holes of sand and crustaceans and keeping vertical joints sealed.

Construction of additional retaining structures or uncontrolled use of machinery should never be undertaken on top of the original revetment wall without obtaining appropriate technical advice from a suitably qualified expert.

Additional retaining structures may cause bowing or failure of the original revetment wall. The cost of replacing the original structure is extremely high due to location and the coastal environment.

It should be noted that council will only place sand against the original revetment wall.



Typical concrete revetment wall.

Revetment walls and beaches continued

Rock revetment walls

Residents must engage the services of a qualified engineer prior to commencing works associated with the repair and maintenance of rock revetment walls.

Rock walls are structurally complex and problems can occur with the joints and drainage if not repaired or maintained properly. Property owners are solely responsible for all the repairs and maintenance to revetment walls.

Council is only responsible for revetment walls that adjoin public open space.

Revetment walls are protected from erosion by rock scour protection, consisting of a bed of rock above a layer of geo-fabric material. Where rock

scour protection formed part of the original design, council will continue to maintain such protective measures. The purpose of the geo-fabric is to prevent loss of material from behind the revetment wall during the receding tides.

It is most important that council maintains the integrity of the rock scour protection as the puncturing of this geo-fabric material can provide an escape path for soil under pressure and will destabilise the revetment wall.

Interference with the rock protection, (e.g. creation of perpendicular rock groynes), can also expose the geo-fabric and cause structural problems for both the property owner and neighbouring revetment walls.





The planting of vegetation or the interference with rock scour protection within artificial waterways is prohibited. Artificial waterways are approved structures which do not include vegetation. Vegetation may result in cases of public accident, injury and may cause damage to revetment walls.

Beach maintenance

Sandy beaches provide an aesthetic appeal to residents, but they also have an important purpose in the stability of revetment walls on waterfront properties. Therefore beach levels should be monitored for erosion. The two main causes of beach erosion are:

- stormwater run-off from waterfront properties and street drainage
- boat wash and wind action.

To avoid beach erosion, waterfront property owners are encouraged to concentrate surface run-off to a grated pit or channel above the revetment wall and to discharge excess water to below the low tide mark via a 100mm diameter PVC pipe laid well below the beach. Alternatively, a catch drain may be built below retaining wall structures, and also be discharged below the low tide mark.

Grass banks and other artificial structures may also cause beach erosion. Contrary to their intended purpose, grass and temporary retaining walls prevent systems from being maintained and can speed up the erosion process. Planting of mangroves, palms and other large trees can also cause structural failure to revetment walls.



Boat ramps, jetties and decks

Residents' responsibility

Constructed boat ramps, jetties, pontoons and decks require the approval of council. Prior to any works commencing, It is very important that you contact council's Customer and Support Services on 07 5475 7526 to discuss and clarify the requirements that apply to your specific property as such requirements may vary depending on the location of the allotment.

Once erected, these structures are the sole responsibility of residents, who must inspect regularly, maintain them and ensure their safety

Boat ramps, jetties or decks must not restrict council in carrying out dredging or other maintenance.

Council has no responsibility for the maintenance of private boat ramps, jetties or decks and may request the repair or removal of such structures if they become dilapidated or unsafe.

Boat ramps

Boat ramps are generally built of reinforced concrete at the beach profile (1:6 to 1:10). They should be designed to discharge local stormwater run-off into the canal or lake but should not be used for general stormwater drainage as this will cause beach erosion.

It is good practice to ensure boat ramps drain into the system by building raised edges, or even supplementary stormwater pipes.

Boat ramps should be built to acceptable engineering standards, with



adequate concrete footings to ensure stability in changing beach profiles. Technical advice should be sought before constructing a boat ramp.

Boat ramps that are not properly built or maintained may crack and break away, causing safety and maintenance problems.

Decks, jetties and pontoons

Generally, an approved development permit is required before commencing operational or building works associated with the construction of a deck, jetty or pontoon, or any other structure beyond the property alignment.

As previously mentioned, council's requirements can vary considerably depending on:

- the location and address of the particular site
- if the system is a tidal waterway or a semi-tidal waterway
- if existing lease arrangements between the property owners and council are in place or are required prior to the issue of building approval
- the type and extent of the proposed works.

Once again, it is essential that property owners should contact council's Customer and Support Services on 07 5475 7526 if considering constructing a deck, pontoon, jetty or other structure. Officers will provide free and clear specific advice about whether a development application is required.



Typical boat ramp drainage.

Boat ramps, jetties and decks continued

If a development application is required, officers can provide initial advice on:

- the process
- statutory requirements
- state government agency consultation
- pre-lodgement approvals
- applicable fees.

It is essential property owners make themselves aware of the responsibilities, processes, requirements and fees associated with the construction of a deck, jetty, pontoon or other structure at the very earliest stage.

Customer and Support Services, available at 07 5475 7526, are best placed to provide current up-to-date information and assistance relating specifically to your property.

Council has developed guidelines in lake management plans for decks, jetties and pontoons that are designed to minimise the impact on dredging operations and routine maintenance of the canals and lakes. Decks, jetties and pontoons can restrict dredging and decks can prevent the even-spreading of sand onto the beach.

Residents can assist by ensuring boats and water craft do not obstruct jetties, pontoons and beaches during routine dredging.

Residents who own decks can also assist by installing hatches every two metres above the revetment wall to allow sand to spill through the deck onto the beach.



Responsible boating

Boat mooring and storage

Waterfront residents do not own the beaches in front of their properties and are not entitled to permanently store a boat or watercraft on the beach (except where the management plan specifically states otherwise).

Provisions for permanent boat mooring and storage are available to residents as moorings, boat ramps, jetties and pontoons.

Boat speed limits

Boat wash is a major cause of beach erosion causing shoaling in canals and lakes. Apart from beach erosion, excessive boat wash may cause damage to pontoons and moored vessels along the systems.

It is important that residents and visitors do not exceed signed boat speed limits or cause excessive boat wash.

Environmental awareness

During recent environmental audits, some systems were found to have excessive chemical levels. Most of these chemicals come from commercial and recreational boat usage. It is illegal to discharge petrol, oils, sewage or other waste materials from boats into the canals or lakes.

When carrying out any maintenance work to jetties, pontoons and walkways, it is recommended that protective drop sheets or other measures are used to prevent oils, chemicals and other environmentally harmful materials from entering the waterways.



Other useful tips

Swimming pools

Swimming pool backwash and pool run-off can cause major beach erosion and damage to revetment walls. It can instantly undo council's costly dredging program by washing sand back into the canals or lakes. Residents must contact council's Customer Contact Centre on 07 5475 7272 for current requirements relating to the appropriate and lawful method of discharge of swimming pool back wash and allotment run off.

Lawns and gardens

Lawn clippings and garden refuse are major causes of pollution in canals, lakes and fish habitat areas. Such material should never be thrown in the canals and lakes or placed in a location where it can be washed or blown into the canals during periods of inclement weather. Lawn clippings and garden wastes not only discolour the waterways but may also increase algal blooms and fish kills. In addition, you can help maintain water quality by minimising the use of fertiliser near a waterway.

House renovations

All house renovations and roof restorations should be undertaken so no pollutants discharge into the drains or waterway. Residents must ensure any polluted water is properly collected and removed.

Beach activities

Common beach activities can unknowingly cause beach erosion and water pollution. A canal or lake beach is not like an open beach, and a number of innocent beach activities may undo all the work carried out by the dredge. For example, digging beaches or discharging water across beaches can cause accelerated beach erosion. Yabby pumping around permanent structures can also increase erosion. The overall affect of these beach activities on the health and maintenance of the artificial waterways network can be severe.



Water safety

Common sense should be used at all times to ensure the safety of all canal and lake users. It is recommended you know all applicable rules and regulations regarding recreational activities such as boating and fishing.

All canals and coastal lakes on the Sunshine Coast are influenced by tidal waters and therefore marine creatures may be present. Submerged objects and slippery surfaces may also pose a problem.

Residential canal areas

The majority of Sunshine Coast artificial waterways are dedicated for residential use only. Commercial fishing and commercial activities are not permitted in residential areas.

Tenants and visitors

While residents may be aware of the issues and their responsibilities, often tenants and visitors are not. Tenants in particular should be made aware of the canal and lake management issues and their responsibilities as residents to ensure the work to keep our artificial systems beautiful is not undone.

Useful contacts

Water quality, public ramps and parks, jetties and pontoons

Sunshine Coast Council Customer Contact Centre

Phone: 07 5475 7272

Sunshine Coast Council Customer and Support Services

Phone: 07 5475 7526

Speeding boats and noise pollution

Water Police Sunshine Coast

Phone: 07 5475 2599

Boating information and abandoned boats

Maritime Safety Queensland, Parkyn Parade, Mooloolaba

Phone: 07 5373 2310

Fishing information and crab pots etc

Department of Agriculture, Fisheries and Forestry

Phone: 13 25 23

Water pollution and boat moorings development applications

Department of Environment and Science

Phone: 1300 130 372

Glossary of terms

Access channel	means an artificial channel constructed in tidal water connected or intended to be connected to a canal or lake.
Beach	refers to artificial waterways beaches rather than ocean beaches.
Beach nourishment	the replenishment of a beach system using imported sediment to balance erosion losses or to re-establish a wider dunal buffer.
Desilting	the removal of suspended silt from canal or lake waters.
Dredging	the mechanical removal of dredged material from below tidal water.
Maintenance dredging	is dredging to ensure that existing channels, artificial beaches and berths are maintained.
Semi-tidal waterway	means a water course or water body of any kind the level and condition of which is not directly subject to ebb and flow.
Profile	is the original shape of the beach and describes the landscape of the beach, both above and below water.
Revetment	is a permanent structure placed on canal or lake banks to absorb the energy of the water and to preserve the existing uses of the shoreline as defence against erosion.
Rivers, lakes and streams	are referred to in the <i>Water Act 2000</i> and are all included in the definition of <i>watercourse</i> . These watercourses may be tidal, or semi-tidal.
Scouring	is the removal by the dynamics of water forces, of granular bed material close to canal or lake structures.
Tidal water	means the sea and any part of a watercourse ordinarily within the ebb and flow of the tide at spring tides. (Spring tides are the highest tides predicted for any given area).

General disclaimer

This handbook contains general information relating to the care and management of the artificial systems in the Sunshine Coast Council area.

This handbook aims to inform all residents of what they can do to improve the overall condition and environmental health of their canal and lake systems.

Council strongly recommends that appropriate technical advice be sought if you are concerned about your retaining wall, drainage discharge or boat ramp.





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