

Pilotage Advisory Committee

Establishment of Principal Fairways in the Waters North of Lantau Island

Purpose

The purpose of this paper is to seek members' endorsement on the proposal to establish fairways in the waters north of Lantau Island for better marine traffic management.

Background

2. In the early 1980s, a coal-fired power station and a cement plant were established at Tap Shek Kok. To enable bulk carriers of up to 120,000dwt to access to the berths of these facilities, a deep water channel was dredged and marked with buoys in the waters north of Lantau Island during the mid-1980s.

3. Since 1990s, marine traffic at the waters north of Lantau Island has grown tremendously with the development of the ports in Pearl River Delta, in particular the ports in western Shenzhen. Various types and sizes of vessels ranging from large deep draught coal carrier (LOA 280m, draft 16.8m), product tankers carrying aviation fuel (LOA 229m, draft 15.0m), ultra large container ship (LOA 395m, draft 15.5m) to sizable ocean tugs (LOA 70m, draft 6m), river trade vessels (LOA 49m, draft 4m) and high speed ferries (LOA 48m, draft 2m) have utilized this waterway for maritime transportation. To manage this change in traffic volume and ensure navigational safety, traffic measures have been introduced over the years. The measures include the reposition, renaming, withdrawal of navigational light buoys and conduction of maintenance dredging to remove high spots along the waterway. Today, the north Lantau Island waters has become one of the busiest waterways in Hong Kong with about 800 vessel movements per day.

Current Situation

Navigation Hazard

4. The topographical and bathymetrical conditions of the water areas north of Lantau Island impose various constraints to different size of vessels. The stretch of water is in the shape of a trumpet with a width of about 1600m on the eastern side and 3500m on the western side. Except a waterway of over 20m in depth which runs along the centre of this stretch of

water, the general water depth is about 10m. However, this waterway is only about 500m in width with the narrowest part of 200m in width at north of buoy CP4. Since large and deep draught vessels can only safely navigate within the 20m depth contour, this narrow section severely limits the navigable sea room of large ocean-going vessels. Besides, the shoals off Tsing Lung Tau and northwest of Cheung Sok and the International Airport Approach Area No. 6 at north of The Brothers with a 15m air draught restriction also reduce the width of navigable waters for large ocean going vessels.

Navigation Safety

5. Despite a general traffic pattern which flows along the waterway has been formed by the majority of vessels, mixed mode of traffic encounters exist in north of Lantau Island waters. Crossing situation often occurs at west of Tai Mo To where deep draught vessels normally on a east/west course encounter the north/south bound tugs and work barges. Head-on situation also frequently takes place along the waterway. These situations render the need of further vessel traffic management measures in the area.

Navigation Aids

6. The current type and disposition of the buoys CP1 through CP7 has an effect to indicate the port and starboard hand sides of the route to be followed by vessels, and to allure vessels that could safely navigate outside the buoyed channel to navigate through it. The occupancy of the buoyed channel by small light draught vessels would seriously affect the navigation of large deep draught vessel which can only safely navigate inside the buoyed channel.

The Study

7. To resolve the current predicament, a study and review on the traffic management and the buoyage system in the subject area has been commenced in mid-2008. The study comprised of site visits, traffic composition and pattern analysis as well as technical discussions with the Hong Kong Pilots Association. The study completed in 2011 and recommended the establishment of principal fairways in the waters north of Lantau Island in order to cope with the present and future traffic situation. To prove the feasibility of the proposal, navigation simulations have been conducted with the assistance of Hong Kong pilots at the Marine Department Training Centre.

The Proposal

Proposed Fairway Configuration

8. It is proposed to establish a routing system comprises of three principal fairways and a fairway junction. Associated with the establishment of these new fairways, one new east cardinal mark (URE) would be laid and three existing buoys (CP1, CP2 & UR2) are to be relocated. The fairway delineation and buoy dispositions are illustrated in the Annex.

9. The proposed name for the three new fairways are, from east to west, “Ha Pang Fairway”, "Castle Peak Fairway” and “Urmston Road Fairway” respectively.

10. The fairway ends at about 1.2 nautical miles south of the HKSAR boundary in the vicinity of the pilot boarding station off Lam Kok Tsui (Black Point) in Urmston Road. This would avoid limiting the navigable water north of the Urmston Road Anchorage and facilitate vessels changing pilots without impeding the through traffic. Establishment of an east cardinal mark is required to demarcate the shallow water to the west.

11. Though the shoal off Tsing Lung Tau lies near to the northern boundary of the fairway junction, it would not hamper the safe navigation of local vessels and river trade vessels owing to their shallow draughts.

12. Due to the narrow width of deep water at the Castle Peak Fairway, it is necessary to adopt a one-way traffic control measure between CP3 and CP7 for vessels of over 290m in length.

Benefit

13. The establishment of these principal fairways and the re-location of navigation buoys would better organize the marine traffic. It would further enhance navigational safety in the waters north of Lantau Island by clearly defining the behavior of vessels navigation along, crossing or outside the fairways.

Consultation

14. The Hong Kong Pilot Association has been consulted on the disposition of buoys and the alignment and of the fairways. The navigation simulation indicated that the establishment of the fairways is feasible and effective. Shenzhen Maritime Safety

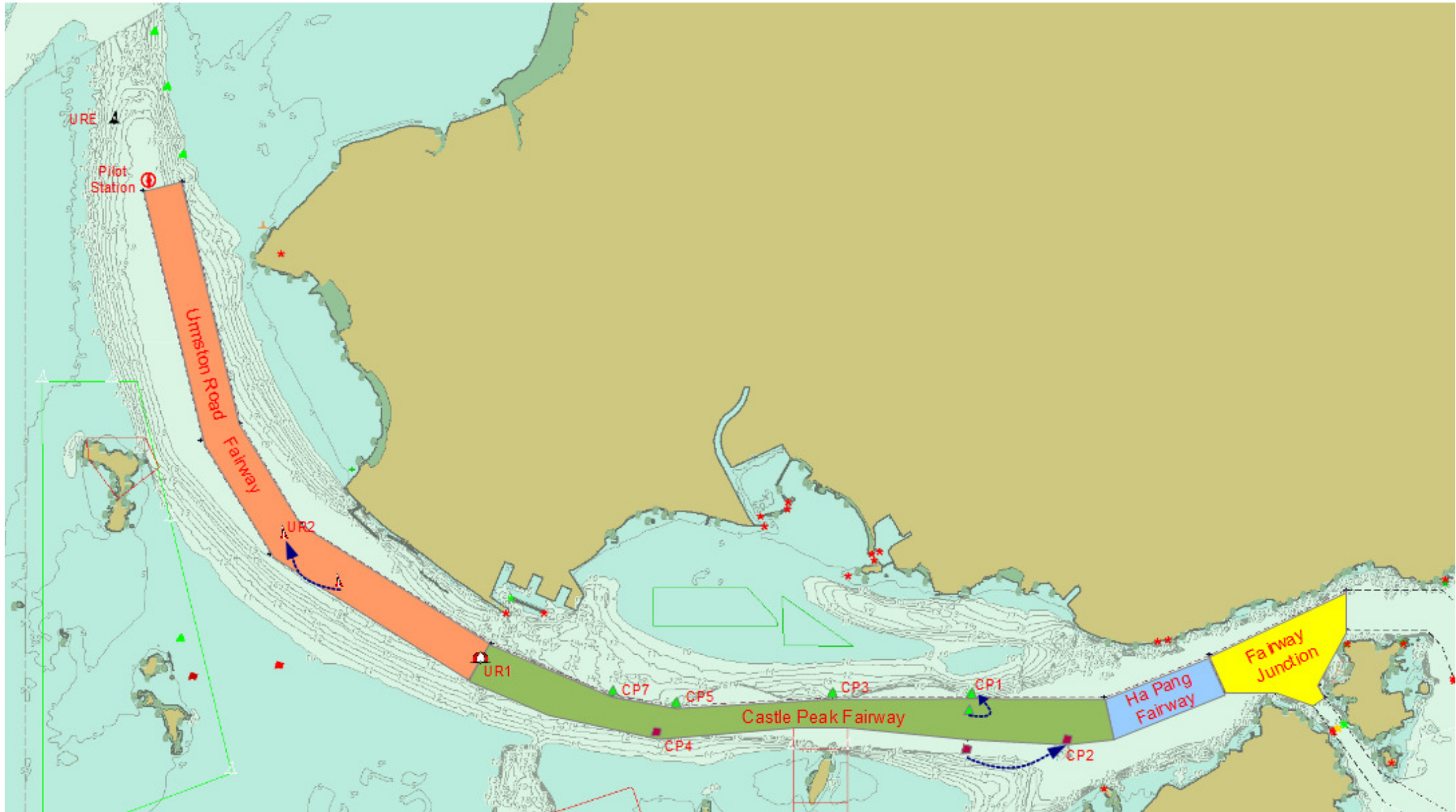
Administration and Shenzhen Pilot Station have also been consulted on the traffic management proposals at waters near the Boundary where change of pilots take place.

Advice Sought

15. Members' comments and endorsement are sought on the proposal to establish the fairways.

Vessel Traffic Section
Marine Department
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Annex – Proposed Fairways in the Waters North of Lantau Island



Aids to Navigation

The following buoys would be deployed:-

<u>Name</u>	<u>Type</u>	<u>Approx. Location (Lat./ Long.)</u>	<u>Remark</u>
Castle Peak 1 (CP1)	Starboard Lateral Mark	22° 20.89'N 114° 00.20'E	Relocate existing CP1 slightly northward
Castle Peak 2 (CP2)	Port Lateral Mark	22° 20.54'N 114° 01.01'E	Relocate existing CP2 eastward
Castle Peak 3 (CP3)	Starboard Lateral Mark	22° 20.89'N 113° 59.02'E	No change
Castle Peak 4 (CP4)	Port Lateral Mark	22° 20.59'N 113° 57.51'E	No change
Castle Peak 5 (CP5)	Starboard Lateral Mark	22° 20.82'N 113° 57.69'E	No change
Castle Peak 7 (CP7)	Starboard Lateral Mark	22° 20.91'N 113° 57.15'E	No change
Urmston Road 1 (UR1)	Safe Water Mark	22° 21.18'N 113° 56.02'E	No change
Urmston Road 2 (UR2)	Safe Water Mark	22° 22.15'N 113° 54.35'E	Relocate existing UR2 Northward
Urmston Road East (URE)	East Cardinal Mark	22° 25.45' N 113° 52.90' E	New buoy