

# **Schedule for State-wide Maintenance Dredging of Queensland Ports**

## **29 March 2018**

### **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.

In accordance with the Queensland Maintenance Dredging Strategy, Queensland ports have worked together to ensure that the 2018 state-wide maintenance dredging program for the *Brisbane* is developed to optimise environmental outcomes and operational efficiencies.

### **Schedule for maintenance dredging of Queensland ports in 2018**

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 2018 dredge schedule (consistent with the requirements of the Queensland Maintenance Dredging Strategy).

To develop the 2018 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 refit needs
- Economic efficiencies

**Table 1** provides a description of how each of these issues relate to the 2018 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.

**Table 1. Key issues considered in developing the 2018 state-wide maintenance dredging schedule for the *Brisbane***

Issue	Implications for scheduling
<b>Minimise dredging requirements</b>	The schedule is best initiated after wet season when most sedimentation occurs to avoid the need for follow-up dredging. The schedule for this year will begin in March.
<b>Minimise environmental risks</b>	<p>Port specific risk assessments suggest maintenance dredging is a low risk at all ports. However good practice principles suggest that, for 2018, dredging should be avoided:</p> <ul style="list-style-type: none"> <li>• At Bundaberg from October to February when turtle nesting occurs at Mon Repos (this is also a permit condition)</li> <li>• At Townsville for 6 days near the full moon in October and November when hard coral spawning occurs.</li> <li>• Although not a GBR port, dredging at Karumba using the TSHD <i>Brisbane</i>, will need to be scheduled to outside the period between 30 September and 30 April (i.e. the wet season) to avoid the prawn migration (which is a permit condition).</li> </ul> <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 good condition (e.g. Cairns and Gladstone). Many years of dredge and seagrass monitoring indicate that restricting maintenance dredging at ports to a specific time of the year does not provide an environmental benefit to seagrass.</p>
<b>Permitting and approval conditions</b>	<p>The following permit conditions influence the schedule:</p> <ul style="list-style-type: none"> <li>• Restrictions on dredging at Bundaberg in the period October to February due to turtle nesting in the area.</li> <li>• No dredging at Karumba prior to 30 April or after 01 October due to the wet season.</li> </ul>
<b>Volumes of material to be dredged</b>	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. Volumes in 2018 at all ports are generally consistent with long term averages.
<b>Urgency of dredging requirements</b>	The urgency of dredging requirements varies from year to year depending upon the degree and location of siltation at each port. All ports that are included in this year's schedule will gain significant operational efficiencies from any planned dredging.
<b>Dredge refit</b>	For 2018, two options are currently being explored in relation to the annual refit (servicing) of the <i>Brisbane</i> . This includes the ship yards in Singapore or Cairns. This has been scheduled for October/November 2018 and will take approximately 4-5 weeks. Shipyard availability times are currently limited.
<b>Dredge economic efficiencies</b>	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 fuel usage and vessel emissions.

**Table 2. 2018 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
<b>Bundaberg</b>			→									
<b>Weipa</b>				→								
<b>Amrun</b>				→								
<b>Karumba</b>					→							
<b>Cairns</b>							→					
<b>Townsville</b>								→				
<b>Refit (Cairns or Singapore)</b>									→			
<b>Gladstone</b>											→	

→	Maintenance dredging period
	No environmental timing limitations
	Low environmental risks but limit dredging during this period if possible
	High – medium environmental risk and/or regulatory restriction in place during this period

*Note: The above schedule is indicative only. Changes may occur as result of issues such as weather constraints, dredge breakdown or other operational limitations and/or failure to obtain permits. If and when the schedule changes each affected port's risk assessment will be reviewed to ensure that the advice and relevant mitigation measures are still sufficient.*