

PILOTAGE ADVISORY COMMITTEE

Rearrangement of Principal Fairways and Anchorages in the Western Harbour

Purpose

The purpose of this paper is to seek members' endorsement on the proposal to rearrange the principal fairways and anchorages in the western harbour to cope with the changes in traffic pattern and operations of the port.

Background

2. The layout of Hong Kong Port had been rearranged in 1994, 2003 and 2006 where the establishment and realignment of service anchorages and principal fairways in the western harbour, have been taken place to tie in with the ever changing marine traffic environment and demands of port users.

3. The modes of shipping operation and pattern of marine traffic continue to change over the last decade. Port statistics indicated that the size of ocean going vessels (OGVs) has become larger and larger; the demand of government mooring buoys (GMBs) has dropped significantly; and the number of high speed passenger ferry increased continuously. Coupled with these, the commissioning of the Kai Tak Cruise Terminal (KTCT) in 2013 added the demand of large cruise vessel transiting the Victoria Harbour via the Northern Fairway. To meet the forgoing changes, it is necessary to revisit the layout of Hong Kong Port.

Current Situations in Harbour Area

Dense Traffic of Principal Fairways

4. The Northern, Western, Southern and North Green Island Fairways form the main waterway for vessels navigating in the western side of Victoria Harbour. The marine traffic in the area consists of the mix of OGVs, River Trade Vessels (RTVs), local tug and tows of dumb steel lighters (DSLs), launches, fishing vessels and high speed passenger ferries.

5. In the Northern Fairway, the RTVs and DSLs associated with the barging activities of the

container terminals and the Stonecutters Island Public Cargo Working Area (SIPCWA) are observed clustering off the SIPCWA and often encroached upon the Northern Fairway. The clustering has caused additional navigation concerns to through traffic using the Northern Fairway.

6. On top of this, there are requests for allowing large cruise ship to or from KTCT to transit the Victoria Harbour via Northern Fairway. However, the existing 305m fairway width of the Northern Fairway is insufficient for two-way traffic in accordance with the principles given in the “Joint PIANC-IAPH¹ Report on Approach Channels – a Guide for Design” (PIANC Guide). In fact, due to the limited channel width which is inadequate for the turning of large cruise ships, temporarily removal of the navigational light buoys “Northern 1” and “Northern 2” in the Northern Fairway are required to cater for the transit.

7. On the southwestern part of Victoria Harbour, the Southern Fairway and North Green Island Fairway is the main east / west corridor for different types of local vessels and fast passenger ferries. From the tracks of marine traffic recorded by the Vessel Traffic Services (VTS) system, as shown in **Annex I**, it is observed that the width of the existing fairways is insufficient to cope with the heavy marine traffic which has occupied the water areas of adjacent anchorages.

8. The above observations warrant a review on the alignments of these fairways.

Low Utilization of Government Mooring Buoys

9. The utilization of GMBs decreases continuously since the establishment of seven service anchorages in the Western Harbour in June 1994. Even though twenty-four GMBs and twelve GMBs were removed in 2003 and 2009 respectively due to low utilization, the utilization of GMBs remain in a low rate, in particular, the two Class A GMBs, A71 and A72, in Kellet Bank. The average occupancy rate of the GMBs A71 and A72 over the past five years (2010 – 2014) are only 2.6% and 4.5% respectively. In 2013, the GMB A71 was occupied for 228 hours (about 10 days) while the GMB A72 was occupied for 96 hours (about 5 days). It is cost ineffective to maintain the GMB. In fact, the water area for the GMBs could be further utilized for other purpose.

Usage of Anchorages

10. According to the 2012 statistics, there were in average 14 vessels carried Class 1

¹ PIANC : Permanent International Association of Navigation Congress; IAPH : International Association of Ports and Harbors

Dangerous Goods (DGs) called Western Dangerous Goods Anchorage (WDGA) monthly. This indicates that there is surplus space in the WDGA for other usages.

11. On the contrary, the operations of RTVs and local DSLs require considerable amount of temporary holding space when waiting for berths. This is evidenced by the crowd of vessels clustering off the SIPCWA and close to eastern boundary of WDGA. To meet their demand, adjustment to the anchorages in this area is warranted.

The Proposals

Widening of Northern Fairway

12. Having considered the traffic pattern, traffic environment and the navigational need of large cruise vessels transiting the Victoria Harbour, it is suggested to widen the Northern Fairway from 305m to 385m to meet the demand of port users. The proposed width fulfils the calculated channel width using the PIANC Guide for two-way traffic of a large cruise ship (65 m breadth) and a RTV (20m breadth). It is further proposed to shift the section of Northern Fairway at south of the Stonecutters Island by 80m southward to provide a wider buffer zone off the SIPCWA. The additional buffer serves to keep the cluster of RTVs and local DSLs away from the Northern Fairway.

Widening of North Green Island Fairway and Southern Fairway

13. Studying into the VTS radar track of the marine traffic along the Southern Fairway and North Green Island Fairway revealed that vessels regularly need to navigate beyond these two fairways into the adjacent anchorage and GMB area due to dense traffic. In view of the above, it is proposed to widen the two fairways from about 220m to 600m. The proposal can alleviate the existing dense traffic situation. Opportunity is also taken to join the Southern Fairway and the Sulphur Channel with the Western Fairway. The details of the realignment of fairways are shown in **Annex II**.

Rearranging of anchorages and Mooring Area in Kellett Bank

14. Due to the proposed widening of fairways, it is necessary to shrink the anchorages in Kellett Bank consequently. Taking into account the needs of different type of vessels, including DG vessels, RTVs and local DSLs, the proposed shrinking of anchorages and mooring areas are shown in **Annex II**. In considering the low utilization of certain GMBs and the need to utilize the limited water space in Victoria Harbour to match with the widening of the North Green Island Fairway, it is also suggested to remove the GMBs A71 and A72 to release the occupied

water space as well as relocating the GMB B30 northward. ;

Relocation of Navigation Aids

15. Associated with the proposed fairway realignments, the Northern 1 to 4, and the Victoria navigation buoys will be relocated as indicated in **Annex II**.

Effect of Changes in Channel Depth

16. Resulting from the proposed fairway widening, some shallow patches will fall within the realigned principal fairways. However, such changes would not affect the ordinary usage of these Principal Fairways. The changes in channel depth are as listed below :-

Southern Fairway :	from -7.8m CD to -7.7m CD
North Green Island Fairway :	from -10.9m CD to -9.6m CD
Northern Fairway :	from -11.0m CD to -10.3m CD

17. The slight change in water depth of the Southern Fairway from -7.8m CD to -7.7m CD will not have effect on the marine traffic in the area as the marine traffic of the Southern and North Green Island Fairway are mainly RTVs, local vessels and fast passenger ferries with maximum draughts less than 5m.

18. For the newly included -10.3m CD shallow patch in the realigned Northern Fairway, the reduction in channel depth will not affect the main route leading into Kwai Tsing container terminals. Although this part of the Northern Fairway is sometimes used by large cruise ships which are transiting the Victoria Harbour via the Central Fairway (west bound) or the Western Fairway (East bound), the existing draught limit in this route is already restricted by a -10.3m CD shallow patch located to the south of Tsim Sha Tsui. Thus, although the proposed Northern Fairway realignment will include a few shallow patches into the widened area with least depth of -10.3m CD, the reduction in channel depth of the North Fairway to -10.3m CD would not create additional draught restriction over the route used by large cruise ships.

Consultation

19. The Pilotage Advisory Committee Working Group have been consulted on 26 November 2014 on the proposal with no adverse comment.

20. The High Speed Craft Consultative Committee will be consulted on its next meeting to be held 15 December 2014. Consultation with the Local Vessel Advisory Committee and the Port

Operations Committee will be arranged accordingly.

Advice Sought

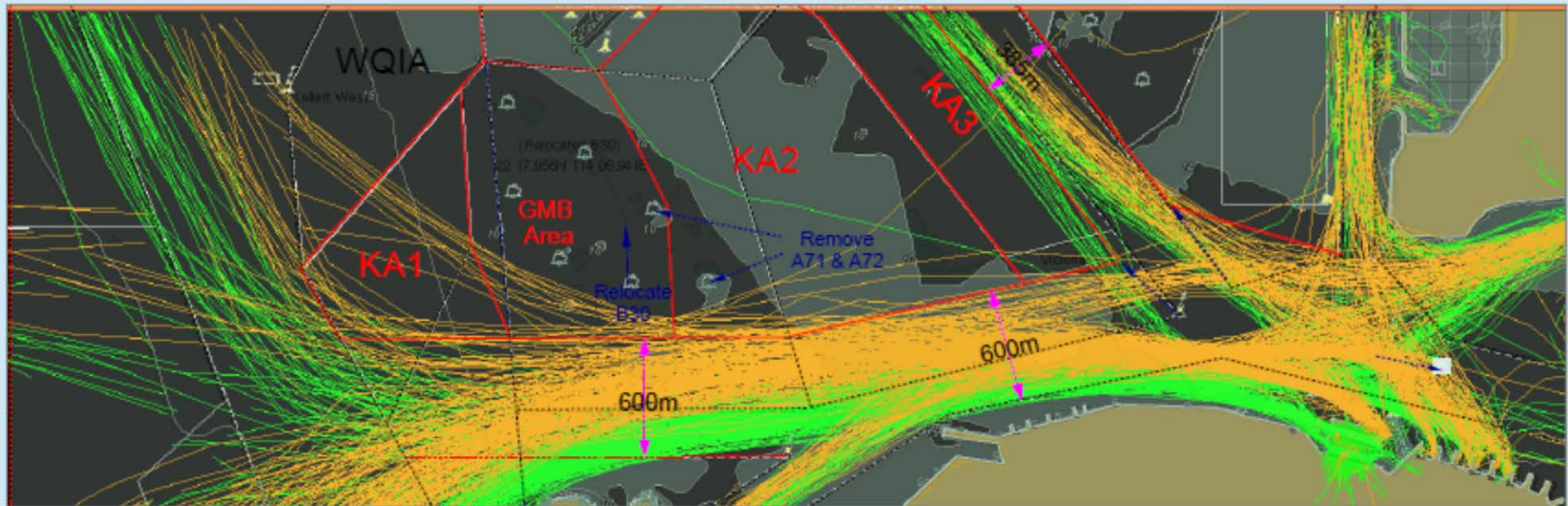
21. Members' comments and endorsement are sought on the proposal as outlined above.

Presentation

22. This paper will be presented by Mr. W H Wong, Senior Marine Officer / Vessel Traffic Centre.

**Vessel Traffic Section
Port Control Division
Marine Department
11 December 2014**

Proposed Realignment of North Green Island and Southern Fairway with Traffic Overlay



Legend : Yellow = west bound track

Green = east bound track

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