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## COST CONTAINMENT, CONTRACTS AND EFFICIENCY

### COMMITTEE RECOMMENDATION

The Committee voted to approve the staff recommendation AS AMENDED to adopt the following changes in scope and procedure in order to achieve cost savings in MTA projects and rail operations:

- a. direct staff and EMC to raise the alignment and reduce the station box depth for two stations on the Eastside extension for a savings of approximately \$15 million and research seismic implications;
- b. reduce the L.A. Car order from 74 to 52 cars for a total savings of \$30 million to the MTA;
- c. utilize the next 30 days to study and make a determination regarding implementation of the automated driverless features on L.A. Car;
- d. adopt the modified rail operating cost model for a savings of \$398.5 million over 20 years;
- e. adopt a lower cost HOV alternative for Route 10 with modified lane widths, median and shoulders for a total cost of \$145 million;
- f. adopt lower cost HOV alternative for Route 60 to the 605 (San Bernardino County Line) with modified lane widths, median and shoulders for a total cost of \$75 million;

- g. develop and evaluate a low-cost, restriping alternative for Route 10 to provide a second HOV lane of the El Monte Busway;
- h. authorize staff to establish a reserve fund with accounts for each rail construction project in terms of the design allowance contingency and other similar discretionary expenditures, that expenditures from these accounts would require Board action in terms of the design allowance when 70% of a rail project's contracts have reached or exceeded the 60% final design phase, a report will be prepared for Board action to determine if the project's design allowance should be reduced.

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August 8, 1995

Los Angeles County  
Metropolitan  
Transportation  
Authority

TO: COST CONTAINMENT, CONTRACTS, AND EFFICIENCY  
COMMITTEE

THROUGH: FRANKLIN E. WHITE

FROM: JUDITH A. WILSON<sup>JW</sup>/STANLEY G. PHERNAMBUCQ<sup>SP</sup>/  
ARTHUR T. LEAHY<sup>AL</sup>

SUBJECT: COST CONTAINMENT RECOMMENDATIONS FOR  
RED LINE EASTSIDE EXTENSION; L. A. CAR; RAIL  
OPERATING COSTS; AND ROUTE 10 AND ROUTE 60  
HOV LANES

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**RECOMMENDATION**

Adopt the following changes in scope and procedure in order to achieve cost savings in MTA projects and rail operations:

- a) Direct MTA staff and the EMC to raise the alignment and reduce the station box depth for two stations on the Eastside extension for a savings of approximately \$15 million;
- b) Reduce the L. A. Car order from 74 cars to 52 cars for a total savings of \$30 million to the MTA;
- c) Do not implement automated driverless features on L. A. Car;
- d) Adopt the modified rail operating cost model for a savings of \$398.5 million over 20 years;
- e) Adopt a lower cost HOV alternative for Route 10 with modified lane widths, median and shoulders for a total cost of \$145 million;
- f) Adopt a lower cost HOV alternative for Route 60 to the 605 (San Bernardino County Line) with modified lane widths, median, and shoulders for a total cost of \$75 million;
- g) Develop and evaluate a low-cost, restriping alternative for Route 10 to provide a second HOV lane on the El Monte Busway;

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- h) At the time when 70% of a rail project's contracts have reached or exceeded the 60% final design phase, a report will be prepared for Board action to determine if the project's design allowance should be reduced .

### **ALTERNATIVES CONSIDERED**

All rail projects were evaluated for possible cost savings. At its July 19, 1995 Cost Containment Workshop, the staff presented a variety of options which were examined. The recommendations in this report reflect those cost containment options which appear to be achievable, avoid significant negative community impacts, and do not create unacceptable risks. The alternatives considered were presented and discussed at great length at the July 19 Workshop. Cost containment actions for the Pasadena Line will be addressed pursuant to a motion Supervisor Antonovich adopted at the July 26, 1995 MTA Board meeting and will not be addressed in this report.

### **IMPACT ON BUDGET AND OBJECTIVES**

If these recommendations are adopted, approximately \$398.5 million in rail operating savings can be achieved and approximately \$45 million in rail capital cost can be reduced.

It should be noted that separate action on the Pasadena Blue Line budget will be taken in October, 1995 subsequent to the work of the Operating Peer Review Panel. The Chairman has also recommended that a workshop on the full system build-out be held in the late Fall, prior to making any changes to the Long Range Plan.

Cost-saving options for the East/West Valley Rail Line will be addressed in the Major Investment Study (MIS) in order to follow appropriate state and federal environmental planning requirements. Final cost-savings in the HOV program will be presented in the HOV Master Plan Implementation Program scheduled for completion in March, 1996.

### **WBE/DBE IMPACTS**

Clearly, whenever the size and scope of projects are reduced, there is less work available for contractors. Given the reduced scope of the construction program,

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there can be an expected reduction in WBE/DBE participation; however, there will be no disparate impact on WBE/DBE businesses as a consequence of these actions. Staff will continue to follow whatever federal and state requirements are in place in awarding future MTA contracts on these projects.

### **BACKGROUND**

At its March 22, 1995 MTA Board meeting, the Board adopted a \$72 billion Long Range Plan. By motion of the Board, this action also included the following directive:

"That a cost containment plan be developed by staff for Board approval within the next 90 days which includes a report on design and construction savings, potential new revenue as well as a forecast of operational costs for the next 20 years;"

This motion was then amended in May, 1995 to restrict cost-savings studies on the Red Line Eastside extension to those options which would not trigger any additional environmental assessment. This was done to avoid jeopardizing the Full Funding Grant Agreement and the Record of Decision, and also to acknowledge that the project was already far along and any significant delays would result in delay costs of approximately \$3 million a month.

On July 19, 1995, the staff presented a series of analyses and recommendations for the Board's consideration. Action was taken on the Pasadena Blue Line at the July 26, 1995 MTA Board meeting, with additional follow-up work on the Pasadena Line scheduled for Board action subsequent to the meeting of the Pasadena Operations Peer Review Meeting. The purpose of this agenda item is to bring forward the balance of the Cost Containment items for a vote of the MTA Board.

To prepare these recommendations, a multi-departmental task force including Construction, Operations, and Planning and Programming worked with the Value Engineering team from Fluor-Daniel to consider all viable options to provide the same function at less cost.

### **MOS-3 Red Line Eastern Extension**

As noted earlier, a variety of options were investigated, including tunneled

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stations; however, the risk of subsidence, schedule impact, and the environmental issues which could be triggered persuaded the staff and the consultant that mitigating these impacts would eliminate any potential cost savings. Staff does recommend reducing the depth of the cut-and-cover modular construction for a cost savings of \$15 million.

### **L. A. Car**

Operating plans for the Blue and Green Lines have been prepared which are consistent with the demand forecast in the Long Range Plan. A total of 118 light rail vehicles will be required to operate all three lines. This includes a 23% spare ratio and an average load factor of 1.45. The new operating plan demonstrates that the two-car trains will meet the ridership demand. If the L. A. Car order is downsized from 74 to 52, a total of 121 light rail vehicles will be available. When the P-2000 contract was negotiated with Seimens-Duewag, the possibility of downsizing the vehicle order was addressed at that time. Seimens-Duewag agreed that a reduced car order would be an option available to the MTA with a \$10 million penalty clause. Even including the \$10 million penalty clause, a total savings of \$56 million is realized by reducing the order. Because the State of California is a funding partner, these savings must be shared. Total savings to the MTA will be \$30 million.

It would be fiscally imprudent to take delivery on an order of 74 cars for which there is no immediate need. These cars would need to be maintained, even if not in use, thus incurring additional operating costs. Operations concurs that a 52 car order will meet projected service delivery needs.

At the July 19, 1995 Board meeting, the staff was requested to meet with Seimens to determine the impact of this downsizing on its factory in Carson. Gunter Ernst, President and CEO of Seimens-Duewag Corporation, maintains that the reduced quantity of cars will result in operating the plant for 1 1/2 years. Because no additional car orders are anticipated, the plant will need to be closed, resulting in a financial loss to the company. (Presumably, the \$10 million penalty negotiated in the contract to exercise the downsizing option covers this loss.)

Regarding automation, if the driverless option is not exercised, it will result in a cost avoidance of \$14.3 million in capital funds. A driverless vehicle will necessitate a requirement for attendants at stations which will substantially offset

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any savings in operating costs, and under certain assumptions, could result in additional annual operating costs of up to \$2 million. Furthermore, public acceptance of high-speed rail in the median of a freeway without an operator is unlikely. Operating in a driverless mode raises safety and service reliability issues. There are no systems in the United States that operate in a driverless mode. The current deadline on exercising the deletion of the driverless option is August 25, 1995; however, it can probably be extended. MTA would also have another opportunity to implement driverless technology in September, 1997 under an option in the Siemens contract. It should also be noted that no funds have been identified or programmed to fund this upgrade.

### **Rail Operating Cost Model**

Over the past nine months, the staff has done a thorough analysis of the rail operating plan using the travel demand forecasts developed for the Long Range Plan. As a consequence, significant opportunities for savings can be realized. Previously, headways for the rail system in the operating cost model had been very aggressive, reflecting the strategy that frequent service would attract ridership. This is a very expensive strategy. In revising this assumption, the staff "widened" the headways to provide service very comfortably to meet the demand forecasted in the Long Range Plan. The number of rail cars was also reduced to reflect the lines which will actually be operating by the year 2015 and the anticipated patronage. Staffing levels were also scrutinized carefully. When the original operating cost model was constructed in the late 1980's, it had been presumed that staffing would increase in relation to the growth in rail miles. Based upon actual operating experience on the Red Line and the actually FY '95 staffing levels, this assumption has been corrected. Further, administrative staff is assumed to be a fixed cost relative to increases in rail service. These modifications result in a savings of approximately \$398.5 million over 20 years. **These savings will be essential in mitigating the reduction in Federal operating subsidies. They should not be reprogrammed until the Board has carefully evaluated Federal reductions and the Long Range Plan has been revised to reflect both cost containment savings and cutbacks in revenue.**

### **HOV Lanes (Route 10 and Route 60)**

When the Long Range Plan was adopted, it was noted that because of expensive right-of-way costs, construction of HOV lanes on both the 10 and the 60 were not affordable. The Long Range Plan assumed that either one or the other would

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be constructed, but both were not affordable. It also noted that the implementation of the HOV Master Plan would allow the staff to consider low cost alternatives on Route 10 and Route 60 to determine if both could be built for approximately \$200 million. (The approximate amount available as a place holder for either Route 10 or Route 60).

Through extensive negotiations with CalTrans and FHWA, agreement has been secured to build an HOV Lane on the 10 between the El Monte Busway and the San Bernardino County line with modified land widths, median and shoulders for a cost of \$145 million. Construction of an HOV on the 60 from the 605 to the San Bernardino line can also be accomplished for approximately \$75 million, also using this modification of lane, median and shoulder widths.

Because the extension of an HOV on Route 60 between Route 605 and Downtown is extraordinarily expensive, the staff has begun to investigate an alternative of adding a second HOV lane on the El Monte Busway. The El Monte Busway was originally built with the expectation that a second HOV lane could be added in the future. This would increase highway capacity in the San Gabriel Valley at an affordable price. This project appears to require restriping and only minor widening from the El Monte Busway terminus to the 605. Thus, two continuous HOV lanes could be provided in each direction through the San Gabriel Valley from the San Bernardino County line to downtown. This alternative will be examined as part of the on-going HOV Master Plan which will be presented to the MTA Board in March, 1996.

## **Design Allowance and Contingencies**

As noted in the Cost Containment Workshop, the way in which projects are managed is critical to effective cost containment. In the past, the EMC has had sole discretion in moving dollars from the "design allowance" to construction line items in the project budget. When a project has completed preliminary engineering, but before final design, a "design allowance" is established for a project. As the design progresses and specific items are addressed with more information, the EMC moves funds from the design allowance into the construction budget. Some Board control is warranted to ensure that the design allowance provides for complete construction solutions which are cost-effective. When the project is at the 60% final design stage, a report should be developed for Board review which indicates the percentage of the project in final design, the amount of design allowance remaining, and any further refinements in the



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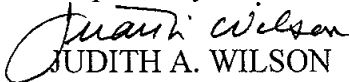
project design which could necessitate moving funds from the design allowance to a construction line item. Board approval of these decisions may be warranted until a higher confidence level has been established in the efficiency of the final design process.

Establishment of contingencies based upon the type of contract is also a reasonable way of controlling costs. Past practice has been to add a 10% contingency regardless of contract type. This contingency has been considered part of the contract budget and not subject to special controls. The Board may wish to establish a procedure to exercise greater control on the expenditure of the contingency in construction contracts. Contract contingencies will be addressed in a separate report by Construction staff on the August 16 Cost Containment, Contracts, and Efficiency agenda.

### **NEXT STEPS**

Once the MTA Board has taken action on the Cost Containment recommendations in this report and the recommendations soon to be forthcoming on the Pasadena Line, the Long Range Planning staff will prepare revised cash flows. The cash flows will also take into consideration any significant actions at the state and federal level that have impacted the Plan on the revenue side. Once this information has been prepared, the MTA Board can review its financial capacity and determine if it wishes to include any additional projects in the Plan or use these cost containment strategies as a hedge against current project overruns or future reductions in federal, state, or local revenue.

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Planning and Programming