

The recent series of articles in the Rand Daily Mail on the Johannesburg Motorways Scheme, while fittingly drawing attention to the scheme and part of its progress and problems, neglected to give due weight to what has been achieved, not only on the Motorways Scheme but also in improving the city's existing major roads. At the same time, the articles made light of the many difficulties that had to be overcome, including the financing of the scheme, which necessitated legislative powers that did not exist, legal procedures that have to be followed, the slow process of land acquisition, the need to save the ratepayers' money, crippling staff shortages and the complexities of the work.

It is with a view to give readers a true perspective of the whole scheme and its surrounding circumstances, that the following brief outline of the history and factors relating to the scheme are set out.

#### Early Planning.

In view of the city's rapidly increasing traffic during the immediate post-war years the City Council, in conjunction with the South African Railways Administration, adopted a scheme to improve access between the central area and the suburbs to the north. As a result, several new bridges were built across the railway lines.

At the same time, the Council appreciated that long term planning was necessary for the future and, as a result, a basic traffic plan was formulated in 1948. This plan included improvements to existing major roads, new bus terminals, the installation of parking meters and the building of parking garages. The implications of the preliminary appraisal of the situation were such that the Council subsequently appointed a renowned American traffic consultant, Mr. Lloyd B. Reid, to examine and comment on this plan. This he did in 1954, and in September the following year the Reid Report was presented to the Council's Works and Traffic Committee. This report substantially confirmed the planning of the Council's officials, and recommended, in addition, a system of urban motorways with control of access, and a modern robot control system.

The urban/...

The urban motorways system consists basically of an east-west motorway running south of the Main Reef Road, and a north-south motorway running through the whole Municipal Area. The east-west motorway will run from the Main Reef Road, at Church Street Extension in the west, to the Germiston boundary, on the east. The north-south motorway will run from the Kimberley Road in the south, through Westgate and Braamfontein, to the northern boundary near Bramley.

After consideration by various Council committees and interested outside bodies, including the Johannesburg Traffic Plan Committee, the Council in 1956 approved in principle the construction of a portion of the motorway scheme, at an estimated cost of R20,802,000. At the same time, it recommended that negotiations be entered into with the Government and the Provincial Administration for their participation, financial and otherwise, and to determine what contribution they were prepared to make in the building of the proposed motorway system.

#### Special Legislation.

The approval of the scheme was followed by negotiations with the authorities, which took a long time in view of important principles which had to be resolved and special legislation which had to be passed. At the same time, however, steps were taken to implement other aspects of the Reid Report and of the 1948 Traffic Plan.

The need for the expenditure of a very large amount of money was a cause for concern to the Council, as is shown by the fact that at first the construction of only a portion of the present motorways scheme was approved. It was felt that the city could not afford to meet the full cost of the motorways alone, particularly as costly programmes for the improvements of existing major roads and other aspects of the overall traffic plan were also imperative.

The question of the amount of the subsidy the Council hoped to receive from the National Transport Commission and the Transvaal Province was therefore an issue of great importance to Johannesburg. This was even more so as the Council was informed that no subsidy would be given for the cost of the acquisition of the necessary land, which formed a very large percentage of the total cost of the scheme in question. This financial aspect became even more important as it became apparent that the whole of the present motorways scheme should be put in hand, and not only the portion decided upon in 1956.

Among the reasons for the protracted negotiations with the Government was the fact that the matter of policy in respect of urban motorways had to be resolved by the National Transport Commission for the country as a whole. In Johannesburg the motorways do not follow the line of existing national roads, and no authority existed for subsidising motorways in such cases. As a result special parliamentary legislation had to be obtained to enable the National Transport Commission to contribute to the cost of the motorways. Special Provincial legislation was also required.

In early 1962 the Council approved the present Motorways Scheme. The estimated cost of this scheme is R45,558,000, of which a total of R21,000,000 will be paid as subsidies by the National Transport Commission and the Transvaal Province. The subsidy receivable by Johannesburg will be about 46% of the total cost; the remaining R24,558,000 the Council will have to find from its own resources. The motorways will have a total length of over 21 miles and are scheduled to be built over a ten year period.

#### Complexities of Motorways Construction.

A special feature of the Motorways Scheme is that the portion to be constructed first, adjoining the central city area, will consist of almost continuous structures above ground level. This portion extends from Smit Street, Braamfontein, southwards to the Westgate Dump, and then eastwards to the Kazerne Goods Yards. In addition, two one-way motorway structures, also above ground level, will run from the Heidelberg Road Interchange to link up with the Harrow Road Scheme.

The total length of these overhead structures is about 4½ miles. In the remaining length of 17 miles, many bridges and large earthmoving works will be built, but compared with the overhead structures, these will be easier and quicker to construct.

The viaduct in Goch Street will be an unusual one. Because of the restricted land available, this will consist mostly of a double deck structure, with three lanes of traffic travelling southwards on the upper deck, and three lanes travelling northwards on the lower deck. The structural problems arising from this type of construction have been very complex.

The whole/...

The whole of the East-West Motorway will be situated just south of the gold reef outcrops, which have been mined. Accurate records of the original mine workings are generally not available and in many cases it cannot be accurately predicted how much future mining will take place close to the motorway. The question of possible mining subsidence has presented many technical problems and in some cases the strengthening of old mine workings near the motorway may be necessary. In addition, land ownership in this area is very complicated and subject to the provisions of the Gold Law.

Comparison has been made with the Cape Town Motorways. There are many differences between the two schemes. Whereas the Cape Town Motorways are situated mainly outside the city, on relatively undeveloped land - and with no problems arising from mining activities - the priority section of the Johannesburg Motorways is close to the central area. In addition, the Cape Town Motorways are mostly at ground level, whereas 4½ miles of Johannesburg Motorways will be continuous elevated structures, about 30 feet above ground level. Because of the open country in which most of the Cape Town Motorways are located, largely undeveloped properties have had to be acquired, which lessened the time and money spent on land acquisition.

#### Improvements to Existing Roads.

In dealing with the Motorways Scheme, it must be borne in mind that motorways, being roads of the highest standards, with complete control of access, still form only part of the city's whole road system. The Johannesburg Traffic Plan covers all aspects of traffic, and includes improvements to the existing major roads, which are the city's arterial routes, the construction of new link roads, the formation of one-way pairs, the installation of parking meters and the construction of parking garages. These works form part of the Major Roads Programme.

The first Major Roads Programme was started in July 1957, R13,000,000 being voted for the purpose. It was intended that this should be a ten year scheme, but by June 1963 about 90% of the programme had been completed. Far from stalling, the Council had expedited the scheme greatly.

A second Major Roads Programme was then approved by the Council, at a cost of R14,000,000 over ten years, commencing in July 1963. Some of the major roads works carried out since 1957, have included schemes in:-

Barry Hertzog Avenue (bridges and a four-lane highway).  
Clarendon Place (dual carriageway).  
Jan Smuts Avenue (dual carriageway).  
Harrow Road (bridges, a viaduct and a dual carriageway).  
Market Street - Bezuidenhout Street (four-lane highway  
and a bridge).  
Heidelberg Road (dual carriageway).  
Booyens Road (dual carriageway).  
Queens Road - Hospital Street Link (four-lane highway).  
Queens Road (Mayfair) - Bree Street Link (four-lane  
highway and a bridge).  
Empire Road (dual carriageway).  
Perth Road (four-lane highway).  
Smit and Wolmarans Streets (one-way operation),  
and many others.

During the same period a few thousand parking meters were installed, and two parking garages were built at Kaserne and Vanderbijl Square, allowing parking for 1,200 cars, at a cost of about R640,000. Since 1962 two other parking garages were built, one at Kaserne and one at the Union Grounds, to accommodate 1,860 cars at a cost of over R1-million. At present, two further garages for 620 cars are being built on the Residency Site and at the Hedley Chilvers Gardens, at a cost of R770,000. Depending on the application of the recent building restrictions, tenders will be called soon for a garage under the Library Gardens, to hold 585 cars, at an estimated cost of R837,000. Altogether, therefore, R3,250,000 has been spent or allocated to parking garages to accommodate 4,265 cars.

#### Progress on the Motorways.

It was decided in regard to the construction of the motorways, to give priority to the section of the motorway system which extends from Smit Street, Braamfontein, to Booyens Road, between which points there will be no interchanges with the normal street system.

This section includes the bridge over the railway marshalling yards at Braamfontein, the main structure of which is nearly completed. This bridge was assigned to a consulting engineer in 1958, four years before the motorway scheme was settled, as it had been intended for many years to have a bridge over the railway lines at this point. As a result, it was possible to start the first contract for the sub-structure of the bridge shortly after the Motorways Scheme was approved.

Since/...

Since the end of 1963 the following motorway contracts have been advertised:-

Bridge over motorway at Showground Road	: Work is under construction.
Goch Street North Section	: Tenders are due next month.
Goch Street South	: Work is under construction.
Westgate to Booyssens Road Section	: Work will start in April.
Berea Street to Siverwright Avenue	: Work is under construction.
Kimberley Road Section, Robertsham	: Work will start in March.

The programme for the remainder of this priority section of the motorways is as follows:-

Westgate <u>Dump</u>	: Earthmoving contract to be advertised next March. Structural and other contracts to follow.
Smit Street Interchange	: Contract to be advertised in May.

In addition, during the rest of this year contracts will be advertised for work on Booyssens Road to Kloff Street Extension; Kloff Street Extension to the Heidelberg Road Interchange; and earthmoving work at the Showgrounds (Southgate Scheme).

In 1966 the following contracts will be advertised: the Heidelberg Road Interchange; a bridge over the Kaserne Yards; motorway from Kaserne Bridge to Germiston boundary; link between End Street and Sigmart Road; and a section north of the Smit Street Interchange.

The total value of the work and land costs in respect of all the work to be advertised up to the end of 1966 is about R27,000,000, about 60% of the total.

#### Land Acquisition Takes Time.

One of the most time consuming factors in the implementation of the Motorways and Major Roads Schemes is the acquisition of land. Certain legal procedures are prescribed and the Council has to follow them. Since 1957 about 500 properties have had to be acquired in whole or in part for these schemes.

Where owners are unwilling to part with their properties, the land has to be acquired under the Municipalities Powers of Expropriation Ordinance of 1903. Notices of intention to expropriate are sent out and the persons concerned are advised that they have a right to object to the expropriation within a month. If an objection is lodged, this has the effect of holding up not only the expropriation of the property to which the objection relates, but the whole scheme or part of a scheme in which the property falls. Objections are dealt with by Commissions of Inquiry under a Commissioner appointed by the Administrator. If the Administrator agrees to the expropriation of the property, experience has shown that it takes from six months to two years to dispose of objections and there is little the Council can do to limit this.

Even when approval to proceed is eventually obtained, there remains the question of financial settlement and this sometimes gives rise to arbitration proceedings, with further delays. Arbitrations delay the taking over of properties because it can seriously prejudice the Council's case in arbitration if the buildings have already been demolished. The very high cost of arbitration makes it imperative for the Council's officials to explore every avenue which might lead to an agreed settlement.

Apart from the time involved by legal requirements, there are also many practical issues. Several large commercial and industrial firms have had to vacate their premises, find other suitable land and rebuild their offices and factories completely. The rights of these firms must be observed as fairly as possible. Any unfair treatment by the Council would greatly increase the damages for which it might be liable, apart from laying it open to severe criticism.

Regarding compensation, officials are obliged to observe the provisions of the appropriate ordinance. Many excessive claims have been received for compensation, and in dealing with these, officials have regarded it as their duty to safeguard the moneys of ratepayers as fully as possible. As an example of what has to be dealt with in this connection, one claim received for compensation amounted to £124,500. Complex issues were involved, but after negotiation lasting more than a year the Council's officials succeeded in settling the claim for £17,500.

The cost/...

The cost of settlements in 1964 totalled R3,674,000, compared with claims of R4,410,000 - a difference of R736,000. This demonstrates the necessity for all claims to be carefully scrutinised by experienced officials.

Development Causes Staff Shortage.

The approval of the Motorways Scheme by the Council in 1962 did not take place very long before the start of a marked increase in the rate of growth of the country's economic development. Compared with the tempo of activity in the years 1960 - 1962 inclusive, during part of which the building trade was much less than fully employed, a marked upward trend in activity took place in 1963 throughout the country and has continued ever since. This could hardly have been foreseen in the previous year.

Great expansion schemes in commerce and industry were started and this in turn increased the demand for the limited technical personnel available in the country. The City Engineer's Department ever since has had great difficulty in retaining its engineers, while it has had far more to handle as a consequence of the upturn in economic activity. All this was over and above the considerable effort required to overcome the backlog of works which had arisen from a former period of financial stringency. There has been a great increase in the volume of building plans received and of large building and town planning developments.

Considerable progress has been made in connection with the new market and abattoirs developments, but these schemes have required staff to handle them. Several major main drainage schemes have had to be undertaken and two large sewage purification works (both larger than any other in Southern Africa) have had to be designed and constructed. The problems of urban renewal have become more pressing and the preparation of a master transportation plan has had to be expedited. These development schemes have come closer to fruition in the period since the Motorways Scheme was approved, so that the loss of technical staff in the department has been in strong contrast to the needs for a much larger staff.

The City Engineer's Department in a city the size of Johannesburg, is required to plan enormous schemes, not only for its own department but also for other departments. To supplement the activities of the department's engineer strength, many assignments have been given to consulting engineers and architects, particularly in respect of the Motorway Schemes and work flowing

from it/...



from it. There are at present nine consulting engineer firms engaged on motorway and major road projects, some with more than one assignment. All these firms are thoroughly competent, and engage engineers with specialised overseas training, as does the Council.

The severe shortage of personnel is also being felt among contractors engaged upon the Motorways, and some are being delayed as a result. On the Goch Street South contract a shortage of carpenters was experienced for a time, while on the new retail market building the contractor was without bricklayers for three weeks.

Recent tenders would also suggest that contractors have in general more work than they need. Only two contractors submitted tenders for one motorways contract and only four for a second, despite the fact that the second contract was worth more than R2-million.

There is no doubt that the high rate of the country's economic development, in relation to the manpower available, will be a continuing strong influence on the rate of progress of much of the city's development.

#### Steady Progress.

In spite of all these difficulties, the rate of progress on the Motorways Scheme is increasing steadily. Four major contracts are currently under construction and during this year six further contracts will be advertised. At the same time, planning for the work further ahead will be pursued as vigorously as possible.

The Motorways Scheme was agreed upon by the Council and higher authorities, bearing in mind the need for the work; the rate of progress that might reasonably be expected in view of competition for physical resources; and the extent to which finance could reasonably and soundly be diverted from other priorities. To justify acceleration, all parties would have to re-assess all these factors; and either higher authorities would have to re-arrange their own financial priorities, or the Council would have to postpone some other top priority work so as to divert funds to the Motorways account until subsidies on the presently approved scale caught up with the new surge in expenditure.

The ratepayers/...

The ratepayers and motorists of Johannesburg can rest assured, however, that the construction of the Motorways will proceed as fast as possible, within the bounds of reasonable costs and the availability of labour. As sections of the Motorways are completed, they will be opened to traffic and Johannesburg's Motorways will be an achievement on which every citizen will be able to look with pride.

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