

MEETING DATE: April 6, 2005

SUBJECT: Purchase Order Amendment Authority Consulting Engineering Services Precast Concrete Tunnel Liner
EVALUATION & REHABILITATION
CONTRACT G85-121 - POAA NO. 7

RECOMMENDATION

It is recommended that the Commission authorize Purchase Order Amendment Authority No. 7 to Hatch Mott MacDonald Ltd. in the amount of \$243,048.00, for additional engineering services during construction for Contract G85-121 – Consulting Engineering Services – Precast Concrete Tunnel Liner Evaluation & Rehabilitation.

FUNDING

Sufficient funds for this expenditure are included in Project 3.4 Bridges and Tunnels, under Precast Tunnel Liner Rehabilitation (as set out on pages 689-691 under the State of Good Repair/Safety Category) of the TTC 2005-2009 Capital Program as approved by City Council on February 23, 2005.

BACKGROUND

There are approximately 6 kilometres of circular tunnel consisting of precast concrete segments in the subway system. As part of the Bridges and Tunnels Program, the need to rehabilitate certain areas of the tunnel structures was identified in 1999. Staff awarded Contract G85-121 in the amount of \$139,400.00 on July 12, 1999, to Hatch Mott MacDonald Ltd. (HMM) on the basis of a competitive bid as being the best qualified to undertake a detailed condition survey and a predesign report. Due to the nature of the work, the requirement for detailed design and review through construction could not be determined until completion of the condition survey and predesign report. Amendment #2 was approved at the November 28, 2001 Commission Meeting to include detailed design and engineering services during construction for \$748,000.00, which included \$350,000.00 for engineering services during construction.

Contract Details are as follows:

Original Upset Limit Amount \$139,400.00
Previous Amendments \$946,410.00
This Amendment \$243,048.00
Total Requested Upset Limit \$1,328,858.00

Work on this amendment is 0% complete.

A summary of the contract amendments is attached as Appendix A.

DISCUSSION

The detailed design and construction documentation for the proposed rehabilitation (approximately 700 rings) of the tunnel liners is complete and the tunnel rehabilitation will be performed by the TTC's Track and Structure Department. The additional amount of \$243,048.00 requested in this report for engineering services during construction, plus allowances from previous authority will bring the estimated cost for this work to \$620,780.00.

Currently, all phases of the HMM work are complete except engineering services during construction, which is scheduled to take place from April 2005 to July 2008.

This amendment is being sought since HMM is required to provide technical assistance on a full-time basis for the duration of the project. When the fees were developed for engineering services during construction in Amendment #2, it was assumed that an outside contractor would undertake the rehabilitation work and would provide some of the engineering services during construction. HMM was to provide periodical but not full-time assistance. Therefore, full-time technical assistance was not included.

However, due to the complexity of work required inside the subway tunnel and to minimize any impact on the subway services, the rehabilitation work will be performed by Track and Structure Department work force. As a result, full-time engineering support by HMM is required to assist the Track and Structure work force during construction. The rehabilitation is scheduled to be complete in 2008.

In addition, it is required that a long term monitoring plan for all 10,000 precast concrete tunnel liner rings to be developed. Currently this scope is not included in contract G85-121 and will be the subject of a future report to the Commission.

JUSTIFICATION

Authorization of Contract G85-121 POAA #7 will ensure full-time technical assistance by Hatch Mott MacDonald Ltd. for the proposed tunnel rehabilitation.

March 17, 2005
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APPENDIX A

**PURCHASE ORDER AMENDMENT AUTHORITY (POAA)
SUMMARY SHEET**

POAA	Description	
1	Geometric Survey and Finite Element Analysis	\$84,700.00
2	Detailed Design and Engineering Services during Construction	\$748,000.00
3	Condition/Safety Survey 2002	\$66,660.00
4	Survey of 26 Rings/Assist Peer Review Panel	\$12,350.00
5	Attendance/Assistance at Peer Review Meetings	\$15,000.00
6	Assessment of Interaction of TTC Tunnels with proposed 15 storey building	\$19,700.00
	TOTAL	\$946,410.00