

PUBLIC TRANSPORT IN URBAN AREAS - A BENEFIT  
OR DISBENEFIT?

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**ABSTRACT:** *Despite increased investment in public transport in urban areas and attention to its management, public transport is seen as being at a cross road in that the discrepancy between costs and revenue is so large that the community may react against subsidising the deficit amount. Past trends which led to the current deficit problems of public transport authorities are examined and future deficit prospects illustrated showing the limited impact of even substantial fare increases.*

*Although operational and policy measures can be used to minimise operating costs and perhaps increase patronage, deficit confinement in the future will require a major review of urban public transport objectives, service levels and fare structure.*

Background Paper for  
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## PUBLIC TRANSPORT - BENEFIT OR DISBENEFIT ?

### INTRODUCTION

Public transport has always been a topic for discussion in the general community and at professional conferences with both groups consistently expressing the general attitude that there is a "need to provide an adequate level of services" (for others to make use of). This view has been put forward quoting many, and well known, examples of deficiencies. These discussions have tended to lead to the expectation of a system that provides a service to all households in urban areas comprising a "no need to look at the timetable" peak schedule, an off-peak and weekend frequency sufficient to meet "possible" demand, and a network that allows trips to be made swiftly between any origin and destination pair. Although most public transport authorities (P.T.A.'s) have faced this task with a healthy skepticism (unlike many land use/transport planners) pressure from government and the general social system have tended to drive them along this path to transport utopia and (in cities as they exist today) financial doom.

More than any time in its history, in the author's view, public transport would seem to be at the cross-roads. In spite of population increases and increased investment and attention paid by the agencies, the demand for public transport in urban areas has been decreasing. There continues to be strong support for more capital investment and considerable discussion on the need for strategies to entice car users over to public transport. However, just recently in Adelaide, a city dedicated against urban freeways, the cause received a temporary set-back. In a situation unique in Adelaide and in Australia during the last decade there was a negative community reaction to a public transport proposal.<sup>(1)</sup> Irrespective of the reason, the fact that it happened, especially in Adelaide, was rather surprising and perhaps an indicator of a more critical and objective attitude by the community towards public investment projects. It would be hard to envisage a similar situation occurring, say 5 to 7 years ago in the period during the aftermath of the Metropolitan Adelaide Transport Study. The actual issues involved were largely locational factors and therefore superficial to what is believed will be the major area of concern for the industry - the cost of providing an adequate level of public transport services to the general public. The discrepancy between this cost and the revenue from fares may grow so large that the community may react against subsidizing the deficit amount. This will raise

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1 See articles in The Australian newspaper of 9/11/78 "Tram Revival in Adelaide Despite Mounting Opposition" and The News of 6/11/78 "Clumsy Tram Plan Slated".

the question of not only the absolute amount of subsidy (or public service obligation) but also the method and target of payments.

In summary, we are in a situation in urban public transport in Australia, where in spite of increasing resources being applied, patronage is continuing to decline and deficits are rising (in some states to levels comparable to the total state deficits). Under these circumstances and with a public becoming more appreciative of the cost of resources (as it affects them) to achieve arbitrary standards of service, there is the distinct possibility of a change in attitude towards deficits, demanding perhaps a real requirement for P.T.A.'s to "break even"<sup>(2)</sup>. Achievement of this would necessitate significant changes in the management and possibly institutional arrangements, financing and operations of public transport systems, and a greater say being given to P.T.A.'s in urban development decisions as to which areas they are prepared to service.

The author believes that the urban public transport situation will get significantly worse, in terms of passengers carried and the cost discrepancy (revenue - costs), and at an increasing rate. With a continuation of current trends including the desire to provide a comprehensive and adequate level of service, the picture emerging is of deficits so large as to be beyond the capacity or will of governments to finance. The purpose of this paper is to highlight this and to raise for discussion various issues, some of which are "pillars of public transport truths". It is proposed to describe the present environment within which the public transport systems operate and to discuss the various factors that have led to this situation and those that will influence the scenario for future public transport development. Various options will also be suggested as initiatives worth considering to maximise public transport's performance in what the author believes will be a situation of limited potential for at least the next 10 years in our existing cities. This paper does not in any way seek to be comprehensive or contain conclusions based on analysis of surveys and detailed statistics. It is written to provide a forum for discussion on issues considered to be of importance to the future of the public transport industry. The paper will achieve its purpose if it helps to support a re-appraisal of public objectives and a review of procedures to achieve them.

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2 Deliberately not defined at this stage.

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### PAST TRENDS

In order to discuss the current situation, it will be useful to provide a proper setting by briefly reviewing some of the factors leading up to it. As indicated earlier, in spite of a bigger market for public transport, patronage has been declining, and over the last ten years has decreased from a figure of about 1300m urban public transport journeys in 1967-68 by just over 20% (B.T.E. 1978). This has resulted from a dramatic decrease in the number of public transport trips made per person. For example, figures compiled for Brisbane by the Mass Transit Authority show a decline from 155 trips/person to 90 trips/person by public transport from 1965 to 1975.

A principal reason for this absolute decrease in patronage was undoubtedly an increasing car ownership and a corresponding growth in vehicle usage of almost 5% per annum over the last few years (B.T.E. 1978). In addition another major factor has been the re-distribution of work place. The central business districts in cities have not only decreased in levels of employment relative to the rest of the metropolitan area, and absolutely in some cases, but there has also been a change in employment structure. In Sydney for example, C.B.D. employment as a percentage of the metropolitan area has dropped from 20% in 1961 to 15% in 1971. Also employment is increasing in finance, business and other white collar industries and falling within wholesaling, retailing and manufacturing.

Further, more and more people have chosen to live in the outer suburbs either through desire or economic circumstances, making it very difficult for the P.T.A.'s to provide an adequate service economically. On the other hand however there is also a growing trend towards semi-rural living, which group, because of the great difficulty in providing a service, can probably be justifiably disregarded by the P.T.A.'s with a consequent nil increase in deficits.

Thus a changing land use pattern together with a greater emphasis on leisure and social activities have been forging a new travel behaviour which has facilitated, and in turn, been re-inforced by the motor car. Accordingly we have seen a decrease in the percentage of work trips and an increase in the percentage of other trips, in which latter category, public transport finds it even harder to compete. These trends have been in existence in Australia for nearly two decades, but for the last decade it was "seen" to disappear because the planners and government wanted it to. Table I compiled by the M.T.A. (Qld.) showing recent trends for Brisbane illustrates many of these points.

RECENT TRENDS - PATRONAGE, POPULATION, CAR OWNERSHIP

TABLE I

Year	Patronage (excl. ferries) (million trips)	Population Brisbane Statistical Division	Patronage per Capita Brisbane Statistical Division	A Population Brisbane City (Inner Urban Areas)	B Population Brisbane Statistical Division excl. Brisbane City (Outer urban areas)	Ratio B/A	Car Owner- ship (cars/ capita, Queensland)
1971	109.7	891,090	123.1	717,330	172,760	.2422	.298
1972	105.6	915,915	115.3	724,400	191,515	.2643	.313
1973	108.3	941,770	115.0	726,840	214,930	.2957	.308
1974	103.3	967,390	106.8	730,440	236,950	.3244	.321
1975	98.7	979,035	100.8	727,119	251,925	.3465	.325
1976	93.0	985,920	94.2	717,170	268,750	.3747	.347
1977	90.8	995,140	91.2	712,400	282,740	.3969	.356
Percent- age Change 1971-1977	-17.2%	+11.7%	-25.9%	-0.7%	+62.7%	+61.0%	+19.5%

Source: Population Statistics - Australian Bureau of Statistics  
 Patronage - Operator Records  
 Car Ownership - Australian Bureau of Statistics

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Although numerous studies recognized that public transport has been entering into a very competitive situation they have tended to belittle the opposing forces and to predict upturns in public transport patronage. Figure 1 indicates a situation resulting from a typical study of the late sixties or early seventies.

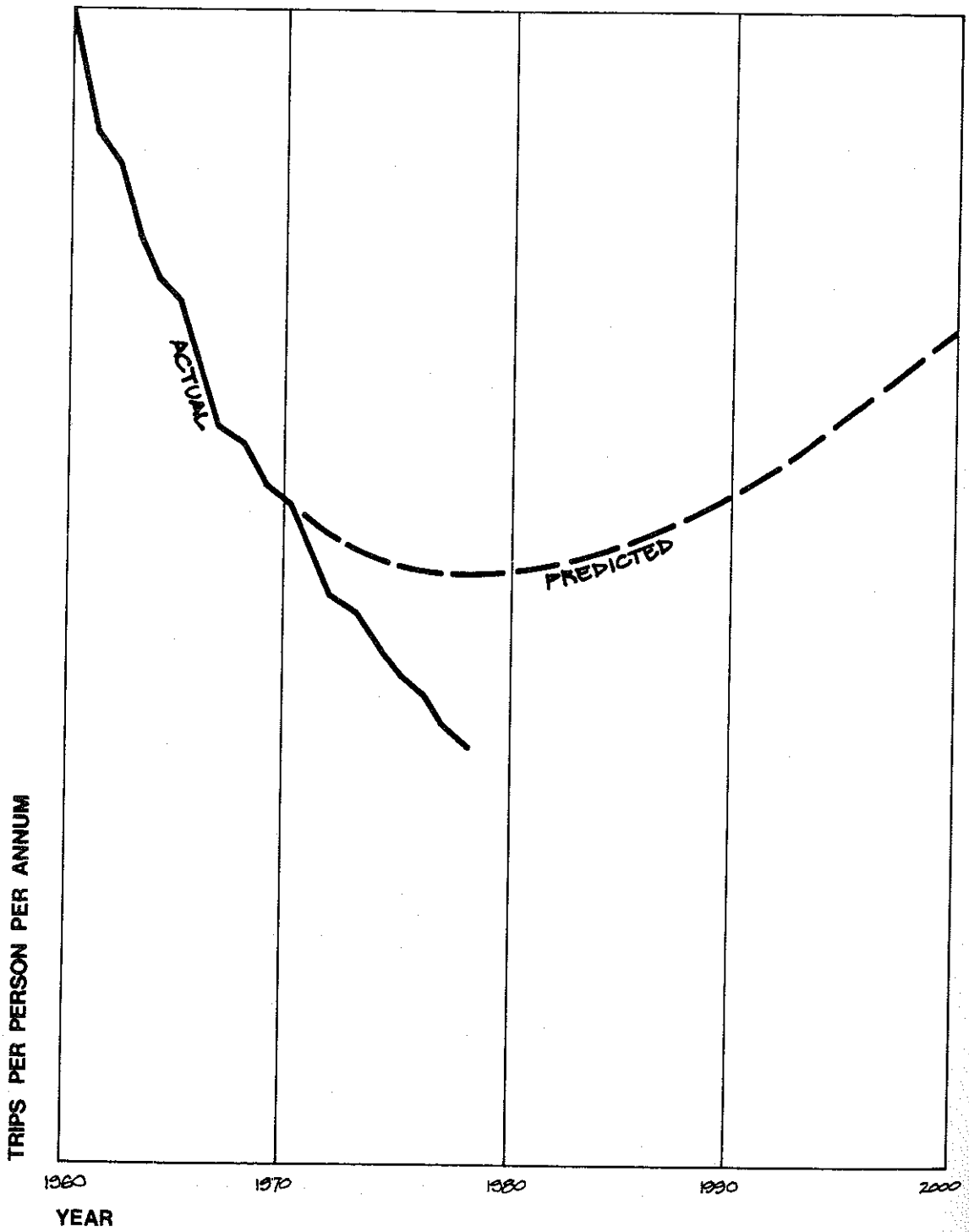
It was this sort of study together with other more specific capital investment investigations which helped to create the general impression of a growth industry encouraging the use of resources in capital projects rather than in management and operations. The flirtation with new technology over the last decade has also discouraged focussing on the real issues facing public transport.

Associated with these developments, has been an acceptance of the resulting P.T.A.'s deficits which have come to be regarded as "a public service obligation". It has been argued that all P.T.A.'s lose money because of the need to provide transport to the transport disadvantaged. But as pointed out by the Sydney Morning Herald in its editorial on 17th November, 1978, this need to provide a social service could be used to hide poor management. The proper management of public transport systems has in theory been made easier in certain states by placing all aspects of public transport management under one umbrella. Whether this will prove the case in practice depends in detail on the institutional arrangements and the existence and acceptance of a common objective by government, the P.T.A. and its operating arms, the passengers and the community.

### CURRENT POSITION

The public transport industry today is one of a decreasing market and rising costs. It is further handicapped by huge (relative to state financial capability) existing deficits, a market expectation that is virtually impractical to satisfy and an environment whose forces generally point in the same direction to constrain the industry's potential.

Technically public transport operates at its best in peak periods carrying commuters to and from their work in the central business districts of cities. Its performance of other transport tasks is inadequate. However, the very peak periods during which public transport operates so efficiently are in effect the major contributors to the P.T.A.'s financial problems. This is the core of the problem. Levinson quotes that as far back as 1916, the American Electric Railway Transportation and Traffic Association set out to prove that: "it is the relation of income to expenditure between the hours of 9.00 a.m. and 4.00 p.m.



**Public transport trips per person per annum**

**FIG 1**

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that is most favourable to the company". It is the peaking of the passenger loading that makes it difficult for a P.T.A. to avoid losses. In spite of this, Government and P.T.A.'s have never been prepared to raise peak fares even though the demand is probably sufficiently inelastic so as not to force too many people to use their cars. In any case such a transfer of demand could prove to be economically desirable. Rather than charge higher peak fares, P.T.A.'s in effect tend to have an opposite policy of charging less for peak rides by offering discounts to various categories of users. The resultant outcome, as far as the P.T.A.'s are concerned, is the more you sell, the more you lose. In most cases a P.T.A. can expect to lose a multiple of the fare it charges.

Although car ownership will not continue to increase as it has done most other factors will increasingly make it more difficult for public transport to operate efficiently. A very significant factor will be the decreasing importance of the C.B.D. as an employment centre and its changing functions. Thus the P.T.A.'s traditional market will decrease irrespective of other forces. This trend will be compounded by the fact that fares are already uneconomically low, and it will become more and more difficult to set fares at a level that will keep deficits under "control".

The following case study, which is of a P.T.A. where the demand is high throughout the day with very little peaking and with a strong growth in demand over the next several years, is now described to illustrate the problem of "breaking-even" where the P.T.A. already has huge deficits and has an uneconomic fare structure.

Figure 2 shows the deficits expected to be incurred each year without a rise in fares. Also shown is the deficit curve resulting from the implementation of a series of improvements. Each "unit" is equivalent to the current average fare. Deficit funding is by loan money and incurs interest. It is interesting to note that although 800m "units" can be saved in 1985 by improvement in operations and management it is still relatively small compared with the size of total deficit for that year.

Figure 3 has been drawn to show the effect of various fare rise strategies including the use of government grants at no interest. It can be seen that once a P.T.A. gets into a bad position financially, it is very difficult to recover even with high fare rises unless grant money is used. Although this company generally has to stand on its own two feet and pay interest for all borrowed funds even for capital purposes, it should be remembered that unlike P.T.A.'s in Australia its passenger demand is very high (4 million passengers/day) and consistent throughout the day.



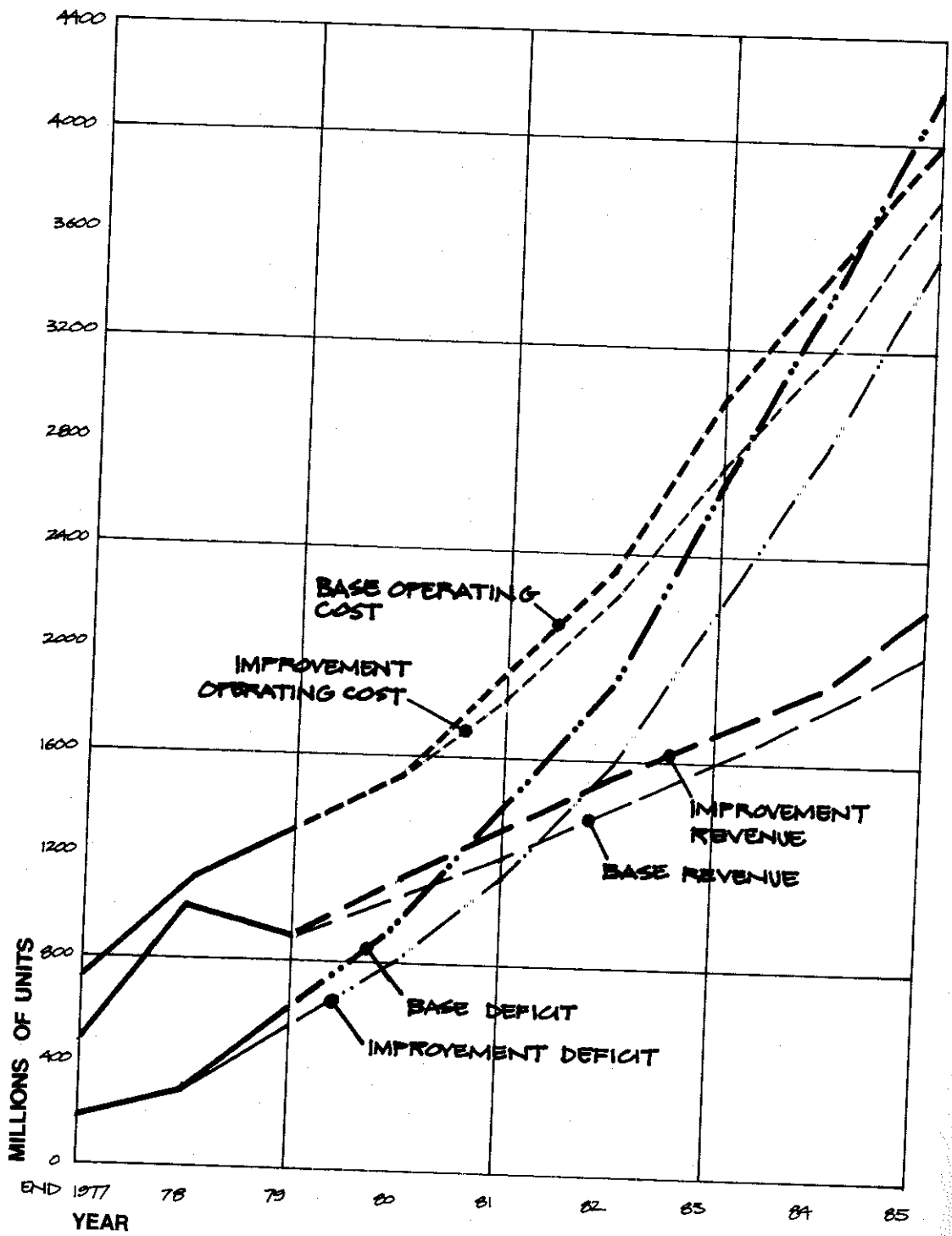
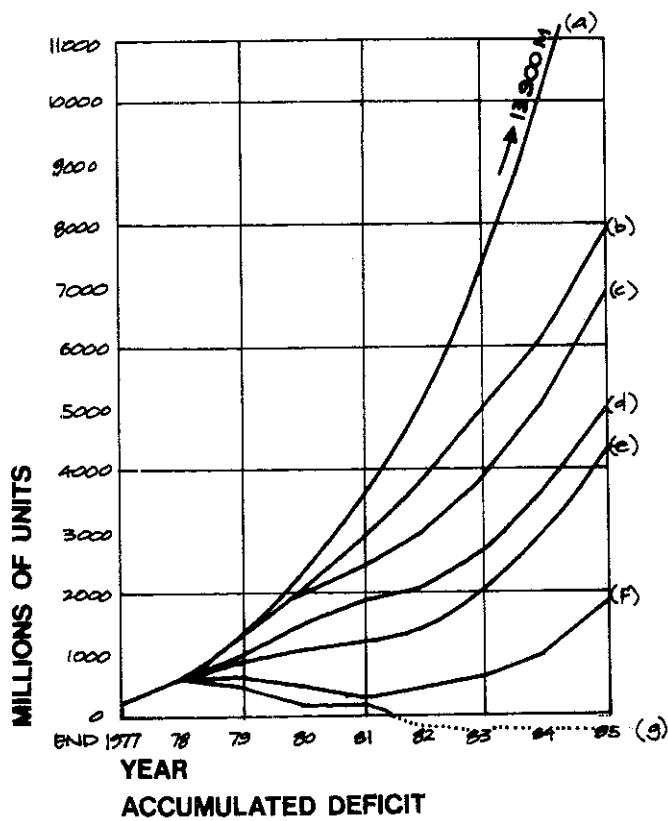


FIG 2



**FARES STRATEGIES**

CASE	FEB. 78	OCT. 78	OCT. 80	OCT. 81	OCT. 82	OCT. 83	OCT. 84
(a)	-	-	-	-	-	-	-
(b)	25%	-	25%	25%	25%	25%	10%
(c)	-	50%	25%	25%	10%	10%	10%
(d)	50%	25%	25%	25%	10%	10%	10%
(e)	75%	25%	25%	15%	15%	10%	10%
(f)	75%	20%	20%	20%	20%	10%	10%
(g)	50%	25%	25%	25%	25%	15%	15%

Grants shown ( )

FIG 3

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Taking the above into consideration, the financial future of the P.T.A. illustrated in this case study is probably a reasonable representation of the situation for P.T.A.'s in Australia with some adjustment for scale. Yet we still seem to be concerned only with palliatives such as fare decreases and are not prepared to have a comprehensive new look at a situation that seems certain to create financial chaos.

Although it can be expected that grant money will continue to be made available to P.T.A.'s and money can be saved by more efficient methods of purchase such as leasing, costs will continue to rise because of the labour element, which is generally two-thirds of P.T.A.'s operating costs. This aspect together with those already discussed may eventually (hopefully) force a complete reappraisal of the management and operating of our public transport systems, but as indicated timing is a critical factor. The longer a review is delayed, the harder it will be to rectify the situation even if each year we are prepared to disregard last year's losses.

### THE FUTURE SITUATION

In considering the future, it would be wise to assess the market potential for public transport. From the viewpoint of the existing system with its current structure the market size looks as if it may diminish or perhaps stabilize at its current level. Further, because of the inherent nature of the existing system catering essentially for journeys to work in the C.B.D., it can be expected that the socio-economic profile of public transport users will change to include a bigger proportion of the "higher" income earners. For example even in the Sydney C.B.D. in 1971, less than 20% can be said to be "blue collar" type workers.

This raises two important issues:-

- (i) Recognizing the market size and its components, what actions should the P.T.A.'s take?
- (ii) Should the governments freely continue to subsidize those on reasonable incomes because they happen to be associated with a group called the "transport disadvantaged"?

It should be noted that this latter group includes many who may be rich enough to afford a car, but have other high priorities like overseas travel, and others who may also be rich or poor, but choose to maximize other

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desires such as living, environment, etc. at the expense of the P.T.A.'s.

There are various operational and policy measures such as priority lanes, traffic or area restraint, etc. that can be used to minimize operating costs and perhaps increase patronage. However the real option open to the P.T.A.'s is whether to cut back services and not provide the same standard to all parts of the urban area. This could be supported by the use of para transit<sup>(3)</sup> private contractors, vouchers, etc. to provide supplementary and feeder services. Associated with this would be a suitable institutional arrangement with financial policies that include selective and properly targetted subsidies if desired and commercially based fare structures.

### CONCLUSIONS

Various issues have been raised and discussed to illustrate the opinion that a major review of urban public objectives and the means of achieving them is necessary. It is considered that urban public transport in Australia has reached the stage where its benefit has to be questioned, if not now, then in the not too distant future.

In any major review the following matters should be considered:-

- (i) Objectives - these should be defined to put greater pressure on the P.T.A.'s operating efficiency, linking them to financial and performance criteria, subsidy levels, fare structure and levels of service.
- (ii) Subsidies - these should be assessed to satisfy only justifiable needs, in terms of identified user categories, and should be allocated accordingly.
- (iii) Fare levels and structure should be set on a more realistic economic basis, and subject to annual review as part of the budgetary process in the light of subsidy policy and agreed levels of service.
- (iv) Level of service - this should be reviewed in the light of the cost of achieving various components of it and those who will be the likely beneficiaries.

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3 Includes taxis, "dial-a-bus", car pools, rental cars, etc.

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- (v) Institutional arrangements should be such as to facilitate the P.T.A.'s in meeting their objectives. For example, the P.T.A.'s should have a strong say on the timing and location of new development areas. Should they be forced into providing a premature service, then it would not be at their own cost. The organization should be such as to allow for the easy integration of, say multiple-hire taxis and other para transit measures if desired.
- (vi) Market - the size and detailed composition should be assessed under different policy assumptions.

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