

**ITEM FOR PUBLIC WORKS  
SUBCOMMITTEE  
OF FINANCE COMMITTEE**

**HEAD 711 - HOUSING**

**Transport - Roads**

**642TH - Improvements to Island Eastern Corridor section between North Point interchange and Sai Wan Ho - consultants' fees and site investigations**

Members are invited to recommend to Finance Committee -

- (a) the upgrading of part of **642TH**, entitled "Improvements to Island Eastern Corridor section between North Point interchange and Sai Wan Ho – consultants' fees and site investigations", to Category A at an estimated cost of \$43.1 million in money-of-the-day prices; and
- (b) the retention of the remaining part of **642TH**, entitled "Improvements to Island Eastern Corridor section between North Point interchange and Sai Wan Ho" in Category B.

**/PROBLEM...**



## PROBLEM

We need to carry out site investigations and detailed design for the proposed improvement works to the section of Island Eastern Corridor (IEC) between North Point interchange and Sai Wan Ho.

## PROPOSAL

2. The Director of Highways, with the support of the Secretary for Housing, proposes to upgrade part of **642TH** to Category A at an estimated cost of \$43.1 million, in money-of-the-day (MOD) prices for site investigations and engagement of consultants to undertake the detailed design for the proposed improvement works to the section of IEC between North Point interchange and Sai Wan Ho.

## PROJECT SCOPE AND NATURE

3. The scope of works for **642TH** includes -
- (a) providing a 800-metre-long new elevated eastbound carriageway (two lanes) along IEC from Man Hong Street to the Eastern Harbour Crossing towards Shau Kei Wan and Chai Wan;
  - (b) providing a 1.4 kilometres long new westbound carriageway (single lane) along IEC from Tai Cheong Street to the west of the Eastern Harbour Crossing;
  - (c) realigning and reconstructing two 200 metres and 150 metres long single lane slip roads respectively from Kornhill flyover and from Sai Wan Ho slip road to IEC westbound carriageway;
  - (d) realigning and reconstructing a section of Hoi Yu Street and at-grade section of IEC;
  - (e) modifying the slip roads and footbridges at Taikoo Shing interchange;

- (f) reprovisioning of an affected marine pier;
  - (g) reprovisioning of Provisional Urban Council facilities along the affected section of westbound carriageway on IEC including development of an open space at Aldrich Bay reclamation promenade to compensate for the land alienation at Quarry Bay Park;
  - (h) implementing the environmental mitigation measures recommended in the EIA; and
  - (i) ancillary works including drainage, landscaping, traffic aids, lighting and other street furniture.
4. The part of the project we now propose to upgrade to Category A comprises -
- (a) site investigation works;
  - (b) detailed design of the proposed works described in Paragraph 3 above; and
  - (c) preparation of tender documents and assessment of tenders.

## JUSTIFICATION

5. The Commissioner for Transport completed a Traffic Impact Assessment (TIA) in February 1997 which concluded that the traffic flows on the IEC will increase significantly in the next decade upon completion of the Central - Wan Chai Bypass and Island Eastern Corridor Link<sup>1</sup> and the new housing

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<sup>1</sup> The project **579TH** – ‘Central-Wan Chai Bypass and Island Eastern Corridor Link’ is in Category B of the Public Works Programme. In July 1995, we engaged consultants to undertake the investigation and detailed design of the project at an estimated cost of \$200 million at August 1994 prices under **557TH** - ‘Central-Wan Chai Bypass and Island Eastern Corridor Link - consultants’ fees and investigations’. We plan to commence construction in 2000 for completion in 2010.

developments<sup>2</sup> in Shau Kei Wan and Chai Wan. To cater for the anticipated additional traffic demand on IEC, the TIA recommended the proposed improvements under **642TH** to expand the traffic capacity of the section of IEC between North Point interchange and Sai Wan Ho. The projected volume to capacity (V/C) ratios<sup>3</sup> in 2001, 2003 and 2011 at critical sections of the IEC under a with and without improvements scenario are as follows -

	without improvements		with improvements	
	AM peak (westbound)	PM peak (eastbound)	AM peak (westbound)	PM peak (eastbound)
Year 2001	1.04	0.88	n/a	n/a
Year 2003	1.13	0.92	0.68	0.66
Year 2011	1.31	1.07	0.76	0.75

6. Furthermore, the section of IEC near the Eastern Harbour Crossing (EHC) has inadequate capacity which has led to traffic congestion and has raised safety concerns. Prior to the increase in the EHC tunnel toll in January 1998, there were long queues of traffic on the eastbound carriageway of the IEC, particularly during the evening peak hours. These traffic queues caused severe merging and weaving problems and delays to the eastbound through traffic. There were similar traffic situations on the westbound approach roads to the EHC. Although the toll increase in January 1998 has provided some interim relief from the traffic pressure at the section of the IEC near the EHC, we anticipate that traffic queues will build up again and we will be faced with the same merging and weaving problems and traffic delays once motorists have become accustomed to the new toll.

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7. We anticipate that the additional traffic lanes provided under this

<sup>2</sup> There are planned housing development sites in Aldrich Bay Reclamation at Shau Kei Wan and north of Eastern Hospital at Chai Wan. These housing developments will be completed between 2000 and 2006.

<sup>3</sup> The capacity here refers to the design capacity of the road. A V/C ratio equal to or less than 1.0 means that the road has sufficient capacity to cope with the volume of vehicular traffic under consideration. A V/C ratio above 1.0 indicates the onset of mild congestion; above 1.2 indicates more serious congestion with traffic speeds progressively deteriorating with further increase in traffic.

project will significantly reduce the weaving and merging problems near the EHC and thereby improve traffic safety on this road section.

8. We plan to engage consultants to undertake the detailed design and supervision of the associated site investigations for the project, as we do not have the necessary in-house resources.

**FINANCIAL IMPLICATIONS**

9. We estimate the cost of the project to be \$43.1 million in MOD prices, made up as follows -

	<b>\$ million</b>
(a) Consultants' fees	28.3
(i) review (including environmental, drainage and traffic impact assessments and preliminary design) and detailed design	24.9
(ii) supervision of site investigations	0.5
(iii) preparation of tender documents	2.9
(b) EMSTF charges <sup>4</sup>	0.2
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(c) Site investigations	5.0

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<sup>4</sup> Under the Trading Funds Ordinance established in August 1996, the Electrical and Mechanical Services Trading Fund (EMSTF) charges government departments for design and technical consultancy services for electrical and mechanical installations. The services rendered for this project include checking consultants' submissions on all electrical and mechanical (E&M) installations and providing technical advice to the Government on all E&M works and their impact on the project.

(d) Contingencies	3.6	
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Sub-total	37.1	(at December 1997 prices)
(e) Inflation allowance	6.0	
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Total	43.1	(in MOD prices)
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A breakdown by man months of the estimate for consultants' fees is at the Enclosure.

10. Subject to approval, we will phase the expenditure as follows -

Year	\$ million (Dec 1997)	Price adjustment factor	\$ million (MOD)
1998 - 99	1.0	1.06000	1.1
1999 - 2000	29.9	1.14878	34.3
2000 - 01	6.2	1.24642	7.7
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	37.1		43.1
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11. We have derived the MOD estimate on the basis of the Government's forecast of trend labour and construction prices for the period 1998 to 2001. We will award the proposed consultancy on a lump-sum basis with provision for inflation adjustment because the consultancy period will exceed 12 months. The site investigation works will be carried out under a contract to be awarded through the normal competitive tendering process and will be subject to remeasurement as there is uncertainty over the drilling depths.

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12. The proposed consultancy and site investigations will not give rise to

annually recurrent expenditure.

## **PUBLIC CONSULTATION**

13. We consulted the Eastern Provisional District Board on 12 February 1998. The Board supported the project in principle. The Advisory Council on the Environment considered the Environmental Impact Assessment (EIA) Report on 23 March 1998 and accepted the findings and recommendations. The project will necessitate the alienation of a piece of land at Quarry Bay Park currently allocated to the Provisional Urban Council. The latter considered the land alienation situation on 9 September 1998 and 15 September 1998, and accepted the Government's proposal to provide compensatory open space at the nearby Aldrich Bay reclamation promenade.

## **ENVIRONMENTAL IMPLICATIONS**

14. The proposed consultancy will not have any environmental implications. As part of the investigation study for the project carried out under a separate consultancy, we completed an EIA study in February 1998 and concluded that the environmental impacts arising from the project could be mitigated to within established standards and guidelines. We propose to install 560 meters of plain 5 metre-high and 650 metres of inverted-L noise barriers along the southern perimeter of the improvement works and modify 130 metres long plain noise barrier to a semi-enclosure to mitigate air impact to the tennis court at Quarry Bay Park. We also propose to provide indirect technical remedies to nine dwellings of the Fire Services Department Staff Quarters at Java Road in the form of window insulation and air-conditioning. The project is a designated project under Schedule 2 of the Environmental Impact Assessment Ordinance (Cap. 499). The approved EIA report has been entered in the Registry established under the EIA Ordinance.

## **LAND ACQUISITION**

15. The proposed consultancy and site investigation work do not require land acquisition.

**/ BACKGROUND...**

## **BACKGROUND INFORMATION**



16. We upgraded **642TH** – “Improvements to Island Eastern Corridor section between North Point interchange and Sai Wan Ho” to Category B of the Public Works Programme in August 1996.

17. We engaged consultants to undertake the investigation and preliminary design of the project at a cost of \$14 million in MOD prices under **Subhead B100HX** – “Minor housing development related works, studies and investigations for items in Category D of the Public Works Programme”. We completed the investigation and preliminary design in September 1998.

18. We plan to start the site investigations and detailed design work (including tender preparation and assessment) in January 1999 for completion by mid 2000. Subject to funding approval, we intend to commence construction in mid 2000 for completion in late 2003.

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Housing Bureau  
October 1998

(B642THV4.DOC)

**642TH - Improvements to Island Eastern Corridor  
section between North Point interchange and Sai Wan Ho -  
consultants' fees and site investigations**

**Breakdown of estimates for consultants' fees (at December 1997 prices)**

<b>Consultants' staff costs</b>			<b>Estimated man- months</b>	<b>Average MPS* salary point</b>	<b>Multiplier factor</b>	<b>Estimated fee (\$ million)</b>
(a)	Review (including environmental, drainage and traffic impact assessments and preliminary design)	Professional	20.00	40	3.0	3.55
		Technical	28.00	16	3.0	1.67
(b)	Detailed design	Professional	75.50	40	3.0	13.41
		Technical	106.00	16	3.0	6.32
(c)	Preparation of tender documents	Professional	10.00	40	3.0	1.78
		Technical	18.00	16	3.0	1.07
(d)	Supervision of site investigations	Professional	2.00	40	2.1	0.25
		Technical	6.00	16	2.1	0.25
Total consultants' staff cost						28.30
<b>Out-of-pocket expenses</b>						
(a)	Site investigations					5.00
Total out-of-pocket expenses						5.00

\*MPS = Master Pay Scale

**Notes**

1. A multiplier factor of 3 is applied to the average MPS point to arrive at the full staff cost including the consultants' overheads and profit, as the staff will be employed in the consultants' offices. (At 1.4.1997, MPS pt. 40 = \$59,210 p.m. and MPS pt. 16 = \$19,860 p.m.). A multiplier factor of 2.1 is applied in the case of site staff supplied by the consultants.
2. Out-of-pocket expenses are the actual costs incurred. The consultant is not entitled to any additional payment for overheads or profit in respect of these items.
3. The figures given above are based on estimates prepared by the Director of Highways. We will only know the actual man months and actual fees when we have selected the consultant through the usual competitive lump sum fee bid system.

