

SUMMARY OF RECOMMENDATIONS

The Transportation Plan prepared by the Committee deals with road development, road traffic terminal facilities, railway development, public passenger transport, finance and administration. The recommendations of the Committee, summarized, are:—

(i) Road Development:

- (a) That a system of urban motorways be constructed from the city centre to provide main traffic routes over the Metropolitan Area: (p. 40)
- (b) That an inner ring road be constructed, as far as practicable to a motorway standard, around the central business area linking together the urban motorway routes:
- (c) That existing main traffic routes, both radial and cross roads, should be improved progressively and integrated with the proposed urban motorways to form a Metropolitan Main Road system: (p. 40)
- (d) That the urban motorway development work should be commenced immediately and carried out in the order set out in this Report to provide "stages" which can be fully used as completed. (pp. 40 and 41)

(ii) Road Traffic Terminal Facilities:

- (a) That the present bus terminal be developed further as necessary; that a further terminal be provided on the western side of the central city area readily accessible to the business and commercial areas; that provision be made for a further bus terminal in the future on the eastern side of the city; and that one of these terminals provide for long-distance road transport: (p. 42)
- (b) That provision be made for a trucking terminal, or terminals, adjacent to or readily accessible to the inner ring road system: (p. 42)
- (c) That provision be made for long-period car parking facilities generally adjacent to and inside the ring road system; that provision be made for increased shorter period parking as near as possible to the main shopping and business premises and that this work should be commenced immediately, as the provision of these facilities is complementary to road development.

(iii) Railway Development:

- (a) That immediate investigation be made with a view to
 - extending a line from the present railway station to a new

station in Victoria Street East to enable diesel-driven passenger trains to be brought into the centre of the city; OR
 — re-arranging the present station and yard layout to allow vehicles nearer to the platforms of suburban passenger trains and thus providing for more rapid and more convenient transfer of passengers: (p. 42)

- (b) That the Morningside Deviation would not carry enough passengers to allow deferring road construction, and should not be embarked upon: (p. 42)
- (c) That the Avondale-Southdown railway connection would not, either alone, or in conjunction with the Morningside Deviation, have any appreciable effect on the daily urban transportation, but is most desirable from the point of view of main line railway operation and should be constructed as a part of the main line development. (p. 42)

(iv) Public Passenger Transport:

- (a) That provision should be made on all motorway routes for a limited number of properly designed bus pick-up and set-down stations on special loop lanes free of the motorway wherever these routes pass through areas which could be served in this way; and that public passenger road transport services should be developed as far as possible for express services by the use of the urban motorway routes: (p. 48)
- (b) That bus terminals, the railway station, major car parks, and the main parts of the central business area should be linked together by public passenger services either by shuttle services, by cross or through routing of services, or by a combination of these methods: (p. 48)
- (c) That once bus routes have been consolidated in normal streets carrying considerable traffic, bus loading bays should be provided, where practicable, off the normal roadway. (p. 48)

(v) Finance:

- (a) That the proposed Metropolitan Main Road system (which is estimated to cost £12,000,000) should be financed by
 - a considerably increased annual contribution from the National Roads Fund;
 - a substantial contribution from the Government towards the cost of arterial routes (where these routes would fulfil functions which the railway development was originally intended to perform): (p. 49)

- (b) That works ancillary to the Main Road system construction should be financed from local body sources with resource, in some cases, to finance provided from National Roads Fund contributions: (p. 49)
 - (c) That the construction programme and the financial provision should ensure the carrying out of the plan by 1965, or at the very latest, 1970: (p. 41)
 - (d) That transport terminals should be financed, in the first instance, by local body finance, but should be self-supporting through charges on the transport using them (although some special consideration may have to be given to bus terminal facilities): (p. 49)
 - (e) That car parking facilities in the central area should be financed, in the first instance, by local body finance, but should be self-supporting through charges on the vehicles using such facilities. (p. 49)
- (vi) **Administration:**
- (a) That the only really effective method for carrying out the construction and development of the proposed Metropolitan

Main Road system would be by means of a small Commission, Metropolitan Board of Works or similar Authority having the necessary legal, financial, and administrative powers: (p. 49)

- (b) That such a Commission or Authority should be established:
- (c) That, as the construction of the urban motorway system is a matter of urgency and as there would be some considerable delay in the setting up of any Metropolitan Main Road Authority, construction work in respect of arterial routes should be undertaken immediately by the Ministry of Works in conjunction with the City Council; and that the City Council and other local authorities undertake the remainder until a properly constituted Metropolitan Commission, or Authority, is established; and that in all cases, the work be carried out in collaboration with the Regional Planning Authority: (p. 50)
- (d) That while some minor changes might be found beneficial, there is no evidence before the Committee which would indicate any radical change being necessary in the present system of public passenger transport service control, or which would justify the setting up of any other authority. (p. 50)

THE BASIS OF THE PLAN

1. BASIC CONSIDERATIONS:

Considerations, which form the real basis of the Plan are:—

(i) **Auckland's Most Urgent Transport Problem — Roads:**

The survey shows conclusively that Auckland's most urgent transport problem, and the one which would give maximum relief, is in respect of its road system. Railway development, while unquestionably of importance, should be developed with the growth of the city, but cannot immediately achieve comparable results and, therefore, should not be given preference at this stage. (p. 159)

(ii) **Comparative Results Per £1,000,000 Expenditure:**

The estimated costs of rail and road development schemes and their estimated total effect:—

	Total Cost:	Percentage of total urban transportation traffic which would be carried in 1960:	Amount of benefit per £1,000,000 expended:
Railway Development Scheme — Morningside Deviation (including electrification from Papakura to Henderson)	£11,710,000	5%	2,000,000 passenger journeys/year (p. 157-9)
Railway Development Scheme — Spurline to Victoria St.	£2,000,000	3%	6,000,000 passenger journeys/year (p. 159)
Road Development Scheme — Urban Motorways	£12,000,000	75% to 80%	20,000,000 passenger journeys/year plus the benefit to all goods traffic in the urban area.

(iii) **Road Development Economically Justified:**

The road development scheme would protect property values in both the central business area and the urban area generally and provide a framework for the orderly development of the rapidly growing urban area. It would be justified economically in that both the money and the manpower used in construction would be saved in a few years by the more efficient transportation system. (p. 152)

(iv) **Increased Contribution from National Roads Fund:**

The estimated contribution to the National Roads Fund by road users in the Auckland Metropolitan Area in 1954 was approximately £3,000,000. Approximately £1,000,000 from this Fund was allocated to the Metropolitan Area through highway construction or subsidies. There is every justification for a considerably increased contribution towards arterial road construction in the Metropolitan Area. (p. 167)

(v) **Use of Available Funds:**

It is evident from the survey that if the £11,000,000 required for construction of the Morningside Deviation Scheme were to be made available by the Government for expenditure on the road system, it would achieve very much greater results.

(vi) **Delay in Construction Will Increase Costs:**

Any delay in carrying out the recommended road development scheme will increase, inevitably, cost of property acquisition, construction, and losses through traffic congestion.

(vii) **Over 90% of Total Transport Carried on Roads:**

By far the greater part (over 90%) of the passenger and goods movement is carried, and will continue to be carried in the foreseeable future, on the road system. (p. 148)

(This is an established and recognized characteristic of transport in every city in the World comparable with Auckland. Also, a joint report on arterial facilities by the Port of New York Authority and the Triborough Bridge & Tunnel Authority in January 1955, stated:

"Vehicular traffic studies showed that if facilities for bringing New Jersey passengers to Manhattan by rail were effectively improved, the number of Trans-Hudson automobile passengers who would be attracted would be relatively small, and the amount of traffic on Manhattan congested streets during rush hours would not be reduced to a noticeable degree.")

(viii) **Road Traffic Volumes Will Increase:**

The volume of road traffic will increase; there is every indication that the total traffic movement in the area will be at least doubled and may even be trebled within the next 20 to 25 years; there is no feasible method of preventing a continued increase. (p. 104)

(This is recognized, not only in growing expanding urban areas such as Auckland, but in older, more stabilized cities. For example, the Report on London

Traffic Congestion, published by the Ministry of Transport in 1951, states:

"There is every indication that the volume of traffic will continue to increase. Nevertheless, we have reached the general conclusion that a reduction in the volume of traffic as a means of relieving traffic congestion is not only undesirable, but quite impracticable."

(ix) **High Cost of Traffic Congestion:**

Traffic congestion, resulting from overloading of the street system is costing the community at large in the urban area millions of pounds (£) per year at present. The losses that can be assessed in terms of money are only a part of the total cost of congestion. The rapid increases in congestion, if estimated future volumes of traffic were to be confined to the existing street system, would result in losses (in time, petrol, and other transport operating costs) of the order of £50,000,000 to £100,000,000 in the decade 1960-1970 (depending upon the rate of growth of traffic).

(These figures exclude the cost of traffic accidents resulting from congestion and the conditions which cause congestion, and exclude factors for which no scientific basis of assessment exists; all authorities agree that the total wastage in manpower and in resources is not only real and very considerable, but has a marked impact on both urban and national economics). (p. 152)

(x) **Necessity for Relief:**

Completely free flowing traffic conditions cannot be provided for all traffic, but steps to relieve traffic congestion are necessary and would bring about substantial nett savings in manpower and resources.

(The United States Highway Research Board, Bulletin No. 25, 1950, states:

"Urban traffic congestion rates high on a list of the Nation's serious domestic problems. Its influence on the economy, safety, tempers and the American way of life is tremendous. Far and wide City and State officials, encouraged and aided by substantial grants of federal funds, are making plans for relieving and correcting the intolerable conditions existing on the streets of every city.")

(xi) **Economy of Road Space:**

Public passenger transport uses road space much more efficiently than the private motor car. On present peak-hour loading it uses approximately only one-tenth of the road space per passenger carried compared with the private car. While every effort should be made to attract passengers to the public transport, it must be faced that there

has been an away trend from public transport to private cars, and there is every indication that this trend will continue. (p. 149)

(The passengers carried by public passenger transport companies in the United States cities per year has dropped to nearly half the number carried 10 years ago.

"To sum up then, I submit that planning for the future wanders off into the abstract and unreal when it attempts to insist on mass transportation as an alternative for the private automobile in the development of the great areas that will make up our new Metropolitan Region with its population of over 20,000,000 people. The rising curve of automobile usage and the decline in the use of public transportation is evident across the entire country." Austin J. Tobin, Executive Director, Port of New York Authority in an address in 1954 to the New York Regional Plan Association entitled, 'Transportation in the New York Metropolitan Region During the Next Twenty-five Years'.)

(xii) **Effect of Air Transport:**

The development of aircraft and air transportation may exert some influence on urban transportation in the longer term future but in the foreseeable future this influence will be very restricted and would be limited to specialist services; and development of air transportation which can be foreseen at this stage would not have any material effect on the urban transportation pattern or any significant effect on road traffic volumes; the most obvious requirement of future air transportation, heliports, can be provided for in the future without affecting the main transportation system.

(It is noticeable that major cities all over the World are proceeding with highway and transportation development plans on the assumption that air transport development will not exert material changes in traffic or transport requirements.)

(xiii) **Alternative Methods to Relieve Congestion:**

Measures to relieve traffic congestion and provide for future traffic requirements must be, fundamentally, either

- (a) railway system development,
- or (b) road system development,
- or (c) road and rail development.

(xiv) **Railway Development Schemes:**

Possible railway development schemes (in relation to Auckland urban transportation) could be, essentially, either a scheme along the lines of that known as the Morningside Deviation (i.e. a loop-line through the central business area from the existing railway station to the North Auckland Main Trunk Line), or a spur or branch line ex-

tension into the Queen Street area from the existing railway station, or a scheme based on re-organization of the existing layout. (p. 159)

A. Morningside Deviation Scheme:

Of the possible railway development schemes, one which would have the most effect on urban transportation would be one along the lines of the Morningside Deviation. The Morningside Deviation Scheme would:— (p. 159)

- (a) cost an estimated £11,000,000 to £12,000,000 (including electrification of the rail system from Papakura to Henderson); (p. 131)
- (b) show an estimated aggregate operating loss of from £350,000 to £400,000 per year up to 1980;
- (c) provide for public passenger transport service for a part of the Metropolitan population (from 10% to 20% depending upon the use and efficiency of feeder bus services at suburban stations);
- (d) carry passenger traffic which, if carried on the roads, would occupy approximately 2% or 3% of the road space used by the total traffic on main traffic routes;
- (e) have to be completed, virtually, in one stage of development;
- (f) have a minor effect on the growth of road traffic and congestion, and would not obviate or delay the need for highway development projects.

B. Spur Line Scheme:

A practical spur line railway development scheme appears to be one from the existing Auckland Railway Station to a passenger terminal station located in Victoria Street East between 100 and 200 yards from the intersection of Queen and Victoria Streets. This Scheme would:— (p. 159)

- (a) involve a tunnel approximately 30 chains in length;
- (b) cost approximately £2,000,000 (using diesel traction);
- (c) provide an improved rail service to approximately half the area which would be served by the Morningside Deviation Scheme, and a limited service to the remainder of the area served by the Deviation;
- (d) have a correspondingly smaller affect on urban traffic than the Morningside Deviation Scheme.

C. Re-organisation of Suburban Passenger Services Without New Line Construction:

The possibility of making an immediate improvement in suburban railway passenger services by re-organization of the suburban platforms so that they link directly with the modernized shuttle bus service (planned by the Auckland Transport Board) and which will reasonably connect the railway station, the bus terminal, the ferry, and Upper Queen Street. Similar provision would appear to be possible from the Mt. Eden Station to deal with passengers from the Northern Line and is worthy of closer examination. (p. 160)

D. Avondale-Southdown Rail Connection:

Provision of the Avondale-Southdown line is essential for main line goods operating and, in conjunction with the Avondale-Rosebank extension, will be necessary for the Upper Harbour Port development in the future. The Avondale-Southdown route has a potential value for south-east-west passenger service. (p. 127)

(xy) Road Development Scheme:

The development of urban motorways and street improvements would:

- (a) cost an estimated £15,000,000 in total (including County Motorways); (p. 162)
- (b) serve the whole urban area;
- (c) provide the basic means for better and more economical public passenger transport to, virtually, the whole of the Metropolitan Area; (p. 167)
- (d) reduce traffic congestion;
- (e) be capable of development in stages over a period with each stage fully in use as completed;
- (f) be justified economically in that the aggregate saving in running costs and time that is paid for would equal the total cost of each development stage within periods estimated at from 5 to 10 years;
- (g) be a sound and justifiable use of manpower resources in that the saving in working time resulting from the more efficient transportation system would more than compensate for the labour used in construction.

(Report on the Los Angeles Freeway Development Scheme, 1954:

"We pay for good highways whether we have them or not, only we pay more if we do not have them.")

(xvi) The Low Population Density of Auckland:

Auckland, when compared with similar or larger cities, has one of the lowest gross population densities in the world. This low density and "urban sprawl" adds to the and difficulties of public transport. The population liv-

ing within reasonable walking distance of an inflexible transport service such as railways is very limited. This means that feeder bus services have to be used over extensive areas if the potential carrying capacity of a rail service is to be anywhere near as fully used.

With the growth of Auckland, pockets of higher density development will occur in the inner areas and development in the outer areas will consolidate, but these changes will not affect present densities enough to have any significant effect on urban transportation. Marked changes in present trends of development would have to take place to raise the gross density of the overall urban area above 5 or 6 persons per acre by 1975.

(The arbitrary nature of some urban area boundaries makes it difficult to obtain truly comparable figures for gross population densities in different cities, but the following figures give a basis of comparison:—

	Density Persons per acre (approx)	Population	
City of Paris	150	2,830,000	} (up to 1946 only)
County of London	54	4,000,000	
Greater Paris	40	4,600,000	
New York	40	7,500,000	
Chicago	25	3,400,000	
Philadelphia	24	2,000,000	
Birmingham	20	1,000,000	
Greater London	20	8,700,000	
Greater Berlin	20	4,400,000	
Melbourne	10	1,150,000	
Sydney	8.5	1,300,000	
Los Angeles	5	1,500,000	
Brisbane	5	350,000	
(Auckland approx. 4)		370,000	

(The foregoing figures, with the exception of those for Auckland, are quoted from "X-ray The City", Dr. E. Fooks, 1946.)

(xvii) **Major Road Development Essential:**

Major road development is essential in the urban area whether or not any railway development is carried out. Expenditure on major road development over the next 10 years would not only pay for itself in savings, but would give a return and a benefit (nationally, regionally and locally) over the next 20 years many times the return from a similar expenditure on major suburban rail transport development. Therefore, any immediate urban transportation plan must be, basically, a road development scheme, and road development must have first claim on the limited resources of manpower, materials, and finance. (p. 152)

(This is borne out by experience and conditions all over the World; after the U.S.A., New Zealand has the highest ratio of motor vehicles to population and is following the U.S.A. in traffic and transport trends and it

is to be noted that in the whole of U.S.A. there is not one city comparable with Auckland which has mass passenger rail and transport facilities, and in that country there are three cities only which have such mass transit facilities — New York (8,000,000), Chicago (3,500,000), Philadelphia (2,000,000), ("Transit Modernization", Bauer & Costello 1950, and "Mass Transportation's Directory" 1950).)

(xviii) **The Form of the Urban Transportation Plan:**

An urban transportation plan for Auckland must be based on the development of—

- (a) urban motorways
- (b) existing main traffic routes
- (c) parking facilities
- (d) passenger and freight terminal facilities
- (e) public passenger transport services.

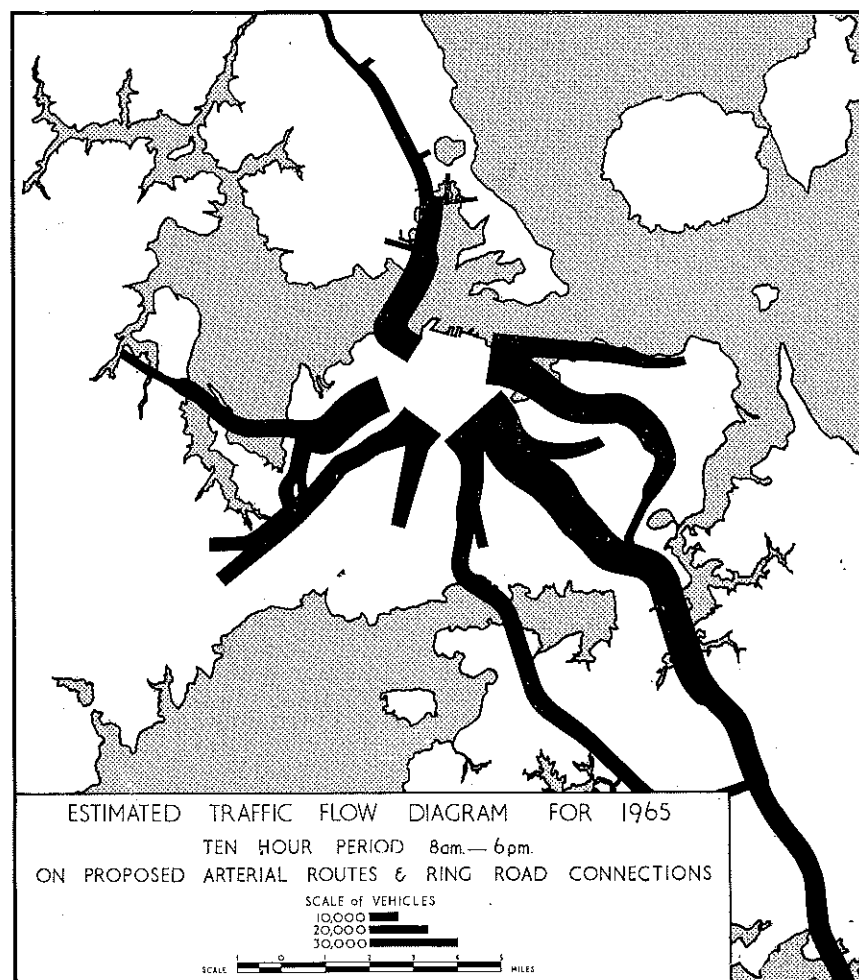




Photo: Traffic Engineering.

EASTSHORE FREEWAY — SAN FRANCISCO

Motorway with three lanes in each direction with emergency pull-off lanes for disabled vehicles — this is a similar standard to that proposed for the main motorway routes in Auckland.

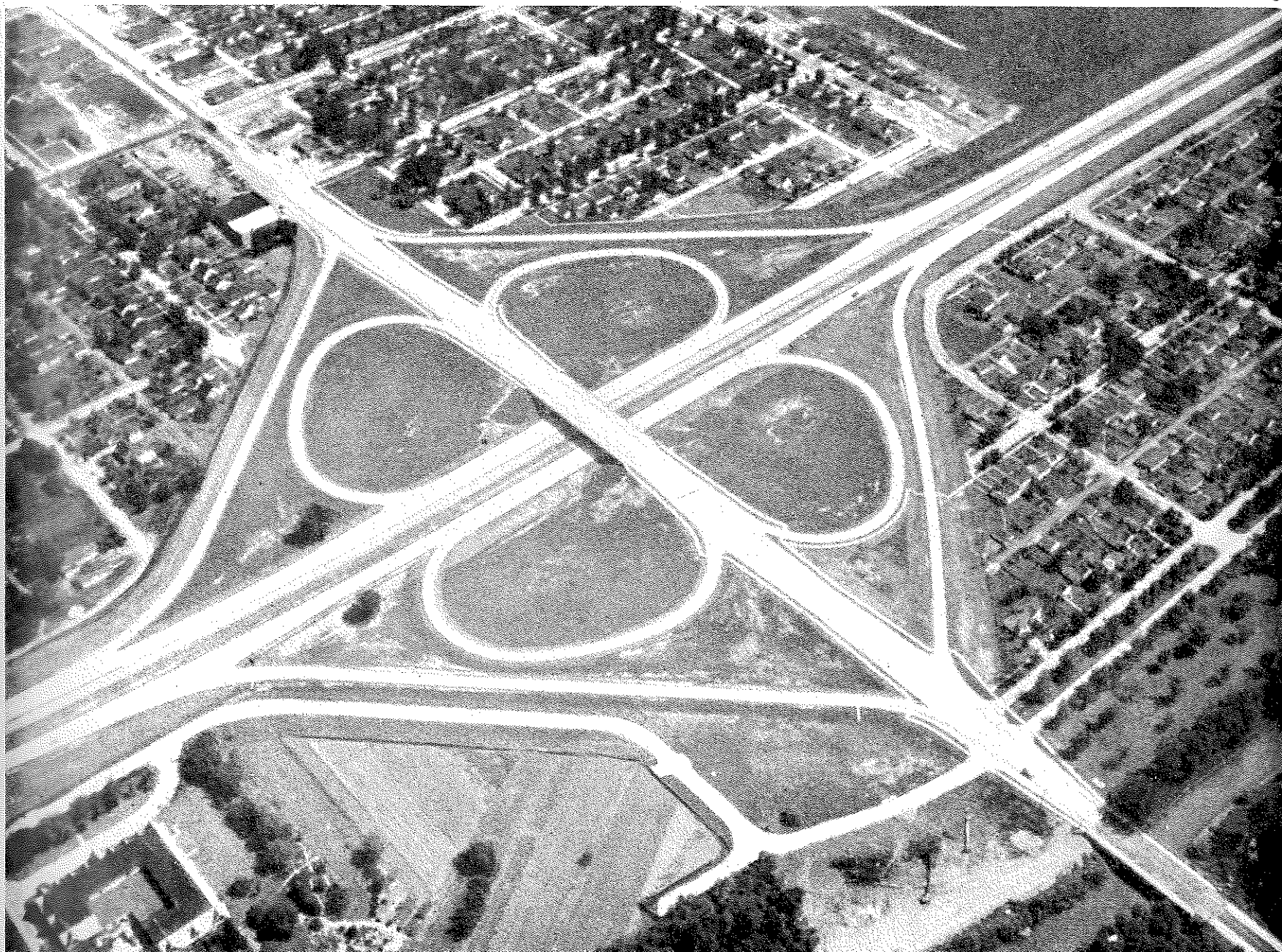


Photo: Traffic Engineering.

TRI-STATE EXPRESSWAY — INDIANA

**Full clover leaf interchange embodying principles adopted in main interchanges
on proposed routes in Auckland.**



ARROYO SECO FREEWAY — CALIFORNIA

Photo: British Road Federation.

An urban motorway route with ramped junction to street system — coloured paving used to indicate different traffic lanes.



Photo: Traffic Engineering.

SANTA ANA FREEWAY — LOS ANGELES — CALIFORNIA

An Urban Motorway Route illustrating acceleration and deceleration lanes at traffic interchange. Emergency space for disabled vehicles.



Photo: Traffic Engineering.

SOUTH-WEST FREEWAY — KANSAS CITY

Urban motorway route — grade separation and access — bus loading bay located before incoming traffic lane meshes with main flows.



Photo: Traffic Quarterly.

ALASKAN WAY VIADUCT (from N. West)

Example of elevated urban motorway connections in Seattle, Oregon, U.S.A.



PUBLIC PARKING AUTHORITY OF PITTSBURGH
Open deck car-parking building.

Photo: Traffic Quarterly.



Photo: Traffic Quarterly.

"PARK AND RIDE" — ST. LOUIS, U.S.A.

Type of system recommended adjacent to Inner Ring Road, Auckland — public passenger service to central business area.

MASTER TRANSPORTATION PLAN PROPOSALS

1. ROAD DEVELOPMENT:

It is proposed that a road development scheme for the Metropolitan Area should be undertaken comprising the construction of new arterial and sub-arterial routes built to a motorway standard, which, with the improvement and development of existing main traffic routes, would form a metropolitan main road system to meet the needs of traffic and transport in the Metropolitan Area over the next 20 to 25 years.

(i) Urban Motorway Proposals:

New routes for main traffic flows should be constructed as follows:— (p. 161)

- (a) From the central business area to the North Shore (and north generally) via the Harbour Bridge;
- (b) From the central business area to the Western Area and the North-Western Motorway via Arch Hill Gully;
- (c) From the central business area to the South to join the existing Southern Motorway at Penrose via a route by-passing Newmarket;
- (d) From the central business area to the Eastern Areas, to the Mt. Wellington Highway and the existing Southern Motorway at Mt. Wellington via Tamaki;
- (e) From the central business area to Dominion Road via a route linking Nelson Street and Dominion Road;
- (f) Ring Road linking routes (a) to (e) inclusive, together around the central business area via a two-level roadway in Quay Street from Nelson Street to Pt. Resolution, and via Union Street, Nelson Street and a link connecting the North-Western and Southern Motorways.

The urban motorway system formed by these routes would link together the central business area, the port, the railway station, and the major industrial area at Penrose, the future port and industrial development at Rosebank and Te Atatu, and would provide for direct road access from the central business area to the major parts of the Metropolitan Area via routes clear of congestion and free from frontage access.

The Standard: All these routes with the exception of the minor sections of the Ring Road should be constructed to an "urban motorway" standard as defined on Page 20 of this Report.

Plan: The locations of these proposed urban motorway routes and Ring Road system are shown on the plans at the end of this Report.

(ii) Development of Existing Main Traffic Routes:

The urban motorway system, referred to above, provides the basic framework for road traffic movement in the Metropolitan Area, but the further movement and distribution of traffic has to be carried out on a system based on the existing main traffic routes.

It is proposed that the existing main roads, both radial and cross routes should be progressively improved and integrated with the urban motorways to form the Metropolitan Main Road Network.

The Standard: These improvements to existing main traffic routes will entail some widening of the carriageway in the vicinity of intersections, clearance to provide improved sight distances, the re-design and re-development of junctions, the provision of bus loading bays, the provision of new road links and, in some cases, lengths of carriageway widening, but will not entail universal widening of these routes.

Plan: The main road routes which would form this part of the Metropolitan Main Road System are shown on the plans at the end of this Report.

These roads include the main radials such as, Remuera Road, Great South Road, Manukau Road, Mt. Eden Road, Dominion Road, Sandringham Road, New North Road, Great North Road, and the main cross-roads such as, St. Lukes — Balmoral — Green Lane, Mt. Albert Road, Campbell Road, Mt. Smart Road, Church Street, and includes certain extensions or links to these roads such as, the Church Street — Mt. Wellington Highway Link, the Sandringham — Maioro Road — Tiverton Road Link, and the Balmoral — Green Lane link. Numerous main traffic routes in the central business area may need some treatment and development in conjunction with interchanges to the Motorway System.

(iii) Stage Development:

Road development proposals have been planned so that they can be carried out in stages, each of which can be fully used as completed. Work on urban motorways, on existing main traffic routes, and on the provision of parking and terminal facilities, will have to be carried out to some extent, concurrently, as much of this work is complementary.

It is recommended that the major work on the urban motorways should be started immediately and carried out in the following order:—

First Stage:—

Nelson Street to Dominion Road

(This section, in addition to providing a clear and more direct route to the Western and South-western districts of the Metropolitan Area, will improve traffic conditions on the existing main routes to the south and the east. Traffic at present feeding through Symonds Street and Upper Symonds Street to New North Road, and traffic proceeding at present via Queen Street—Exmouth Street, and Pitt Street—France Street to New North Road, would be drawn off to Nelson Street. This would make for better traffic conditions in the present congested areas of Symonds Street, Queen Street, Pitt Street, etc. Per mile, the Nelson Street—Dominion Road connection is the most costly of the main roading proposals (except, perhaps, for the Quay Street overhead), but in the immediate future it would give the highest return per £ spent and, therefore, is recommended as the first stage).

Second Stage:—

Southern Motorway — section Beach Road to St. Marks Road (via Grafton Gully)

(This section would by-pass the congested areas of Symonds Street and Newmarket).

Subsequent Stages:—

Ring Road Links—Grafton to Cobden; Quay St. overhead

Southern Motorway—section St. Marks Road to Penrose

South-eastern Motorway—Tamaki Drive to Mt. Wellington

North-western Motorway—Newton to Pt. Chevalier

Northern Motorway—Takapuna to Albany

South-western Motorway—Mt. Albert to Redoubt Road.

These subsequent stages will not be carried out necessarily in the order set out above, but the actual order will depend upon conditions in the future. Of necessity, land acquisition and work on certain stages will have to overlap. The works programme prepared for this plan serves to indicate this.

(iv) Estimates of Cost:

In the proposed urban motorway system most of the routes lie within the administrative boundaries of the City and Boroughs. But the Northern Motorway (Takapuna to Albany) and the South-western Motorway (Onehunga to

Redoubt Road) are located in the County areas, and this could affect the financial responsibilities for the construction of these routes. Therefore, the estimates of cost have been scheduled to separate the Northern and South-western Motorways from the remainder. (p. 162, etc.)

The cost of the various stages of the Motorway Development proposals, taking into account land resumption, engineering construction, and adjustment of services, is estimated as follows:—

	Length: Miles	Cost:
Nelson St. to Dominion Rd.	1.1	£2,100,000 approx.
Southern Motorway—		
Beach Rd. to St. Marks Rd.	2.25	£2,800,000 "
St. Marks to Penrose	2.85	£1,500,000 "
	5.10	£4,300,000 "
Ring Road Links—		
Grafton to Cobden	.5	£580,000 "
Quay St. overhead	1.5	£1,600,000 "
South-eastern Motorway	5.25	£1,600,000 "
North-western Motorway	3.25	£1,400,000 "
<i>Total in City & Boroughs</i>	16.7	£11,580,000 "
North Motorway	7.0	£1,100,000 "
South-western Motorway	10.0	£2,000,000 "
<i>Total in County Areas</i>	17.0	£3,100,000 "
<i>Total, All Motorways</i>	33.7	£14,700,000 "

(v) Economic Justification:

Analysis of all the proposed stages of the road development scheme and an appraisal of the manpower, money, and material which would be required to carry out the scheme shows not only a clear economic justification for commencing work on the proposal immediately, but that they would achieve savings to the community at large of millions of pounds (£) a year in the relatively near future. (p. 137-138, 152)

In addition to the saving in traffic and transportation costs, and in time, they would protect and stabilize property values in the inner city area and in the urban area generally, and would provide an essential framework for an orderly and efficient development of the rapidly growing urban area.

(vi) Works Programme:

If the road development scheme is to be effective, it must be commenced immediately and carried on at a rate which

would ensure its completion by 1965, if possible, or at the very latest, 1970.

A target expenditure programme to complete the work within this period has been prepared and incorporated with this Report. This programme envisages an expenditure on the Urban Motorway System of up to £1,250,000 a year.

In many cases, it will be necessary to acquire land well ahead of the actual construction work. It is essential that the rights-of-way of proposed road routes should be protected from land subdivision and development which would render them more costly to acquire in the future. This has been provided for, as far as possible, in the Target Expenditure Programme.

2. TERMINAL FACILITIES:

If full and efficient use is to be made of improved facilities for traffic movement on motorways and main streets, then adequate provision must be made for terminal facilities for public passenger transport, for goods vehicles, and for private motor cars. These facilities are just as important as improved trafficways and much of the benefits that would result from motorway and street construction would be nullified without properly designed and adequate off-street facilities.

It is proposed, therefore, that bus and truck terminals and car parks should be planned and constructed, concurrently, with road development.

(i) Bus Terminals:

The present bus terminal should be developed further as necessary, and a further terminal provided on the western and eastern side of the city. Provision should be made for a third bus terminal in the future, on the opposite side of the city. One of these terminals should provide for long distance road transport in addition to suburban services. (p. 154)

As far as possible, these terminals should be readily accessible to the urban motorway system.

(ii) Trucking Terminals:

In addition to off-street loading and unloading facilities in commercial and industrial premises, it is proposed that provision should be made for a trucking terminal, or terminals, in the central business district. Such terminals should be located so as to be readily accessible to the general business district and adjacent to or readily accessible to the ring road system. (p. 154)

(iii) Car Parking:

Long-period (4 hours and over) car parks should be provided for adjacent to and immediately inside the ring road system. These should be located, as far as possible, so as to be reasonably accessible to streets and passenger services leading to this central business area. (p. 153)

Shorter-period parking facilities should be provided as near as possible to the shopping and business premises. The provision of these facilities is as urgent as road development and the work required should be commenced immediately. This is a matter for the local planning authority.

3. RAILWAY DEVELOPMENT:

(i) Morningside Deviation:

The survey reveals not only that Auckland's most urgent transport problem is in respect of streets, but that the Morningside Deviation Railway Development Scheme, or any similar scheme, would not carry enough passengers to allow deferring road proposals. Evidence shows that these railway proposals would be very costly and would result in substantially increased annual losses to the Railway Department. The Committee cannot recommend embarking upon the Deviation proposals and is convinced that situation will not alter, materially, until Auckland's population is two or three times the present figure. At this present stage, far greater benefits will result from the expenditure of public money on the urban road system. (p. 157)

(ii) Spur Line Scheme:

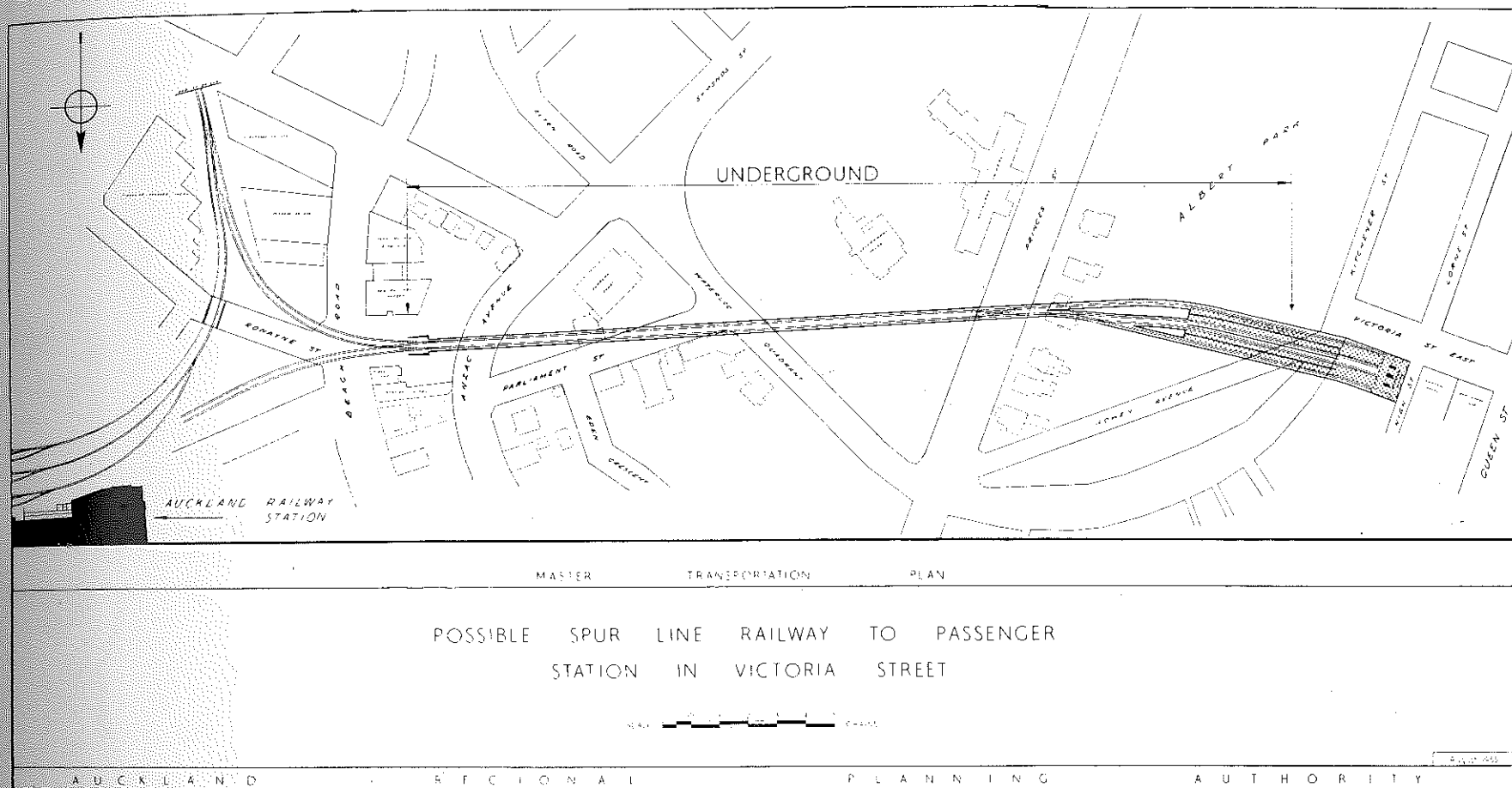
The Committee considers that a branch line from the present railway station to Victoria Street might benefit considerably the present railway system by enabling diesel trains to be brought into the heart of the city. The cost of this scheme should not exceed £2,000,000, and would provide, in so far as suburban passenger transportation is concerned, a greater return per £ of expenditure than a scheme along the lines of the Morningside Deviation. This branch line could be extended to the North Line if at some future date this was warranted (although this extension would not take the same form as the Morningside Deviation). (p. 159)

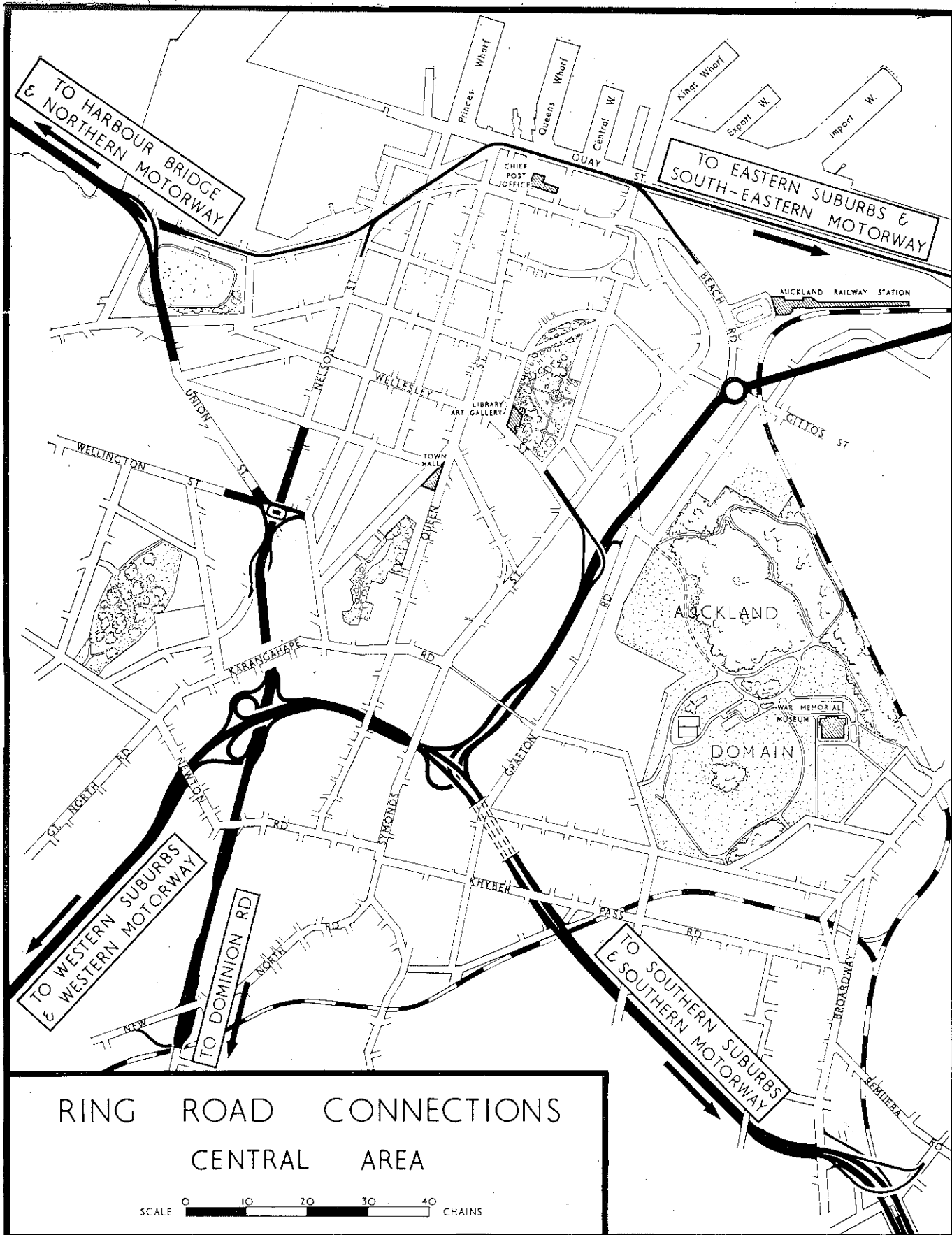
(iii) Immediate Development:

For immediate development purposes it is proposed that the Railway Department should make an investigation into the fullest possible use of the existing rail system for suburban passenger transport by a scheme which would not entail major construction. Such a scheme should take into consideration the re-organization of the existing station to provide more rapid and more convenient transference from suburban trains to city road services, fast modern units for passenger service, and the improvement and co-ordination of central city road services to and from the railway station. (p. 160)

(iv) Avondale-Southdown Railway Connection:

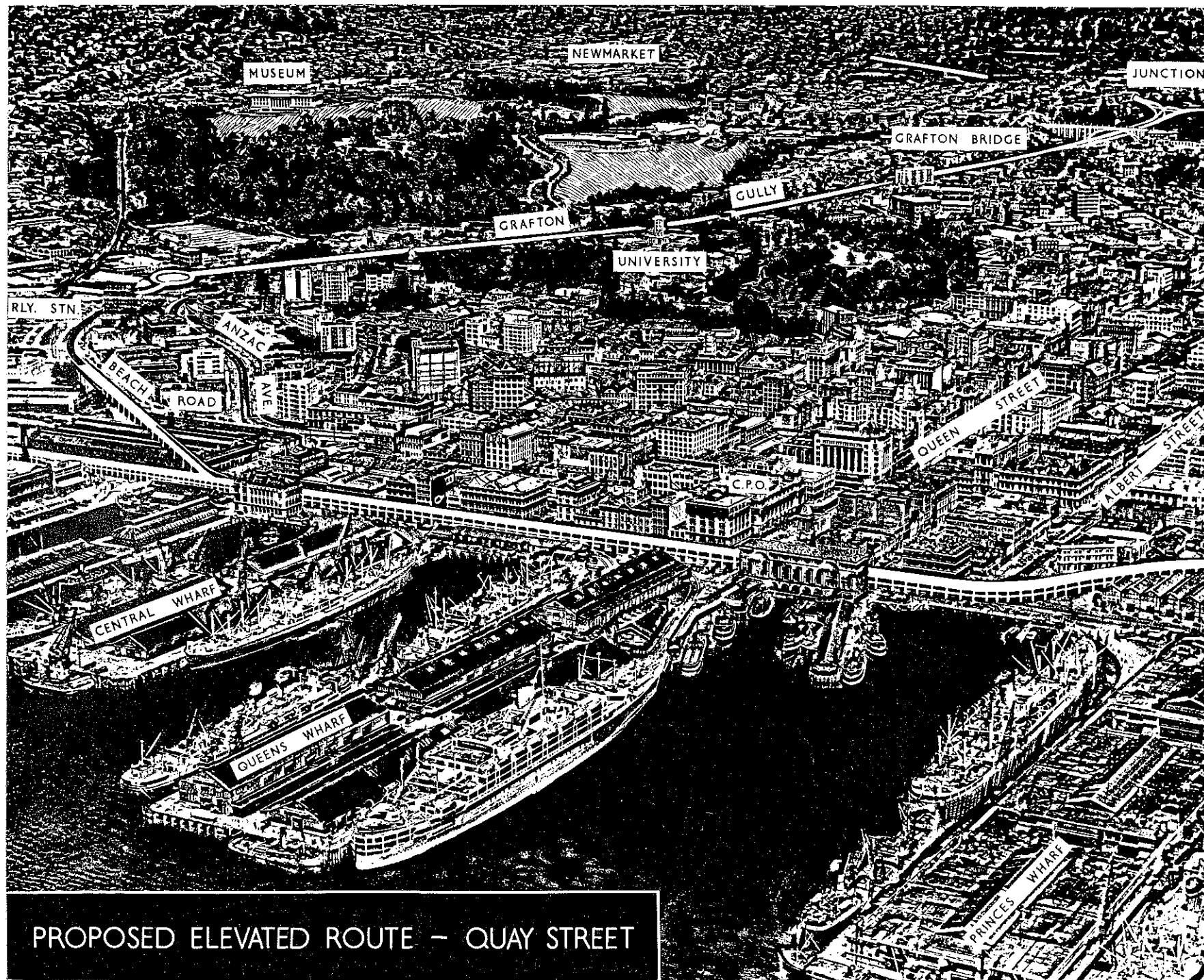
It is apparent that the Avondale-Southdown Railway connection would not, either alone, or in conjunction with the Morningside Deviation, have any really appreciable effect on road traffic and transport in the Metropolitan Area, but this







Whites Aviation Ltd. Photograph





White's Aviation Ltd. Photograph.

is however, an essential link in the future operation of the main line railway services and, if constructed, could be integrated with any suburban railway system that might be developed in the future. (p. 127)

4. PUBLIC PASSENGER ROAD TRANSPORT:

(i) Express Services:

The provision of the recommended motorway and inner ring road system by general road traffic will relieve traffic congestion on city streets and existing main traffic routes and will allow more freedom in these streets for public passenger transport vehicles. In addition, the public passenger transport services should be developed as far as is possible, for express services by the use of the motorway routes.

(ii) Provision for Public Transport Pick-up Facilities on Motorway Routes:

Provision should be made on all motorway routes for a limited number of properly designed bus pick-up and set-down stations on special loop lanes free of the motorway wherever these routes pass through areas which can be served by passenger services.

(Some amendment may be necessary to the Motorways Legislation (Public Works Amendment Act, 1947) to provide adequately for these measures as well as to enable the construction of "Urban Motorways" as defined on Page 20 of this Report.)

This would enable the maximum use to be made of motorways and express transport services. It would provide some of the advantages of the rail system while retaining the flexibility of road transport which can "peel" off and continue on the ordinary road system.

(iii) Inner City Services:

Passenger bus terminals, the railway station, and the main part of the central business area should be linked together by public passenger transport services. This may be achieved by either shuttle services, cross or through routing of main services, or by a combination of these methods.

(iv) Street Loading Facilities:

Once the bus routes have been consolidated in normal streets carrying considerable traffic, loading bays should be provided, where practicable, off the normal roadway width at all stops.

5. FINANCE:

(i) The Source of Road Funds:

Roading finance in New Zealand comes from, essentially, the following sources:—

— road user taxes (petrol, tyre, mileage, taxes, etc.)

— heavy traffic fees
— local body rates.

(ii) The National Roads Fund:

Part of the road user taxes collected by the Government goes to make up the National Roads Fund. The greater part of this fund comes from petrol tax.

The fund is administered by the National Roads Board and is applied to State and Main Highways in Counties and in Boroughs of less than 6,000 population, and, through "subsidies" to other local authorities, to roads in cities and boroughs over 6,000 population.

The National Roads Fund for the period 1954 - 1955 totalled £15,500,000. (p. 167)

(iii) The Distribution of the National Roads Fund:

The National Roads Fund is spent on roading in both rural and urban areas, but by far the greatest amount (over 75%) is spent in the rural areas. The road user taxes contributed from the urban areas to the Fund is much greater than the amount spent from the Fund in those urban areas. In the larger urban areas this position is exaggerated.

For example, road user taxes (principally petrol tax) paid into the National Roads Fund as a result of vehicle use in the Auckland Urban area amounted to an estimated £3,000,000 for the year ended 31st March, 1955. In the same period, approximately £1,000,000 from the Fund was spent in the Area. (p. 167)

These figures indicate that the basis of distribution of the National Roads Fund is now somewhat inequitable and unrealistic and there is no doubt that a change of the present basis of allocation of road user taxes in New Zealand is most desirable. This contention is supported by submissions made by the Ministry of Works to the Roothing Investigation Committee which reported to the Minister of Works in 1953.

These submissions stated:

"When the Highways Act came into force in the early 1920's, almost the total aid went to the rural roading of the Counties. When the road levy, or the so-called petrol tax, began to be imposed upon the motorist the majority of the motorists operated in and around the municipalities, so that the road revenue from petrol was derived mostly from operation within the urban areas. Nearly all of this money was spent in the rural district, when the roads were very poor by the then roading standards. The position is almost the reverse today . . . it is now in the municipalities where it may be said with a considerable degree of truth, that the main traffic routes are frequently in a deplorable condition."

The report of the Roothing Investigation Committee supported these views further, in stating:

"The unanimous opinion of the Committee is, therefore, that the existing allocation of petrol tax to cities and boroughs is seriously inadequate to compensate them for the lack of State and Main highways in their areas and should be substantially increased." . . . "It appears to the Committee that the time may not be far distant when, owing to traffic congestion, in addition to the provision of motorways approaching metropolitan areas, the national interests will require the extension of such motorways for some distance into the city area to provide facilities for inwards and outwards traffic. In this event, the liability for constructing and maintaining these motorways should fall upon national roading funds in the same manner as now applies to motorways outside city areas. In other words, where national interests require the provision of a motorway either outside or inside a city, the same principle of financing the cost should apply and the motorway should be the responsibility of the national roading authority."

(iv) Financing of Road Development Scheme:

It is proposed that the Road Development Scheme of urban motorways and main road routes should be financed by:—

- (a) increased contributions from the National Roads Fund;
- (b) a contribution from the Government to the cost of arterial routes where these routes would fulfil the functions which the Morningside Deviation Railway Development Scheme was intended to perform;

It is not proposed that the specific contribution from the National Roads Fund should be increased at this stage to an amount which would equal the contribution to the Fund made by the road user in the urban area; but it is proposed that this contribution should be increased at least to an amount which would equal, say, 66% of the amount paid into the Fund by the road user in the area.

It is not proposed that the specific contribution from the Government to the cost of arterial routes in lieu of the Morningside Deviation Scheme should equal the estimated cost of that scheme; but it is recommended that some portion of this total should be allocated to the urban motorways. (It should be noted that in other countries, notably the U.S.A., over recent years, Federal and State Government have been giving increasing financial aid to main road routes in urban areas.)

It is proposed that works ancillary and consequential to main road development (such as parking facilities, terminal facilities, and possibly certain junctions for road connections) should be financed from Local Body funds.

This method of financing would be sound in that it is based, essentially, on a principle of the road user paying and in that the money so invested will save the road user each year many times the total annual charges. It would be realistic in that it would provide for the expenditure of available funds in a planned development to achieve the greatest return and would spread the cost between taxation which is levied for roading purposes (and paid by the road user in the area), national funds (on arterial routes of national importance), and Local Body rates.

(v) Financing of Terminal and Parking Facilities:

Transport terminal and car parking facilities would have had to be provided and financed, in any case, independently of this Transportation Plan. Therefore, no specific provision has been detailed for the financing of these works, which to a very large extent, can be treated differently from road development works in so far as finance is concerned.

Bus terminal facilities should be a charge on the public passenger services and any trucking terminal, or terminals, should be financed through charges on the actual transport using them. The Committee has not been able to go into the full details of the financing of bus terminals, but are unanimous that such terminals are a necessary part of the scheme.

Car parking facilities should be self-supporting; both short and long period off-street car parks (with the exception of those in buildings) could be charged for probably through a parking meter system. Parking buildings will require normal charges through attendant service.

6. ADMINISTRATION:

(i) Local Government Structure:

The Metropolitan Area of Auckland is administered by some 25 territorial local authorities (i.e. City, Borough and County Councils) and there are, in addition, 12 Ad Hoc Authorities with the responsibility for the provision of certain services — power, drainage, fire, transport, etc. Some Government Departments have certain responsibilities for some services in parts of the area (Ministry of Works, Railways, Lands and Survey, etc.). (p. 140)

No one of these Authorities has the necessary powers, or responsibility, to administer, construct or maintain, a Metropolitan Main Road system; and no one of these Authorities is suitable in its present form to take over such responsibility.

(ii) Recommended Administrative Body:

A small Commission, Metropolitan Board of Works, or similar authority appears to be the Committee to be the only really effective means for carrying out the construction and development of the proposed Metropolitan Main Road sys-

tem. Such an Authority would need to have the necessary legal, financial, and administrative powers to protect the rights-of-way of proposed routes, to construct new routes both motorway and highway, to re-construct existing routes and to maintain the overall system.

(iii) **Immediate Procedure:**

There would be, inevitably, some considerable delay in the setting up of any Metropolitan Roding Authority as recommended above; and, as the construction of the urban motorway system is a matter of some urgency and should be commenced immediately, it appears necessary to find some other method of administrative control which would undertake the initial stages of the work until a Metropolitan Roding Commission or Authority could be established.

The most practical solution would be for the Ministry of Works to undertake the construction of arterial motorway routes involved in the first stage of the development proposals.

It is recommended, therefore, that as the construction of the urban motorway system is a matter of urgency and as there would be some considerable delay in the setting up of any Metropolitan Main Road Authority, construction work in respect of arterial routes should be undertaken immediately by the Ministry of Works in conjunction with the City Council; and that the City Council and other local authorities undertake the remainder until a properly constituted Metropolitan Commission or Authority is established; and that in all cases the work be carried out in collaboration with the Regional Planning Authority.

(iv) **Public Passenger Transport Control:**

There is no evidence before the Committee which would indicate any radical change being necessary in the present system of public passenger transport service control, or which would justify the setting up of any other authority, although some minor changes may be found beneficial.

