

Submission to the Panel on Transport

G.N. 3864

PWP Item No. 6519th

**Route 10 – North Lantau to Yuen Long Highway
(Southern Section)**

Sir Gordon Y.S. Wu (胡應湘), KCMG

**Fellow, Institution of Civil Engineers
Honorary Fellow, Hong Kong Institution of Engineers
Chairman, Hong Kong Port & Maritime Board**

18th October, 2002

Mrs Miriam LAU
Chairman, LegCo Panel on Transport
Legislative Council Building
Hong Kong

15th October, 2002

Dear Madam,

G.N. 3864
PWP Item No. 6519TH
Route 10 – North Lantau to Yuen Long Highway
(Southern Section)

Further to Sir Gordon Wu's and my previous objections and presentations at the Legislative Council on 17 December 2001 and 17 January 2002 with respect to the Route 10 (North Section), I wish to object to the above gazettal due to the following reasons:-

1. While we all agree to have a 2nd alternative link to our strategically important CLK Airport, **Tsing Lung Bridge** does not fulfil its functions as an effective alternative route / link due to its location and its structural type.

A. Location

The proposed Tsing Lung Bridge is no longer in the right location as it was originally planned to join on to CT10 –CT13 and then went on to HK Island. It is definitely not an appropriate fixed link to serve the airport, as even after its implementation, access to and from the airport is still relied on the 16km (each way) North Lantau expressway (i.e. like a cul-de-sac “one way in” and “same way out”). Should anything happen to this 16km feeder road, access to the airport will be paralyzed; our previous Kai Tak had 6 No. feeder roads!

If someone claims that this bridge is needed to serve the Disney visitors, I would say that there are many ways to get there instead:-

- i. Rail - MTR spur line to Disney
- ii. Water - Ferry to Disney
- iii. Road - Tsing Ma / Kap Sui Mun (Eastern approach)
- The proposed Tuen Mun / CLK link (Northern approach)

B. Structural Type

During typhoon conditions, Tsing Lung Bridge will have to be closed even sooner than Tsing Ma, especially it has only a thin single top deck (2.5m thick) while the Tsing Ma has an internal lane within the box during inclement weather. So Tsing Lung Bridge is not an effective alternative link.

2. As a result, all other associated works w.r.t. the addition of Tsing Lung Bridge will be irrelevant if Tsing Lung Bridge itself is in question.
3. I strongly urge the government to study the alternative fixed link to the airport via a low-level Bridge (like the structure type of the HK Island Eastern Corridor By-pass) and a short submerged tube tunnel (\approx 1.5km long like all our harbour crossings) for the deep water navigation channel between Tuen Mun and CLK Airport. This will create a loop between Tuen Mun, CLK Airport, Tsing Yi and Kowloon peninsular, thus genuinely providing an alternative link to the airport apart from Tsing Ma Bridge and North Lantau Expressway (see the enclosed conceptual layouts).

Further, this proposed link can be designed to operate throughout typhoon conditions! i.e. providing all-weather 24 hour secure access to our airport which is rightly deserved.

4. Building such low level trestle bridges does not have to be expensive, although our Island East Corridor probably is? I have summarised some trestle bridges construction cost over the world for your reference in the enclosed table.

5. If one can utilize the Islands of “the brothers” (大小磨刀島) as one of the tunnel approach islands, not only we can save on the construction cost but also to facilitate some dangerous goods storage facilities including **the airport supply fuel** on “the brothers Islands” (instead of putting it in Tuen Mun, which may be more dangerous to people).
6. The north approach Island may be turned into a water sports leisure island; similar to Sentosa in Singapore.
7. In a longer term, we should link up the west rail in Tuen Mun to CLK Airport Railway, this mere 9km railway link is far more strategically important than any other feeder rail lines planned in the inner city, as other feeder rails may be efficiently served by environmentally friendly mini buses (clean transport does not have to be on rails; it can be on wheels too, if we do it right!)

Your attention to these suggestions would be greatly appreciated.

Yours faithfully,

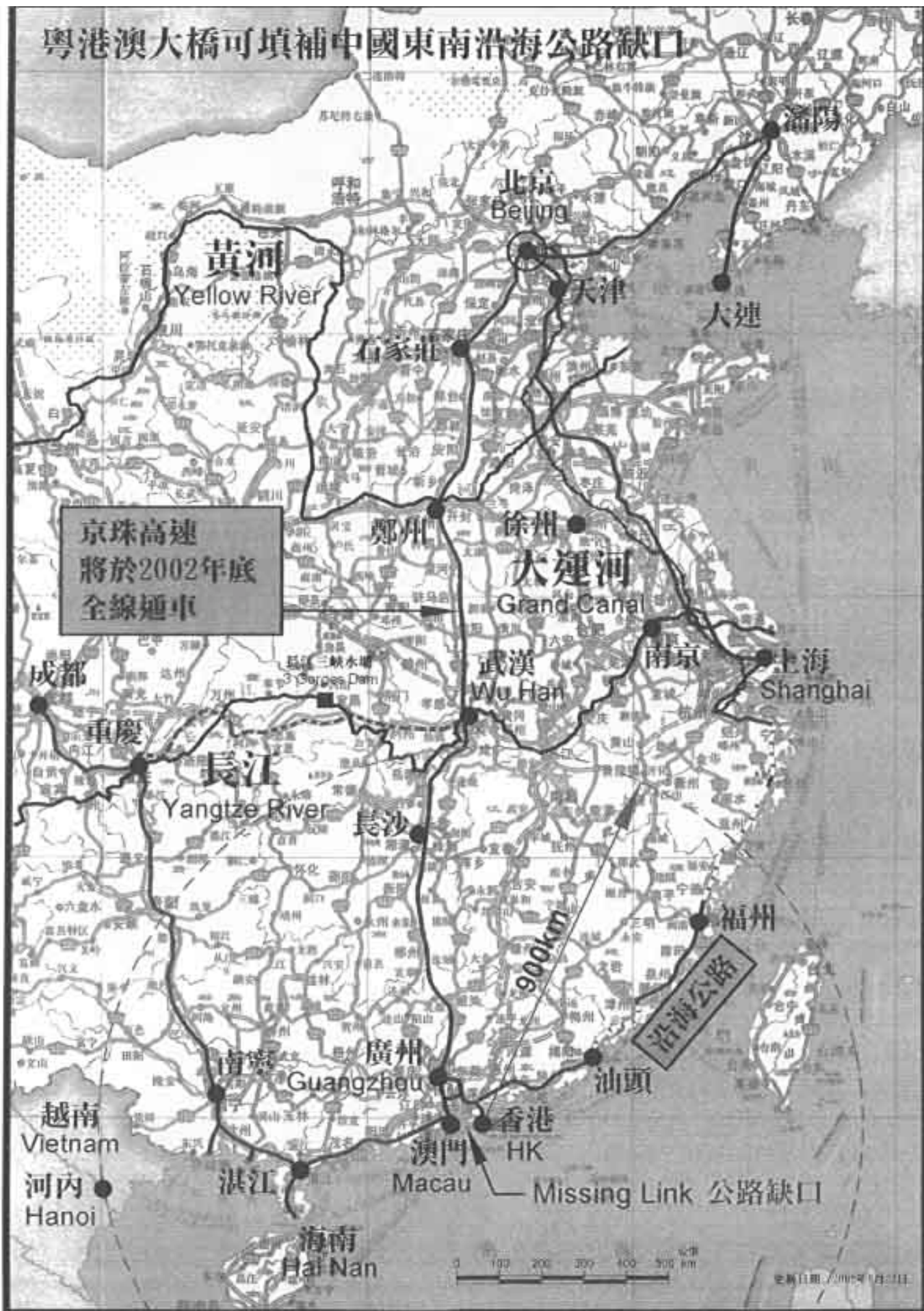
Leo K K Leung (梁國基)

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Encl.

粵港澳大橋可填補中國東南沿海公路缺口



京珠高速
將於2002年底
全線通車

沿海公路

Missing Link 公路缺口

0 100 200 300 400 500 km

更新日期：2002年1月22日

南中國主要公路圖



京滬高速公路
直通武漢到北京
(在2002年底全線通車)

至南昌
江西

福建

河橋高速

至 寧波、上海

桂海高速

廣西

廣東

廣—肇—梧 高速

廣惠高速

汕頭高速
南中國沿海高速

橫河高速

深汕高速
南中國沿海高速

可通至越南

廣潯高速

廣東西部沿海高速
2002年中通車

廣珠東線

廣深高速

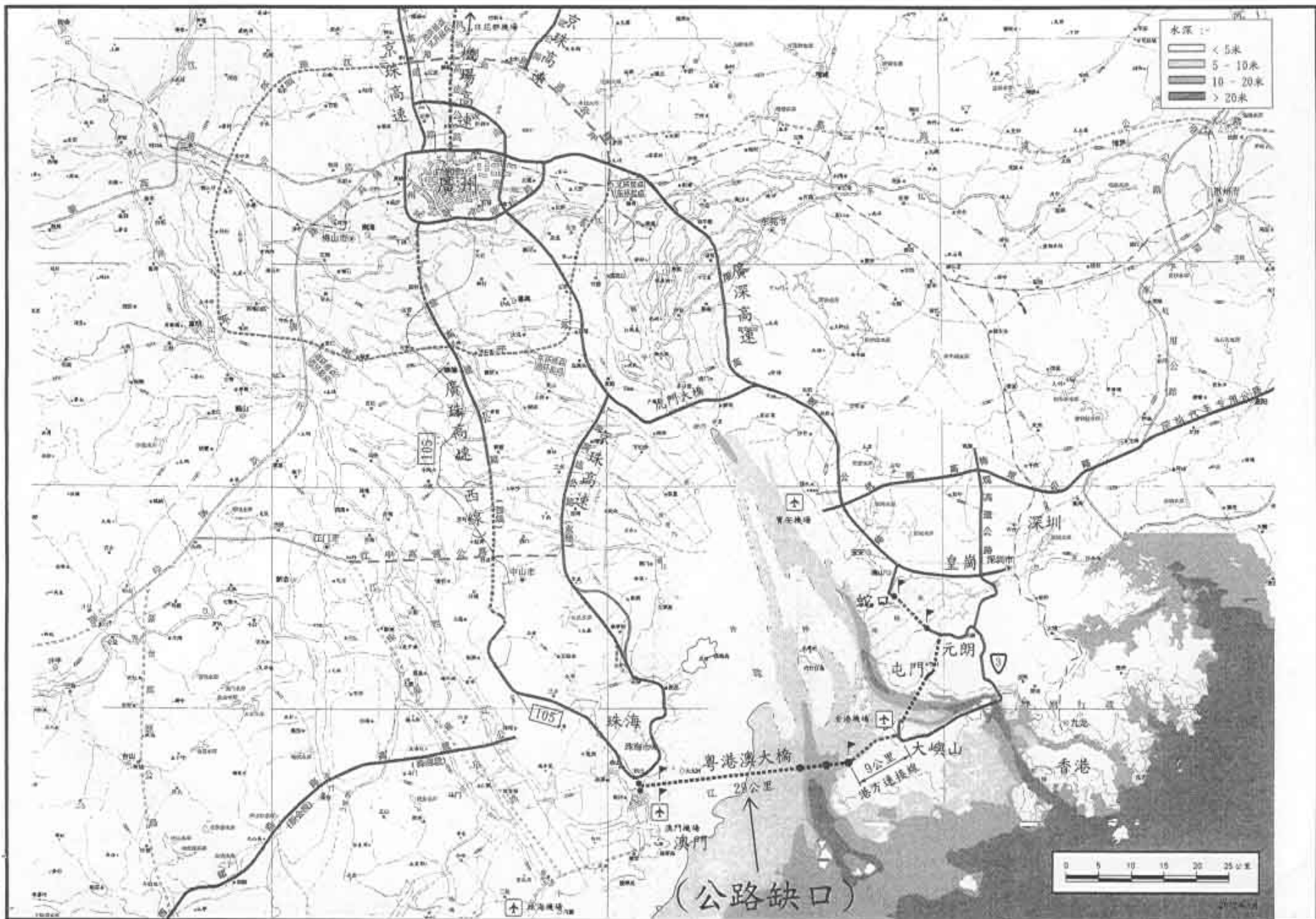
在2000年底統計：
廣東省已興建了：1350 公里 高速公路
5200 公里 一級公路

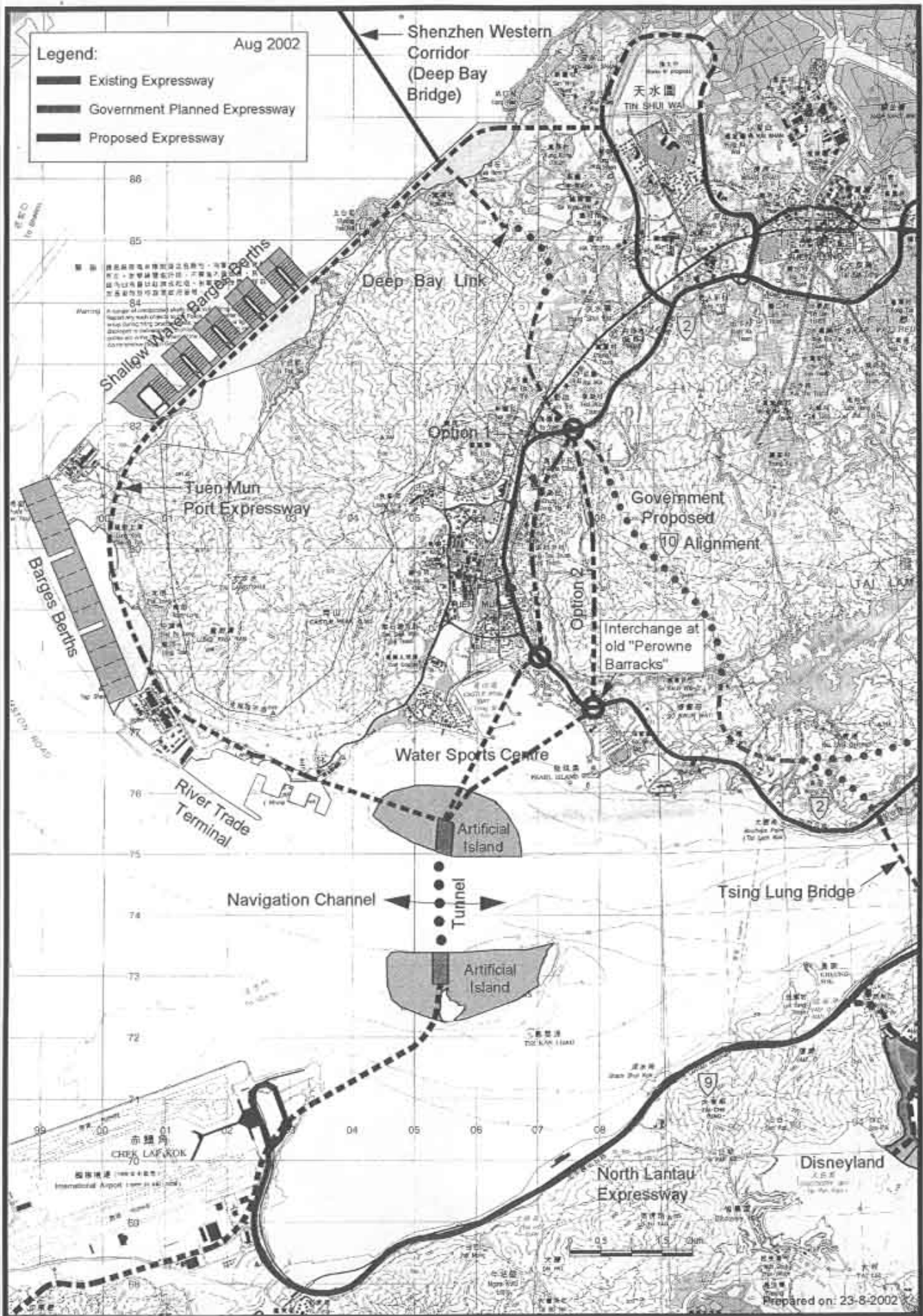
北部灣
GULF OF TONKIN

海南

0 20 40 60 80 100km

Updated on 25 Jan. 2002





Legend: Aug 2002

- Existing Expressway
- Government Planned Expressway
- Proposed Expressway

Shenzhen Western Corridor (Deep Bay Bridge)

Shallow Water Barges Berths

Deep Bay Link

Tuen Mun Port Expressway

Barges Berths

Option 1

Government Proposed 10 Alignment

Interchange at old "Perowne Barracks"

Option 2

Water Sports Centre

Artificial Island

Navigation Channel

Tunnel

Artificial Island

Tsing Lung Bridge

River Trade Terminal

CHEK LAP KOK International Airport

North Lantau Expressway

Disneyland

0.5 1.5 2km

Prepared on: 23-8-2002

Examples of Low Level Trestle Bridge

Country / City	Name	Year of Completion	Construction Time	Length	Width	Cost of Construction		Linear Length Cost HK\$ / km	Road Surface Area Cost HK\$ / m ²
						US\$	HK\$		
U.S.A.	Lake Pontchartrain Toll Causeway ^{*(1)} New Orleans, Louisiana	1956	14 months	38.0 km	8.5 m	30M	234M	6M	724
	Chesapeake Bay Bridge - Tunnel ^{*(2)} Virginia	1964	42 months (North Bound)	24.0 km	10.5 m	90M	702M	29M	2,786 ^{** (a)}
		1999	46 months (South Bound)	24.0 km	13.0 m	250M	1,950M	81M	6,250
	San Mateo - Hayward Bridge (New) ^{*(3)} California	1967	60 months	10.9 km	13.0 m (?)	70M	546M	50M	3,853
	Seven Mile Bridge ^{*(4)} Key West, Florida	1982 (1st built in 1938)	36 months	10.9 km	11.5 m	45M	351M	32M	2,620
	Jeddah - Mecca Expressway ^{*(5)}	1984	36 months	20.0 km	13.0 m (?)	380M	2,964M	148M	11,400
Canada	Confederation Bridge ^{*(6)}	1997	44 months	12.9 km	11.0 m	338M	2,636M	204M	18,579
Bangladesh	Jamuna Bridge ^{*(7)}	1998	45 months	4.8 km	18.5 m	248M	1,935M	403M	21,784
Macau	New Macau Taipa Bridge ^{*(8)}	1994	46 months	4.7 km	18.0 m	75M	585M	125M	6,915
Hong Kong	Island Eastern Corridor ^{*(9)}	1989	104 months (3 stages)	9.0 km	?	?	?	?	?

* Reference:

(1) <http://www.neworleansnorthshore.com/kidzkorner/bridge.html>

(2) <http://www.cbbt.com/facts.html>

(3) <http://bridgepros.com/projects/SanMateo-Hayward/sanmateo.htm>

(4) <http://www.fla-keys.com/news/893.htm>

(5) <http://www.athena-sa.gr/english/project2a.html>

(6) <http://www.earthtech.com/services/transportation/projects/ConfederationRevA.htm>

(7) <http://www.civil.columbia.edu/em2002/proceedings/paper/205.pdf>

(8) <http://dawning.iist.unu.edu/incom/maps/transport.html>

(9) <http://www.hyd.gov.hk/chinese/road/index.htm>

** Calculation:

(a) based on i) 4 Artificial Islands = US\$20M

ii) 2 Tunnels (4 km) = US\$90M

iii) 24 km Trestle Bridges = US\$90M

1964's cost : US\$200M

Prepared on: 2002/8/26