WORKING PAPER NO. 4
BASELINE REVIEW OF PORT FACILITIES AND FUTURE REQUIREMENTS

Purpose

1. The purposes of this Paper are:
   a. to review the current position and future requirement of port facilities; and
   b. to identify the key planning issues.

Review of existing condition

2. Endowed with a deep-water harbour strategically located at the mouth of the Pearl River Delta (PRD) Region, Hong Kong has evolved as a regional hub port. In 2000, the port of Hong Kong handled 18.1 million Twenty Foot Equivalent Units (TEUs) of cargo and remained as the world's busiest port. A comparison of container throughput for the three busiest container ports in the world is at Annex A. In fact, "Trade, transportation and logistics" has been identified by the Commission on Strategic Development as one of the seven key areas to support Hong Kong's long term vision.

3. The Port and Airport Development Strategy (PADS) Study, completed in 1989, set out an overall long-term strategy for port and airport development in Hong Kong. Our main objective in port planning and development is to ensure realistic planning and timely provision of sufficient port facilities to handle Hong Kong's port cargo. In order to respond to the ever-changing circumstances, three reviews on port development strategy were carried out in 1992 (1st PDSR), 1995 (2nd PDSR) and 1998 (3rd PDSR) respectively. An in-house study to update the 3rd PDSR, in the light of the latest findings of the Port Cargo Forecasts (PCF) 2000/01 Study, was carried out jointly by Planning Department, Port and Maritime Division of Economic Services Bureau and Marine Department. This study, retitled as "Port Development Strategy Review 2001" (PDSR 2001), was completed in September 2001. The findings of which will be fed into the present HK2030 study.

Existing Port and Port Back-up Facilities

4. Hong Kong's port is renowned for its efficiency. At present, we have 8 container terminals (CTs), with a total seafrontage of 5,800m and a total terminal area of about 200 ha. A new CT 9, with 4 deep sea berths and 2 feeder berths, is being constructed on Tsing Yi Island. Besides, there are 12 mid-stream sites (MSSs), occupying an area of 25.3 ha and a total seafrontages of over 2,460m; a river trade terminal (RTT) in Tuen Mun Area 38, with a seafrontage of 3,000m and an area of 65 ha and 8 Public Cargo Working Areas (PCWAs), with a total seafrontage of 7,742m. Regarding the port back-up land, a survey undertaken by the Task Force (Black Spots), Lands Department revealed that there was a total of 331 ha of port back-up land in the territory in April 2000. Details of these facilities are at Annex B. Locations of various port facilities are shown in Plan 1.

Key Problem Areas

5. The existing Government's policy on port development is to match supply of port facilities with forecast demand. In recent years, port development in Hong Kong faces new challenges and opportunities.

Challenges

Competition from Shenzhen Ports

a. Hong Kong is the hub port for South China. In 1999, about 84% of total South China cargo is exported through Hong Kong's port. Our position in the region, however, faces increasing challenges from ports elsewhere in Southern China, given the significant cost advantages they offer to customers. According to PCF 2000/01, over 50% of total South China cargo will utilize Shenzhen ports by 2020 and about 65% of the trade between Taiwan and South China and all the trade between Taiwan and Central/Northern China, which is currently routed via Hong Kong, will be lost by 2009. Container ports in Shenzhen have experienced a much higher rate of growth as compared with Hong Kong. The locations of major ports in the PRD region are shown in Plan 2. Yantian, in particular, with deep water access, ample supply of backup land and proximity to the cargo base, has a substantial potential to become one of the most important deep water ports for international trade in the region. Should the Tonggu Channel be constructed, the sea access for Shekou and Chiwan ports would also be much enhanced. Throughput and future development of Shenzhen ports are at Annex C and Annex D respectively. It is worth to note that the involvement of Hong Kong's port operators in managing the Mainland ports is an important factor in
avoiding over-competition between Hong Kong and Shenzhen ports.

**Concern on Adverse Impacts Caused by Port Development**

b. Although the port has provided the mainstay of economic growth of Hong Kong, and contributed significantly to the Gross Domestic Product (GDP) and employment, port operation will place a very heavy strain on the land resource, infrastructure system and environmental capacity of the territory. In particular, port facilities in the inner harbour are not compatible with the planning intention for the waterfront recreational uses and would create traffic, environmental and visual impacts on the surrounding areas. There has been increasing public concern about the adverse impacts caused by port development and operation.

**Constraints of Port Expansion**

c. In Hong Kong, existing waterfront suitable and available for major expansion of port facilities is very limited. Sites originally earmarked for CTs 10 and 11 were lost to the development of the Disney theme park project. The reserved sites for CTs 12 and 13 on the current OZP are considered not compatible with the overall planning theme for Northeast Lantau which is tourism and recreation-oriented. This calls for an urgent appraisal of our port development strategy in order to provide a clear direction as to where new port facilities can be placed to meet forecast demand. To better serve our cargo base in the PRD, future port facilities should be located in the western part of the harbour. West Tuen Mun might be one of the potential sites. Further investigation on other possible sites in the territory is required.

**Proliferation of Port Back-up Land in New Territories**

d. Adequate provision of port back-up land is found to be essential to maintain the port competitiveness. Partly related to its nature, port back-up activities will have some degree of adverse environmental, traffic, drainage, visual and other impacts on the surrounding areas. If these activities are not properly planned and managed, they will bring an overall degradation to the environment of New Territories. One key factor causing the great demand of port back-up land is Mainland's customs practice which treats empty containers as dutiable commodities. Such practice causes multiple handling of cargo and resulted in high handling costs of cargo in Hong Kong.

**Opportunities**

**World Trade Organization Accession and Mainland's Policy of Developing the Western Region**

c. Mainland's accession to the World Trade Organization (WTO) and her policy of developing the Western Region offer new opportunities for our port development. In particular, given the strategic location of Hong Kong as well as our close economic linkages with Mainland, it is expected that Hong Kong will have much to gain from the spurring effect of China's WTO membership. According to PCF 2000/01, China's accession into WTO will boost China trade by 10% over a period of 4 years (average 2.5 % per annum), a portion of which will flow through Hong Kong.

**Development of Logistics Services**

f. There has been growing community interest on the subject of strengthening Hong Kong's role as a logistics hub to serve the needs of the region. The logistics business is about the efficient processing of goods, information and transactions and there has been thinking on how our port and airport can provide a "total logistical solution" to its users. Further development of logistics industry would enhance our competitiveness.

**Port Development Strategy Review 2001 (PDSR 2001)**

6. Taking into consideration the above-mentioned challenges and opportunities, the PDSR 2001 aims to update our port facilities development strategy. The key findings of PDSR 2001 are summarised below. The requirements for major cargo handling facilities are indicated in Annex E.

a. New CT facilities will be required towards the end of this decade based on the current prediction on cargo forecast and capacity of the Kwai Chung CTs. Four sites, including West Tuen Mun, North-west Lantau, East Lantau and South-west Tsing Yi, (Plan 3) are identified to have potential for CT development. To identify the most appropriate site, an integrated planning, engineering, environmental, economic/financial feasibility study on all the above locations should be carried out.

b. With the full completion of the first Tuen Mun RTT in end 1999, it is expected that the second RTT would not be required until the next decade. To facilitate movement of containers, it is suggested that future river trade facilities should be provided as part of CT facilities. Accordingly, future provision of river trade facilities would be investigated in conjunction with the proposed feasibility study for the CT

c. It is anticipated that the demand for MSS will be quite steady in the foreseeable future. Except the planned sites,
How Could the Port Back-up Problem be Relieved?

How to Promote Intermodal Link?

c. Our port is at present well served by extensive road network. Some proposed highway projects recommended by the Third Comprehensive Transport Study will have significant bearing on the connectivity of our present/future port. The completion of RTT has provided an incentive, which stimulates the use of water over road in moving cargoes to and from South China. To further improve the connectivity of our port, it would be worthwhile to further examine the feasibility of Port Rail Link (Plan 4). Such a rail link can minimize port related traffic and the associated adverse environmental impacts. Besides, it also provides an opportunity for Hong Kong to gain deeper penetration into more inland sources for cargo much further away from the PRD region.

How to Minimise the Impacts of Further Port Development?

d. As shown in Annex E, a total of 20 CT berths will be required in year 2030 to meet the future demand and it would place a very heavy strain on the land resource. Instead, we may need to consider measures to enhance our port productivity by, for example, ensure adequate on-port and adjacent-port back-up land and provide good transport network around our port area. Further investigations would be required to provide the necessary technical details.

Strategic Planning Implications

7. During the study process of PDSR 2001, it has been identified that further port development would have the following strategic planning implications:

What are the Pros and Cons of Further Port Development?

a. Notwithstanding the findings of the PDSR 2001 that new CT facilities would be required towards the end of this decade, further port development in Hong Kong would probably be a contentious issue and subject to public debate. On one hand, Hong Kong is the number one container port in the world and a major portion of Hong Kong's economic success is hinged on port development. An analysis conducted with input from Economic Services Bureau, Financial Services Bureau and Census and Statistics Department estimated that the "trade, transportation and logistics" sector accounted for 21.6% of Hong Kong's GDP and employed some 575,000 persons in 1999, representing some 20% of Hong Kong's workforce. However, one may argue that trade generated GDP may include other economic activities other than port development.

b. On the other hand, port operation places strain on the land resource, infrastructure system and environmental capacity of the territory. Recent public consultation exercises carried out by PlanD on the present HK2030 Study, Metroplan and Planning Study on the Harbour and its Waterfront Areas, indicate that there are growing public concern on large scale reclamation and on adverse environmental impacts caused by the enormous amount of traffic generated by the container vehicles. Some argued that the driving force of our future growth should be knowledge based economy and the financial services sector.

c. At this stage, we need not commit ourselves to building another CT after CT 9. The merits and demerits of further port development as well as the mutual impacts of port development and other development initiatives need to be carefully assessed.

How to Minimise the Impacts of Further Port Development?

d. The emergence of the first RTT has provided an alternative to PCWAs to pick up both river and bulk cargo. It is recommended that no new PCWA should be provided except for the reprovisioning of displaced facilities. However, finding replacement sites are extremely difficult within the Victoria Harbour. Progressive implementation of PCWA Management Reform should be continued with a view to enhancing the productivity of PCWAs and thus reducing their requirement in the inner harbour. Due to competing waterfront uses and the need to provide land for major infrastructure, open space and tourism related developments, the Government has notified operators of Wan Chai, Western District, Kwun Tong and Cha Kwo Ling PCWAs that these PCWAs would be affected by development plans/projects in the respective areas.

c. It is estimated that the current and planned supply of port back-up land could meet the demand for the next decade. The supply and demand situation, however, has to be closely monitored. The possibility to relocate port back-up sites to the Mainland should be further examined.

d. To increase the competitiveness of Hong Kong, intermodal transport links between the cargo base and our port has to be strengthened. The efficiency of the boundary crossings should also be improved.

e. Hong Kong has to focus on high value-added services which complement rather than compete with the lower cost services provided by other ports. Logistics services are identified to play a role in this aspect. A conducive environment and necessary infrastructure should be provided to facilitate the development of the logistics sectors.

f. To respond to the changing assumptions and circumstances, our port cargo forecasts and at the same time the development programme for new port facilities should be reviewed every two years.
f. Although it is identified that the current and planned supply of port back-up land can meet the demand well into the next decade, ways have to be identified to further rationalize the port back-up land. In the short to medium term, the planning process by way of temporary use could still cater for the needs of the industry. In the long term, it is expected that many of the port back-up services would be located in the Mainland. This situation would be monitored and land requirement would be reviewed from time to time.

How to Develop Hong Kong as a Logistics Hub?

g. Regarding the development of logistics services, there have been various land-use measures taken to promote the competitiveness of Hong Kong as a logistics center. Sites for logistics center are provided in the Hong Kong Industrial Estates, the Chek Lap Kok Airport and the RTT in Tuen Mun. "Distribution Centre" and "Freight Forwarding Services Centre" are column 1 uses within the "OU(Business)" zone. It would be important to study how logistics opportunity can be blended into future land-use planning, especially port development planning.

How to Co-operate with our Counterpart in the Mainland?

h. It is also an appropriate time to enhance the liaison with our neighbours in the PRD region in port planning. To this end, the Administration has maintained constant dialogue with the Port Authorities in the Mainland. We have also liaised with them closely in updating the PDSR 2001 and we are aware of their thinking on future cargo demand, timing of providing various port facilities etc. The information they have provided to us so far is very useful.

Attachments

Annex A : Comparison of Container Throughput for the Three Busiest Container Ports in the World
Annex B : Existing Cargo Handling Facilities in Hong Kong
Annex C : Past Trend of Container Throughput for Hong Kong and Shenzhen Ports
Annex D : Current and Planned Handling Capacities of Shenzhen Ports
Annex E : Requirements for Various Cargo Handling Facilities
Plan 1 : Locations of Cargo Handling Facilities
Plan 2 : Major Ports in Pearl River Delta Region
Plan 3 : Potential Sites for Future Container Terminal
Plan 4 : Proposed Port Rail Line

Footnotes

1 Census and Statistics Department
2 PCF 2000/01 is the fifth port cargo forecast review after the PADS Study. The objective of the study is to review and update the current port cargo forecasts which was prepared in 1997/98, so that we could have an up to date understanding of the demand trends to enable us to better formulate our port development strategy.
3 "Distribution Centre" in free-standing, purpose-designed building is a column II use within the "OU (Business)" zone, such use may be permitted with or without conditions on application to the Town Planning Board.

PLANNING DEPARTMENT
JUNE 2001
Annex A: Comparison of Container Throughput for the Three Busiest Container Ports in the World

<table>
<thead>
<tr>
<th>Year</th>
<th>Hong Kong Throughput (mn TEUs)</th>
<th>Hong Kong Year-on-Year Growth (%)</th>
<th>Rank (Hong Kong)</th>
<th>Singapore Throughput (mn TEUs)</th>
<th>Singapore Year-on-Year Growth (%)</th>
<th>Rank (Singapore)</th>
<th>Kaohsiung Throughput (mn TEUs)</th>
<th>Kaohsiung Year-on-Year Grow</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>7.97</td>
<td>29%</td>
<td>1</td>
<td>7.56</td>
<td>19%</td>
<td>2</td>
<td>3.96</td>
<td>1</td>
</tr>
<tr>
<td>1993</td>
<td>9.20</td>
<td>16%</td>
<td>1</td>
<td>9.05</td>
<td>20%</td>
<td>2</td>
<td>4.64</td>
<td>1</td>
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<tr>
<td>1994</td>
<td>11.10</td>
<td>20%</td>
<td>1</td>
<td>10.40</td>
<td>15%</td>
<td>2</td>
<td>4.90</td>
<td>6</td>
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<tr>
<td>1995</td>
<td>12.55</td>
<td>14%</td>
<td>1</td>
<td>11.85</td>
<td>14%</td>
<td>2</td>
<td>5.05</td>
<td>3</td>
</tr>
<tr>
<td>1996</td>
<td>13.46</td>
<td>7%</td>
<td>1</td>
<td>12.95</td>
<td>9%</td>
<td>2</td>
<td>5.06</td>
<td>2</td>
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<tr>
<td>1997</td>
<td>14.56</td>
<td>8%</td>
<td>1</td>
<td>14.14</td>
<td>9%</td>
<td>2</td>
<td>5.69</td>
<td>1</td>
</tr>
<tr>
<td>1998</td>
<td>14.58</td>
<td>1%</td>
<td>2</td>
<td>15.14</td>
<td>7%</td>
<td>1</td>
<td>6.27</td>
<td>1</td>
</tr>
<tr>
<td>1999</td>
<td>16.21</td>
<td>11%</td>
<td>1</td>
<td>15.95</td>
<td>5%</td>
<td>2</td>
<td>6.99</td>
<td>1</td>
</tr>
<tr>
<td>2000</td>
<td>18.10</td>
<td>12%</td>
<td>1</td>
<td>17.09</td>
<td>7%</td>
<td>2</td>
<td>7.43</td>
<td>6</td>
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</table>

^ In 2000, Busan was the third busiest container port in the world, and handled a total container throughput of 7.54 million TEUs

Source: Hong Kong Shipping Statistics, Census and Statistics Department
Annex B: Existing Port and Port Back-up Facilities in Hong Kong

Container Terminal (CT)

1. There are at present 8 CTs in Hong Kong, with 18 berths, a total waterfrontage of about 5,800m and terminal area of about 200 hectares (including on-dock container yards and container freight stations). These CTs are operated by four different CT operators: Modern Terminals Ltd. (MTL), CSX World Terminals Ltd. (CSX), Hong Kong International Terminals Ltd. (HIT) and COSCO-HIT Terminals Hong Kong Ltd. (COSCO-HIT).

2. A new terminal, CT9, is being built on Tsing Yi Island. The first berth would be completed in 2002 and the whole terminal in 2004. CT9 would provide 6 berths (4 deep-sea berths and another 2 feeder berths).

3. In 2000, CTs in Kwai Chung handled 11.6 million TEUs of cargo or about 64.1% of the territory annual throughput. However, if only ocean container cargo is taken into account, CT handled over 75% of the territory's ocean containerized cargo in the last four years.

Mid-stream Site (MSS)

4. Mid-stream operation refers to the loading and unloading of ships while moored at buoys or at anchorages within the harbour. Lighters are used to move the cargo between the waterfront sites and the ships using their own single-boom cranes, or on-shore mobile cranes. Cargo handled can be bulk, break-bulk or container. Both the river trade and ocean going ships can be serviced. This practice has provided an attractive alternative for small to medium size ships as the rate charged by MS is about 40% cheaper than those of CTs.

5. There are at present 12 MS sites in Hong Kong. Totally, they occupy an area of 25.3 ha and a total seafrontage of over 2,460m. About half of the MS sites are operated under temporary tenure, either Short Term Tenancies (STTs) or Short Term Waivers (STWs).

6. In 2000, 3.0 million TEUs, or about 21% of Hong Kong's ocean container throughput was handled in mid-stream. Mid-stream sector is mainly engaged in intra-Asia and feeder related trades, although some operators provide services outside this area.

River Trade Terminal (RTT)

7. The RTT is designated to operate as a consolidation point for container and bulk cargo shipped between Hong Kong and the Pearl River Delta ports. The present RTT, locating in Tuen Mun near Pillar Point, commenced its operation in end 1998 with the whole terminal completed in end 1999. The total area of the RTT is about 65 ha with 3,000 m seafrontage.

8. With 60 berths and a lease term of 50 years, the RTT aims to provide full range and comprehensive services which include container and breakbulk handling operation, storage, trans-shipment, lighter shuttle services, container freight station, warehousing operation, container maintenance and repair services. Scheduled marine shuttle lighters allow frequent services linking the RTT with the CTs, mid-stream and designated berths in urban areas.

Public Cargo Working Areas (PCWAs)

9. When PCWAs were first established, cargo handled thereat were mainly breakbulk cargo loaded on and unloaded from mid-stream lighters and river trade vessels. Now, containers are also handled at the PCWAs even though the facilities there are not designed and built to serve the purpose due to constraints on its layout, and in particular, its lack of backup area.

10. In the past, berths were allocated to PCWA operators on a first-come-first served basis. In 1997, the MD introduced a programme of management reform to the PCWAs with a view to improving the efficiency and productivity of their operations. The first phase of the reform, completed in early 1998, was to allocate all the berths in the eight PCWAs to the operators for a period of three years through a tendering exercise. The second phase of the reform, completed in May 1999, was to rationalize the landside management and the fee structure.

11. At present, MD manages 8 PCWAs with a combined seafrontage of 7,742m and a total area of about 305,460m². They are located in Wan Chai, Yaumatei, Kwun Tong, Stonecutters Island, Western District, Rambler Channel, Cha Kwo Ling and Tuen Mun.

Port Back-up Facilities

12. According to a survey undertaken by the Task Force (Black Spots), Lands Department in April 2000, there was a total of 331ha of port back-up land in the territory, of which, 67% was located in Yuen Long and Tuen Mun, 17% was in Kwai Tsing and 10% was in North District. Compared with the figures for 1998, there was a decrease of total port back-up land area by 3.8%.

Footnote

1 Port and Maritime Board
Annex C: Past Trend of Container Throughput For Hong Kong and Shenzhen Ports

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Hong Kong Port *</td>
<td>11.1</td>
<td>12.55</td>
<td>13.46</td>
<td>14.56</td>
<td>14.58</td>
<td>16.21</td>
<td>18.10</td>
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<tr>
<td>Year-on Year Growth(%)</td>
<td>20.1%</td>
<td>13.6%</td>
<td>7.3%</td>
<td>8.2%</td>
<td>1.0%</td>
<td>10.5%</td>
<td>11.6%</td>
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<tr>
<td>Shenzhen Ports +</td>
<td>0.18</td>
<td>0.28</td>
<td>0.59</td>
<td>1.15</td>
<td>1.95</td>
<td>2.98</td>
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<td>Year-on Year Growth(%)</td>
<td>39%</td>
<td>60%</td>
<td>107%</td>
<td>94%</td>
<td>70%</td>
<td>53%</td>
<td>34%</td>
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* Census and Statistics Department
+ Port and Maritime Board
## Annex D : Current and Planned Handling Capacities of Shenzhen Ports

### Throughput

#### Annex D : Current and Planned Handling Capacities of Shenzhen Ports

<table>
<thead>
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<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Berths</td>
<td>Capacity (000 TEU)</td>
<td>No. of Berths</td>
</tr>
<tr>
<td>SCT Phase I</td>
<td>574</td>
<td>2</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>SCT Phase II</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CKCT Phase I</td>
<td>350</td>
<td>2</td>
<td>600</td>
<td></td>
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<tr>
<td>CKCT Phase II</td>
<td></td>
<td>1</td>
<td>400</td>
<td></td>
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<tr>
<td>YICT Phase I</td>
<td>1,588</td>
<td>2</td>
<td>800</td>
<td></td>
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<tr>
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<td>3</td>
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<tr>
<td>YICT Phase III</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,512#</td>
<td>10</td>
<td>3,800</td>
<td>9</td>
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<tr>
<td>Cumulative Total</td>
<td></td>
<td>10</td>
<td>3,800</td>
<td>19</td>
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</table>

Note: SCT - Shekou Container Terminals  
CKCT - Chiwan Kaifeng Container Terminals  
YICT - Yantian International Container Terminals  
* Conversion of the existing multi-purpose berth into a container berth.  
# In 1999 about 474,000 TEUs of Shenzhen port throughput was handled in other terminals.

Source: Port Cargo Forecasts 2000/01, Port and Maritime Board
### Annex E : Requirements for Various Cargo Handling Facilities

<table>
<thead>
<tr>
<th>Additional Facility</th>
<th>2005</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
<th>2030</th>
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<tbody>
<tr>
<td>Container Terminal Berth (assumed berth length=320m)</td>
<td>0</td>
<td>2</td>
<td>9</td>
<td>13</td>
<td>20</td>
</tr>
<tr>
<td>Mid-stream Berth * (assumed berth length=55m)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>River Trade Terminal Berth (assumed berth length=50m)</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>29</td>
<td>37</td>
</tr>
</tbody>
</table>

* On the assumption that two mid-stream sites will be provided in Tsing Yi South (ex power plant) and Tsing Yi Southeast by 2005.
Locations of Cargo Handling Facilities
MAJOR PORTS IN PEARL RIVER DELTA REGION