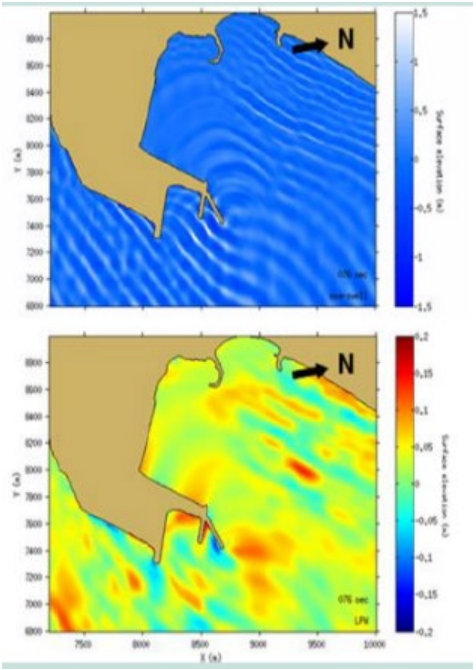
SOUTHERN PORTS
ALBANY BUNBURY ESPERANCE

LNM Number: 01/2024 **Date: 29/08/2024**

Date of Effect:	**29/08/2024**
Details:	**Esperance Port – Vessel Mooring**
Former Notice:	**08/2022 superseded**
Charts & Publications:	**AUS 119/ ENC AU5119P1**
Further Notice:	**On cancellation of the Notice**
Attachments:	**None**

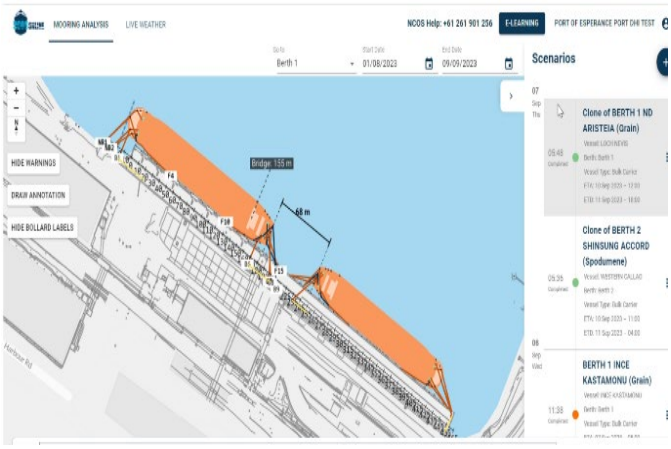
LONG PERIOD WAVES (LPW)

Vessel surging conditions can develop within Esperance Harbour during energetic offshore swell periods, conditions when long-period waves (LPW) develop. The excitation of conventionally moored vessels by LPW can result in excessive motions and ultimately incidents of mooring line failure. LPW is generated outside the harbour due to nonlinear energy transfers from the swell waves. Ultimately, LPW energy becomes released near the shore as free waves, which propagate independently. Some of this LPW energy penetrates the harbour basin, reflection off the internal harbour walls causes excessive vessel motion alongside berth.

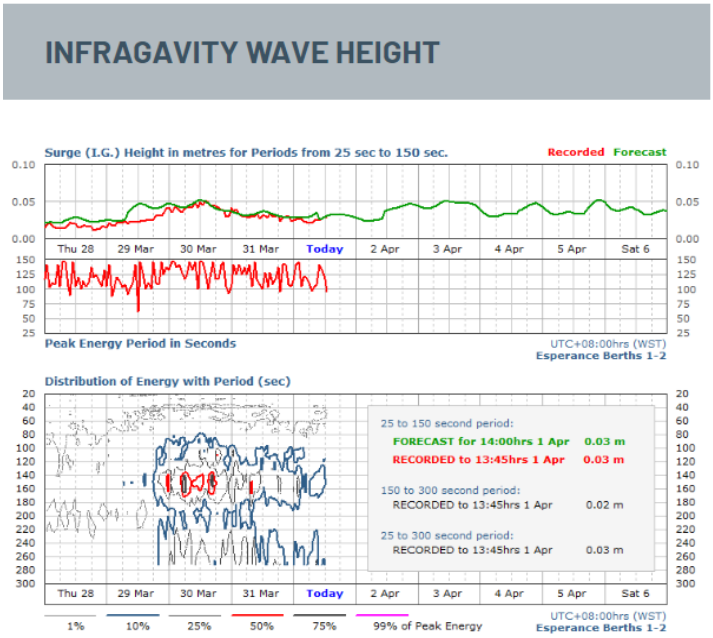


Esperance Port Authority has below mentioned risk mitigation in place.

1) **Mooring Analysis**: All vessels must submit their NCOS Mooring details form prior to arriving in the port. Vessel data and forecast weather information is fed into mooring analysis software which gives details of expected mooring loads and vessel movement at berth during the vessel's planned stay in port. All vessels will receive a mooring plan based on the results.



2) **Met Ocean Sensors**: The Port has installed various met ocean sensors which give live wind, tide, current and LPW (Infragavity wave) data. The vessel master will be given a mobile device with the link to the data, and this is also available on the [Southern Ports website]



3) **Berth 1 and 2 - Shore Tension Units:** Vessels at berth 1 and 2 are subjected to surge and sway motions during LPW events. To minimize the excessive vessel motion the port utilises shore tension units where a shoreline is made fast to the vessel's bollard as a forward and aft breast line. This shore line maintains a constant tension of 10-14 Tonnes. The application of this system does not relieve the ship's crew of their obligation to maintain their moorings as directed.

4) **Berth 3 Coir system**

Vessels at berth 3 are subjected to surge motions during LPW events. To minimize the excessive vessel motion the port utilises a coir system for 2 spring lines forward and aft for cape vessels. The vessel will send their spring lines to the shore via a shore messenger line and shore crew will pass the messenger through a thimble and return the messenger back to the vessel. The vessel shall heave on the messenger back to the vessel around a roller fairlead and put the spring line eye on the vessel bollard.

Best Practice for vessel's moored at Port of Esperance

- Inspect mooring ropes prior to arrival and ensure the ropes are in very good condition.
- All winches are required to have carried out break rendering tests within 1 year and the break limits marked.
- Vessels will not be permitted to use mixed moorings or wire moorings.
- Vessels must use anti chaffing sleeves and measures to prevent mooring lines parting from chaffing.
- Vessel must prepare spare mooring lines on deck prior to arrival to berth.
- Vessel crew to tend mooring lines constantly and maintain equal tension in lines.
- If the vessel starts to move excessively notify the Terminal Supervisor.
- If mooring lines part or winch breaks render the vessel must notify the Terminal Supervisor.
- Vessels at berth 3 are to use measures to prevent the head, breast and stern lines from getting wedged in the drum.
- Vessels are to heave up their gangway if the vessel movements are excessive, ensuring no possible damage to berth structures.
- Vessel engines are not to be immobilised whilst in port and main engines must be available at short notice if the vessel is experiencing excessive movement alongside.
- Self tensioning winches are not to be used in self tensioning mode.
- During mooring, ship's crew are not to haul on any mooring lines unless the pilot advises the Master that it is safe do so.
- Masters are further advised that in tending their moorings, their vessel's propeller is not to be operated without permission of the Harbour Master or Duty Pilot.

Mooring line arrangements are to be appropriate for the size of vessel; see Tables 1and 2 below.

Table 1: Mooring Line Requirements – Berths 1 & 2

Lines/DWT	Head	Breast	Spring	Stern
Up to 30,000 dwt	3	NA	2F,2A	3
30,001 to 50,000 dwt	4	1F, 1A	2F, 2A	4
50,000 + dwt	4	2F, 2A	2F, 2A	4

Table 2: Mooring Line Requirements – Berth 3

Lines	Head	Breast	Spring	Stern
Cape size	4 Powered winches	2F, 2A Powered winches	3F/A, 2 on the bight (Powered winches) (1 Loose F/A)	4 Powered winches
Panamax - mini cape	4 Powered winches	2A Powered winches	2F/A (Powered winches)	2 Powered winches
Handymax	3 Powered Winches, 1 Loose	NA	2F/A 1 Powered winch, 1 Loose	3 Powered Winches, 1 Loose

The Harbour Master

Southern Ports Authority, Port of Esperance