

**PROVISIONAL LOCAL VESSEL ADVISORY COMMITTEE**

**Study on Marine Traffic Risk Assessment for Hong Kong Waters  
(Progress Report)**

**Purpose**

This paper is to advise Members on the progress associated with the Study on Marine Traffic Risk Assessment for Hong Kong Waters (the “MARA Study”), currently being undertaken by the Marine Department and assisted by the Consultant BMT Asia Pacific Ltd.

**The Study**

2. The objectives of the MARA Study are to assess the present and future levels of marine traffic risks in the waters of Hong Kong, and to recommend improvement measures to mitigate the identified risks so as to ensure the sustainability of the Hong Kong Port.
3. The MARA Study is being conducted in three phases by the Consultant, namely, the establishment of a database of marine traffic activities by way of conducting field surveys (Phase I), the development of a ‘Marine Traffic Model’ and to assess the traffic risk levels for 2006 and 2011 (Phase II), thence to develop options to mitigate any risks identified (Phase III).
4. Based on the findings of the Consultant, the Marine Department, in conjunction with other relevant Government bodies, will assess all possible mitigating options and develop a strategy to implement the selected option, to ensure that Hong Kong will continue to provide shipping with one of the safest and most efficient ports in the world in the coming years.

## **Progress**

5. The Study is generally on schedule with Phase I field surveys completed, marine traffic data analysed, marine traffic model (MT model) developed, route structure created and input into the MT model. Baseline (2003) and Benchmark (2006 & 2011) scenarios have also been run within the model.
6. The Study team has presently completed the following tasks:

### Surveys

- Field surveys at eight sites distributed across key areas of water spaces in the Hong Kong waters (namely, Urmston Road, Rambler Channel, Western Fairway, Northern Fairway, Central and Hung Hom Fairways) for 24 days within 3 months;
- Analysis of ocean-going and river-trade vessel arrival data for 2001 & 2002;
- Review of scheduled ferry activities; and
- Capture, analyse, cross-correlation and post-processing of 12 days' radar data.

### Marine Traffic (MT) Modeling

- Consolidation of data to form a representation of vessel activities for 2003;
- Analysis of incident distribution for 2001 & 2002;
- Forecast of future vessel activities;
- Validation of the 2003 Baseline MT model;
- Analysis of trends associated with vessel safety and consequences of collisions; and
- Prediction of risks (collision) distributions for 2006 & 2011.

## **Findings**

7. The following findings have been developed :

### Validation

- Validation of the 2003 Baseline MT model has proved the accuracy of the

model in estimating the distributions of the present vessel activities.

### Assessment

- The collision risk environment for the benchmark years of 2006 and 2011 has been fully assessed by the MT model. The assessment reveals that the overall level of collisions in 2006 and 2011 would be slightly lowered as a result of the continuous improvement of good navigation practice and port control/management;
- It is however observed that the level of collisions projected in the Western Harbour, Urmston Road and Inner Harbour will be increased moderately; and
- The assessment also discovered that, following the general increase in vessel size, the consequence of collision incidents will become more serious.

### **Way Forward**

8. The Study is about to proceed to Phase III for developing options to mitigate risks identified by the Consultant. The Marine Department will, based on the findings of the Consultant, conduct an in-house study in conjunction with other relevant Government bodies to assess all possible mitigation options and develop a strategy to implement the selected option.

### **Presentation**

9. The paper will be presented by Dr. Richard Colwill, a representative of the Consultant.

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