The next section, entitled 'Further perspective on the problem' identified further information, generally from the appendices of the Report, which it was felt would be of use to the decision maker. It is worthwhile to look at these points in detail.

The first point identified that in certain city areas, due to pre-motor car planning, rights had been entrenched in properties completely unrelated to the capacity of the street system to provide the necessary access - without substantial investment in transport facilities.

The second point made is that the urban transport problem can be reduced to the economics of supply and demand. Corrective measures can be directed either in the provision of more transport facilities, with more capital expenditure, or the adjustment (peak reduction) of demand, which is the cheaper alternative.

Thirdly it was mentioned that peak period traffic gives rise to additional costs such as extra operating costs, 'socio-economic' costs, and additional investment to cope with peak.

The different population groups in South Africa was mentioned as introducing an additional dimension to the local urban transport problem. The author of this report does not consider this as being of real relevance to transportation in its purest sense.

2.2.1 Policy and planning

The sixth and seventh sections set out the essential elements of an urban transport policy and stressed the basic importance of urban transport planning.

In this regard, the Government accepted the following recommendations:

'1.2.3 The functions of the National Transport Commission should be extended to include the formulation of urban transport policies, and broad supervision over and co-ordination of all matters relating to urban transport in the Republic. For this purpose three additional members conversant with urban transport problems should be appointed to the Commission. Of these, one should be the Commissioner for Urban Transport, who would be in charge of an Urban Transport Division created in the Department of Transport, the second should represent the South African Railways,
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and the third should represent the broad public. (Par. 4.6.3.)

1.2.4 In order to ensure co-ordinated urban transport in a metropolitan area, a Metropolitan Transport Advisory Council should be established by the Administrator in any metropolitan area which merits such an organisation in the view of the Administrator as well as the National Transport Commission. Such a Council should advise the Administrator on all aspects of the planning and co-ordination of urban transport within the area, and should also serve as a forum for an exchange of views on these matters by the three tiers of government, private commerce and industry. In order to ensure proper co-ordination with the work of the Metropolitan Transport Advisory Councils, representation should be given to the latter on the Central Guide Plan Committee, or Metropolitan Planning Councils which the Department of Planning and the Environment is setting up in the major urban areas. (Par. 4.6.6)

The recommendations in Section 4.6 of the Report, which supplemented the above, were also accepted, including those on the subsidising of transport studies to 50% maximum of the costs (par. 4.6.7), and the extension of the functions of the National Institute for Road Research to cover urban transport research (par. 4.6.8).

2.2.2 General long-term measures which can be implemented without delay.

The Government supported the view that education and training in urban transport should be encouraged, and the relevant Driessen recommendations were accepted.

The Government also accepted the following recommendations without change:

1.3.1 Bodies and institutions at all levels associated with land use and transport planning must assign the highest priority to urban transport requirements by establishing in advance the extent of, and maximum densities and bulk factors envisaged for key business and employment areas in order to ensure the provision of adequate transport facilities, and thus to obviate the need for resorting to excessive investment in such facilities at a later stage in order to keep city centres "alive". The precept of reducing the need for transportation to a minimum should be applied as far as
possible. (Par. 5.3.10.)

1.3.2 Higher densities should be promoted in urban residential housing and local as well as provincial authorities should give much more weight to this factor in the layout of future suburbs. (Par. 5.3.12.)

However it expressed the opinion that long distance travel for non-whites to white areas may promote decentralisation in encouraging non-whites to spend relatively more in their own areas.

This notion is being proved fallacious as can be witnessed in any CBD, especially on a Saturday morning. More on this comes later.

The Government did accept that there is a close relationship between buildings and urban transport and accepted the following recommendations:

1.3.4 Planning authorities should freeze existing maximum bulk factors in the central urban areas of the major metropolitan areas, and these maxima should be increased only after the authorities have satisfied themselves that the anticipated transport facilities will be adequate. Bulk factors should be specified in urban transport plans submitted to the National Transport Commission. (Par. 5.4.6)

1.3.5 All buildings erected by public authorities, including the Central Government, should be subject to the above restrictions and should comply with the provisions of town planning schemes and bulk factors applicable to the area. Public buildings should be sited with due regard to their accessibility and where they do not add to the urban transport problem. (Par. 5.4.7)

1.3.6 Properly conceived urban transport plans for the major metropolitan areas should be submitted for approval to the National Transport Commission by the provincial administrations, and authorities implementing such plans should qualify for grants and subsidies, as indicated in various recommendations in this Report. (Par. 5.5.10)
2.2.3 Measures on transport modes which can be implemented without delay.

In this section came the first signs of the political resistance from Parliament to subsidising local government, in that the Government generally cut the Driessen Committees financial proposals by half. However the following recommendations were accepted:

1.3.9 The expansion of taxi services must be regarded as a necessary adjunct to the development of more adequate public transport services, especially distribution services, in the major urban centres, but the number of licences which are issued in each centre for White and Non-White transport should be subject to continuous review in order to keep these as close to an optimum as possible. Taxis should be encouraged to operate on a roving basis in central areas, unless the saving of fuel or other factors should indicate otherwise. (Par. 5.6.6)

1.3.10 The National Transport Commission should ensure that proper and adequate provision is made for the expansion of bus and other transport services for Whites and Non-Whites in the urban transport plans submitted to it for approval. Full cost comparisons with other modes of transport should be made when new, or expansions in, bus services are contemplated. (Par. 5.7.8)

1.3.11 Grants amounting to 25 per cent of the costs of capital equipment and 30 per cent of the cost of land and construction of roads, and related amenities, such as bus depots, required to replace and improve bus facilities under approved urban transport plans, may be authorised by the National Transport Commission. Such grants must not, however, be payable on equipment and facilities used solely for services which are already subsidised by the Government. (Par. 5.7.10)

1.3.12 Local authorities should be eligible for grants of 30 per cent on the construction and expropriation costs of expressways and arterials, including alterations to services, which have to be built as part of an urban transport plan approved by the National Transport Commission. The above rate should, however, be reviewed when new schemes are submitted for approval. (Par. 5.8.9)
1.4.12 A subsidy of 20 per cent on current revenue should be paid on public urban bus services which are not subsidised by the Government, provided that such undertakings—

(i) keep full sets of books and prepare properly certified statements;
(ii) charge fares approved by the National Transport Commission;
(iii) run services which are part of an approved metropolitan transport plan; and
(iv) fully observe Government policies.

The subsidy basis should be changed to the volume of service rendered where the latter can be satisfactorily measured, and the principles set out in par. 6.8.2 should be observed as far as possible. (Par. 6.9.13.)

1.4.11 Bus transport should be accorded preference in urban traffic control systems by means such as the introduction of exclusive bus lanes or streets, closing of roads to car traffic during peak hours or for longer periods, contra-flow use of one-way streets by buses, special robot and traffic light signalings, and other devices. (Par. 6.9.9)

1.4.13 As it is important to augment public facilities before imposing measures to discourage the use of motor-cars in urban areas, Recommendations 1.3.11 and 1.4.12 (see above) should be applied as soon as possible on an interim basis to large public transport undertakings in the major urban areas, subject to such safeguarding conditions as may be considered necessary by the National Transport Commission (Par. 6.9.14)

1.3.13 The circumstances under which railways offer special advantages for urban transport, especially where rapid linehaul mass transport is required, indicate that urban railways will continue to play an important role in transportation between high-density areas. However, proper cost comparisons should be made with other modes of transport when the construction of new lines is considered for urban transport purposes. (Par. 5.9.9)

1.4.14 Close liaison should be established between the Metropolitan Transport Advisory Councils and the managements of the Railways
Administration and urban bus undertakings for the purpose of studying and co-ordinating the needs and preferences of the travelling public in urban areas. (Par. 6.10.5)

1.4.15 The principle should be adopted that variable costs on any specific suburban railway network should be covered as far as possible by revenue from fares. If new services should have to be provided requiring investment in additional fixed assets, fares should cover the full additional costs as far as possible. (Par. 6.10.6)

1.4.16 Suburban railway services for first and second class passengers which remain essential but are not expected to break even on variable costs and which cannot be replaced by other modes, should be subsidised on the volume of service to enable them to cover losses on variable costs. Such subsidies should be financed as follows:

(i) an amount of approximately R5 million per annum to be provided from the resources of the Urban Transport Fund, as set out in par. 7.6.3, this amount representing the transfer described in par. 6.8.2 (ii);

(ii) the balance of form a charge against the Consolidated Revenue Fund of the Central Government, in terms of the exposition in par. 6.8.2 (v) and (vi).

1.3.16 The on-street loading and unloading of goods vehicles in central urban and congested areas should be shifted as far as possible to night or early morning hours, and furthermore prohibited entirely during peak hours. Explicit provision should be made for such arrangements in urban transport plans submitted to the National Transport Commission. Local authorities were requested to implement this recommendation as soon as possible. (Par. 5.11.4)

1.3.17 The possibility of using more compact delivery vehicles in the Republic’s central city areas should be investigated by the proposed Urban Transport Research Division of the C.S.I.R., and extending containerisation should be considered. (Par. 5.11.5)

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2.2.3 General short-term measures which can be implemented without delay.

The Committee stressed the importance of the co-ordination and integration of urban transport services, and also of transport services with the requirements of employers, telecommunications, etc. The Government accepted the following recommendations in various degrees:

1.4.1 The proposed Metropolitan Transport Advisory Councils should promote the introduction of measures designed to ensure proper and adequate co-ordination and integration of the various urban transport services, including the railways, in the major metropolitan areas of the Republic. (Par. 6.2.7)

1.4.2 The Committee supports in principle in the introduction of staggered working hours schemes, and in this regard the proposed Metropolitan Transport Advisory Councils can play a useful role. A Staggered Working Hours Committee should be established in each metropolitan Transport Advisory Council, to investigate and supervise the implementation of staggered working hours. Employers as well as employees' organisations should be represented on the Committee. (Par. 6.3.7)

1.4.3 The conditions on which parking facilities will be provided or permitted to the National Transport Commission. (Par. 6.4.4)

1.4.4 The principle of charging for parking space and loading zones in central city areas should be applied, and charges should cover all direct and non-direct economic costs, except in the case of park-and-ride facilities. (Par. 6.4.6)

1.4.5 Legislation should, where necessary, be adopted to enable local authorities to frame regulations whereby the provision of parking space in all buildings and on all sites can be controlled, and to impose a special tax or levy on parking space. (Par. 6.4.7)

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6. **1.4.6** A proper traffic control policy should form part of any urban transport plan submitted to the National Transport Commission for approval. (Par 6.5.4)
1.4.7 Grants may be made by the National Transport Commission at a rate of 25 per cent of the capital expenditure of additional equipment required for the control of traffic in central urban areas, provided that the acquisition of such equipment is approved by the Commission as part of an urban transport plan which is submitted for approval. (Par. 6.5.6)

1.4.9 Urban transport undertakings should be required to satisfy the National Transport Commission that effective and efficient management procedures are applied and regularly reviewed. (Par. 6.7.6)

The first of these recommendations was 'particularly' accepted; the second endorsed; the third, fourth and fifth approved provided with supervision; the sixth and seventh accepted, with subsidies again provisionally reduced by half; while the last was endorsed.

2.2.4 Measures for which time is required.

The White Paper elaborated on the 'levy and permit system' proposed by the Committee, which was discussed in Chapter 2 (section 2.1.5) of this Report, and the Government stated that, if the proviso that the system be experimentally introduced to measure its effect is observed, and also if those measures relating to the raising of finance through the levy system are introduced, then it was prepared to accept the following recommendations:

1.3.7 Provisional maximum increases of 30-35 and 100-110 per cent over 1970 should be set as targets for White car travel in the major urban areas in the years 1980 and 2000, respectively, but these targets should be subject to continuous review in the light of changing circumstances. (Par. 5.5.11)

1.3.8 Provisional maximum increases of 70-80 and 200-250 per cent over the relatively low 1970 figure should be set as targets for Non-White car travel in the major White urban areas, excluding Non-White residential and business areas, in the years 1980 and 2000, but the targets should be subject to continuous review in the light of changing circumstances. (Par. 5.5.12)

1.4.8 A levy and permit system for directly controlling the number of cars which are permitted to enter congested areas or "restricted zones" in major cities should be introduced to improve the balance between the number of vehicles and the available road space. Such a system should, where necessary, be included in the measures proposed for implementing urban transport plans which are submitted
to the National Transport Commission, but should be implemented with due regard to the viability of the central business district. (par. 6.6.10)

The Government took note of the reservation of the provincial representatives regarding the utilization of the above-mentioned system as a source of revenue for the financing of urban transport measures, but indicated that no decision would be taken on the matter at that stage. The Government also took note that the system should be regarded "as an essentially temporary means of obtaining additional funds for urban transport purposes, and that it should be replaced as soon as practicable" by an electronic or other system of "identification of a vehicle as it passes a road pricing point". It was anticipated that such other systems would gradually become cheaper and more practicable as technology improved in the field.

2.2.5 Underground railways

The question of underground railways received special consideration, particularly as Johannesburg was making loud noises in this direction.

The White Paper states that:

'The Government has given careful consideration to the matter and has come to the conclusion that the construction of an underground railway in any of the big cities of the Republic can be justified only if a comprehensive cost-benefit analysis based on the above-mentioned feasibility study and other necessary investigations indicate clearly that it would be preferable to other transport modes. In this connection an evaluation would be required of, inter alia, the following aspects:

(i) the possible error margins to which the market survey may be subject;

(ii) the current socio-economic costs, apart from the operating costs, of such an undertaking;

(iii) the adaptability of underground railways compared with other transport systems to the requirements of changing circumstances;

(iv) the effect of the railway on urban development, particularly on the further concentration of development in the city centre.
(v) the social consequences of such a railway in the multinational cities of the Republic;

(vi) the availability of capital and the extent to which expenditure on other development projects would possibly have to be curtailed if such a capital-intensive project should be undertaken.

In the light of the above considerations, and also the likelihood that the financial resources set out in the next section will not provide sufficient funds to cover the capital costs as well as a possible current deficit of an underground railway in addition to the costs of other transport facilities, the Government is of the opinion that a decision cannot be taken at this stage on Recommendation 1.3.16 that the construction and equipment of underground railways or other mass transit systems should qualify for a capital grant of 60 per cent. This recommendation will, however, be kept in mind when a decision has to be made in any specific case about the building of an underground railway or other special type of mass transit system.

2.2.6 Financial aspects

The Government concurred with the Driessen Committee's proposed permit and levy system, but argues (by implication) that the introduction of the suggested levies would at the time be politically unacceptable. For this apparent reason the proposed expenditure of R92,0 million per annum was cut to R52,0 million, allocated approximately as follows:

- R36,0 million on roads and related works
- R 7,0 million on bus transport (operating subsidies)
- R 3,0 million on capital expenditure on buses
- R 0,5 million on traffic control equipment
- R 0,5 million for administration, transport studies, etc.

The Government went on to accept the following recommendations in the light of the amendment set out above:

'1.5.1 Additional funds for expenditure on the improvement of existing urban transport facilities, and the provision of facilities which should be additionally financed, should be planned for at a rate of about R52 million per annum at 1974 prices in the major urban areas during the years immediately ahead. This includes a subsidy
of R5 million for suburban railways. (Par. 7.7.1)

Regarding the acquisition of funds, the Government agrees with the idea that the affected local authorities should collect additional revenue, but believes that the amount of about R18 million allotted by the Committee for this purpose should be reduced to approximately R8 million. The following recommendation is therefore accepted with the corresponding amendments:

1.5.2

About R8 million of the required R52 million per annum would become available to the local authorities in the major urban areas as a result of additional taxes, which should be earmarked for approved urban transport plans. These taxes are:

(i) an additional levy of up to 12 per cent on central city properties;

(ii) additional revenue from parking fees, of which a fixed percentage should be earmarked;

(iii) a tax on parking space;

(iv) charges for loading zones. (Par. 7.7.2)

The residual R44 million of the target expenditure of R52 million will have to be found from other sources, but the Government has not yet taken a decision on the matter for the reasons set out below.

(i) During the financial years 1975/76 and 1976/77 the administrative and other initial expenditure required to launch the approved remedial measures will be relatively small. An amount of about R750 000 will be made available by the Treasury to the Department of Transport for this purpose.

(ii) It is anticipated that the expenditure of local authorities as a result of approved urban transport plans will commence during the course of 1976/77 and then increase gradually. A decision on the financing of the residual R44 million need not therefore be taken until 1976/77 and at that stage there will be more clarity on the nature and size of the proposed expenditure.
(iii) The postponement of a decision will provide appreciably more time for the Department of Transport and the National Transport Commission to investigate the implications of various financing methods, and in particular to assess more accurately the contribution which the application of the levy and permit system on restricted zones is likely to yield (see section 2.2.4 above). Thus more flexibility will be obtained in financing.

(iv) The Government will have to take account of economic and other circumstances when a decision has to be made on the financing of the residual R44 million, and such circumstances may possibly be gauged more readily in 1976/77.

In view of the factors set out above, the Government cannot bind itself now on the method of finding the residual R44 million. The required decision will, however, be taken in good time so that the implementation of the proposals will not be delayed for lack of funds.

1.5.4 An Urban Transport Fund should be established under the aegis of the National Transport Commission, and the yield from the levy and permit system, supplemented by other sources as deemed necessary, should be paid into the Fund. Grants, subsidies and expenditure, as proposed by the Committee, should be financed from the Fund in accordance with priorities determined by the National Transport Commission. (Par. 7.7.6)

The Government approved the application of this principle to the subsidising of urban bus as well as rural transport, and therefore accepted the following recommendation:

1.4.10 The Committee supports in principle the centralisation of subsidy payments on Non-White Transport under the Department of Transport, and approves of the basic principles which are being applied. All transport subsidies should, furthermore, be based as far as possible on the volume of service rendered, and where this is impracticable on current revenue, and should not have adverse effects on efficiency. (Par. 6.8.5)

2.2.7 Administrative machinery

The Government concurred in every respect with the Committee's proposed administrative machinery, discussed under Chapter 2 (Section 2.1.6) above.
2.2.8 Implementation of the measures.

The White Paper identified that it would be necessary to initiate the following actions for implementation:

- amend the Co-ordination of Transport Act of 1948 to give the NTC its necessary new (additional) powers;
- create a division on urban transport within the Department of Transport;
- negotiate between the Chairman of the NTC and the Provincial administrations for the early establishment of MTAB's;
- delimit the proposed new metropolitan transport areas;
- commence the preparation of urban transport plans as no transport subsidies should be paid before these have been approved for an area;
- extend the functions of the (then) National Institute for Road Research to embrace transportation;
- freeze existing bulk factors, perhaps best achieved by an act of Parliament;
- the NTC to give early consideration to determining priorities, and this might entail transport studies and plans on a provisional basis;
- the NTC to select an urban area, in consultation with the provincial administrations and local authorities, for the proposed experiment on the application of the levy and permit system in a restricted zone. It was felt that the experience would prove useful for providing an indication of the basis on which the residual funds of R44,0 million for the financing of urban transport facilities should be obtained.

2.2.9 The Government's urban transport policy in brief

The White Paper concluded with a section setting out the Government's urban transport policy in brief.

This is repeated verbatim as, while certain NTC, Ministerial and Cabinet discussions have marginally altered its intent (and these shifts are presently being identified in a Department of Transport project), the White Paper description remains the only comprehensive and complete statement.
available at this time on the Government's urban transport policy.

The Government's urban transport policy for the Republic can now be set out briefly in the light of the elements of an urban transport policy described above.

(i) The policy will be aimed at the attainment of four major goals, viz. mobility, convenience for the user, reasonable costs and minimum side-effects. The emphasis laid on the various goals will, however, vary in accordance with requirements in various urban areas, and they will therefore have to be circumscribed in more detail for each area. The emphasis will also vary from time to time in accordance with the requirements of a flexible policy designed to cope with changing circumstances.

(ii) The above goals can be most readily pursued on the basis of sound planning, and in this connection proper co-ordination is required between the following tiers of planning:

(a) urban transport planning on the basis of transport studies, with special attention to land use;
(b) general urban planning;
(c) general regional planning, with the requisite stress on transport, and also on the linking of the latter with urban transport;
(d) national physical planning, which resorts under the general supervision of the Department of Planning and the Environment.

(iii) The measures which are applied within the above framework to pursue the postulated policy goals, should conform to the following requirements:

(a) short-term measures should be applied as part of a long-term policy, and not in isolation;
(b) high priority should be accorded to flexibility in the choice of remedial measures, and therefore also in the types of transport facilities supplied, especially on account of the requirements of changing circumstances;
(c) the basic role played by the cities in economic development is recognised, and the socio-economic health of the big cities should be promoted as far as possible, but at the same time excessive concentration of employment in central urban areas should be discouraged if it should necessitate inordinate amounts of investment in transport facilities;

(d) the particular needs of the various population groups in the cities of the Republic should be recognised in the provision of transport facilities;

(e) when decisions are taken on the provision of transport facilities, cost-benefit analysis and related methods must be applied as far as possible in order to ensure that the socio-economic yield on capital invested will be as high as possible.

(iv) The last requirement postulated above is of cardinal importance in the financing of transport facilities in the Republic, particularly on account of the shortage of capital in relation to its need for development and other purposes. The principle of user charging should be applied as far as possible in the financing of urban transport facilities in order to ensure that the available capital will be utilized most effectively. The subsidising of urban transport should not be regarded as a socio-economic necessity, and should be introduced only when the advantages clearly outweigh the disadvantages, and then on such a basis that efficiency would be promoted as far as possible.

(v) The administrative arrangements required for the implementation of particular measures should be directed towards the saving of manpower and the elimination of duplication. At the same time, recognition should be given to the functions of the various tiers of government which have been established in terms of the constitution of the Republic.

2.3 The Urban Transport Act.

Following on the Government’s acceptance of the Urban Transport Policy, as enunciated in the White Paper, the formalisation of the procedures necessary to implement the policy were made law in an amendment to the Transport

The Act, necessarily, did not introduce anything new to the accepted White Paper and was merely a formalisation of procedures.

For purposes of this Report the 27 sections and their descriptions only will be given.

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Thus we have traced the course of the Report of the Committee of Inquiry into Urban Transport Facilities in the Republic (the Driessen Report), which was appointed by the then Minister of Finance; through its development into a Government accepted White Paper setting out a policy on urban transport, and its expression into law.

The Driessen Report formally identified a need stemming from the developing urban transport problem; the White Paper stated what the Central Government was prepared to do about it; the Urban Transport Act provided the necessary legal framework in which to act.

What has this initiative achieved?
CHAPTER 3: AREAS OF NON-MEASURABLE EFFECT

Certain aspects of Government activity cannot be objectively quantified. These are discussed in this chapter.

3.1 Research, Education and Training

3.1.1 Research

The functions of the National Institute for Road Research of the CSIR were, as directed in the White Paper, extended into the broader transportation field.

While this move was, and remains, welcome and while the Institute has undoubtedly done good work, a noticeable flaw is evident.

The White Paper, while conceding the shortage of transportation expertise in the country, appeared to assure that this could be addressed in the research field merely by extending the NITRR's functions. The practical implementation of this extension appears never to have been completely thought through.

As a result, the NITRR established a transportation research steering committee, an off-shoot from the existing Road Research Steering Committee. This steering committee, with its dominant coalition of experienced highway engineers, compiles an annual research program which is then approved and financed by the National Transport Commission - which in turn has considerable experience in rural highway provision, but very little transportation, and especially urban transportation, experience.

Belated moves by the Department of Transport and the City Engineers of the five Core Cities to establish a Committee of Urban Authorities (CUTA), complimentary to the long existant Committee of State Road Authorities (CSRA), unfortunately ran into approval difficulties from both the then Minister of Transport (J.C. Heunis) and the established CSRA. This was unfortunate as the situation remains that urban transport research activities continue to be guided by a dominance of well intentioned but rural highway oriented parties, the NITRR being the only transportation moderating opinion.

The creation of CUTA is again enjoying attention under a more sympathetic Minister (H. Schoeman) and a more sympathetic CSRA, no doubt benefitting from the experience gained in four years of urban transportation planning.

This development is to be welcomed as, until transportation research, which is predominantly urban in nature, is guided by urban practitioners, it is unlikely that activities will efficiently address the really necessary issues or that results will be efficaciously or enthusiastically applied.
A temporary way out of this organisational dilemma, pending the formation of CUTA, is for urban authorities to include research priorities in their annual urban transport plans, thus affording the steering committee an indication of what the cities deem important. It is interesting to note that certain groups in the existing directing hierarchy are opposed even to this - an indication of the depths of resistance to change felt by some.

In view of this resistance the question must be asked as to whether cities should not be permitted to undertake their own research (e.g. into traffic signal systems). Considering the size of South Africa and the relatively low concentrations of traffic I suggest no. Practitioners are so few in number that they should be permitted to meet the daily problems unencumbered by unnecessary functions; however they should be permitted input into steering research in necessary directions.

The funding of transportation research, as opposed to pure road research, comes from the Urban Transport Fund. The latter is funded from the National Road Fund.

In 1981/82 the total amount available to the NITRR was:

- **UTF** R650 000
- **NRF** R3 250 000
- **CSIR** R1 500 000 (internal funds)
- **TOTAL** R5 400 000

The total spent by road authorities in the same period amounted to:

- **NRF** R140 m
- **UTF** R 20 m
- **Provinces** R450 m
- **Cities** R442 m
- **TOTAL** R1 052 m

Added to this must be approximately R8 000 million in transport operating costs and it is seen that, apart from vehicle and equipment manufacturers own research expenditure, only a minute percentage of capital and operational expenses is spent on research in South Africa. This is, frankly, dangerous.

American companies spend on average 3% of their annual budgets on research.

There seems cause to increase the country's transportation research budget to approximately R31,0 million, funded by the respective authorities in
proportion to their annual transportation expenditures. The direction of
research should continue to come from two steering committees, one re-
sponsible to the CSRA and one to CUTA. These steering committees should be
under the chairmanship of the NITRR, but answerable to the respective
CSRA/CUTA Chairmen who should rotate annually.

As mentioned at the start of this section, while the function of the
National Research Institute was extended in terms of the White Paper, the
practical directing organisation was not. Consequently the research output
varies from apparently useful, practical manuals, such as the Transport
Planning Research Reports, which it is respectfully suggested are neither
really research documents nor practitioners daily aids, to 'ivory-tower-ri
projects such as the 'Black Study'.

In their contexts these, as most documents put out by the Insti-
tute, are valuable, but they are not 'research'.

This failing appears to be due to government not recognising the true
role which should be played by a research institute and then further, not
putting its money where its mouth is and courageously providing adequate
finance for this role to be fulfilled.

3.1.2 Education

Very early in the Driessen Report - White Paper - Urban Transport Act
development process it was formally identified that there existed a
dearth of qualified transportation expertise in the country.

This shortage of skilled manpower is not uncommon to most industries in
South Africa and, while its formal identification came as nothing new
to practitioners, it did enable something to be done about it.

In fact at the time of the passing of the Urban Transport Act, thirty
two post graduate transportation planning specialists, all with overseas
qualifications, existed in the whole country, the only graduate employees
amongst the public transport operators were civil engineers (railways)
and mechanical engineers (bus transport), and there was not one operational
graduate in the road freight haulage industry.

Early action came slowly, with the NTC sponsoring chairs at the Universi-
ties of Pretoria (Transport Engineering) and South Africa (Transport Economics)
a lectureship at Stellenbosch (Transport Engineering) by 1978. As policy was
formulated certain individual bursaries were awarded to person's studying for post graduate transportation planning.

Input from the Cities, essentially calling for 100% grants to pay for employees attendance at universities, both local and overseas, combined with the NTC's becoming increasingly aware of the resistance from (State) Treasury to increase the Exchequer's annual contribution to the Urban Transport Fund, led to a NTC policy formulation that it would sponsor the facilities at universities, but local authorities should bear the costs of individuals attendance at those institutions.

The response from local authorities was negative, but understandable under the circumstances, in that they could not afford to hold open a post while the incumbent was away for up to two years at university.

This impasse between the NTC and MTA constituent local authorities was overcome by a proposal from Johannesburg that the costs of attendance should be split according to a sliding scale wherein a large local authority, such as Johannesburg, would find 50% of the cost of keeping the post open, the balance being borne by the respective CMTF, while in the case of the smaller local authority in an MTA the ratio of shared costs would be 10:90. The proportion in between these extremes was determined by the size of population of the relevant municipality. In all cases the CMTF would pay 100% of the cost of fees, books, etc.

While this formula appears to have been accepted by all concerned it is disheartening to note that only three municipalities have applied it in practice, these being Johannesburg (twice), Durban and Cape Town, although in the last case the student in question went to an overseas university. This apparent lack of interest from other local authorities is no doubt attributable to wariness in seeing which way the urban transport initiative is going to go.

The NTC has subsequently increased its annual allocation to its sponsored lectureship at Stellenbosch and is also sponsoring a lectureship in Transportation engineering at the University of the Witwatersrand.

The policy appears to be vindicated in that registered student figures at the respective faculties in the 1981 academic year were:

| University of Pretoria | 5 |
| University of Stellenbosch | 8 |
In the end of 1980, 15 students had graduated from the four faculties concerned, with post graduate qualifications in transportation engineering or economics.

An engineering conference in Hermanus in 1968 it was generally accepted by the South African Institute of Civil Engineers that one engineer could be held accountable for R500 000 worth of work. Allowing for inflation, that figure would be of the order of R1,0 million today. A glance at the R55 million spent on road infrastructure provision given in the previous section thus reveals an indicated road transportation engineering practitioner demand of approximately 1000, if we consider a post graduate qualification as a minimum requirement. We thus have a long way to go.

Considering the universities' existing engineering faculties, the focus of the Driesen Report on transportation planning, and the general level of education in the transportation infrastructure provision versus transport operations, it was inevitable that the first educational initiative should come in the transportation engineering/planning fields. This should in no way be read as a conscious refraining from educational training in transport operations on the part of the authorities/institutions. Rather it was generally readily accepted that this was the area most critically short of qualified and educational skills.

Some of the sponsored universities are moving towards operationally oriented courses. These moves are welcome, but it is suggested that the immense shortage of knowledge and skills in operations can in the short term be best addressed through on the job training, augmented by short courses, rather than through formal education. This is particularly in view of the disparity of existing general level education between the two sides of transportation.

The government's involvement in this training movement is discussed in the next section.
3.1.3 Training

Practically immediately after the promulgation of the Urban Transport Act, the Department of Transport took the initiative in calling together 'representatives of the bus transport industry to form a 'Bus Industry Training Group', convened and run as a project by the NITRR.

It was recognised by this group that a pressing need existed to train, and to co-ordinate training, in the bus industry. They soon set as their aim the creation of a training committee which proceeded to produce manuals and other training matter.

Two training courses were established, the first for management at the Graduate School of Business, University of Pretoria, and the second for first line supervisors at Rand Afrikaans University.

The fact that 52 and 560 persons have passed through their courses respectively since their inception speaks for their acceptance by the Industry.

Recognising the benefits of this training program, the freight industry, largely at the instigation of the Hauliers' Association, joined forces with the Bus Group. These organisations formed a combined 'Joint Committee of the Road Transport Industry' with two training subgroups, namely the Bus Industry Group and the Freight Industry Group.

These three groups, aided by new labour legislation, have as their aim the creation of a Road Transport Industry Training Board (RTITB), run along similar lines to the Civil Engineering Industry Training Board.

The future for more formalised and co-ordinated training on the operational side of transportation accordingly looks quite bright and appears to be based on a sound footing. Consequently, while the Urban Transport Fund continues to sponsor those activities pending the formation of the RTITB, the Department of Transport is removing itself from direct participation in the Industry's affairs, which is as it should be.

The Department has involved itself in other areas of training also, although these have not enjoyed the same formal organisation as above. Policy is to obtain courses from sources outside of the country (e.g. the Transport and Road Research Laboratory, the Institute of Transporation Engineers) and to then make these available for use by local authority engineers in training programs (e.g. traffic signal technicians courses).
This aspect of training is regarded by the Department as being supplemen-
tary to those courses sponsored by the NITRR, South African Road Federa-
tion and local authorities themselves.

The current role that the Department has assumed in training is thus one
of co-ordination and 'filling-the-gap' where training needs are either
firmly identified from the cities or provinces or become apparent from the
NTC's and Departments interpretation of the Urban Transport Act. Whether
this is the correct role or not is discussed in the sections concluding
this dissertation.

3.2 Planning

This dissertation does not compare different planning approaches nor does
it lay any claim to be a planning reference. However it is commonly accepted
that, through its document 'Guidelines and Requirements for the Preparation
of a Urban Transport Plan,' the Department of Transport has had an influence
on transportation planning in South Africa. As the author of this report
was a co-author of the 'Guidelines' document he will state the case for the
Department's planning approach and endeavour to identify those advantages
and disadvantages which have become apparent with time.

3.2.1 History of the Department of Transport Urban Planning Philosophy

Urban Transportation studies were begun in South Africa in the 1960's.
Prominent among these were the Greater Johannesburg Area Transport Study,
the 1967 Durban Transportation Study, the East London Transport Study and
those undertaken in Port Elizabeth, Pietermaritzburg and Kimberley. These
were all studies in the classic mould stemming from the Greater Chicago
Transportation Study of the late 1950's.

In other words a gravity model, or a derivation thereof, was used to dis-
tribute forecast generated trips to forecast trip attractions along a
network of links. The required number of links and their type, was pro-
jected to a certain planning horizon, generally twenty years off, to meet
anticipated demand.

The resultant map, with supporting data such as cost, etc. was considered to
be 'The Transport Plan'.
With the promulgation of the Urban Transport Act, Cape Town anticipate the planning direction which would be followed by the National Transport Commission, wrongly as it transpired, and appointed consultants to undertake the 'Cape Town Metropolitan Transport Study'. This study, completed in 1978, was the last of the 'classic' urban studies undertaken before the Department's influence began to be felt.

Mention must be made of the PWV Transportation Study, also completed in 1978. However this was a rural study and in fact largely disregarded public trips, so cannot be considered as being in the same vein as the others mentioned.

The reference above to 'the Department's influence being felt' is not expressly correct as, at the time of introduction the Urban Transport Act, the transport planning profession as a whole was beginning to question the validity and appropriateness of the classic studies. However the Department's influence undoubtedly hastened the shift towards the on-going planning process.

With the acceptance by the Government of the White Paper, and with the subsequent passing of the Act, it became apparent, in fact it became law, that the National Transport Commission could not make grants or subsidies from the Urban Transport Fund to any area not covered by a 'properly prepared and approved Urban Transport Plan'.

In those early days (1977) it was far from clear as to what exactly met this requirement.

The country was fortunate to have at that time persons of calibre who were invited to sit on a 'Transportation Planning Steering Committee', convened by the NITRR and sponsored from the Urban Transport Fund. Under the guidance of this committee the NITRR worked towards, and in 1978/79 produced its series of manuals entitled 'Transport Planning Research Reports'.

These, it was intended, could be distributed to relevant Core City Engineer's and consultants to form a manual for use in the preparation of an urban transport plan - much as the TRH (Technical Recommendations for Highways) Reports address highway materials specifications.

Unfortunately the philosophy expounded in the NITRR's Planning Reports was felt by the Department to still lean too heavily towards the classic modelling approach. This, it was felt, would not be comprehensible or acceptable to the average Town Engineer, whose priority is not always transportation.

Practically simultaneously with the publication of these reports, the Forward Planning Branch of the Johannesburg City Engineer's Department produced its Initial Interim Transport Plan for the JOMET Area.

This plan, as is well known, was a simple statement of the existing conditions in JOMET, a further simple statement of what was required to address the issues in the area, how much it would cost, and a program listing attainable priorities.

The available local literature thus ranged from a comprehensive set of research documents, to a practical set of reports produced by practising municipal engineers, albeit with a transportation bent.

3.2.2. Implementation of the Department's Philosophy.

The Department endeavoured to bring the best of these two approaches together in its document 'Guidelines and Requirements for the Preparation of a Transport Plan'.

This document was purposely split into two sections. The Guidelines portion identified an approach to planning and a format which was heavily influenced by the JOMET PLAN, but it made no attempt to prescribe what was absolutely necessary. This approach was deliberate as it recognised that there were many more practising engineers in other municipalities who might further improve on JOMET's efforts with time.
The requirements portion was necessary in order to direct loose thoughts and inspired political guesswork into a relatively uniform data system for objective assessments of transport requirements. This was felt necessary at the local level where existing political processes would, for example, direct resources into those areas with political clout, ignoring the areas suffering under inadequate political representation. It would also provide central government with some objective basis of comparison between metropolitan areas and would permit the monitoring of the travel patterns of an area. This would indicate both the efficiencies of different local planning policies and effectiveness of the national effort, measured against the goals set out in the Driessen Report.

The response to this document was immediate and, one ventures to suggest, predictable. The guidelines section, while not evoking vocal comment, resulted in the preparation of plans from PREMET, Durban and PEMET closely approximating the suggested format. There were in fact improvements, a notable one coming from Port Elizabeth in its additional report 'Problem Identification and Recommended Solutions', which crisply summarised what needed to be done in the area.

Cape Town, due to their initial false start, followed somewhat later but, it was interesting to see, adopted a similar format to that suggested by the Department.

The Department's approach, it is true, can be criticised in its emphasis on short term planning to the exclusion of the long term. In response to this criticism it must be pointed out that South African cities need to address their short term requirements on a co-ordinated basis now.

It has always been accepted that long term planning is necessary for orderly development of our cities over the next twenty years. To meet these requirements the Department invested substantially in both the DELTRAN and TRAMP suites of computer programs.

The fact remains that South Africa needs to address it's short term issues immediately - so as to ensure that a long term future exists.
The requirements section of the 'Guidelines' document received a different response. It was accepted by those authorities (notably Johannesburg and Port Elizabeth) which already had systems operating which could provide the data, but was severely criticised by those who needed to introduce the systems at, it is conceded, high initial cost.

Nevertheless it is interesting to observe that, increasingly, authorities are adopting the TABS and similar suites and are showing, more and more, signs of acceptance of the need to establish a database against which projects can be assessed.

The ultimate satisfaction to the Department is Springs which, in its role as Core City of the East Rand is complying in every respect to the Guideline Document.

The Department's view does not decry classic transport modelling techniques in the long term, nor does it denigrate the NITRR's Research Reports.

Its view on the former is that modelling is very much a tool to predict long term trends and changes, but this tool must play second fiddle to the more important needs of addressing and resolving the practical issues facing us now. It does not take a gravity model to tell the decision maker that every route from a black group area to the CBD is in dire danger of collapse - right now.

Its view on the latter is that the NITRR's work is necessary reading for specialist transportation planners, but not essential reading for a practising town engineer who is more concerned with sewerage and water reticulation - but who must be made to realise that transportation is every bit as important to the welfare of his community, and that there are objective, practical means of determining how resources should best be distributed to ease his transport problem. Unfortunately this 'goldfish bowl' approach to transportation is the only practical means of gaining this municipal element its due.
Two other Departmental influences must be mentioned in this section.
These are the concept of metropolitan planning and the benefits of
the Urban Transport Act in pulling together operating data from public
transport undertakings which was either not available in the past -
or was most jealously guarded.

With regard to the first, mention was made earlier of the JOMET Initial
Interim Transport Plan. Similar budgeting plans and programmes had
been produced annually for practically every local authority in the
country. The results of this independent planning were evident
everywhere - freeways which terminated in two-lane arterials (Pretoria),
dual carriageways which did the same (Higgins Highway in Durban),
the highway maze that is the East Rand.

For some inexplicable reason provision of sewerage and water reticulation
proceeded smoothly on a regional or metropolitan basis, without anyone
even talking about it, but parochialism led to highway and public
transport systems whose only clear focus was the individual CBD. The
fact that 40 000 vpd crossed the Johannesburg/Germiston boundary daily
was apparently not ever considered in the planning process.

This different treatment of sewerage, water and transport still
confounds one, even after four years of a metropolitan view of
transportation.

The JOMET Initial Plan, as reasonable as its programme was, was
the first plan to emerge in South Africa in which ten municipalities
had agreed to a priority rating for transportation projects throughout
their region.17

As critical as an observer might be of the actual priorities, and as
far from the concepts cited in Driessen as the implementation process
might be, the first small step had been taken towards co-ordinated
regional transportation provision. The significance of this step
discussed more fully later.
With regard to the latter, the Urban Transport Act has made it a requirement that any operator receiving subsidy from the Urban Transport Fund must satisfy the NTC of the soundness of its management practices. This is a considerable step forward from the Tariffs and Subsidies Act which presently governs subsidies and which only calls for financial control. The requirement led to the development of the NTC's Management Information System for Bus Undertakings. Initially tried on an experimental basis with 22 undertakings, it has recently been extended to cover 99, which is practically the entire industry. The only significant operators not providing data are the 262 independent operators in Durban.

While, increasingly, the participating organisations are deriving individual benefits from the system, the wealth of data generated for transport planning, both from a point of view of statements of fact and the establishment of norms is proving increasingly valuable.

We see that the Departments' role in planning has not been one of actually undertaking any activities itself, nor in fact of instructing anyone on what to do. It has rather taken the role of catalyst, hastening the acceptance of new philosophies, encouraging the cross change of information and, perhaps most importantly introducing a practical, objective, co-ordinated view into planning.

3.3 Public Involvement

The Driessen Report, published as it was in 1973, indicated its awareness of the need for public involvement in the planning process.

It did not however identify what it considered necessary for effective execution of the identified need.

This omission was perpetuated by both the White Paper and the Act which, by implication, both felt that the administrative procedures established for metropolitan transport planning were sufficient to obtain adequate feedback from the public, through duly elected representatives and the democratic process.
Fortunately the NITRE Reports' recognised this serious omission and devoted one report solely to the issue. This intelligent anticipation of a very necessary planning activity proved propitious when, with planning activities underway, the Parktown Residents Association was formed, in 1977, to oppose the siting of the proposed MS along the Parktown Ridge.

The success of the Parktown Residents Association became evident when they amalgamated with other Residents, Ratepayers and Vigilante Groups to form the Johannesburg Metropolitan Action Group (JOMAG).

There is no doubt that this group of dedicated residents is a most able and necessary body. It's effect was to make all tiers of government aware of the need for public involvement. The NITRR report was, as mentioned, particularly propitious as with JOMAG's increasingly vocal criticism of planning activities it enabled JOMET to begin to address some of the criticism in a scientific manner.

Unfortunately, and to the Johannesburg Council's shame, that body refused to appoint a professional public relations team, insisting that its officials were best suited to take the issues to the public.

The decision is criticised on two scores. Firstly, technically minded persons are not the correct individuals to convey difficult and contentious topics to laymen, no matter how aware these laymen are. Secondly it is unconvincing, and plainly unfair to expect a planning professional who has to argue for a particular idea to objectively convey that idea to the public.

Nevertheless the officials of JOMET rose well to the demands placed on them and tackled the communication exercise with considerable zest. The exercise was a landmark in South Africa's planning history in that it was the first time that public involvement had been attempted on a macro scale, for a strategy as opposed to a specific project. Interestingly two approaches were adopted by town councils. The 'older' councils with more fixed ideas insisted in reporting back to their wards themselves, while 'younger' councils requested full, well advertised open public meetings at which the full strategy presentation was made.
This is surely a sign that established councillors are not willing to release their powers just yet, but also that a younger generation of councillors are very aware of the need to permit true expression of the people's will, especially on matters of strategy.

It was significant to note that of the formal public response, 98% was from the municipalities which adopted the latter approach, which encouraged more involvement. While it can be argued that this was due to these communities being generally more educated and aware than the norm, and it is agreed that this is partly the case, it is suggested that the active address and participation approach had far more influence on the public response. Despite the JOMET exercise, and surely attributable to the Core City Council's continued insistence that communication must be handled through overworked and unsuited planning professionals, certain points were still taken issue with by JOMAG.

This inevitably led to progressive approaches up the ladder of authority, in two instances eventually to letters to the Minister of Transport.

This 'moving up the ladder', which was encouraged by the expression of central government's interest in the urban areas by the passing of the Urban Transport Act, was not exactly what was intended by higher authority, who had a view that 'flak' should be handled at grass roots level where at all possible.

The initial reaction was to endeavour to push criticism back down to the local level. This worked in several instances, but enough unresolved criticism remained to cause the Director-General: Transport, Mr. A.B. Eksteen, to attend JOMAG's annual general meeting and address the group on how his Department views its role.

This is set out in a document entitled 'Guidelines for Public Involvement' which is intended to be approved by the National Transport Commission and distributed to all parties benefitting financially from the Urban Transport Fund.

Essentially the document aims at ensuring that public involvement is handled as near to grass roots as possible, and calls for professional public relations teams to continually conduct exercises such as that undertaken by the JOMET Team, but following the course adopted by the 'younger' councils.
The document does not at this stage aim to set out requirements for public participation, but is envisaged as a guide for those authorities who wish to benefit from other's experiences.

Mention must be made of an alternative approach to public involvement followed by Durban. A well advertised series of demonstrations, in the form of exhibits set up in a bus, travelled the area spending up to three days at a time in convenient public places, such as public libraries, civic centres and the like.

While considerable interest was shown in these exhibits, the interest was primarily from those who wanted to criticise the lack of public transport. A further weakness became evident in that the exhibits merely called for public comment and suggestions on the existing situation; it did not put forward a concrete alternative for reaction. The experience gained from the exercise nevertheless proved valuable.

Apart from the above exercises, no other practical work has been undertaken in public involvement in transportation planning in South Africa. Surely this is an indication of how fortunate the profession has been. The lack of public resistance can not go on forever - besides, it is time that we as planners recognise that involvement of the public can be to our benefit (e.g. in creating a political demand for more funds) as well as in obtaining support for acceptable proposals.

The Political Process

If one looks at the Driesen Report / Urban Transport Act in depth, one sees more than a practical statement of the urban Transport problem and measures by which to address it.

Indeed, we would be naive to view it in this way. The entire process of initiating central government interest in transportation in the urban areas was a political one.

The trigger of a call for financial assistance came as much from parties of the opinion that central government had a responsibility towards the provision of infrastructure as much as for any other reason.
The central government's implied response, both in passing the Urban Transport Act to enable the exchequer to put money in these areas and in passing the Act to coerce co-ordination amongst parochial local authorities was political.

So too was the government's ultimate practical rejection of its requested involvements, seen in the R20,0 million annual allocation vs the R 390,0 million (inflated) annual allocation it was envisaged would be its share at this time (1981).

However, benefits to the political process have flowed from the Urban Transport Act.

Much of South Africa's urban transport problem stems from past parochialism. It is no coincidence that while inter-urban travel, along the rural authorities' road network, and travel within a municipal area, presents no problem, intra-metropolitan travel gives rise to congestion on unmaintained roadways. This is especially the case between residential areas of different race groups e.g. Umlazi - Durban; Soweto - Johannesburg; Mamelodi - Pretoria; New Brighton - Port Elizabeth; Mdantsane - East London; the list is as long as the number of black townships in the country.

This phenomenon stems as much from national policies as from local preservation of the existing order. It is significant that, right at the present time, while R 400,0 million is being invested towards improving Soweto's infrastructure, little, if anything is being done to improve the links between South Africa's two biggest cities, Soweto and Johannesburg.

The PWV (rural) transportation study also, did not consider intra-metropolitan travel, while the National Transport Commission's national road policy was for many years to connect regions, disregarding the effect of the discharge of traffic from these high class facilities.
Despite the spirit of 'unification' embodied in the construction of first the Union - and then the Republic of South Africa, parochialism is a historic way of life. It can also be seen throughout the railway system and in all facets of public transport.

That this unfortunate aspect of humanity can be overcome, there is no doubt. We have only to consider the very successful work of the Rand Water Board, the Johannesburg Sewerage System and Cape Metropolitan (Land use) Planning Committee to see that, where persons can be convinced of the public good or, more cynically, of the self advantage to be gained from a broader view, parochial interests are overcome. The spirit of the Urban Transport Act was aimed at achieving this co-operation in transportation. This was also the spirit behind the much maligned and non-respected 'Physical Planning Act' which calls for guide plans to be prepared for economic areas.

The great difference between these two co-ordinating Acts is that the Urban Transport Act has a designated source of finance to support it, the Guide Plans do not.

The greatest failing amongst all parties involved in effecting the Urban Transport Act has been in not implementing the White Paper's call for a trial subsidy from the Exchequer, to enable an experimental area to demonstrate the effectiveness of the permit and levy system to raise moneys for its Consolidated Metropolitan Transport Fund.

This failure is attributable to all parties involved. Firstly to local governments who lack the political courage necessary for such an exercise. Johannesburg and Pretoria spent a year arguing over which city would try, and then dropped the issue, preferring to demand that central government should be a source of unlimited financial largesse.