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FROM: STANLEY PHERNAMBUCQ

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AUG 02 1995  
BOARD BOX ITEM

SUBJECT: METRO RAIL PROJECTS  
ALTERNATIVE CONTRACT TYPE FOR  
ARCHITECTURE AND ENGINEERING  
FINAL DESIGN SERVICES  
FIXED-PRICE VERSUS COST REIMBURSABLE

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ISSUE

The Board requested staff to review the use of fixed-price versus cost reimbursable contract types to acquire Architectural and Engineering (A&E) services for Metro Rail Projects.

BACKGROUND

It is the MTA's policy to acquire quality A&E services within the required performance period, at a fair and reasonable price. To effectively implement this policy, it is critical to select the appropriate contract type which maximizes the consultant's incentive for cost effective and superior contract performance (management, technical, quality and schedule).

There are two basic broad categories of contract types:

- A. Fixed-Price
- B. Cost Reimbursable

For this discussion, alternative contracting methods such as design-build or turnkey will not be discussed.

Contract Type Discussion:

Fixed-Price

The price to perform the desired services are agreed to at the inception of contract performance. This contract type provides for a price that is not subject to any adjustment on the basis of the consultant's incurred cost resulting from contract performance. However, the contract price will be adjusted for

changes which revise the scope of services. This contract type allocates the risks of contract performance to the Consultant. There are generally three types of risks inherent to A&E contracts: cost, technical (inclusive of quality), and schedule. The consultant is responsible for managing these risks and accepts full cost responsibility with this type of contract.

It is appropriate to utilize this type of contract when the risk involved is minimal or can be predicted with an acceptable degree of certainty. It is in the best interest of the contracting parties to allocate risk to the party which is in the best position to manage it. The risk inherent in any project can only be allocated among the contracting parties along with the associated cost of managing that risk. Therefore, the party who is in the best position to manage that risk can do so most effectively and economically. Shifting risk which the agency can best manage to the consultant will be at a premium price.

#### Cost Reimbursable

The cost-reimbursement type of contract provides for payment of allowable incurred costs, to the extent prescribed in the contract. The final cost of the contract will be the total of the reimbursable cost. At the inception of a cost type contract, an estimated total cost is negotiated and agreed to for the desired services. The estimated cost amount is a ceiling which the consultant may not exceed without the approval of the MTA. Completion of the desired services within the estimated cost is not guaranteed under this contract. The MTA assumes all cost responsibility.

Cost-reimbursement contracts are suitable when uncertainties involved in contract performance do not permit costs to be estimated with sufficient accuracy to use any type of fixed-price contract. This contract type permits contracting efforts that might otherwise present too great a risk for Consultant to undertake. Since this contract type provides the Consultant only a minimum incentive to control costs, the MTA's oversight role is critical. MTA's administrative burden under a cost type contract is greater than under a fixed-price type. Before entering

into this type of contract, the MTA must allocate an appropriate level of staffing to ensure efficient and effective contract performance.

One contract type is not necessarily preferred over the other. What determines the best contract type is the circumstances surrounding the acquisition and the performance risk of the desired services. It is always best to select the appropriate contract type based on the risks associated with the scope of the project one wishes to undertake.

Fixed Price:

Advantages:

- A baseline fixed price is established, thereby assisting the MTA in budgeting.
- Cost growth can be quantified and changes identified with the party/parties responsible.
- Risks of cost growth can be shared by those parties who are responsible.

Disadvantages:

- Start of work will be delayed due the prerequisite that preliminary engineering be completed to a more advanced stage.
- MTA will have to take on the responsibility of defining scope, schedule and deliverables in sufficient detail to establish a reasonable fixed price.
- There will be a tendency to seek change orders for even minor changes and the number of change orders is likely to increase with a corresponding increase in administrative costs to deal with them.
- It is unlikely that as much of the work will be subcontracted out due to the additional cost and performance risk. The risks can be managed more effectively within the consultants organization, thus some business opportunities for DBE/MBE/WBE firms may be reduced. In addition, some DBE/MBE/WBEs will find it more difficult to be considered qualified under a fixed price contract because they may not have the financial capacity to be considered responsible nor be able to acquire their own insurance. The MTA's small business out reach will be adversely impacted.

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Cost Reimbursable:

Advantages:

- Work on final design can proceed immediately.
- Provides flexibility to incorporate changes during final design. These changes may occur as a result of third party requirements, art and architectural concept development requirements, right-of-way constraints, value engineering ideas, improvements in design issues that were not finalized during preliminary engineering.

Disadvantages:

- Costs are likely to grow and controlling cost growth can be difficult.
- It is difficult to quantify increase in costs for individual changes and assign responsibility for the cost growth.
- There is less incentive to resolve the design issues during preliminary engineering and a tendency to postpone the decision making process on unresolved issues to final design.

Survey of Other Transit Agencies:

A survey of contracting practices was done with information received from:

MBTA - Boston  
WMATA - Washington DC  
BART - San Francisco, Extensions Program  
BART - San Francisco Airport Extension  
MIAMI - Metro Dade, initial transit system  
MTDB - San Diego Metro Transit Development Board  
New York - MTA  
ST. Louis - Bi-State Development Agency  
Cleveland  
Toronto Transit Commission - Rapid Transit Expansion

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The survey highlighted three areas:

- General Engineering Management Consultant
- Preliminary Engineering
- Final Design Engineering

**General Engineering Management Consultant:** Of the ten agencies listed seven (7) contracted based on cost plus, two (2) do not have current contracts, and one(1) BART Airport Extension is a turnkey demonstration project with the FTA.

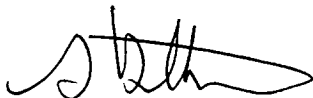
**Preliminary Engineering:** Eight(8) of the agencies use a cost plus contract, St. Louis does their own internally.

**Final Design Engineering:** Four (4) use cost plus; three(3) use lump sum; and two (2) would use lump sum for well defined scope, cost plus for others.

**LACMTA Procurement Practice:**

Although the MTA's practice till now has been to use cost reimbursable contracts for all A & E services, staff will examine more closely the selection of contract type. The selection of contract type will be based on considerations contained within this report. As the survey of other transit agencies indicates, there may be opportunities to utilize fixed-price contracting for final design services when the scope is well defined. MTA staff will recommend the use of fixed price contracts when it is in the best interest of the MTA and appropriate based on considerations mentioned.

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