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Los Angeles County  
Metropolitan  
Transportation  
Authority

One Gateway Plaza  
Los Angeles, CA  
90012

213.922.6000

Mailing Address:  
P.O. Box 194  
Los Angeles, CA 90053

REVISED MAY 1, 1997  
APRIL 1, 1997

**TO: BOARD OF DIRECTORS**  
**FROM: LINDA BOHLINGER** *Linda Bohlinger*  
**INTERIM CHIEF EXECUTIVE OFFICER**  
**SUBJECT: APPROVE ADDITIONAL YEAR OF FUNDING  
FOR GEOTECHNICAL AND TUNNELING  
CONSULTING SERVICES**

**RECOMMENDATION**

Approve the balance of funding for the following consultants for geotechnical and tunneling consulting services for the period of June 1, 1997 through April 30, 1998:

- a) Dr. Z. D. Eisenstein for a not-to-exceed amount of \$165,000;
- b) Dr. G. R. Martin for a not-to-exceed amount of \$46,000; and
- c) Shannon & Wilson, Inc. (Dr. H.W. Parker) for a not-to-exceed amount of \$91,333.

**ORGANIZATIONAL IMPACT**

The Tunnel Advisory Panel's expertise in the areas of tunnel design and construction will contribute to the cost efficiency and effectiveness of the Metro Rail Projects.

**BUDGET IMPACT**

The funds for this action will be apportioned from the contracts with the General Engineering Consultant, Construction Management Consultants, and Project Management Assistance Consultant as directed by the Board. Staff will apprise the Board of any contractual modifications necessary to implement this directive

**ALTERNATIVES CONSIDERED**

- a) The Board has the alternative to issue a new Request For Proposal (RFP) for geotechnical and tunneling consulting services. Drs. Eisenstein, Martin and Parker were selected in August, 1995 after an extensive search due to their technical expertise. They have since acquired specific knowledge of the Metro Rail construction process and could continue working without the interruption an issuance of a new RFP would cause.

- b) Another alternative is to not retain geotechnical and tunneling consultants. This alternative is not recommended since these consultants' recommendations have provided a valuable contribution to the Metro Rail design and construction process.

## **BACKGROUND**

At the April meeting, the MTA Board directed staff to more specifically delineate the responsibilities of the Tunnel Advisory Panel. The Board also requested that staff distinguish the Tunnel Advisory Panel's role from that of the General Engineering Consultant, the Construction Management Consultants, and any other geotechnical consultant the MTA may contract with for such services. This revised scope of work is delineated in Attachment 1.

The Tunnel Advisory Panel convened in August, 1995 in response to questions posed by Mayor Riordan and the MTA Board regarding the feasibility of tunneling in Los Angeles ground conditions. The MTA contracted with Drs. Dan Eisenstein, Geoffrey Martin and Harvey Parker to determine the feasibility of tunneling in Los Angeles, to assess the effectiveness of the MTA's construction program to date, and to recommend any modifications to the current construction program deemed appropriate.

The Panel issued their report directly to the Board in November, 1995. Their recommendations included establishing a permanent technical advisory review panel which would formulate and regularly oversee the implementation of the technical principles and policies of the construction project. Since that time, the panel has been asked to review and recommend courses of action for Metro Rail projects along Lankershim Boulevard, tunneling through the Santa Monica Mountains, and for the Eastside Extension.

At its April, 1996 meeting the MTA Board awarded a 2-year Time and Expense contract with two one-year options to Drs. Eisenstein, Martin and Parker. At its April, 1997 meeting the MTA Board approved funding for 30 days which commenced May 1, 1997. Staff is now seeking approval to fund the balance of the second year of the contract which would cover an 11- month period from June 1, 1997 to April 30, 1998.

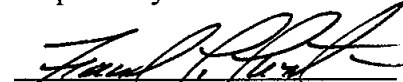
## **SMALL BUSINESS PARTICIPATION**

There was no small-business participation involved in this contract as it was a non-competitive procurement.

## **ATTACHMENTS**

Attachment 1: Scope of Work  
Attachment 2: Budget

Prepared by: Melissa Schiavo, Contract Administrator



Frank C. Cardenas  
Chief of Staff

## ATTACHMENT 1

### SCOPE OF WORK

1. To advise the CEO and MTA staff in matters related to:
  - quality control in planning, design and construction of underground space
  - planning of future underground lines of the Metro System
  - geotechnical investigation for underground space
  - detailed engineering design of underground space
  - specification for construction of underground space
  - construction performance criteria (ground movements, ground water control, etc.)
  - construction monitoring and data evaluation
  
2. To support the CEO and MTA staff in providing information to the MTA Board, the public and media in matters related to:
  - future usage of underground space for transportation purposes
  - construction impact on the environment and communities
  - construction methods and techniques used on MTA projects
  - current state of construction progress on ongoing projects
  - results of monitoring and quality control on ongoing projects
  
3. To assist the CEO and MTA staff in technical aspects related to eventual legal actions and disputes with:
  - individual citizens
  - citizens action groups
  - consultants
  - contractors
  
4. To report to the CEO and MTA staff in technical aspects related to eventual legal actions and disputes with:
  - overall status of technical progress
  - issues requiring immediate action

## **MTA TUNNEL ADVISORY PANEL**

### **ROLE, SCOPE OF WORK, ACTIVITIES AND RELATIONS TO OTHER PARTIES**

The MTA Tunnel Advisory Panel (TAP) was established by the MTA Board in April 1996 with the original Scope of Work attached. In establishing the Panel the MTA Board had followed a practice adopted by many owners of large and complex projects of the caliber of the LA Metro subway. Independent review and advisory boards or panels are commonly set up on important projects to provide an objective, balanced and impartial view of the overall design and construction progress. Such a view is often needed when several large design, management and construction companies are involved in the project. The boards or panels are normally not a substitute for routine consulting or construction management services, but are responsible for advising on technical concepts and reviewing their implementation in planning, design and construction. Their responsibility lies solely with the owner, to whom they report directly.

In line with their role as outlined above and with their Scope of Work the TAP members have been directly involved during the last year in the following activities:

1. Advising on and reviewing environmentally sensitive and publicly acceptable construction criteria for the Santa Monica Mountains tunnels (reduction of blasting, ground water control).
2. Advising on new tunneling technology (slurry or earth pressure balance TBM) for improved ground control at the Eastside Extension, including review of ground control criteria for contract specifications.
3. Advising on contract strategies for new tunneling technologies to be applied at the Eastside Extension.
4. Advising on and reviewing settlement criteria for tunneling along the Lankershim Boulevard and under or adjacent to several important structures (MCA, Dreamworks).
5. Providing conceptual input into setting criteria for seismic design at the Eastside Extension.
6. Supporting and assisting MTA defense in a dispute about differing site conditions at the Santa Monica Mountains tunnel, including extensive review of geological, geotechnical and performance data and their processing for presentation to the Dispute Review Panel.

7. Participating as an independent party (apart from EMC and JMA) in MTA defense in the Differing Site Conditions dispute.
8. Evaluating protective measures for the El Capitan building at the Hollywood - Highland station.
9. Setting standard levels for the Geotechnical Design Summary Reports for the Eastside extension.
10. Contributing to MTA defense at the Hollywood Boulevard/Hudson Street excessive settlement dispute.
11. Providing input into and review of the constructibility report on Eastside Extension.
12. Advising on and reviewing design of single pass liner for the Eastside Extension.
13. Participating in media briefings.
14. Providing individual guidance and advice on a number of ongoing issues.

In fulfilling their role the TAP members have interacted closely with MTA Construction staff as well as with outside organizations such as EMC, Parsons Dillingham, JMA, Fluor Daniel, etc. However, in order to be effective in their review and supervisory roles they maintained strict independence with respect to the outside organizations and under no circumstances duplicated their respective roles.

During the second year of their current contracts the TAP members expect to be involved with the following issues:

1. Advise on conceptual parameters of design for the first two tunnel contracts on the Eastside Extension and review the design, specifications and contractual arrangements as prepared by the designer of record. This review process will be carried out as an ongoing interaction between TAP, MTA and the designer.
2. Advise on the concept and criteria for ground control monitoring program at the Eastside Extension and assist the designer and CM in their implementation.
3. Review and follow closely environmental criteria related to blasting and ground water level control at the Santa Monica Mountains tunnels.
4. Advise on formulation of criteria for station seismic design to be used by the designer of record.
5. Continue to provide in-house training to MTA engineers in the subject of underground construction.

**ATTACHMENT 2**

**BUDGET** (for 12 months)

	<u>DAYS</u>	<u>FEE</u>	<u>TRIPS</u>	<u>EXPENSE</u>	<u>TOTAL</u>
Z.D. EISENSTEIN	96	\$96,000	24	\$84,000	\$180,000
G.R. MARTIN	48	\$48,000	0	\$ 2,000	\$ 50,000
SHANNON & WILSON	80	\$80,000	As required	\$20,000	\$100,000