

Schedule for State-wide Maintenance Dredging of Queensland Ports

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Background

Queensland ports require routine maintenance dredging to remove sediments that have accumulated in channels, berths and swing basins due to siltation and sediment transport processes. Most ports cannot sustainably function without maintenance dredging. Maintenance dredging has occurred in Queensland since ports were first established.

Most maintenance dredging is carried out by the *Brisbane* which undertakes an annual dredging program of Queensland ports over a period of 6-8 months. The dredge, based in Brisbane and operated by the Port of Brisbane Pty Ltd, was specifically designed and built for Queensland conditions with the vessel applying high standards of environmental management. The environmental management mechanisms are equivalent to the features installed in the latest TSHD models used around the world and ensure environmental impact is minimised during the dredging works.

The Queensland Government has developed a Maintenance Dredging Strategy for Great Barrier Reef World Heritage Area Ports (the Strategy) consistent with the requirements of the Reef 2050 Long-Term Sustainability Plan. The Strategy aims to build on the current strong regulatory requirements and ensure the ongoing protection of the Reef's values and the continued operating efficiency of ports within the GBRWHA.

The Strategy requires ports to work together to ensure that the annual state-wide maintenance dredging program for the *Brisbane* is developed to optimise environmental outcomes and operational efficiencies and to make the schedule publically available.

The Strategy focusses on ports within the GBRWHA. However, development of the state-wide schedule needs to consider other Queensland ports (e.g. Weipa, Karumba and Bundaberg) as they also have maintenance dredging requirements and need to be included in scheduling of the *Brisbane*. The northern ports campaign can be influenced significantly by the level of monsoon activity or wet season extreme weather events, particularly at Weipa or Karumba, and hence affect the schedule at the GBR ports.

This document describes the schedule the *Brisbane* will adopt for maintenance dredging of Queensland ports in 2017 and details how this schedule has been developed. It has been prepared by the Queensland Port Association based on information provided by individual ports and the dredge operator.

Schedule for maintenance dredging of Queensland ports in 2017

The schedule for the state-wide maintenance dredging program by the *Brisbane* varies from year to year and consecutive years are rarely the same. Not all Queensland ports require dredging each year and the volume of dredging required at each port, and associated urgency, depends upon the level of siltation at each port and its operational needs.

Importantly, environmental risks associated with timing of maintenance dredging, whilst typically low, may also vary annually. Each port has therefore completed a port-specific environmental risk

assessment as a key input to the development of the 2017 dredge schedule (consistent with the requirements of the Maintenance Dredging Strategy).

To develop the 2017 state-wide dredging schedule, individual ports and the dredge operator considered the following issues:

- Opportunities to minimise dredging requirements
- Opportunities to minimise environmental risks
- Permitting and approval conditions
- Volumes of material to be dredged
- Urgency of port dredging requirements
- Dredge vessel maintenance including refit needs
- Economic efficiencies

Table 1 provides a description of how each of these issues relate to the 2017 state-wide maintenance dredging schedule.

Table 2 provides a schematic of the environmental timing limitations and dredging schedule for those ports that require maintenance dredging. The schedule may be influenced by unanticipated factors such as weather, dredge breakdown, logistical or provisioning issues. Ports will continually monitor the schedule to determine whether such changes are likely to result in increased environmental risk. In instances where the environmental risk increases, TMR will be notified and existing environmental controls reviewed to determine whether they are still effective.

Table 1. Key issues considered in developing the 2017 state-wide maintenance dredging schedule for the *Brisbane*

Issue	Implications for scheduling
Minimise dredging requirements	The schedule is best initiated after the wet season when most sedimentation occurs to avoid the need for follow-up dredging. The schedule for this year will begin in April.
Minimise environmental risks	<p>Port specific risk assessments suggest maintenance dredging is a low risk at all ports. However good practice principles suggest that, for 2017, dredging should be avoided:</p> <ul style="list-style-type: none"> • At Bundaberg from October to February when turtle nesting occurs at Mon Repos (this is also a permit condition) • At Townsville for 6 days near the full moon in October and November when hard coral spawning occurs. <p>Seagrass communities at ports vary in condition and extent reflecting environmental conditions (e.g. cyclones or above average rainfall) experienced over the preceding years with some being in a good condition (e.g. Townsville) whilst others are recovering or are in a poor condition (e.g. Cairns and Gladstone). Many years of dredge and seagrass monitoring indicate no environmental benefit would be gained by restricting maintenance dredging at ports to a specific time of the year.</p>
Permitting and approval conditions	Permit conditions include restrictions on dredging at Bundaberg in the period October to February due to turtle nesting in the area.
Volumes of material to be dredged	The degree of siltation and its location within the channel, berth or swing basin determines the volume of material to be dredged and the duration of dredging at each port required to restore designated depths. Currently forecast volumes in 2017 at all ports are generally consistent with long term averages.
Urgency of dredging requirements	The urgency of dredging requirements varies from year to year depending upon the degree and location of siltation at each port. Based on current conditions only Weipa has identified a priority requirement for maintenance dredging in 2017. Material has accumulated in the channel during the wet season and designated channel depths need to be restored quickly to avoid the need for ships to have to carry reduced loads to ensure safety. Reduced loads would result in significant economic losses and additional ship visits to meet export volume demands (leading to additional traffic, increased emissions etc.).
Dredge refit	For 2017, the only viable Australian location for annual refit (servicing) of the <i>Brisbane</i> is in the shipyards at Cairns. This has been scheduled for early May 2017 and will take approximately 2 weeks. Shipyard availability times are limited. Dredging of northern ports (Weipa and Cairns) near this time would avoid "backtracking".
Dredge economic efficiencies	The schedule has been designed to ensure ports are visited in a linear fashion and avoid the need to "backtrack". Increased requirements for the dredge to travel between ports results in increased costs (potentially \$100,000's), fuel usage and vessel emissions.

Table 2. 2017 state-wide maintenance dredging schedule by the *Brisbane* and related environmental timing limitations.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bundaberg				→								
Cairns (refit)					→							
Weipa					→							
Cairns						→						
Townsville							→					
Gladstone								→				

→	Maintenance dredging period
→	Refit period
	No environmental timing limitations
	Limit dredging during this period if possible.
	Regulatory restriction in place or window imposed by ports to manage a significant impact.