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TO: BOARD OF DIRECTORS

THROUGH: FRANKLIN E. WHITE

FROM: LINDA BOHLINGER *LB*

SUBJECT: STAFF COMMENTS ON BUS RIDERS UNION
BUS EXPANSION PLAN



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This report provides a staff review of the Bus Riders Union (BRU) Bus Expansion Plan presented to the Board of Directors at its Bus Workshop on September 14, 1995.

SUMMARY OF STAFF COMMENTS

The BRU Plan to curtail rail construction and invest in significant expansion of bus service at lower fares cannot be implemented. Its \$17.221 billion cost greatly exceeds the \$1.3 billion of MTA funds that would be available over the next 20 years if rail construction stopped after MOS-3. Furthermore, the BRU Plan would not do as much for countywide mobility as the adopted Long Range Plan, and would result in higher levels of air pollution. Staff review also found that the BRU Plan's ridership benefits are overstated, acquisition of electric buses is likely to be more costly than assumed by the BRU, and electric bus technology is not expected to be sufficiently advanced within the near term to meet the needs of the MTA's route structure.

SUMMARY OF THE BUS EXPANSION PLAN

The BRU Plan contains five proposals, as follows:

1. A **50% expansion of the MTA bus fleet over the next five years** (about 1100 additional buses) with continuing expansion to keep pace with growth in demand and population resulting in **nearly doubling bus transit over the next 20 years.**
2. An **immediate return to the prior fare structure** (\$1.10 cash; \$42 pass); a further reduction to a \$.90 cash fare and a \$34 pass in the second year; and, subsequent annual reductions of \$.05 in the cash fare and \$2.00 in the pass price until the **Proposition A Reduced Fare is restored** (\$.50 cash; \$20 pass).
3. **For the first three years, 10% of new buses are to be electric vehicles** with an increasing proportion of subsequent year purchases being electric vehicles such that **by 2003 all new buses would be electric powered.**

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4. The MTA would give a **priority to Los Angeles manufacturers for new bus purchases** for those providers with affirmative action policies that do not interfere with the union organizing rights of their employees.
5. Except for the completion of MOS-2 (and possibly MOS-3) of the Metro Red Line, **no further rail construction would occur.**

The BRU estimates an increased bus subsidy over 20 years of \$17.221 billion comprised of the following components:

\$10.143 billion	from increased bus operating expense
4.859 billion	from reduced farebox revenue
2.219 billion	from additional bus replacement and facilities costs

The BRU Plan assumes that increased bus subsidy requirements can be funded from rail construction and operating dollars programmed in the MTA's Long Range Plan which would not be needed under the BRU Plan (which ceased all rail construction beyond MOS-3). While there is a restatement of the MTA's rail capital program in the BRU Plan classifying \$27.7 billion of expenditures as rail-related, some of those expenses would still be incurred under the BRU proposal (e.g. MOS-1, MOS-2, MOS-3, Long Beach Blue Line, Metro Green Line, LA Car, Metrolink Capital, a portion of rail rehab. and replacement costs, a portion of systemwide rail capital costs, a portion of environmental study costs, a portion of rail operations costs, and some portion of debt financing payments). There is not a specific accounting of what portion of these rail costs could be used to fund higher bus subsidy requirements. The BRU Plan also does not address whether or not increases in MTA bus service would be matched with commensurate increases in other operators' bus services.

STAFF COMMENTS

The BRU Plan postulates that the transit mode share achieved by the Long Range Plan can be improved significantly by a shift in policy away from reliance on construction of a backbone rail network (Proposal #5) to a policy of greatly expanded bus service (Proposal #1) charging lower fares (Proposal #2). In the process, other public policy objectives can be advanced by conversion to zero-emissions vehicles (Proposal #3), and encouragement of local production and jobs without prejudice to the rights of the workers (Proposal #4).

Staff review has concluded that the BRU Plan cannot be implemented because curtailment of the rail construction program would provide only \$1.3 billion of the \$17.221 billion needed to finance the BRU proposals. In addition, we found that the BRU Plan would not do as much for countywide mobility, or air quality, as the adopted Long Range Plan. The BRU Plan was also found to overstate potential transit ridership benefits, rely on unproven technology (electric buses), potentially underestimate the costs of procurement of electric buses, and ignore the realities of attempting to site and construct seven new operating facilities within a seven year period.

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MTA staff comments will address each of these elements of the BRU Plan. Finally, we will look at whether or not the BRU Plan can be expected to accomplish what it intends.

Cease Future Rail Construction and Reinvest in More Bus Service

This is the crux of the BRU's Plan. Their contention is that the money made available from stopping construction of rail projects beyond MOS-3 could be used to finance their proposed bus expansion plan. The BRU's Plan suggests that stopping construction beyond MOS-2 would be more desirable, however, doing so would violate the existing Full Funding Grant Agreement with the Federal Transit Administration and expose the MTA to the risk of having to refund the federal interest in the project because of its abandonment.

While the BRU Plan recites the list of rail-related projects contained in the MTA's Long Range Plan as evidence of the dollars that could be available for expanded bus service, their Plan does not identify the dollars that would actually be "saved" from curtailing only post-MOS-3 projects, nor does the BRU Plan address the applicability of these dollars to operation of bus service.

The following rail construction projects, contained in the MTA's Long Range Plan would be affected by the BRU's proposal:

TABLE 1
RAIL PROJECTS NOT BUILT IN BRU PLAN
(dollars in millions)

<u>Project</u>	<u>Prop. A&C</u>	<u>Local Agency</u>	<u>State</u>	<u>Federal</u>	<u>Totals</u>
PASADENA LINE to Sierra Madre	\$630.7		\$367.3		\$998.0
San Fernando Valley East/West	272.0	\$50.6	253.1	\$506.2	1,081.9
RED LINE West. Ext. to I-405 Fwy.	1,196.5	155.5	23.3	1,735.4	3,110.7
RED LINE East. Ext. to Whittier/Atlantic	480.0	62.0	9.1	691.1	1,242.2
TOTALS	\$2,579.2	\$268.1	\$652.8	\$2,932.7	\$6,432.8

In addition to the construction costs shown in Table 1, limited additional expenditures for miscellaneous rail rehabilitation, environmental clearance and study costs, and rail operation would

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be avoided by not building the identified four projects. Of particular relevance to potential funding availability for the BRU's Plan is the fact that the Local Agency, State, and Federal dollars shown in Table 1 would not be available to the MTA if these projects are not built. Further, virtually all of the Prop. A & C dollars funding these four projects are derived from bond sale proceeds.

Staff employed the Long Range Plan financial model to determine the dollars that would become available over the next 20 years, if the rail construction program were to be curtailed as proposed by the BRU. The available local dollars, principally derived from rail operations expense and debt service costs that would be avoided, were \$1.3 billion. These dollars would be available principally in the second decade (FY 2004-2013) of the Long Range Plan. This is somewhat less than the \$17.221 billion that the BRU estimates would be needed to fund its bus expansion plan, ignoring the matter of whether or not the \$1.3 billion which would become available could be used to operate bus service. This is strong evidence of how highly leveraged the MTA's rail construction program has become. On the other hand, \$1.3 billion of local dollars over the next 20 years will support construction and operation of four additional rail lines representing more than \$7 billion of total expense during that time period.

Performance of BRU Plan Compared with MTA's Long Range Plan

The Long Range Plan was designed to be multimodal in respect to bus, rail, and highway programs. By expanding the bus fleet, reallocating buses to the highest demand corridors, building rail only where densely populated urban corridors require this investment, and creating a true High Occupancy Vehicle (HOV) system, better transportation opportunities are provided for the residents of Los Angeles County.

Of the total \$72.4 billion included in the Long Range Plan, the largest share of the funds (\$25.5 billion) is dedicated to countywide bus operations and capital projects. Major projects funded in the category include continuation of countywide bus operations for the MTA and all municipal operators, continued paratransit service, a 12-year vehicle replacement cycle for the countywide fixed-route bus fleet, provisions for facility replacement and support equipment purchases over the 20-years, and a bus expansion plan that includes a total of 300 additional buses over the plan period. At the Board workshop of January 20, 1995, staff presented analyses of three bus expansion scenarios demonstrating that the 300 bus expansion plan produced the highest performance measurements in terms of transit home-to-work trip mode shares, mobility effectiveness, air quality effectiveness, and cost effectiveness.

Staff employed the Long Range Plan transportation model to simulate the performance of the BRU Plan. While the projected growth in transit ridership for the simulated BRU Plan (79%) was greater than for the Long Range Plan (65%), it was less than the growth projected by the BRU (90%). Further, the performance of the BRU Plan was found to be one-dimensional. The BRU Plan provided greater mobility for transit users at the expense of all other modes. Evidence for this finding is provided by comparing the Mobility Index for the BRU Plan (26.38) with that of the Long Range Plan (28.39). What this means is that the BRU Plan would produce more congestion, and slower

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average travel speeds, for countywide residents over the next 20 years than the adopted Long Range Plan.

Staff believes that the poorer Mobility Index performance of the BRU Plan is attributable to the slower speed of the additional buses, many operating in mixed traffic, compared with the higher speed afforded by the more extensive rail network of the Long Range Plan. A further consequence of the greater congestion resulting from the BRU Plan is poorer air quality, despite the BRU Plan's reliance on electric buses. The reduced travel speed of all other transportation system users more than offsets the benefit of cleaner buses (only 2.91% of all trips are made on public transit under the simulated BRU Plan -- by comparison, 2.77% of trips are made on public transit under the Long Range Plan).

Reduced Fares

A focal point of the BRU Plan is reduced bus fares, an extraordinarily expensive way to stimulate ridership (not only do you need to add capacity to accommodate the added riders, whose fares do not pay for the cost of the added service, but less revenue is recovered from all of the previous riders thereby increasing the subsidy required to maintain the existing service). While the BRU Plan assumes that its proposed lower fares will induce 90% growth in transit patronage over the next 20 years, compared with 65% growth projected in the Long Range Plan, it does so at the expense of \$4.86 billion less revenue (approximately a 49% reduction).

The basis for the BRU Plan's ridership growth projection is an assumption that riders will respond vigorously to lower fares. Specifically, the experience with the Proposition A Reduced Fare Program in FY 1982-83 through FY 1984-85 is cited as evidence to support a price elasticity assumption of $-.5$ (this is the equivalent of assuming that a 10% fare decrease will cause a 5% ridership increase). The MTA's experience with more recent price changes (July 1985 and July 1988) suggests that Los Angeles transit riders are less sensitive to price changes than the BRU assumes. In fact, the latter price changes suggest that an elasticity of $-.2$ is more likely representative of ridership behavior (this is equivalent to assuming that a 10% price change will cause a 2% ridership change).

Why is this so? There are several reasons. The perceived price elasticity associated with the Proposition A Reduced Fare Program, based on comparing the percentage decrease in the cash fare to the three-year percentage increase in patronage, understates the "true" fare reduction experienced by riders. The Proposition A Reduced Fare Program was introduced simultaneously with the imposition of a 1/2-cent sales tax, a portion of which flowed directly to municipalities (Local Return). As this was a new source of revenue for local communities, but restricted to transit purposes, it was difficult for many communities to initially decide what to do with the revenue. One of the first uses of these Local Return dollars was to buy-down, or subsidize, the cost of transit for their residents. Also, the reductions in monthly pass prices for many riders (elderly, disabled, and students) were significantly greater than the reduction in the cash fare under this program.

The evidence from more recent price changes suggests several considerations for future price changes. As the proportion of riders that are transit dependent increases, the sensitivity to price

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changes (measured by elasticity) diminishes in magnitude. Transit dependent riders will continue to make essential trips despite a price increase because they have no alternatives, only discretionary trips are reduced. Thus, if the price is decreased, there is not an overwhelming pent-up demand for trip-making by dependent riders that can suddenly be satisfied. A price decrease causes an increase in discretionary trips by dependent riders (trips that they would like to make in a higher fare environment, but can't afford). Therefore, we would anticipate that the increase in ridership associated with a fare decrease does not represent a corresponding increase in the number of people using public transit, but, in part, an increase in the number of trips made by dependent riders who are already transit users (trips that were not taken before the price reduction). Furthermore, if we were to lower fares at some time in the future, we could expect that some communities would take advantage of the opportunity to reduce their residents' transit subsidies, particularly where ambitious local transit programs are consuming more dollars than annual Local Return receipts. This would reduce the benefit of the fare reduction for their residents, and , consequently the magnitude of the ridership increase.

In summary, our experience and evidence of more recent price changes, suggests that the ridership benefits of the BRU Plan are likely overstated. In fact, as described previously when we used the Long Range Plan transportation model to model the BRU Plan's impacts, the model projected a 79% increase in transit patronage compared with the BRU's 90% growth projection and the Long Range Plan's 65% growth projection.

Commitment to Electric Vehicles

The BRU Plan proposes an immediate commitment to electric vehicles (10% of expansion bus purchases) which increases to a total commitment within eight years (by 2003). The type of electric vehicle is not specified (we can rule out electric trolleybus as the intended vehicle because the BRU's cost analysis only assumes an increased vehicle cost without any associated infrastructure investment beyond additional operating facilities). Assuming that the intended electric vehicle must have a self-contained power source, immediate options are limited to battery-powered, limited range, small transit buses usable primarily in local circulation services. No full-sized, electric powered transit coach exists today with a range comparable to that of traditionally powered buses.

Within the constraints of existing technology, a commitment to electric powered buses would limit where they could be deployed. If an improved technology is not developed within the time frame proposed in the BRU Plan, an increasing commitment to electric powered vehicles could result in a significant restructuring of bus routes (shorter routes, and more frequent substitution of replacement buses during the service day) resulting in higher operating costs and an increased likelihood of having to transfer to complete a trip (offsetting the benefits of more frequent service and lower fares).

Priority for Local Bus Production

As there is no longer a local manufacturer of full-sized transit buses within Southern California, this proposal likely intends that an existing manufacturer would establish a local production, or assembly,

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facility within the basin. The justification for doing so would be the multi-year commitment to increased bus purchase quantities expressed elsewhere in the BRU's Plan.

Existing production capacity in the United States for transit buses is underutilized. Furthermore, the 220 bus increase in annual demand in the BRU Plan is only sustained for five years, a relatively short period of time to amortize the costs of a new production facility. A likely consequence of these considerations is that the cost of vehicles produced from a mandated local facility would be higher than otherwise justified by the marketplace. If we change our commitment to future purchase volumes after such a facility is established, additional costs would be incurred (the MTA's recent experience with a decision to reduce the quantity of vehicles purchased in the LA Car order demonstrated this point).

Bus Expansion

The BRU Plan recognizes that significant bus fleet expansion will require facilities and equipment to garage and maintain the additional vehicles. Estimated costs for these improvements are included in the BRU Plan. Ten additional operating facilities are contemplated; one in each of the first seven years, and the remainder over the balance of the 20-year Plan period as the pace of bus expansion slows.

What is not addressed in the BRU Plan is the practicality of trying to locate sites for the construction of additional operating facilities. The MTA and its predecessors have spent ten years trying to identify a site for an additional, or replacement, operating facility on the westside that meets environmental, locational and community standards. Nor, is expansion of existing facilities practical when many of them are viewed as undesirable neighbors as development pressures increase in their immediate vicinity. Building one new facility would be a major challenge, let alone seven of them in seven years.

CONCLUSIONS

Staff has shown that the BRU Plan to stop future rail construction and reinvest in significant bus service expansion is infeasible. Insufficient dollars would be made available from curtailing the rail construction program (\$1.3 billion) to fund the cost of the bus expansion proposal (\$17.221 billion). Additionally, the ridership benefits of the BRU Plan are believed to be overstated, the ability of the MTA to construct the new bus operating facilities that would be needed within the first seven years is questionable, and the availability of electric buses with operating capabilities suitable for operation of the MTA's route structure within the next eight years is doubtful. Additionally, requiring local manufacture of new buses could increase the cost of acquisition beyond what has been estimated by the BRU. Even if the BRU Plan could be implemented, simulation of the Plan has shown that greater congestion, slower average travel speeds, and increased pollution would occur than with the adopted Long Range Plan.