



GOVERNMENT OF BOMBAY

REPORTS

of the

PANELS APPOINTED

by the

STUDY GROUP FOR

GREATER BOMBAY

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*Report of the Study Group on
Greater Bombay printed as
a separate volume*



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BOMBAY

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ON GREATER BOMBAY.**

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**REPORT OF THE
HOUSING AND HOUSING FINANCE PANEL**

REPORT OF THE HOUSING AND HOUSING FINANCE PANEL

INTRODUCTORY.

The Study Group appointed by the Government of Bombay under Government Resolution, Political and Services Department, No. MIS. 1157/76643-B, dated 14th March 1958, to consider certain problems facing the Metropolitan and Suburban areas of Bombay City and to recommend specific measures in their connection, decided at its meeting held on 21st May 1958 to appoint five panels to consider different groups of subjects of which Housing and Housing Finance Panel was one.

Housing and Housing Finance Panel.

This Panel is required to consider the extent of housing needed on reasonable standards for the existing population and probable growth in the immediate future over the next 10 years or so. It had also to assess the extent (and possibilities) of private building activity and building activity by public authorities and employers.

It was further required to assess the housing finance available from the existing housing finance agencies and to make recommendations in this behalf for making a larger quantum of finance available and for facilitating its greater utilisation by would-be borrowers.

§ The Panel comprised of—(1) the Housing Commissioner, Bombay, Shri C. R. Desai, the Convener, (2) the City Engineer, Bombay Municipal Corporation, Shri K. B. Carnac, (3) Shri M. A. Master, representative of the Indian Merchants' Chamber, (4) a representative of the Millowners' Association, Bombay, Shri D. S. Bakhle, I.C.S. (Retd.), Deputy Chairman, and (5) Shri L. S. Dabholkar, the then Chairman, the Bombay Co-operative Housing Finance Society Ltd.

The Panel held 13 meetings. It considered exhaustively all aspects of the problem concerning Housing and Housing Finance.

All the Members evinced keen interest in the subject and particularly Shri M. A. Master guided at every stage the deliberations of the panel and helped it considerably in formulating the conclusions and recommendations which are detailed in this report.

General.

Of all the places in India, perhaps Bombay City i.e., Greater Bombay is experiencing the most acute shortage of housing accommodation. A clear idea of this problem as it existed in the past about a decade ago is detailed in (i) the Report of the Housing Panel for the Greater Bombay Scheme published in January 1946 (ii) the Preliminary Report of the Development of the Suburbs and Town Planning Panel of Bombay City and Suburbs Post-War Development Committee published in March 1946 and lastly in (iii) An Outline of the Master Plan for Greater Bombay published in 1948. As stated in these reports the housing situation in Bombay was extremely critical ten

years ago. During the last decade conditions have much worsened and the situation has become more or less desperate, due to the phenomenal growth of population in the City without corresponding addition of housing accommodation.

Present Picture.

The population of Greater Bombay in 1941 was 17·35 lakhs in 1951, it was 29·99 lakhs including the population in the area of the presently extended Suburbs and in mid 1958 it was about 43·17 lakhs as computed by the Director General of Health Services, New Delhi.

At the present rate of growth, the population of Greater Bombay in 1960 will be about 45 lakhs and in 1970 it will be about 60 lakhs. The area of the old City of Bombay is 26·189 square miles and of the Suburbs and extended Suburbs 142·81 square miles. The population in the old Island City in 1951 was 23·19 lakhs and in mid 1958 it was about 31 lakhs. The population of Suburbs and extended Suburbs in 1951 was 6·7 lakhs and in mid 1958 it was about 12·17 lakhs. Large masses of people have been concentrating and living in the small area of the Island of Bombay. This is mainly due to the lack of sufficient foresight on the part of the authorities in not creating conditions which would provide reasonable attractions to the people to go and live in the Suburbs. The reasons for the above are that (1) Transport facilities in the Suburbs are most unsatisfactory. Vast areas are open but there are no roads. The construction of Express Highways has been inordinately delayed. Whatever roads exist are hopelessly narrow. The risk and danger to life in this area are growing. The overcrowding in the trains has reached the danger limit ; (2) Essential amenities and services like water supply, medical facilities, drainage sewers, etc., are woefully lacking ; (3) Avenues for employment have continuously expanded and concentrated mainly in the south of the Island of Bombay where transport and other facilities exist and are easily procurable ; (4) Building construction in the Suburban areas did not get adequate encouragement and could not satisfactorily progress due to lack of communications, facilities and amenities ; (5) Moreover most of the old industries are located in the Island of Bombay and new industries in a larger proportion have been located here during the last ten years.

Existing Accommodation, overcrowding and immediate need.

The population in the Island of Bombay has, therefore, naturally increased and continued to increase rapidly from day to day. The Island of Bombay is now so congested that the existing accommodation is crowded to an extent that in a built-up area of 100 square feet as many as 8 to 10 persons live in many parts of the city and large masses of the population reside in slums where the density as per a recent survey carried out by the Municipal Corporation varies from 438 to 1,175 persons per acre on an average as per the statement attached herewith marked 'A'. It is deplorable that there are practically no open spaces for recreation and no playgrounds for children in most parts of the City. Moreover vertical development with proper safeguards for light, air, health and traffic requirements does not seem to have merited the attention it deserves.

There are presently about 4,08,097 tenements of all categories in the Island of Bombay and about 1,65,576 tenements in the Suburbs. There is thus total accommodation of about 5,73,673 tenements in the whole of Greater Bombay which may be said to be enough to accommodate about 28 lakhs persons. Considering the fact that the existing population is about 43 lakhs it may be reckoned that about 15 lakhs persons need accommodation and it would require about 3 lakhs new tenements to house them. This immediate need in itself is a colossal problem.

Estimated population and requirement of accommodation in 1970.

Even considering the expected increase in population during the ensuing short period of 10 to 12 years i.e., up to 1970 by which time the population of Greater Bombay would be about 60 lakhs persons, further need of housing accommodation in this City in addition to the new 3 lakhs tenements which are immediately required and which may any how be provided by at least 1970 will be about 3,25,000 tenements. Thus even when and if a successful effort is made to provide *3 lakhs tenements by 1970*, the shortage of housing accommodation in 1970 will yet be greater than now.

Future location of Housing Accommodation and distribution of population.

The correct appreciation of the fact as to where the new housing accommodation should be located in future is a matter of utmost importance.

In the Master Plan for Greater Bombay, it has been envisaged that the Island of Bombay would ultimately hold a population of about 13 lakhs persons. Even at the time when the Master Plan was prepared in 1948 the population of the Island was about 23 lakhs and instead of a decrease there has been a considerable increase in the population of the Island. The population now is about 31 lakhs. Anticipations have been falsified and are being falsified. The process of all round growth of Bombay which commenced about a decade ago has received greater and greater momentum during the recent years. Not only will the growth continue but may exceed all expectations and anticipations.

Under the existing circumstances, it is most difficult, if not quite impossible to create ideal conditions and take effective steps to ensure that the Island of Bombay will hold and continue to hold a population of only 13 lakhs. As stated above, the present population of Bombay is about 31 lakhs. We are given to understand that the excess of births over deaths in the Island of Bombay adds to the population about 31,000 souls per annum. This alone will cause an automatic addition nearing about 4 lakhs of people to the existing population of 31 lakhs during the course of the next ten to twelve years and raise the population to about 35 lakhs by the end of 1970. Viewing the question in a practical and realistic manner we are driven to the inevitable conclusion that we shall have to reconcile ourselves with the situation as it will develop and resort only to such measures as will prevent further congestion by the provision of new houses.

There are still a number of plots and areas which are vacant at present in the Island of Bombay or which may be available later on and upon which new houses can be constructed. Though it is not our suggestion that new houses

should not be allowed to be constructed on such plots, we would most strongly recommend that when the existing old and dilapidated houses fall down or are removed, steps should be taken to keep the land on which they are built, as far as possible, as open space. We understand that there is about 8,274 acres of residential area in the Island of Bombay. We are further informed that if the area between the Nariman Point and Colaba Point is filled up and if low lying areas at other suitable places in the Island are reclaimed and if some of the land occupied by certain interests becomes available for residential purposes an additional area of about 2,200 acres would be available. Such adjustments should then be made that at any rate, the existing open areas in the City of about 400 acres are increased at least to about 2,000 acres during the course of the next ten to twelve years. In future, total area for residential purposes will be about 10,474 acres, but new construction should be so disposed that open areas to be left should be earmarked in such a manner that about 2,000 acres in all become available for recreation grounds, open grounds and play grounds purposes in the near future. With the construction of new houses and the destruction of old and dilapidated houses we recommend that such adjustments should be made as would not provide accommodation for new population in the Island. But the adjustment should be so planned that the existing congestion may become less acute than what it is to-day, more open grounds, playgrounds and recreation grounds, and plots for building schools can be provided and the 35 lakhs of people which are expected to be in the Island of Bombay by the end of 1970 may have better living conditions than those under which 31 lakhs of people in the City are living at present. The problem is not merely a problem of economic calculations and arithmetic. It is a human problem. It is a social problem. It can be solved only by persuasion and a continuous appeal to the nobler instincts of human nature and above all by the creation of an atmosphere of Co-operation and confidence whereby all may be driven to strive strenuously for the achievement of the common goal on large humanitarian considerations.

We, therefore, recommend that almost all the required new accommodation should be put up in Suburban areas. Considering the available residential area built up at present and that which remains yet unbuilt, including low marshy places that may be reclaimed, considerable space will be available for suburban development and population who can find accommodation there. Then again with the building of the projected road bridge over the Bassein creek and if a rail-cum-road bridge across the Thana creek becomes a possibility enormous spaces will open out for further industrial expansion and also for absorbing the increasing population of Greater Bombay. We, therefore, recommend that the sanctioned work of constructing the bridge over the Bassein creek be taken in hand immediately and the rail-cum-road bridge over the Thana creek be put up as soon as the possibility of doing so is found, satisfactory from technical and all other points of view.

Agencies for providing accommodation.

Till recently housing accommodation was being provided by private investors alone but after the last World War the situation has changed considerably in this country as it did elsewhere in the World. Due to high charges of building materials and increasing wages of labour the minimum cost of a tenement with

minimum accommodation permissible under municipal rules is presently about Rs. 6,000 per unit and its economic rent works out fairly high. The earning of a low income group family in urban areas may work out on an average to about Rs. 150 per month. Private investors, we find, do not build for this class of people, as about 80 per cent. of the population coming under this group would only be earning about Rs. 150 per month. With this low earning, it will be next to impossible for them to pay economic rent as presently calculated of about Rs. 50 per month for accommodation costing about Rs. 6,000. This economic rent is arrived at without taking into consideration the amount of taxes which an ordinary investor will have to pay to the Central Government. With such taxes the economic rent may work out to about Rs. 75 per month or even more. Further the various provisions of the Rent Act and the great burden of taxes—Central, State and Local—it is represented, cause vexation and hardship to the private investors and leave no enthusiasm and incentive for them to go in for the housing industry. Under the prevailing circumstances, the private investors have ceased to build and will not ordinarily take to housing industry.

It has, therefore, to be considered as to which agencies will put up the three lakhs tenements which is the immediate need during the next twelve years. About eighty-six per cent. of the existing accommodation consists of one-room and two-room tenement chawls. It can, therefore, safely be assumed that about eighty per cent. of the population comprises and would continue to comprise of low income group families in the city and since private investors would have no inducements to build for them, eighty per cent. of 3 lakhs tenements, i.e., 2,40,000 tenements will have to be put up at the rate of 20,000 tenements per year by Government, semi-Government bodies, local authorities and bodies of similar nature. The remaining 60,000 tenements may be put up mostly by private investors to cater to the needs of families in the groups higher than the low income group. Our conception of an individual coming under the low income group category is one whose monthly family income is less than Rs. 500.

The various agencies which at present provide housing accommodation in the city are (1) the Bombay Housing Board authorities who build for industrial workers and to a small extent for low income group persons under the Government of India housing schemes provided in the plan ; (2) The various employers comprising of (a) the State, and (b) the Central Governments through their Public Works Departments and their various—Statutory Corporations, the Railways and B. P. T., etc., (c) the Municipal Corporation and the B. E. S. T. Undertakings, (d) various industrial and commercial establishments ; (3) Private investors ; and (4) Co-operative Housing Societies formed by individuals.

The figures as are available show that in Bombay there are at present *about* (i) 4,45,000 industrial workers, (ii) 1,64,000 Central Government employees including those of the Defence Department, the Income Tax Department, the Accountant General's Office, Post, Telegraphs, Telephones Office, the Mint, etc. and of the various Statutory Corporations under Central Government Control, (iii) 40,000 State Government employees including those of the Statutory Corporations under State Government Control, (iv) 47,600 employees of the Municipal Corporation, (v) 21,000 employees of the B. E. S. T.

Undertakings, (vi) 16,000 Bank Employees, and (vii) 3,34,000 miscellaneous employees in trade, commerce, etc., governed by the Shops Establishment Act.

The Housing Accommodation so far provided by the various employers is about (i) 6,700 units by Textile Mills and other industrial establishments, (ii) 18,000 units by the Central Government and its Statutory Corporations Railways, etc., (iii) 2,500 units by the State Government and its Corporations, (iv) 25,600 units by the Municipal Corporation including those built by its old Improvement Trust, (v) 542 units by the B. E. S. T. Undertakings, (vi) 1,000 units by the Reserve Bank, etc. Figures of housing put up by the Trade and Commerce establishments for their employees are not available but it may be safely assumed that they have made little or no contribution.

The Development Department of the State Government had put up 16,000 tenements before 1925 and after 1947, the Bombay Housing Board has so far constructed about 18,000 tenements for industrial workers, low income groups and displaced persons.

Apportionment of Housing Responsibility between Agencies.

The Bombay Housing Board has a programme of constructing about 6,000 tenements in Bombay every year henceforth. Individuals and Co-operative Societies may put up annually about 2,000 tenements. The Municipal Corporation, the State Government, the Central Government, the Central Railway and the Western Railway between them may put up annually about 4,000 tenements. Then out of the target of annual 20,000 tenements remain 8,000 tenements. These tenements would be required mostly for industrial workers and persons of low income group working in large scale commercial and other establishments. As the employers have not been in a position to provide houses for their employees under the present circumstances Government will have to decide as to how these 8,000 tenements should be provided annually.

Estimated annual cost of Housing Accommodation.

Construction of 25,000 tenements annually with the combined effort of all agencies will cost about Rs. 20 crores a year. The problem is one of great magnitude. Government and semi-Government bodies alone will not be able to cope with the problem, not on the ground of finance but owing to the lack of necessary organisation for the purpose. Private investors also have to make a large contribution. Unless favourable conditions are created for the various agencies undertaking building construction it will be difficult to cope successfully with the problem.

Private Investor and Impediments in his way.

Out of 13 lakhs tenements in the country put up during the First Plan period, private enterprise constructed about 6 lakhs tenements. The Planning Commission further expects that out of 19 lakhs tenements expected to be put up during the Second Plan period in the country 8 lakhs tenements may be constructed by private enterprise. Private enterprise has come up to the required expectations in the past and the country expects it to continue to

discharge its duties hereafter during the very difficult and trying periods of serious economic stress. Private enterprise however is being scared away from the field due to rent control restrictions and increased taxation, which tend to reduce the return on their investments in housing. Private enterprise will not invest money in the building of houses unless it is assured that it will have a reasonable return on the sums invested in housing.

It would be appropriate to point out that Government has offered very tempting inducements for investment in small savings exempting the same from Income-tax, Super-tax and Corporation tax and for those that have the resources, investment to the full maximum allowed is over Rs. 4 lakhs for a family of 5 persons.

The 12-year National Plan Savings Certificates also offer a very attractive investment. Income from the same is not liable to any tax and is also not added for arriving at the proper slab rates for the purpose of assessment. Unless, therefore, a fair return of about 10 per cent. net after deduction of all outgoings including all Central Taxes can be secured by investing money in the building of houses private investors will not be inclined to go in for the same, with all its attendant risks. We therefore recommend that the Rent Control Act should be so amended as will entitle the owner of a property to realize a net return of 10 per cent. on the amount invested by him in that property out of rent that is allowed to be charged.

Some of the important conditions and circumstances which are said to militate strongly against the inflow of private investment in housing are :—

(1) Inadequate return on the investment due to heavy Taxation, Central, State and Local.

(2) Certain restrictive provisions in the Rent Control Act, viz. (a) Freezing the rents of old buildings at pre-1940 level and subsequent increase authorised being inadequate, (b) Conditions practically making it impossible to evict tenants and further to prevent them from trading in the tenements etc.

(3) Existing heavy Municipal Taxation, and its continuous rise and the imposition of further betterment charges under the legal cover of varying the Town Planning Scheme years after its completion.

(4) Very inadequate transport facilities by rail and road.

(5) Heavy Urban Property tax, increasing rate of non-agricultural assessment, abolition of exemption from land revenue enjoyed by holders of certain estates in the island of Salsette and the demand of very heavy land revenue from such estates.

(6) Lack of developed building sites due to non-provision of essential services, like roads, water supply mains, drainage sewers, etc. and that too in spite of heavy municipal taxation.

(7) Unpopular Town Planning Schemes as also usual delays in finalizing the Town Planning Schemes.

(8) Scarcity and high prices of essential building materials.

The difficulties mentioned above have made such investment not only unremunerative but they have also become a damper against any desire for such investment.

Lopsided Development and need to create another Centre of Activities in a Central Belt.

We have already stated that due to the concentration of industries and almost all fields of employment in the South of the Island of Bombay and as Suburban areas have not been developed with communications facilities and provision of essential municipal services, building construction in the suburbs has been discouraged. Apart from the time involved in the journeys, Railway and Road Transport costs cause economic strain on the pockets of low income group people. Large masses of population have, therefore, concentrated in the Island of Bombay and those who have willy nilly settled down in the suburbs experience formidable inconveniences and considerable risk to their life due to most uncomfortable road and railway journeys to and fro every day and also due to lack of essential services.

The overcrowding in trains has become progressively more and more acute, the risk to life has been increasing and there is no prospect of the existing situation being eased. In his statement, the Railway Minister has given to the public to understand that overcrowding is likely to continue. These circumstances have acted as a deterrent to induce people to move to the suburbs.

The only practical solution in our opinion and that of the people who have been applying their minds and devoting their serious thought to the problem of Bombay city is and which we recommend to create as early as possible another new centre of activity in the central belt of Greater Bombay say above Bandra-Kurla line wherein some of the important Government offices, banks commercial and industrial houses, new educational institutions, insurance offices and market place should be located in order that at any rate those people who may find employment in this Centre may not have to travel long distances from North to South as at present in the morning and in the reverse direction in the evening.

This would ease the pressures on the lines of communications which are presently subjected to great stress and strain. It is generally and widely recognised that normally speaking no new office or commercial house buildings should be permitted to be constructed and no large scale industries be allowed to be established in the Island of Bombay.

Development of Suburbs into Satellite Towns.

Side by side work should be commenced to plan and develop the open areas of the suburbs systematically taking advantage of the modern knowledge of the art of town planning and encouraging in every way the provision therein of adequate and wide express highways, roads and feeder roads, where traffic can move quickly and safely, of housing accommodation, educational and other facilities and also of light, small and medium scale industries in locations fixed for them so that the whole suburban area to the north of Andheri-Kurla line may develop into a few satellite towns round about the existing suburban railway stations like Andheri, Goregaon, Malad, Kandivli and Borivli on the Western Railway and Kurla, Chembur, Ghatkopar, Vikhroli, Bhandup and Mulund on the Central Railway. The idea of the satellite town emanates from the necessity of making those development self-contained towns in every way with all

amenities and employment opportunities so that by and large the people living in those areas may find employment there only and may not have to travel long distances.

In any case a shift of the population to the suburbs must be encouraged.

Equalisation of Railway fares for Suburban Passengers.

It may be suggested that the Railways may further rationalise the passenger fares of pass holders to eliminate the difference in existing fares and keep the same i.e. uniform fares for pass holding passengers for travel from any Railway Station between Kurla and Thana on the Central Railway to Victoria Terminus or to Churchgate and between Andheri and Bhyander on the Western Railway to Churchgate or to V. T. All effective steps should also be taken to ensure regular and fast services both in the morning and in the evening so that the travelling public can reach from any railway station between Kurla and Thana on the Central Railway to Victoria Terminus or to Churchgate and between Andheri and Bhayander on the Western Railway to Churchgate or to V. T. in about 30 minutes.

Need for expeditious completion of Express Highways.

We have also stated heretofore that inadequate communications and lack of roads have badly hindered the progress of development of suburban areas. The existing main highways from Bandra to Ghodbunder and from Sion to Thana are dangerously narrow, their road surfaces are in most deplorable condition and they carry so much heavy trucks and other traffic that travelling on those roads at any time is a hazard. Some portions of these roads can only be described as regular death traps. The need for providing new express highways parallel to both these main arteries was recognised by all authorities as far back as ten years ago. We believe these projects have since long been sanctioned by the Central Government and the State Government has even appointed and entertained separate engineering establishment for executing these projects and it is therefore unfortunate that these highways have not been constructed. We would therefore most strongly recommend the Government to lose no further time but see that the work on these high ways is seriously taken up and completed most expeditiously, and that the existing main roads are sufficiently widened and brought up to modern standards to meet the needs of growing traffic both in human beings and goods.

The alignments of these two express highways have been so designed that they will help in opening out vast vacant tract suitable for residential building activity and also industrial development. A look at the map will show that on both sides of the Western Express Highways alone the extent of vacant land suitable for residential development is about 6,000 acres.

Onerous task on the authority for planned development of suburban areas.

Development of the vacant suburban areas is a work of very great urgency importance and magnitude requiring a sustained effort.

It is essential that the requisite amenities like the roads, supply of water, supply of electricity etc. should precede before the actual housing operations commence.

The authority entrusted with this work will have to set itself to the task of planning and developing in a systematic manner all vacant areas according to a programme and schedule. The programme may be fixed for a period of ten to twelve years ending in 1970 and the needed resources from year to year to enable the authority to execute the programme should be arranged to be placed at its disposal.

Developed sites may be handed over to the building agencies like (1) The Bombay Housing Board (2) the various employers (3) Co-operative Housing Societies and (4) Individuals.

Role of individuals and Co-operative Housing Societies.

Co-operative Housing Societies and individuals fall within the category of private investors. Co-operative Societies have made no small contribution in building houses in this State. According to the figures available there were only 48 Co-operative Housing Societies in Greater Bombay who had put up 968 tenements up to the year 1946. After 1946 Co-operative Housing Societies were formed in larger numbers and there are now in Greater Bombay 354 societies who have constructed 7555 tenements. Previously Government itself was advancing loans to the Societies. Government set up under the Co-operative Societies Act in 1952 a financing body known as the Bombay Co-operative Housing Finance Society Limited, who now advances loans to Co-operative Housing Societies. It is understood that increasing number of Societies are being formed in Bombay since the beginning of the 2nd Five-Year Plan but they have been encountering difficulties in obtaining finance and building materials with the result that their progress is hampered. Even individuals who desire to build their own houses experience similar difficulties.

Co-operative Housing Societies and individuals should be given all reasonable encouragement and help to build houses as their contribution apart from adding to the stock of houses at economic cost foster and sustain a spirit of mutual co-operation and self-reliance. Their activities encourage increased social intercourse between families of different communities and thus promote cultural unity. Sometimes the working of some of the co-operative societies is seized by opportunist members who abuse their position and the trust placed in them for self aggrandisement. Their malpractices affect the growth of such societies and have tended to discourage often times people from joining co-operative Societies though they would very much like and are otherwise anxious to own houses. There are administrative delays in registering the societies or in acquiring land on their behalf. We would recommend that Government should see that positive enduring efficiency and effective control are exercised by the promoters of the Societies themselves in looking after the promotion and the working of Co-operative Housing Societies and that all delays are eliminated and sufficient vigilance is exercised to prevent malpractices by undesirable elements. Similarly individuals who want to build houses for themselves should be extended all co-operation and help in their efforts.

Need to modify rent-control provisions and to grant reliefs and concessions.

Housing shortage is being accentuated mainly because the cost of construction has gone up beyond the economic capacity of the common man who is not able to build for himself, building materials are in short supply and lastly

:because those who have resources and capital do not invest in housing as the restrictive provisions of Rent Control Act, and the incidence of taxation and the disabilities have made such investment not only unremunerative but also they become a great damper for any substantial investment and on the other hand the cause of inconveniences and troubles for them. We are glad to note that Government have recognised the necessity of fulfilling their responsibility and entered the field, formulated schemes of public housing and made provision in successive plans for subsidised housing for industrial workers, sweepers and occupants of slums and grant of loans at reasonable rate of interest to persons and co-operative societies of low income groups. The terms and conditions on which loans are given and the extent of subsidy that is given have not created the climate and the incentive which are necessary for undertaking housing construction on a large scale. We would recommend that Government should not only substantially liberalise the conditions of the loan but they should also increase appreciably the quantum of subsidies given for the construction of houses. This will go a long way in encouraging the individuals and Co-operative Housing Societies to come forward in larger and larger numbers to build houses. To the extent they do so, the burden on Government and public funds will be correspondingly reduced.

✓ We strongly recommend that income from all new buildings providing accommodation carrying rent up to Rs. 100 per tenement per month should be exempt from income-tax, super-tax and wealth-tax for a period of ten years. Similarly such tenements should be exempted from the operation of Rent Control Act. In the case of such buildings the Municipal Corporation and the State Government should give rebate of 50 per cent. of the general taxes and the urban Immovable Property Tax respectively for a period of ten years. For the last few years the Government of India has been exempting new residential buildings for a period of only two years at a time from income-tax. This concession apart from being inadequate due to the limited period of its operation and consequent uncertainty was not revived after 31st March 1956 and will cease to be operative from 1st April 1958. In the case of all new residential buildings Non-agricultural assessment on land should not be levied at least for the first five years after the completion of the buildings.

Standard of Accommodation for Public Housing.

The cost of building a house even of minimum accommodation, has, in recent years gone up so much that an average earner of a low income group finds that its economic rent is beyond his paying capacity. Neither a private investor would construct houses for them nor would an employer either of industrial labour or of any other type of workers would build for them and charge subsidised rents as that would land them into substantial and continuous annual financial losses. It therefore appears inevitable that the Government shall have to discharge their responsibility of providing houses for Low Income Groups, and shall have to make accommodation available to those on subsidised rents as in the case of industrial workers.

People have to pass a larger part of a day in the house and as the life of an ordinary house lasts for a period of over fifty years it is necessary that it should provide healthy living conditions, modern amenities, sanitary requirements due privacy for family life, and also comfortable proper accommodation. ✓ Our

Prime Minister has told us that the days of single room tenements are over and he has been stressing from time to time that the objective of all housing programmes should be to provide houses with at least two living rooms. Recognising this obligation on their part public authorities like the Railways, the Bombay Municipal Corporation, the Bombay Port Trust, the Bombay Electric Supply and Transport Undertaking Limited, and also some employers such as the Tatas at Jamshedpur, the Chittranjan Locomotive Works, Chittrajnan, the Perambur Wagon Building Works near Madras, the Air India International and the Reserve Bank of India at Bombay have provided housing accommodation and amenities for their workers which in some cases is of a higher standard than the minimum requirements of two living rooms referred to above.

Different standards of accommodation for the same category of employees, it is argued, may sooner or later generate feelings of jealousy and bitterness and thus affect the morale and efficiency of the workers. It is natural for human beings to make comparisons and feel dissatisfied with their lot. That is, however, a phenomenon not peculiar to housing accommodation. It can be observed in almost all walks of life. What is of vital importance in the building up of a Welfare State is to ensure the provision of living accommodation of modern standards with the recognised essential amenities for the people in the country. We, therefore, recommend that the minimum accommodation should provide at least two living rooms and a separate kitchen with sanitary and other essential modern conveniences. Construction of new houses with a lower standard of accommodation and conveniences will be tantamount to compelling the people in the country for next three generations or more to a sub-standard existence denying them the privacy of family life. This will retard the development of a social order essential for the building of the Welfare State in New India.

It is argued that it is not possible to provide accommodation, according to the recognised standards, at the present cost of building houses because both the finances and the materials required for building are very limited. It is, therefore considered prudent that practical considerations should be allowed to prevail and the housing programme for the future should consist of single room tenements as in the past. We do recognise that it will not be wise to lightly brush aside the financial difficulties as the provision of the necessary finances is the crux of the problem. No one can, however, ignore the vital fact emphasized by the Prime Minister that if houses were not provided for the workers of the proper standard with essential facilities, it would adversely affect the ability of labour to put forth proper work. That would given and continue to give, serious blow to the economic and social progress of the country. We, therefore, consider it our duty to emphasize the fundamental fact that in providing single room tenements, we would only be continuing the system of the present sub-standard housing for the people at least for the next fifty years. This will strike at the very root of the planned economy in the country, where efforts are made in all directions in raising the *modern standards of life*. We cannot help therefore, urging upon the Government in all earnestness that the programme of housing should be in consonance with the concept of modern standards of life which would help the country in the development of a Welfare State. As the Government has been implementing with determination the

announced policy of removing the inequality of income and wealth they should do their utmost to find finance for providing houses for the people of a standard which everyone from the Prime Minister downward has recognised as essential in modern days. This is our approach towards the question of housing and we have borne that in mind in making our recommendations in subsequent paragraphs.

Finance for Housing Schemes.

We have stated that provision of 25,000 tenements including the 5,000 to be built by the private investors annually would cost about Rs. 20 crores per year on the basis of cost of two living rooms and a kitchen. It has to be considered whether finance of this magnitude will be available, and if so, how.

So far as the Bombay Housing Board is concerned who provides houses for industrial workers on subsidized rent and houses for low income groups on economic rents it will require every year about Rs. 4½ crores for subsidized housing, ½ crores for low income rental housing and another ½ crores for site development aggregating to Rs. 5 crores per year. These funds will have to be obtained and can be had from the Central Government out of the plan provision under housing. Co-operative Housing Societies and individuals of low income groups will need financial assistance to the extent of about Rs. 1.5 crores which amount will also have to be obtained and can be had from the Central Government out of the plan provision. State and Central Governments and Semi-Government bodies including Statutory Corporations will require about Rs. 3 crores annually for housing their employees which will have to come out of their annual budgets.

For the rest of the Low Income Group employees working in industrial establishments not catered for by the Bombay Housing Board and those of commercial and trade establishments whose housing also may have to be provided by Government, the State will require about Rs. 5½ crores annually. This amount will have to be raised by loan borrowings from the market. Private investors who are expected to cater to the needs of middle class housing may require funds to the extent of about Rs. 5½ crores. Half of it or say Rs. 2½ crores may be their investment from savings and the remaining Rs. 2½ crores may have to be obtained by borrowing from financing agencies. In final analysis therefore, the position with regard to the funds will have to be as under :—

(i) Rs. 9½ crores to be provided every year in the annual plans of the States and Central Governments.

(ii) Rs. 5½ crores to be raised by loan borrowings from the market by the State for housing employees of industrial and commercial establishments.

(iii) Rs. 2½ crores to come out of the resources of private investors, every year.

(iv) Rs. 2½ crores to be out of borrowings from financing agencies for private investors.

We recommend that the private investors as well as individuals belonging to middle income group who desire to invest in housing and the Bombay Co-operative Housing Finance Society Ltd., who would advance loans to Co-operative Housing Societies of middle income group families, should be enabled by the State to obtain loans from the Life Insurance Corporation Fund and such other Funds which may be in a position to advance long term loans at a reasonable rate of interest.

Encouragement of Formation of House Building Societies.

In Western countries a very large contribution towards provision of housing accommodation is being made by House Building Societies. These Societies would work as business bodies with private capital subscribed for their promotion. They should also be enabled to obtain long term loans from financing agencies like the Life Insurance Corporation Fund and such other Funds on reasonable terms. These building societies would be commercial concerns and their incomes should be liable to taxation as in the case of other companies and Corporations.

Working of the Bombay Co-operative Housing Finance Society Ltd.

The Bombay Co-operative Housing Finance Society Ltd. has advanced Rs. 1,10,59,000 to the various societies in the State of middle class persons during the last five years, out of which 1,861 tenements have come to be constructed and are occupied. The demand on this body for loans has been increasing from year to year :—

(i) From the experience, gained so far it would, appear that this Finance Society's need of funds for advancing loans to Co-operative Housing Societies of middle class persons would be about Rs. 75 lakhs annually.

(ii) This Society has been entrusted by Government with the work of advancing loans to the Co-operative Housing Societies of Low Income Group Persons also for the last two years and it has advanced an amount of Rs. 43,55,400 to various societies in the State out of which 324 tenements have been constructed and are occupied. We understand that this Scheme is becoming increasingly popular but its progress had to be checked for want of funds. The Finance Society's need of funds for Low Income Group Societies if they are made available as required, would also be about Rs. 75 lakhs annually.

The working of the Bombay Co-operative Housing Finance Society has encouraged and given an impetus to housing construction by co-operatives. The Finance Society needs adequate funds to enable it to function effectively. Lack of funds so far seems to have been its major handicap. The other hardships experienced by Co-operative Housing are difficulties in securing land at reasonable cost, in securing controlled building materials in time and the heavy municipal taxation. We recommend that the funds to the extent of 150 lakhs as indicated above should be made available either from the Life Insurance Corporation Fund or other Funds. If these funds are made available and the other difficulties are removed, Co-operative Housing Societies, it would appear, can make an appreciable contribution in providing housing accommodation, along with the other agencies.

Problem of old dilapidated buildings.

Though most urgent, imperative and acute is the problem of providing new housing accommodation, the problem of repairing about 18,000 old buildings containing about 1,61,300 tenements which may have to be pulled down during the next 10 to 15 years is equally important and urgent. According to the survey made by the Municipal Corporation, about 5,000 buildings containing 51,000 tenements in the Island and 1,000 buildings containing 6,000 tenements in the Suburban area i.e. 6,000 buildings containing 57,000 tenements will finish their useful life and may have to be pulled down within the next five years. The Bombay Municipal Corporation has been taking action in discharge of their responsibilities as a matter of routine for repairs to old buildings, but such action has not been very effective in preventing the collapse of buildings especially during monsoon seasons causing damage and sometimes loss of human life. Most of these 18,000 buildings are more than 80 years old and are of timber-framed construction. Judging from usual normal standards these buildings have outlived their useful life. We cannot, therefore, recommend that they should be kept going by repairing them at a cost which would be heavy and inordinately disproportionate to the income derived by the owners from these buildings. The owners on the other hand could not pull down their old buildings which were past their useful life because of the provision of the Rent Control Act. The result of all these has been that the majority of the buildings have reached such a stage that substantial repairs to them are often a waste of money and building materials since such repairs would not prolong their life very appreciably. In short, financial difficulties, disproportionately high cost of repairing old buildings and excessive wear and tear due to overcrowding are the main factors which have contributed to bring many old buildings to their present very bad state of disrepair.

It will not be possible to salvage the 6,000 buildings which have to be pulled down within the next five years. As regards the remaining 12,000 buildings wherever it is considered desirable and advisable repairs to them may be carried out to the satisfaction of the Municipal Corporation and the existing rents may be allowed to be increased, by suitably modifying the Rent Control Act, to the level of the subsidised rent charged by Government to the industrial workers which is at present Rs. 30 per month per tenement.

Summary of important conclusions and recommendations.

The problem involved in the provision of housing accommodation and housing finance, as detailed in the above paragraphs, are difficult and intricate. We summarise below our conclusions and recommendations :—

1. *Population in 1970.*—The Population of Greater Bombay, which is at present about 43 lakhs, would reach about 60 lakhs by about 1970.

2. *Absence of attractions for living in the Suburbs.*—Large masses of people have been concentrating and living in the small area of the Island of Bombay. This is mainly due to the lack of sufficient foresight on the part of the authorities in not creating conditions which would provide reasonable attraction to the people to go and live in the Suburbs.

3. *Lack of Open Space.*—It is deplorable that there are practically no open spaces for recreation and no playgrounds for children in most parts of the City.

4. *Vertical development not explored.*—Vertical development with proper safeguards for light, air, health and traffic requirements, does not seem to have merited the attention it deserves in this rapidly growing city.

5. *Minimum need of 3 lakhs of tenements.*—The immediate need of new housing accommodation is 3 lakhs tenements costing about Rs. 240 crores and we recommend that it should be provided at the rate of 25,000 tenements a year before 1970. With the population of 60 lakhs, the shortage of accommodation will still be 3,25,000 tenements in 1970, in spite of providing the aforesaid 3 lakhs new tenements.

6. *Construction of new houses in the City—No appreciable addition to the existing population.*—Although the population in the Island of Bombay will reach the figure of about 35 lakhs by the end of 1970, realising that this is a social and a human problem and viewing it, there ore, in a practical and realistic manner we are driven to the inevitable conclusion that we shall have to reconcile ourselves with the situation as it will develop and should resort only to such measures as will so far as possible prevent addition to the existing population by the provision of new houses.

7. *Minimum increase in Open areas to 2,000 acres.*—There are still a number of plots and areas which are vacant at present or which may become available later on in the Island of Bombay upon which new houses can be constructed. It is not our suggestion that new houses should not be allowed to be constructed on such plots. We, however, most strongly recommend that when the existing old and dilapidated houses fall down or are removed, steps should be taken to keep the land on which they are built, as far as possible, as open space. Such adjustments should be made, that, at any rate, the existing open area in the City of about 400 acres is increased at least to about 2,000 acres during the course of the next ten to twelve years, so that greater facilities could be provided for open grounds, recreation grounds, playgrounds, plots for building schools, as well as space for other social, cultural and public purposes, and such an environment be created so that the 35 lakhs of people, who are expected to be in Bombay by the end of 1970, may have better living conditions than those under which 31 lakhs of people in the City are living to-day.

8. *Future development in the main in the Suburbs—Necessity to create a new centre of activities in the Central Belt.*—Although no satisfactory conditions either in the matter of transport or feeder and main roads and express highways or for essential amenities like water supply, medical facilities; education, drainage, sewage, etc. have been created in the suburbs which would provide reasonable attraction to the people to go for and live in the suburbs, all future development in the main should be planned and located in the suburban areas. The wanting facilities will have, therefore, to be immediately provided for. Moreover, to achieve the desired end expeditiously, we strongly recommend that a new centre of activities like the Fort Area should be created in the Central Belt above the Bandra-Kurla Line, by locating all new Government Offices, Commercial and Industrial Houses, Banks, new Educational Institutions, Insurance Offices, Markets,

etc. in the Central Belt. This will also ease the pressure on the lines of communications which are presently subjected to great stress and strain.

9. *Construction of Rail-cum-Road Bridges over the Bassein and Thana Creeks—Opening up of new areas.*—The construction of the projected bridge over the Bassein Creek and the possibility of building a rail-cum-road bridge over the Thana creek will not only open up new areas for industrial development and absorption of the increasing population of Greater Bombay, but it will also provide the long missing links between the Island and Greater Bombay on the one hand and the mainland beyond the same on the other. We, therefore, recommend that the work of constructing the bridge over the Bassein creek should be taken in hand without delay and the construction of the bridge over the Thana creek should be taken in hand forthwith as soon as the possibility of such construction is found satisfactory, after the careful examination of all issues connected therewith from technical and other points of view.

10. *Widening and modernizing of existing Roads and completing the construction of Express Highways—Opening out of vast vacant tracts.*—We recommend that the existing main roads in Greater Bombay should be sufficiently widened forthwith and brought upto modern standards to meet the increasing needs of growing traffic of goods and human beings and we also recommend that the work on the two projected Express Highways should be expedited and completed in the minimum of time as they will facilitate and help in the opening out of the vast vacant tracts in the suburbs for development.

11. *Creation of self-contained Satellite Towns.*—We recommend that the development should be so planned, taking advantage of modern knowledge, experience and art of town planning, as will create Satellite towns around the existing suburban Railway Stations of Andheri, Goregaon, Malad, Kandivli and Borivli along the Western Railway and Kurla, Chembur, Ghatkopar, Vikroli, Bhandup and Mulund along the Central Railway. These towns may be made as far as possible, self-contained towns in every way, so that all amenities and employment opportunities can be found therein. This will also obviate the necessity by and large for the people living therein to travel long distances both in the morning and in the evening and reducing thereby the existing great strain on the Railways and other transport machinery of the City and the Suburbs.

12. *Provision of facilities for developing vacant sites.*—We recommend that the Bombay Municipal Corporation should be requested to carry out as expeditiously as possible the work of developing vacant sites in the suburbs by providing roads, water supply mains, drainage sewers, etc. and similar other facilities so that they might become available for building houses.

13. *Standard of minimum accommodation for housing.*—The provision of single room tenements will only continue the existing sub-standard housing conditions for the people at least for the next fifty years. This will adversely affect the progress of the planned economy in this country, where efforts are made in all directions in raising the modern standards of life. After examining the question from all points of view, we recommend that the

minimum accommodation for a family should consist at least of two living rooms and a separate kitchen with sanitary and other essential modern conveniences.

14. *Agencies for providing houses.*—The agency for providing accommodation will be the Bombay Housing Board, the various employing authorities coming under the public and the private sectors, the private investors and the Co-operative Housing Societies and individuals.

15. *Why private investors do not go in for the Housing Industry.*—Various provisions of the Rent Act and the great burden of taxes—Central, State and Local—have imposed such hardships on private investors that they have scared them away from the field and have left them with no enthusiasm or incentive to go in for the Housing Industry and build houses for the people of Low-Income Group which occupy about 86 per cent. of the available accommodation. Moreover, investments in small Savings Securities offer special inducements and a comparatively high return to private investors. We are convinced that unless, a fair and reasonable return of about 10 per cent. net, after deduction of all outgoings, including all Central Taxes, can be secured by investing money in the building of houses, private investors will not be inclined to go in for the same with all its attendant risks. We, therefore, recommend that the Rent Control Act should be so amended as will enable the owners of the property to realize a net return of 10 per cent. on the amount invested by them in housing out of the rent that they are allowed to charge.

16. *Giving a new momentum to housing activities—Need to modify Rent Control Provisions and grant of relief and concessions.*—We are glad to note that Government have recognised the necessity of fulfilling their responsibilities and have entered the field formulating schemes of public housing and made provisions in successive Plans for subsidized housing for industrial workers, sweepers and occupants of slums and grant of loans at reasonable rate of interest to persons and co-operative societies of low income groups. The terms and conditions on which loans are given and the extent of subsidy that is given have not created the climate and the incentive which are necessary for undertaking housing construction on a large scale. We, therefore, recommend that the Government should not only substantially liberalise the conditions of the loan but they should also increase appreciably the quantum of subsidies given for the construction of houses. Among many other concessions the important ones which we have recommended are that (i) income from all new buildings providing accommodation carrying rent up to Rs. 100 per tenement per month should be exempt from, Income-Tax, Super-tax and Wealth-tax for a period of ten years and (ii) such tenements should be exempted from the operation of the Rent Control Act.

17. *Agencies that should build the 3 lakhs tenements in 12 years.*—We have recommended that the undermentioned agencies should build every year the number of tenements mentioned against their names :—

The Bombay Housing Board	.. 6,000 tenements mainly for Industrial workers and partly for people coming under low-income group.
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The Municipal Corporation, the State Government, the Central Government, the Central Railway and the Western Railway together.

Individuals and Co-operative Societies. 2,000 tenements for themselves and their members.

The Central and the State Government. 8,000 tenements for housing employees of Industrial and Commercial establishments other than those provided for by the Bombay Housing Board.

Private Investors. .. 5,000 tenements for middle class people.

25,000

Thus the total number of tenements to be built per year will be 25,000. They will aggregate to 3 lakhs tenements in the course of the next 12 years ending with the year 1970.

18. *Who will come under Low-Income Group Category.*—Our conception of an individual coming under the low income group category is, one whose monthly family income is less than Rs. 500.

19. *Finance required for building 25,000 tenements every year.*—We estimate that provision of 25,000 tenements including the 5,000 to be built by the private investors for middle class people would cost about Rs. 20 crores on the basis of the cost of 2 living rooms and a kitchen. The total finance required for 12 years will, therefore come to Rs. 240 crores. We have estimated that the finance that will be required by the different agencies mentioned in paragraph 17 above will be as follows :—

Name of the Agency. 1	Amount of Finance required. 2	Source of Finance. 3
I. The Bombay Housing Board.	Rs. 4.25 crores for industrial workers on subsidised rent.	From the annual budgets of State and Central Governments.
The Bombay Housing Board.	0.50 crores for people of low income group on economic rents.	
The Bombay Housing Board.	0.25 crores for site development.	
Co-operative Housing Societies and Individuals of low Income Group.	1.50 crores.	
State and Central Governments and semi-Government bodies including Statutory Corporations.	3.00 crores for housing their own employees.	
	9.50 crores.	

Name of the Agency.	Amount of Finance required.	Source of Finance.
1	2	3
	Rs.	
II. Central and the State Governments.	5.75 crores for housing employees of industrial and commercial establishments.	To be raised by borrowing from the market.
Private Investors ..	2.75 crores for housing middle class people.	From their own resources.
Private Investors ..	2.50 crores for housing middle class people.	Out of borrowings from financing Agencies.
	20.50 crores.	

20. *Loans from Life Insurance Corporation and other Funds.*—We recommend that the Private Investors as well as Individuals belonging to middle income group and the Bombay Co-operative Housing Finance Society Ltd., advancing loans to Co-operative Housing Societies of middle income group families should be enabled by the State to obtain loans from the Life Insurance Corporation Fund and such other Funds which may be in a position to advance long term loans at a reasonable rate of interests.

21. *Lack of Funds—The major handicap of Co-operative Housing Societies.*—We recommend that Funds to the extent of Rs. 150 lakhs per annum should be made available to the Co-operative Housing Societies through the Bombay Co-operative Housing Finance Society Ltd.

22. *Problem of repairing old buildings.*—There are 18,000 old buildings containing about 1,61,300 tenements in Greater Bombay. 6,000 of such buildings containing 57,000 tenements will finish their useful life within the next 5 years. Neither is it possible nor is it desirable to salvage these 6,000 buildings. As regards the remaining 12,000 buildings we recommend in their connection that whenever it is considered desirable and advisable repairs to them may be carried out to the satisfaction of the Municipal Corporation and the existing rents should be allowed to be increased by suitably modifying the Rent Control Act to enable the party concerned to charge rent after such repairs are carried out up to the level of the subsidised rent charged by the Government to the industrial workers, which is at present Rs. 30 per month per tenement.

M. A. MASTER,
D. S. BAKHLE,
L. S. DABHOLKAR,
K. B. CARNAC, } *Members.*
C. R. DESAI (*Convener*).

OFFICE OF THE BOMBAY HOUSING BOARD:
Esplanade Maidan, Bombay 1,
Dated 3rd December 1958.

STATEMENT "A",

Table of certain Slums (wardwise) in Bombay City.

Ward	No. of slums.	Area in sq. yards.	Area in acres.	No. of buildings.	No. of Residential buildings.	No. of Non-residential buildings.	No. of families.	No. of families of industrial workers.	Population in persons.	Minimum density of population in slums.	Average density of population in slums.
A	7	99,162	20.60	525	458	67	4,181	441	22,109	652	1,073
B	20	1,11,015	22.80	447	367	80	5,761	1,098	26,785	442	1,175
C	24	4,38,498	90.50	2,082	1,651	411	19,268	704	85,273	417	942
D	27	3,74,294	77.00	1,000	872	128	10,972	1,459	48,677	294	632
E	24	6,08,637	125.70	1,914	1,613	301	18,618	7,161	1,16,425	444	626
F	18	4,45,351	91.80	840+ 935 huts.	711+ 935 huts.	129	8,218	5,037	40,225	100	438

**REPORT OF THE
BUILDING MATERIALS PANEL**

REPORT OF THE BUILDING MATERIALS PANEL.

In the study of the various problems concerning Greater Bombay by the Study Group appointed for that purpose by the Government of Bombay under Government Resolution, Political and Services Department, No.MIS. 1157/76643-B, dated 14th March 1958 the study of the existing housing conditions, the present actual requirements and the future need considering the probable growth of population during the next ten to twelve years occupies a predominant position. After the assessment of Housing needs has been made the authorities must consider the availability of the various resources in (1) Finance, (2) Building Sites, (3) Building Materials and the building labour force.

This Panel comprised of:—

- (1) Shri Motichand G. Shaha, Chairman, Bombay Housing Board—Convener.
- (2) Shri K. V. Apte, B.E.
- (3) Shri B. P. Kapadia, B.E.—A nominee of the Institution of Engineers.
- (4) Shri S. H. Parelkar, F.R.I.B.A., F.I.I.A.—A nominee of the Institute of Architects.
- (5) Shri C. R. Desai, B.E. B.S.E.(I)—Housing Commissioner, Bombay,

is concerned with building materials. It is required to examine whether the various building materials required for construction in meeting with the housing needs of the city from year to year would be available, and to examine the possibilities of cheapening them.

The panel held six meetings. At the first meeting the Panel discussed about the quantitative requirements of the various materials. Shri C.R. Desai, Housing Commissioner, Bombay, had appraised the Panel that considering the present population of about 43 lakhs, and the existing stock of housing accommodation in Greater Bombay area, the immediate need of building construction was for housing a population of 15 lakhs of people who it was estimated had no accommodation of their own. He further stated that even if minimum accommodation permissible under the Municipal rules is to be provided to a family, it will be required to put up 3,00,000 tenements for them. The Panel considered that looking to the finances and various other resources involved the authorities would have to spread the programme of construction over a period of about twelve years. If therefore a determined and positive effort is decided to be made by the Government to meet the actual housing shortage in the City it would be necessary to construct about 25,000 tenements at least every year.

The Country has launched Five-Year Programmes with a view to achieve self-sufficiency in agricultural production and in progressively industrialising the country and all available resources will have to be used in the projects connected therewith. Housing will thus have a lower priority for a few more years and whatever funds are available for housing will have to be

used most economically to extend the benefit to larger numbers. The Panel therefore believes that at least for the period of next ten to twelve years, a family will have to be satisfied with the smallest permissible accommodation. Such unit accommodation in Bombay in multi-storeyed structures at prevailing prices would cost about Rs. 6,000.

The essential building materials whose supply at reasonable rates will have to be assured are bricks, sand, cement, crushed stone, timber and steel. Bricks, Sand and crushed stone are produced locally or in the Localities near about. Cement, timber and steel are produced elsewhere and they are transported here by Rail or by Sea.

It is estimated that for an annual programme of construction of 25,000 tenements each tenement costing about Rs. 6,000 the requirements of various building materials would be as under:—

Bricks	..	..	12½ crores.
Sand	..	..	1,25,00,000 Cft.
Crushed stone metal and broken stone			1,25,00,000 Cft.
Cement	..	..	1,30,000 Tons.
Timber	..	..	25,000 Tons of logs.
Steel	..	..	30,000 Tons.

The Panel invited representatives of brick manufactures and sand dealers and discussed the matter with them at two meetings of the Panel. According to them the present production of bricks which came to the Greater Bombay area was about 14½ crores of kiln-burnt and 2½ crores of clamp burnt bricks. The present sand supply was about 2,00,00,000 Cft. Some of them were suppliers of crushed stone metal and they gave the Panel to understand that the supply of stone metal in increased quantities would not present any great difficulty as it meant only installation of more crushers at the quarries and so far the experience has shown that the production of crushed stone metal was keeping pace with the demand.

The Panel discussed with the representatives the various aspects of brick manufacture with particular reference to the availability of brick fields with suitable clays, brick laying labour, coal for burning etc., and tried to elicit from them their difficulties and requirements and the conditions to be satisfied to assure steady supply of the increasing demand of bricks at reasonable rates. The Panel discussed similarly with the sand dealers their problems and elicited from them their views as to what was necessary to be done to procure the necessary increasing supply of sand economically.

After taking all the discussions and deliberations into consideration the panel decided to record its observations as under with reference to each building material.

Bricks.

Prior to the last war almost all the bricks used in Bombay were being burnt at Kalyan. With the increased tempo of building construction after the war and particularly after 1947 Brick Kilns were progressively established.

in the Suburbs at Andheri, Jogeshwari, Kurla, Powai and Mulund. Brick suppliers also began burning bricks in clamps. Presently about half the supply of bricks comes from Kalyan and the remaining half from the suburbs. With the larger housing programme the present production will have to be increased by about nine crores of more bricks. It appears, no great difficulty will be experienced in achieving the increased production but certain basic facilities will have to be afforded to the brick manufacturers by the Government. In the suburban areas of Greater Bombay the soil available is not by itself quite suitable for brick burning. It requires to be admixed with sand certain proportion of red and yellow earth and also tank bed or Kyari bed clay to make it suitable for burning. The Government will have to arrange to see that the brick manufacturers are allowed to borrow on payment red and yellow earth from the hilly areas. The manufacturers require black plain and corrugated iron sheets for their kilns. They also require coal for brick burning.

The Government will have to arrange for timely supply of the iron sheets and coal. They experience hardships presently in the matter of rates and taxes. It is recommended that all recoveries either on account of Royalty, Local Fund Cess or N. A. Assessment should be rationalised and compounded into one charge instead of recovering them separately.

The brick manufacture is a seasonal industry and the labour which is generally imported stays on the field for a period of six to seven months. The labour is housed in katcha huts which are demolished as soon as the monsoon approaches. The Municipal authorities are alleged to be recovering taxes for the period of full one year from the brick manufacturers for the huts. It would be fair to recover taxes from them for half-year only. The same difficulties are also faced by the Kalyan brick manufacturers. Further, bricks from Kalyan are transported to Bombay in Country Crafts through the Thana creek. For some time past the brick carrying country crafts are unduly detained at the Customs outpost with the result that instead of making one trip to and fro from Kalyan to Bombay in two days it now takes double the time *i.e.* four days with the result that supply gets delayed and transport has become costlier resulting in higher prices of bricks. This matter may be investigated and unnecessary hardship, if any, may be removed.

Whether Government should undertake brick manufacture departmentally or it should give aid to private parties directly for ensuring the increased production and supply of bricks at reasonable rates will be discussed later in the report.

Sand.

Sand supply to Bombay is mainly from the river Ulhas, the several sources along which lie between Mumbra and Bhayander. Some sand comes from Dharamtar as well as from Virar. Sand is quarried and transported from the river bed by country crafts as well as by dredgers and barges. Presently there are five dredgers between Ghodbunder and Mumbra out of which four dredgers are in continuous operation. The total supply of sand in Bombay at present is about 2,00,00,000 cft. The sand dealers have to depend mostly

on the whims and fancies of the owners who bring sand in their country crafts to Mahim bunder, etc. According to them the country craft owners cannot be relied upon for regular supply of sand at a steady rate. The demand for sand is growing. Transport by railway wagons apart from the heavy transport cost involved is undependable because of the uncertainty of availability of wagons. These conditions have placed the country craft owners in a dictating position. Moreover there are not enough country crafts to ply in this trade. The demand for sand with the proposed increased building activity would be nearly doubled. According to the sand dealers the existing resources will not be able to cope with the demand and ways and means will have to be devised to dredge the required quantities of sand regularly from the river bed and to make reliable arrangements to transport the same. The Penal agrees with the above view of the said dealers, and considers that it would be absolutely necessary to add two more dredgers to the existing fleet and to employ diesel trucks for transporting sand to Bombay. Which Agency should acquire and employ the dredgers and the diesel trucks will be considered hereafter.

The present high price, of sand in Bombay is considered to be mainly due to the heavy Railway freight. The sand dealers stated that before the war the Railway freight for a 600 cft. wagon was about Rs. 15 which was increased to about Rs. 35 for 600 cft. wagon during mid-war and it is now about Rs. 105 for a 600 cft. wagon. The Railway freight has thus increased seven times which accounts for the increased price of sand. The Panel does not know how far it will be possible to persuade the Railways to reduce the Railway freight but if cost of sand has to be cheapened efforts will have to be made in obtaining a sizable reduction in the Railway freight and in a steady daily supply of wagons required.

Crushed stone metal and broken stone.

The Penal does not anticipate much difficulty in the supply of crushing stone metal as private parties would come forward to instal crushers according to the demand of the material in the market if they are satisfied that such demand is steady. There are numerous hills and quarry sites round about Bombay and installation of crushers to exploit them should not be difficult.

Cement.

With the proposed increased building construction the requirement of cement in addition to the present consumption in Bombay will be about 1,00,000 tons per year. The cement supply position is becoming easier from year to year due to increasing production of cement, and the Panel considers that it will not be difficult to obtain the additional 1,00,000 tons of cement per year as required.

Steel.

The supply position of steel is presently very precarious and this material is in extremely short supply. The buildings in Bombay have necessarily to be multi-storeyed structures and the use of steel cannot therefor be

avoided. For implementing the proposed increased building construction annually 22,000 tons of additional steel would be required. The existing difficult position is expected to last till the three plants under construction in the country go into operation by the end of 1960 or thereabout. It appears therefore impossible to launch on any big scale building construction immediately. But considering the fact that supply of steel from 1961 onwards would ease, the intervening period of about two years would be useful for planning, gearing up all agencies and in getting ready for commencing construction on a large scale thereafter.

Timber.

Teak timber for building purposes is already in short supply in the country. Our forest yield a very small percentage of building teak but they have vast resources of inferior and secondary species of timber. In future building construction on a large scale therefore, we shall have to use hard and soft wood timbers after treating and seasoning them. This matter has been under the active consideration of the State Government and the Chief Conservator of Forests has proposed installing treatment and seasoning plants at four places in this State at Waghai, Ghodbunder, Paratwada and Balarshaw. The Panel would like to stress here the great urgency of this matter and the necessity of installing the seasoning plants most expeditiously. Unless the seasoning plants are installed and treated and seasoned hard and soft wood timber is made available building construction on a large scale at reasonable cost would not be possible.

Just prior to the last war and particularly in the post-War period the provision of housing accommodation presented a very difficult problem, almost throughout the world. It has been realized that the housing problem owes its existence to the disparity between supply and demand. Various factors operated in retarding the growth of housing accommodation and in accentuating the situation. The Rent Control legislation for example seemed to aggravate the economic difficulty which private enterprise experienced in obtaining a profitable return on money invested in low cost housing, high interest rates on building loans, steep rise in land prices and increased building costs all combined to place further obstacle in the way of supplying the growing need of cheap dwellings. The net result has been that it has been found impossible to provide sufficient or satisfactory accommodation for the low income groups by methods of unassisted private supply. It has been accepted throughout the world that housing for the low income groups will have to be provided at public expense and at heavily subsidised rents. The cost of housing therefore, is a matter of primary importance to the State.

In countries where housing has been accepted as a Public Service, the housing policies there have been directed towards rationalization in three respects, firstly (1) Building Finance, secondly in (2) the land policy and thirdly in the matter of (3) technical methods, materials and labour. The study of low cost housing elsewhere emphasises the importance of proper planning or rather preplanning after setting up a target for a period of years. This enables effective use being made of all available resources both men and material.

It is possible to reduce building costs by careful planning. If the programme is spread over a period of year, targets are fixed and the executive is given a free hand to implement the programme without interference from the administration it should be possible for the department to supply essential building materials cheaply by placing contracts with brick kilns for a period of three to five years in advance and similar methods may be employed for procuring other building materials such as sand, crushed stone, etc. and building components such as doors and windows, all of which can be supplied to the contractor whose tender would then mostly be for labour only—Transport can be similarly handled.

Taking all factors into consideration and keeping in view that has been stated above, *this Panel makes the following recommendations* with regard to the essential building materials for procuring them in sufficient quantities and of proper quality and at reasonable costs :—

Bricks.

The difficulties met with by brick manufacturers in Bombay mainly are :—

- (1) Difficulty in obtaining suitable land for taking out clay for manufacturing bricks.
- (2) Shortage and inferior quality of fuel.
- (3) Shortage of transport.

✓With regard to (1) Government should expeditiously make necessary land available to the brick manufacturers on payment by them of reasonable cost either from Government waste land or by acquiring suitable private land. The brick manufacturers may be given the facility of paying such land cost in suitable instalments.

✓With regard to (2) firm arrangements should be made to supply coal of the requisite quality for brick manufacture. This can be done by making Railway wagons available to them as and when required.

✓With regard to (3) facilities should be afforded to the country craft owners to make a quick trip to and fro without unnecessary detention. This should be arranged in consultation with the customs authorities.

The Panel further recommends that in order to improve the quality of bricks and to bring about gradual standardization in brick manufacture, Government should undertake to instal a suitable plant and work it for moulding bricks, mechanically and for mechanizing the other processes also. If Government puts up such a plant and works it successfully brick manufacturers are bound to emulate and follow the Government example. By mechanizing the process of brick manufacture in big cities like Bombay, Calcutta, Delhi, Kanpur, etc. quality of bricks would be improved and standardized, dependence on manual labour will be minimised and prices will be stabilized.

Sand.

It would be necessary to augment sand production to achieve double the present supply. This can be done only by employing dredgers and barges and it is recommended that to begin with two more dredgers may be brought

into operation between Mumbra and Ghodbunder. If sand dredging is left entirely in the hands of private trade Government will have little or no control in assuring steady supply a reasonable price. The Panel is hence of the opinion that Government may buy the two dredgers in partnership with experienced private parties in the sand trade. The responsibility of working the dredgers efficiently and economically should be that of the private parties. The terms of partnership may be discussed and settled by Government.

Transport of sand from Ghodbunder, etc. will have to be handled by diesel trucks. It may be left to private operators to put such trucks on the road.

Timber.

Utmost use of soft and hard woods available in plenty in our forests should be made in building construction. It can be done only if such timber is supplied by the Forest Department after requisite treatment and seasoning.

Teak timber used for building purposes is already in very short supply. Its cost being high it has raised the building costs. It is imperative therefore to install and operate seasoning plants at several suitable places in the State and to arrange as early as possible to supply treated and seasoned timber for building construction which apart from relieving the existing undue pressure on teak wood will also help in reducing building costs. The Panel strongly recommends that Government should take most expeditious steps to install treatment and seasoning plants at suitable places in the State.

General.

The Panel would like to impress upon the Government the fact that for making effective use of all available resources in men and materials the programme of construction should be preplanned and approved at least three years in advance.

The targets fixed for each years in the programme should be implemented as per the schedule and the Executive Department should be organised and geared up accordingly in advance.

K. V. APTE,	}	<i>Members.</i>
B. P. KAPADIA,		
S. H. PARELKAR,		
C. R. DESAI.		
MOTICHAND G. SHAH		<i>(Convener).</i>

OFFICE OF THE BOMBAY HOUSING BOARD :
Esplanade Maidan, Fort, Bombay I.

—Dated 31st July 1958.

**REPORT OF THE
COMMUNICATIONS AND TRAFFIC PANEL**

REPORT OF THE COMMUNICATIONS AND TRAFFIC PANEL

By one of those strange tricks which the Fates are wont to play upon man kind, the great City of Bombay developed out of a tiny settlement in one of the many islands in the beautiful bay from which there is a belief that Bombay derived its name, at least for the Portuguese, who bequeathed "BOM BAHIA", to the British as a dowry for their Queen. There is, of course, another story which says that Bombay is a corruption of "MUMBHAI", the Goddess that presides over a famous temple in the City. Whatever its origin, in those days of warfare between neighbouring States, an island was a safe fortress. On this island, the British sheltered themselves; and during the ages the small settlement has blossomed into a great city, which boasts on its crest the motto "Urbs Prima in Indis".

While it was an accident of history that determined the choice of this port, it was equally the factor of geography which determined the size and shape of the City. For the island is a narrow one and lends itself largely to a longitudinal laying of roads, leading from the tip of Colaba in the South to the mainland in the North. Naturally, being an island so shaped, the spill-over can only be across bridges into the mainland and the North; and equally naturally, the traffic lanes are so positioned. If the Port had grown on the mainland, the City's geographical features would have led to a normal development of the means of communications; but the sitting of the Port on the island has made developmental expansion extremely difficult.

Unfortunately, within the narrow confines of the island has developed a vast city which is a testament to the acquisitive nature of man who has put the small amount of land available to him to the best possible use—the best being interpreted as the most lucrative, without regard to the rights and comforts of his neighbours. If an example of man's inhumanity to man is sought, Bombay supplies the finest sample!

With the electrification of the Railway's Suburban Services, there has been a movement towards the Suburbs which have developed to some extent but not as fast as they might have done if space allowed for the arteries which would carry the flow of men and materials from the suburbs to the city in a reasonable amount of time. However, though electrification came fairly early, the phenomenal development of the internal combustion engine did not take place for some time with the result that traffic has outgrown the means of communication, and the old-time roads are unable to carry the heavy and speedy traffic that is now offering. Coupled with that handicap is the pre-eminence enjoyed by Bombay among the cities of India, for it is no idle boast for the Bombayite to declare that out of five major industries established in the country, three are located in or near Bombay. While this has further strengthened the claim of Bombay to be first city in India, it has imposed a heavy burden on its citizens; for congestion in the houses and on the roads has reached a stage where no palliatives in the shape of skyward structures and street widening can have the effect of providing decent accommodation and carrying traffic at the speed at which modern commerce demands movement.

The problem of traffic congestion can be viewed from two angles. One is to tackle it from its own peculiar desideratum of the need for a sufficiently wide network of main roads and side streets to be able to carry the traffic. It is possible also to view this problem from a wider angle, for it must not be forgotten that traffic congestion is the concomitant of population congestion, and population congestion is the resultant of traffic congestion. It is obvious that if movement were free and fast, there would not be any necessity to conglomerate within the City of Bombay in close proximity to places of work. It is equally obvious that if residences and business houses and industrial units were placed in the suburbs, the congestion in the city would not be as heavy as it is today.

The Communications and Traffic Panel have therefore viewed the problem from the wider angle, and it is on this account that its first and main recommendation is to the effect that the error of history must be corrected and the handicap of geography must be overcome by developing a city on the mainland side of the Bay. Such a development would have multiple effects. Firstly, it would relieve the pressure on the railways and the roadways that now have to move a considerable amount of traffic between the North and the South; secondly, it would provide room for the development of a Port on the other side of the Bay, thereby again reducing the demand for transport in the City of Bombay; and thirdly, it would open to the possibility of the development of a new township, which would in time not only draw away from the island of Bombay the over-flow of the industrial units and residential colonies, but also enable the city to develop in an orderly manner.

Main Recommendation.

After great thought and deliberation and after considering all the pros and cons of the matter, even after taking into account the relief that might be afforded by the sinking of an underground railway in the city, or by the development of an elevated roadway over the railway lines, or by the construction either of a tunnel under the Harbour or alternatively of a ropeway across the bay to connect the city with the main land at Uran, not to mention the available palliatives, such as street widening, new main roads, sub-ways, over-bridges and the like, it is the unanimous recommendation of the Communications and Traffic Panel that the highest priority should be given to the building of a rail-cum-road bridge across the Thana creek, linking Kurla with Karjat. It is realised that this is a big venture; but it has been proved by actual surveys that there is no technical difficulty in building such a bridge. It is realised that a good deal of finance will be required, but a much greater price will have to be paid, for without such a development the City of Bombay would for ever remain "Cabined, cribbed and confined" within its narrow limits. It is realised that the building of the bridge alone will not immediately solve the problem and provide relief to the citizens of Bombay, and to the country at large, which is so dependent on the Bombay Port, but it is believed that Government has, or can acquire the power to ensure that the forging of this link between Bombay and the mainland would not result in stagnation because greedy landlords would make the development of that area prohibitively expensive, or because the necessary services (water drainage

electricity, market, schools, etc.) would not be available, or because Government itself would not give the lead in shifting some of its offices into that area. In any case, the area would have to be brought under a Development Plan immediately, so that we are not ham-strung in our objective of creating a new township to accepted modern standards.

The ex-G. I. P. Railway Engineers as a post-war investigation Project took up a Preliminary Engineering Survey for a double track electrified broad-gauge railway line between Kurla and Karjat in 1946. The main object of the investigation was to shorten the distance between Bombay and Poona, and if the Project materialised it would open up the country opposite to the Island of Bombay within easy reach, for industrial development.

The proposed alignment crossed the Thana Creek near Trombay on the Kurla side of the Island of Bombay and near the Belapur Salt Pans on the Karjat side on the main land. The survey operations across the Creek were unique and complex in nature and quite different from normal location survey operations on land.

Investigations involved broadly the following operations :—

- (1) Base line and triangulation surveys of the area.
- (2) A preliminary Bamboo-Probe Reconnaissance of the area of the Creek.
- (3) Wash-boring (water jet boring) on selected cross-sections in the bed of the Creek.
- (4) Core-boring operations on selected cross-sections.
- (5) Tidal observations and velocity data.
- (6) Observations for navigational free-board over H.W.O.S.T. in the main channel.
- (7) Survey of the mud-flats in the approaches to the Creek on either side.

With the data collected in the field from these complex investigations a preliminary design for the bridge was worked with the help of the Railway's Consulting Engineers. The clearance for navigation was proposed at 44 ft. above the H.W.O.S.T. (High Water Ordinary Spring Tide Level) and this height was kept only for the central channel for navigation spans. Various alternative designs were worked out, and the cost of the Bridge was approximately estimated at Rs. 5 crores. The Railway project as a whole from Kurla to Karjat, including the bridge was estimated at Rs. 11.5 crores on the basis of the cost of material and labour prevailing in 1948.

From these data, it is clear that the practicability of the scheme is without question, and that foresight has been used in selecting the most suitable site, allowing even for navigational needs in the channel. The estimate which was made some years ago was that a rail-cum-road bridge of a length of two miles with two tracks of railway lines and two lanes of roadways would cost about six crores of rupees and that the approaches on both sides probably add another two crores to the cost; but the Panel is of the view that even if the revised estimate due to inflation of prices is of the order of 10 crores of rupees, it is a scheme which must be pursued with vigour; for it is evident that by the construction of a highway across the Thana Creek; numerous objectives would be achieved at one stroke, namely, development of a new township.

with all the attendant advantages ; availability of open spaces ; dispersal of industries and relief from pressure on the Port, on the Railways and on the Municipality, which already are unable to cope with the demand for their services.

The Panel have deliberately made no recommendation about the levy of a " toll " on the users of the bridge, for that is a matter for high-level policy decision; but, if finance is an obstacle, then obviously notional objections to a toll will have to be waived.

There is little doubt that the development of the mainland opposite the Island of Bombay would really be a master-stroke ; the progress of the country would seem to demand the siting of a new township on the mainland of the God-given harbour of Bombay. For it would permit the building of a series of docks, which would serve as termini of the vast inter-land of Maharashtra and Andhra, eliminating Bombay's precarious dependance on the bridges which link the island to the mainland. From the angle of security, a port on the Eastern side of the Bay would be ideal. In any case, the Defence Services would most certainly welcome such a development ; immediately, even without a railway connection, access to the Bombay-Poona route is easy. It is understood that consideration has already been given to the building of a Naval Harbour in that area ; and if such a lead is followed, the growth of a Satellite town would be a matter of course.

It is hardly necessary to detail the many advantages that would flow from early Government action towards the development of this area, by the provision of a bridge, by the freezing of land prices and by the introduction of a Town Development Plan. Once the further growth of the Island of Bombay is halted, the problems of the city will almost automatically solve themselves, or at least diminish in urgency and intensity.

Other recommendations.—While it is acknowledged by all Members that such a connection between Kurla and Karjat would considerably reduce the pressure on land, open spaces in the city and on the present roads and the existing suburban rail services; while it would also shorten the length of the national highway to Poona and reduce the pressure on the two railway bottlenecks at Thana and at Kalyan, some additional relief to the existing city of Bombay would still be necessary. The Panel has noted with regret that progress on the Eastern and the Western highways has been slow and it is recommended that the greatest urgency be imported into the completion of these Highways before the end of the Second Five-Year Plan period. With an increase in the tempo of their construction, a fillip would be given to the making of the side-roads, thereby opening up vast areas in the immediate suburbs which are at present lying undeveloped for want of communications. It is perhaps not realised that thousands of acres of land, north of the aerodrome, between the Eastern and the Western Highways are awaiting only the provision of necessary services, such as roads, drainage, water and electricity, before they can embrace about a lakh of people in decent human houses.

Geographically the island of Bombay is about 10 miles long North-South and about 2½ miles wide East-West. Besides, with the business centre located in the South, viz., in the Fort area, the movement of traffic is Southwards in

the morning and Northwards in the evening. To cater for these enormous streams of traffic, there exist today only two main North-South Roads—one along Gokhale Road, Cadell Road, Annie Besant Road, Love Grove Road, Peddar Road, Opera House, Marine Drive or Queen's Road and the other, Vincent Road, Parel Road, Victoria Garden Road, Ibrahim Rahimtoolla Road, Mohemadali Road and Dadabhai Naoroji Road.

There are two other arteris being cut—one an Eastern link along Mori Road, Sion Road, Rafiahmed Kidwai Road, Sewri, Cotton Green, Reay Road and Frere Road which would relieve the traffic generating from and to the Harbour and the Railway terminals (Carnac Bunder and Wadi Bunder), and the other a Central link along Tulsi Pipe Road starting from Mori Road along Dadar Railway Station crossing Gokhale Road, Delisle Road, Fergusson Road and joining Haines Road near Mahalaxmi and Clerk Road, which would lessen the presence on Mohammadali Road. It is regretted that due to difficulties, the construction of a main highway connecting Frere Road *via* Reay Road and Sewree to Wadala has been bogged. With the construction of this road, there would be available four main highways running across the Island in a North-South direction; and these highways, prohibited to lorries and animal-drawn traffic during peak hours, would remove the repugnance of people to flock to the suburban dormitory areas. These roads are being constructed by the Municipal Corporation as part of their ordinary programme, but if they are accorded a priority and if necessary, given help by Government (by way of finance and easy requisition of land at a nominal cost), they could be completed within two to three years.

It was felt that the time had come when advantage should be taken of the bits of road that skirt the sea, so as to provide a highway for fast moving traffic which would start at Nariman Point and come out at Mahim. For this purpose, two alternative schemes were considered—one, a scenic road right along the edge of the sea along the Malabar Hill to link up with Worli and thereafter along the edge of Mahim Creek to link up with Bandra; the other, a tunnel under the Malabar Hill, so as to obviate the detour along Government House. This road would connect Chowpatty Sea Face with Hornby Vellard with access at junction of Bhulabhai Desai Road and Napean Sea Road; or alternatively Chowpatty Sea Face with Bhulabhai Desai Road. This road would be on the model of the auto-bahn, restricted only to motor cars. Details of the expenditure involved in these schemes could be worked out and whichever was deemed feasible could be adopted, but it must be stated that to this scheme the Panel did not agree to give a high priority.

For many years, the town-planners of Bombay have toyed with the idea of providing the citizens with an underground railway. Certainly, the size and importance of Bombay justify serious consideration of any scheme that would make for cheap and speedy communication. The Panel noted that, in the opinion of all experts, such a mode of conveyance would prove a success as a commercial enterprise, since there are no technical difficulties in the way. Many authorities have drawn up schemes and the Panel had the advantage of studying three of the recent, well-documented proposals. The one recently submitted by Shri Y. N. Neigashi, Director General and Chief Adviser of Teitei Rapid Transit Authority of Tokyo, the Panel noted with some measure of

surprise, envisages an underground railway costing Rs. 28·50 crores and covering a total distance of over 8 miles in the area of the metropolis south of Bellasis Road. This scheme was not considered suitable as it would not fully meet the requirements.

On the same principle, namely, restricted utility, the proposal to link up Victoria Terminus with Churchgate by a cut-and-cover underground railway is not favoured. The Panel also studied the earlier scheme for an underground railway in the whole Island of Bombay to be built in two stages—between Museum and Victoria Gardens for a start and thereafter between Byculla and Dadar. This is an altogether more attractive proposition because surface congestion is heaviest within the old Municipal limits of Bombay. Purely from the traffic point of view, such a proposal would be supported by the Communications and Traffic Panel; but in recognition of the necessity for improving conditions in the city proper, it was acknowledged that account would have to be taken of the wider recommendations of the Study Group, one of which would be to the effect that the population should be restricted to a figure of about 20 lakhs, if the citizens of Bombay are to enjoy the amenities usually available to modern cities. It would also be necessary to watch the effects, on the one hand, of the ban on new industries in the City and the other, of the development of industrial and housing areas in the suburbs with a new Flora Fountain sited on the reclaimed land at Dharavi or further north at Kurla, or even at Thana. On that account, it was generally agreed that the construction of an underground railway should not receive the first priority in the recommendations. The Municipal Authority, whose responsibility it will be to undertake the venture, should however continue to devote attention towards this objective, so that at the appropriate time, all relevant data are available.

The Panel also gave great thought to the proposal formulated by certain Engineers for the construction of a tunnel under the Harbour at a cost of approximately Rs. 25 crores which would provide facilities for rail as well as road traffic. Even apart from its financial implications which it was felt would continue for some time to be beyond the capacity of the city, it was agreed that the advantage of bridge over the Thana Creek far out weigh any advantage such a tunnel would claim. It cannot also be overlooked that such a link would tend to attract traffic to the heart of the city which is already congested. On technical grounds too, the underground tunnel would be an infinitely more difficult proposition. Therefore, the Panel regrettably came to the conclusion that atleast for the next 25 years such a proposal could be shelved.

Fortunately, the three organisations that cater for surface traffic in the City of Bombay are alive to the present needs as well as the future, demands. The B.E.S. and T., which runs a monopolised tram and bus service in the City, has been progressively increasing the services, particularly in the shape of double deck buses; and very wisely some tram routes are being discontinued as it is the experience in all cities that trams are acting as a drag on speedy movement and occupy an out-of-proportion space on the roads, even though they offer the cheapest form of transport. The following table indicates both

the changing needs of a fast-developing city as well as the gradual increase in the demands for a speedy service :—

Year.			Number of buses in service.	Passengers carried.	Number of trams in service	Passengers carried.
1952-53	..	..	343	22,66,77,000	248	21,32,41,000
1953-54	..	..	377	25,82,71,000	253	20,31,47,000
1954-55	..	..	437	29,17,14,000	246	19,57,56,000
1955-56	..	..	492	32,35,72,000	240	18,66,09,000
1956-57	..	..	548	36,79,21,000	213	17,40,85,000
1957-58	..	..	624	41,96,51,000	205	17,66,67,000

Having regard to the shape and size of the roads and the increase in private motor cars, it is feared that the physical limit has now been reached and that the routes cannot take any more vehicles. With street widening, with the provision of parking places and such other palliatives, a little increase in bus service may be possible, but not much relief can be expected from that source.

Symptomatic of the growth in the city's population is the pressure on the two railways' suburban services. From year to year, traffic has been mounting and the railways are facing a very serious problem. The following figures show very clearly the upward trend of suburban traffic on the two railways :—

	1953-54.	1954-55.	1955-56.	1956-57.	1957-58.
<i>Central Railway—</i>					
Passengers ..	140,716,000	147,276,000	139,193,000	171,859,000	171,878,000
Number of trains.	200,062	200,343	202,541	205,936	206,876
<i>Western Rail- way—</i>					
Passengers ..	153,724,000	162,941,000	177,764,000	180,330,000	207,980,000
Number of trains.	....	106,316	107,621	111,031	121,628

Even with all these extensions, the traffic problem will still continue to be a serious one ; and the Panel have determined that all available palliatives should be explored without delay. Wherever feasible, bottle-necks must be eliminated. Street widening is not only a slow process but a very expensive proposition. During the course of a detailed study of the traffic conditions in the city, it became apparent that slow down points, where streams of traffic are continuously dam.ed, could be considerably reduced ; and the Panel has come to the unanimous conclusion that certain remedial measures must be applied. It is true that with the opening of two additional main roads—

one from Frere Road along Reay Road and Jackeria Masjid Bunder to King's Circle, and the other from Tulsi Pipe Line Road, connecting Haines Road with Mori Road at Mahim, the congestion will be reduced on the main arteries functioning at present, namely, (a) Marine Drive, Peddar Road, Hornby Vellard, Gokhale Road and Lady Jamshedji Road and (b) Mohamedali Road, Ibrahim Rahimtoola Road, Victoria Garden Road, Parel Road and Vincent Road. Relief would also be afforded to another North-South Channel, namely Queen's Road, Lamington Road, Arthur Road, De'Lisle Road and Gokhale Road. But the problem at Kemp's Corner is such as to call for a spirited application of modern methods of transport. Everyday between 10-30 and 11-00 in the morning and between 6-30 and 7-00 in the evening, over 1,200 vehicles concentrate on that spot. On this account, as well as on account of the example that will be set to the country, which looks for Bombay for enlightened policy, the Panel is of the unanimous opinion that a fly-overbridge should be constructed, so as to reduce the pressure at Kemp's Corner. Estimates vary but at the outside, the cost will not exceed Rs. 20 lakhs. It is heartening to know that the Municipal Corporation has decided to widen to a breadth of 70 feet the Peddar Road and the Warden Road, both of which take most of the brunt of the South-North traffic.

The congestion at Kemp's Corner can also be relieved by widening the Tardeo Road which is scheduled to be a road of 100 ft. width. Simultaneously, the Kennedy Bridge would have to come in for widening, and it is understood that the Corporation is prepared to effect this improvement, but matters cannot be brought to head due to difficulties of obtaining land from the Government of Bombay and securing the required amount of Steel.

The inevitable conclusion forced upon the Panel by all this is that a High-Powered Co-ordination Committee to iron out matters between the Government, the Municipal Corporation, the Railways, the Port Trust, and other Public utilities is absolutely essential and should be formed at once.

The foregoing recommendations relate to the roads in the Island of Bombay itself, but the position in respect of roads linking the city with the suburbs is equally stagnant, for the Bombay-Agra Road in the East and the Ghodbunder Road in the West are the only arterial roads leading to the main land. These roads are too narrow (hardly 18 to 30 feet wide) to cater for the heavy traffic of a great city like Bombay. No doubt, the Eastern and Western Highways, under construction, will be completed in the near future; but the importance of these two roads, viz., Bombay-Agra Road and the Ghodbunder Road, will not be diminished at any time; hence the need that they should, therefore, be widened sufficiently.

It is understood that they are to be brought up to 70 ft. standard—100 ft. would indeed have been desirable to carry four lanes of traffic and to provide footpaths on the sides. The cost of their widening only up to Bhandup in the East and Jogeshwari in the West is over Rs. 1 crore, and the Municipal Corporation, with its limited finances, is bound to take a number of years to complete the works. On this account, it is for consideration whether the Central or the State Government should not be required to render assistance in completing

these links which are vitally important today. It would not be correct to remain satisfied with the construction of the Eastern and Western Highways, in the construction of which the Central and State Governments and the Municipal Corporation bear the expense in equal proportion. It is for consideration whether the expenditure on the widening of the existing two roads could not be distributed in a similar manner.

Links with the Express Highways.

The Express Highways today extend only up to Thana and Dahisar and will take some years to complete. If certain stretches of these Highways could be completed earlier, large tracts of land made available immediately for development where industry and the populace could easily shift. One such cross-road would link up Borivli and Dahisar on the West with Bhandup and Mulund on the East, serving also Bombay's picturesque lake district. Another would connect Malad and Goregaon on the West with Vikroli on the East. A third would provide easy communication between Andheri (South of the Railway station) on the West and Ghatkoper in the East. The existing link between Borivli *via* Ghodbunder to Thana would need to be widened and resurfaced, so as to bring it to a national highway standard, as it would provide another valuable link between the Eastern and the Western Highways.

In line with these recommendations are the other proposals that the sub-way at Santa Cruz must be extended or, if that is not possible, another sub-way cut so as to give free and easy access to the Aerodrome. While this would only help traffic, proceeding to the Air-Port from the City, an overbridge across the Western Railway's lines between Vile Parle and Jogeshwari would be necessary to afford similar facilities to traffic originating in the northern part of the Suburbs.

The time has come to plan for the segregation of different traffics, so as to permit easier and speedier movement, without the impediments of cross traffic and intersecting traffic. For this purpose, consideration is suggested to the proposal that two through highways may be perfected to carry vehicles to the Western and Eastern suburbs along the Western and Eastern Coast lines of the island, giving the maximum facilities for direct flow and discouraging frequent deviation. These two highways might be linked towards the Northern part of the City by a broad road so that vehicles might negotiate between them and also filter through the link into Central Bombay. The outline of an Eastern and the Western highway already exists along Frere Road and Reay Road on the East and along Marine Drive, Hornby Vellard, Dr. Annie Besant Road on the West. Along the Eastern aspect, it would be necessary to connect the Northern extreme of Reay Road with Sion Causeway by a direct route through Sewri and Eastern Matunga. The road width of Frere road and Reay road is more than adequate for the needs of the anticipated load and by giving a fair surface over the entire width of road, multi-lane traffic could be encouraged, thereby giving a better road-attraction value and expeditious Disposal of load. On the West, the width of Marine Drive, Hornby Vellard and Dr. Annie Besant Road is adequate but there is bottle-necking between Wilson College and Mahalaxmi Junction. It would be necessary to improve a road width between these two points, and if possible to segregate the flow of suburban bound traffic from local traffic. A tunnel, providing six lanes of traffic

between Chowpatty and the Western Seaface and then an embankment on the Western seaface to Mahalaxmi continuing six lanes of traffic, would eliminate the trouble daily experienced along Huges Road, Kemp's Corner and Pedder Road. Further along there is another bottle-neck, as North of Dr. Annie Besant Road along Prabhadevi Road, the road width again becomes suddenly narrow and interferes with expeditious traffic flow. Following the concept of segregating suburban bound traffic from local traffic, it would be ideal to create an embankment along the Western seaface between Mahalaxmi and Mahim. A link from this road in an easterly direction over Tilak Bridge up to the Eastern Highway would also be necessary.

These recommendations relate to movements between the North and the South, but the City of Bombay has suffered also from lack of cross-connections between the East and the West. The Panel have all along been mindful of the fact that the cutting of new roads, and the widening of existing ones is almost a dream; and it is only after consideration of all possible factors and of the feasibility of the scheme that they have again unanimously recommended that Mahim and Sion should be linked by an over-bridge north of Mahim station. This recommendation is made after keeping in mind the proposal to cut a road across the Bandra Causeway to link up the Eastern with the Western Express Highway.

A priority list for the over-bridges over the two Railways for connecting the East-West links has been formulated. According to this, a very high priority has been given to the over-bridge on the North of Mori Road and Mahim Station. This road forms part of the Dharavi Development Scheme where a dyke has been proposed to keep back the sea water from the lowlying area of Dharavi. This Scheme may take time to materialise but it is necessary that the work on this 100 ft. road should be taken up immediately, as it will also form the main link to the Tulsi Pipe Road and the Eastern thoroughfare.

The cost of each over-bridge is estimated to be from Rs. 10 lakhs to Rs. 25 lakhs depending upon the length of the bridge. These projects are very urgently required and will have to be given a top priority, if the present bottle-necks in the traffic are to be removed. The question of sharing the cost between the Central Government, State Government and the Municipality will have to be discussed at a high level conference.

Similarly, the sinking of sub-ways for vehicular traffic has now become inescapable: the urgency extends to one to connect Princess Street with Marine Drive, a second to connect Mahatma Gandhi Road with Cross Maidan and Carnegie Road with Queen's Road, a third to connect Opera House with Chowpatty would provide great relief to traffic.

Pedestrian traffic.

On the roads, the pedestrian is as important as, or perhaps more important than, the motorist, and unless adequate footpaths along the roads and safe crossings across the roads are provided, it is likely that he will create trouble for both, in addition to the congestion created by his presence. The Municipal Corporation has made a beginning by providing a Sub-way at Churchgate, but several more are necessary mainly at Bori Bunder, Marine Lines, Charni Road,

Opera House, Bhendy Bazar, Khodadad Circle, and, in fact, on several other main roads. The importance of such a measure can be gauged from the heavy concentration of pedestrians that occurs at such places during peak hours. According to the Police, there is considerable pedestrian-vehicular conflict at Opera House, Charni Road, Marine Lines, Dhobi Talao, Bori Bunder, Flora Fountain and Churchgate Street.

Concomitant with the concentration of industries and population in the important city of Bombay, there has been an increase in the number of vehicles. The number of private cars and trucks registered during the years 1953, 1954, 1955, 1956, 1957 and 1958 (half-year) are as under :—

Year.				Private Cars.	Trucks.
1953	..	..	..	23,200	7,000
1954	..	..	..	25,200	7,321
1955	..	..	..	26,406	7,823
1956	..	..	..	26,200	8,130
1957	..	..	..	32,145	10,751
1958 (half-year)	..	..	..	12,959	10,500

By normal standards the speed of movement is deplorably discouraging and if the traffic increases even half as fast as it has done during the past five years, the citizen is likely to suffer considerably from slow-moving traffic. It is natural that with increasing industrialization, with a better standard of living and with perhaps progressive decreases in the prices of cars and trucks, registrations will be heavier in the years to come and therefore the Panel views with great concern the lack of any plan to deal with such a contingency.

Operation of Goods Trucks.

The number of trucks on registration with the Road Transport Officer, Bombay is in the vicinity of 10,500. There is also a considerable turn over of vehicles registered in the neighbouring States. Except in very few cases, these trucks are parked and garaged on the roads, especially within the area bounded by Frere Road, Opera House, Girgaum, Lamington Road and Grant Road, to the detriment of other road traffic and to the consternation of businessmen and residents. In order to allow full scope for the development of road transport companies, a total ban on their operations within the city would be anti-social but it is very necessary to segregate all transport companies into the local which would afford facilities for garaging off the roads and for suitable loading and unloading facilities. For this purpose, the Bombay Port Trust property and other open lands lying along the east of Frere Road, Reay Road, Cotton Green would be suitable, as also the wide and large areas of Sewri and Wadala which could be ear-marked for this purpose. When this is done, rigid parking restrictions on other roads could be imposed without any hardship to the trade. Such a measure would reduce slow-downs and such heavily crowded roads as the Mohamedali Road, Lamington Road, Girgaum Road and Grant Road.

Parking of Vehicles.

Even to a casual visitor it is clear that while the roads are not broad enough to take the traffic, their utility is further restricted by the parking of vehicles. In due course, it will be necessary to introduce parking metres so as to eliminate the use of streets as parking places, except for short intervals, but until such a development is forced upon the city, it is felt that a good deal of relief can be afforded by measures which are within the reach of the Police. In 1955, a survey was taken in the Fort area which is the area where halting traffic is the greatest in the entire city. It was established that there were 2,649 parking stalls and that during the day time period 12,511 vehicles halted in this area ; giving the turn over of 4.7 vehicles per available parking stall. Since that year there has been an increase by over 30 per cent. in car registration in the city and though no further census has been taken it would be within reason to consider that the demand would now be in the vicinity of six vehicles per available parking stall in this area. The Municipality have been concerning themselves with a plan to convert certain open spaces into car parks. As an instance, what can be done, is, on the one hand without impeding traffic in general and on the other without causing undue inconvenience to car owners. is that parking on the Dadabhoy Naoroji Road south of Pherozshah Mehta Road up to Rampart Row should be prohibited and that people whose offices are situated there should be persuaded into parking their cars to Mayo Road between the Public Works Department Office and the Prince of Wales Statue. as well as on Mahatma Gandhi Road along the edge of the Cross Maidan. Atleast these experiments should be tried out although at first there will be some complaints for people may have to walk a few 100 yards before reaching their cars it will gradually be appreciated that the inconvenience to the few would be greatly outweighed by the advantages to the many.

A parking lot with a capacity of 200 parking stalls can be created at the Horniman Circle opposite the Town Hall. If developed on the modern lines this can take care of a number of cars which are parked for long hours on the road, thus surrendering space which can be used for casual parking.

Good roads and foot-paths contribute considerably to the free movement of the traffic, both pedestrain and vehicular. One of the most shattering experience is the frequent openings of the roads by the public utilities. The roads are opened by the utilities under the powers vested in them under thier respective legislations, whereas the restorations are to be effective by the Corporation. On account of lack of co-ordination, excavations are carried out in several cases no sooner a road is constructed or re-surfaced ! It is necessary that the Municipal Corporation should be armed with powers either to stop such excavations or to force the utilities to provide duplicate services under the foot-paths whereby the excavations on the carriage-ways can be reduced to the minimum. Alternatively cross tunnels or conduits should be provided at suitable intervals across the road wherein the utility can lay their services and thus free both sides of the road. Legislation in this direction is imperative. The State Government could probably help the Municipal Corporation to this end as early as possible.

Staggering of traffic.

The staggering of office hours would provide a reasonable amount of relief without undue dis-location of habits. After a great deal of discussion and after our interview with a number of employees who come to the Fort from various parts of the suburbs, as far as Virar on the Western Railway and as far as Ambernath on the Central Railway the Panel came to the conclusion that staggering of office hours is both legitimate as well as feasible and that Government must set the lead in changing its hours of business. In this context, Government includes both the Central and the State Governments as well as Semi-Governmental Organisations such as the Municipalities and other Quasi-Government organisations. The recommendations are to the following effect :—

- | | |
|---------------|--|
| 10 to 5 | .. Railways, Government, Municipal and Quasi-Government offices. |
| 11 to 6 | .. Banks and Insurance Companies. |
| 11-30 to 6-30 | .. Commercial and Business Houses, Shops, etc. |

Obviously, as legislative action would not be possible, the fullest co-operation will have to be solicited from Chambers of Commerce and other trade Associations.

The Panel have not made any specific recommendations in regard to the various traffic measures adopted in other large cities, as the suitability of such methods is under the constant study of the Police Traffic authorities. Various *ad hoc* Committees have, from time to time, analysed the traffic problem ; and it is understood that consideration is being given almost continuously to whatever improvements are effected elsewhere in the World.

The Panel would recommend that for this purpose, the *ad hoc* Traffic Advisory Committee be strengthened by the inclusion of a Traffic Engineering Expert.

The Panel have to reiterate that they have viewed the traffic problem from the wider angle of solving the problem of the City of Bombay as a whole ; hence the emphasis on the development of a Satellite town on the mainland side of the Harbour of Bombay.

S. M. A. PATHAN,	}	<i>Members.</i>
K. B. CARNAC,		
T. S. RAO,		
C. D. JEFFEREIS,		
A. D. DHINGRA,		
V. N. DESAI,		
M. V. RAJWADE,		
J. E. CASTELLINO		<i>(Convenor).</i>

**REPORT OF THE
INDUSTRIAL LOCATION PANEL**

REPORT OF THE INDUSTRIAL LOCATION PANEL

1. Appointment of the Industrial Location Panel.

1.1 The Study Group appointed by Government in Political and Services Department under Government Resolution No. MIS. 1157/76643-B, dated 14th March 1958 " to consider problems relating to congestion of traffic, deficiency of open spaces and playing fields, shortage of housing and over-concentration of industry in metro-politan and suburban areas of Bombay City and to recommend specific measures etc. " decided in its first meeting to constitute five panels to consider the following groups of subjects :—(1) Housing and Housing Finance, (2) Building Materials, (3) Land and Open Spaces and other Community Requirements, (4) Industrial Location and (5) Communications and Traffic.

1.2. Accordingly, the Industrial Location Panel (ILP) was appointed with Dr. M. R. Mandlekar, Director of Industries as the Convenor, and Shri M. A. Master, Shri N. V. Modak, Shri S. V. Desai, Public Health Engineer, Bombay Municipal Corporation and Shri K. V. Apte as members.

2. Terms of Reference.

2.1. The terms of reference of the ILP are as follows :—

(1) The panel will assess the extent of (a) growth of existing industrial units, (b) location of new industrial units in the City over say last 15 years or so.

(2) The Panel will consider the problems with reference to the location of new industries and growth of existing units in the future having regard to availabilities of land, water, power, communication facilities both in the immediate overflow areas of the City and more distant locations.

(3) Some assessment of possibilities of decentralisation of industry in the countryside may be made. The progress in establishment of industrial estates elsewhere in the State as programmed in the Second Five-Year Plan period may be ascertained. Problems connected with industrial location as a part of the licensing powers under the Industries (Development and Regulation) Act, 1951, and as a part of the Municipal licensing may also be considered.

3. Number of Meetings held.

3.1. The ILP held in all 11 meetings. In the first meeting held on 9th June 1958, various aspects of the location of industries, existing and new ones, in the metropolitan and suburban areas were generally discussed. It was decided to first secure a map for Greater Bombay showing industrial and residential zones, open spaces, etc. and the main highways and arterial communications.

3.2. The second meeting of the ILP was held on 23rd June 1958 when Shri Godambe, Development Officer, Bombay Municipal Corporation, explained the maps for Bombay Island and suburban part of Greater Bombay.

Some approximate areas allocated for industrial, residential and other uses were also given. These were based on the zoning map placed before us and were only provisional being broadly based on the Master Plan prepared in 1948 which we were given to understand had no legal sanction then. We were further informed that the Bombay Municipal Commissioner has undertaken the preparation of a Development Plan for Greater Bombay under the Bombay Town Planning Act 1954 and this Plan when approved by Government will have the proper legal sanction. The juxtaposition of highways and arterial roads with the industrial zones were noted and some general aspects of the provision of amenities like electricity, roads, rail facilities, etc., in the industrial zones of the suburban areas were discussed.

3.3. The third meeting of the ILP held on 4th August 1958 discussed specific question relating to shifting of existing industries in the Island and location of new industries in the Island areas.

3.4. In the fourth meeting of the ILP held on 11th August 1958, further discussions took place on the various aspects of the questions relating to the development of industries in the suburban areas in a planned manner. It was also decided that a draft report on the basis of discussions and material produced before Panel meetings might be prepared for the consideration of the members of the Panel.

3.5. In the remaining meetings, the draft report was considered in detail and the revised draft incorporating the necessary modifications and suggestions was signed by the members.

All the meetings of the ILP were attended by Dr. M. R. Mandlekar and Shri M. A. Master and all except one, by Shri K. V. Apte and all but two by Shri S. V. Desai, Shri N. V. Modak was unable to attend the first five meetings of the ILP primarily due to ill-health and other pre-occupations.

3.6. Shri I. B. Patel, Deputy Secretary, Public Works Department, Shri B. B. Godambe, Development Officer, Bombay Municipal Corporation, Shri V. V. Divatia, Deputy Director of Industries, Shri D. S. Godbole, Assistant Director of Industries (Engineering) and Shri J. D. Kale, Deputy Engineer Public Works Department also participated in the discussions at some of the meetings of ILP.

4. Form of the Reports.

4.1. It seems advisable for us to mention the lines on which the report is formulated in order to broadly indicate at the outset the sequence of questions and problems dealt with in the report.

4.2. In paragraph 5, we have felt it necessary to define certain terms which are used several times in the Report and which may without proper definition in all likelihood create confusion. In paragraph 6, we have touched upon the existing distribution of factories and workers, both in the Island of Bombay and its suburbs. Relevant observations on the growth of industries in Greater Bombay in recent years have also been made. In paragraph 7, we have indicated our approach to the problem of congestion in

relation to the existing concentration of industries and prevention of further over-concentration in Greater Bombay. In paragraph 8, questions relating to industries in the Islands are discussed in detail, from the point of view of shifting of existing industries as well as location of new industries and substantial expansion of existing ones. Relevant observations pertaining to large scale industrial units will be found under sub-paragraph 8.2 and to small-scale units under sub-paragraph 8.4. In paragraph 9, similar observations will be found for the suburban areas. We have discussed in paragraph 10, our proposals for developing satellite towns in the outlying areas not far too distant from Bombay City. The financial implications of all the various proposals relating to industrial estates, developed industrial areas and satellite towns in distant areas are discussed in paragraph 11. In the same paragraph we have made our proposals for a Development Corporation for establishing industrial Estates in industrial areas and satellite towns.

4.3. It may be mentioned in passing that several letters and memoranda from a number of parties were passed on to us by the Secretary of the Study Group for our consideration. We have considered these very carefully and we would like to acknowledge here our gratitude to the writers who have made these suggestions which have no doubt been of considerable guidance in our deliberations. Statement appended at Appendix "A" gives a summary of suggestions received from various sources.

5. Definitions.

5.1. For the sake of clarity, we feel it necessary to define certain terms which are frequently used in the report in order to avoid confusion--

(1) *Greater Bombay*.—Greater Bombay covers the entire area under the jurisdiction of the Bombay Municipal Corporation, comprising (a) Island area upto Mahim and Sion Causeways and (b) all suburbs beyond.

(2) *Large scale Units*.—All industrial units employing 50 or more workers and using power, or employing 100 or more workers and not using power are defined as large-scale units. This is the generally accepted definition by State and Central Government and is also to be found in the Industries (Development and Regulation) Act, 1951.

(3) *Small-scale units*.—A small-scale industrial unit is one which employs 10 or more but less than 50 workers if using power or 20 or more but less than 100 workers if not using power. The minimum limits of 10 workers in the case of units using power and 20 workers in the case of units not using power become necessary since units employing workers below these minimum limits are not amenable to Indian Factories Act, 1948.

It may be noted in this connection that Small-Scale industries Board of Government of India defines small-scale units as industrial units employing less than 50 workers and using power or less than 100 workers and not using power and having capital assets less than Rs. 5 lakhs. Thus, there is some difference between the definition adopted by us and the one adopted by the Small-Scale Industries Board. The main reason for adopting our definition are its simplicity consistency with regard to the definition of large-scale units and the fact that determination of capital employed

sometimes leads to complexities which can conveniently be avoided for the purpose of our report. Moreover considerations of location of large or small industries in Greater Bombay call for the examination of the problems arising out of housing accommodation and traffic involved in men and materials.

(4) *Cottage-scale Units*.—All industrial units which are not amenable to Indian Factories Act, 1948, are defined for the purpose of this report as Cottage-scale units. Thus, all industrial units employing less than 10 workers and using power or less than 20 workers and not using power would be covered within this category of cottage-scale units. Within Greater Bombay most of these units are covered by the Shops and Establishment Act, 1958, and those employing mechanical power are also covered by section 390 of the Bombay Municipal Corporation Act.

Our definitions of cottage-scale units also differs considerably from the definition adopted by Governments and Statutory bodies, for the reasons already stated earlier. The official definition emphasises the role of family labour and permits only a casual use of hired or paid labour and also brings in the capital aspect in the industry. The official definition is as follows—

“Cottage industries are those industries, which whether using mechanical or electrical power or not, are generally carried on in the homes of the artisans whether in rural or urban areas and sometimes in small karkhanas or other places not distant from the homes of the artisans, by the artisans, their dependents and occasionally with the aid of a very small number of hired labour, where not more than nine workers are employed (including the artisans, his family and dependents and hired labour) and, in which the investment in fixed capital does not exceed Rs. 10,000.”

5.2. It may also be observed here that we speak of large-scale small-scale and cottage-scale *units* or undertakings and *not* large-scale, small scale and cottage-scale *industries*, for the obvious reasons that it is possible to find a given industry operating in large-scale as well as small-scale factories and it seems, therefore, important to distinguish between a manufacturing, process, i.e., a particular industry and the size of the factory or the unit in which this process is carried out.

5.3. We may also remark in passing that we have refrained from adopting a classification on the basis of heavy and light industries, since we feel, that such a classification is not likely, to be helpful to the ILP report, Different interpretations are placed on these terms and the concept tends to become an elusive one. The Bombay Municipal Corporation classifies industries as heavy or light depending upon the intensity of noise, vibrations and, other nuisance value of the industry, traffic loads, amount of land required etc., and in so far as these factors are important from the standpoint of shifting of industries from one area to another or preventing the establishment of new ones, they can be taken into account as additional factors for guiding the siting aspect of development of industries. Moreover, such a classification might involve personal judgments.

6. Existing distribution of factories.

6.1. A detailed note on the distribution of registered factories (i.e., factories registered under the Indian Factories Act, 1948) will be found at Appendix "B" along with relevant statistical tables. It is, therefore, proposed to pinpoint only the broad features of the prevailing distribution of registered factories in Greater Bombay.

6.2. On an area of 169 square miles, which accounts for only about 0·1 per cent. of total area of Bombay State, there are at present 3,539 registered factories in Greater Bombay. This figure accounts for over one-third the total number of registered factories in Bombay State. In terms of labour-employed, these factories give employment to 4,45,005 average daily number of workers, which is about 44 per cent. of the total average daily employment in registered factories in Bombay State. Two aspects of the employment which are quite the normal features of the working of industries are the following :—

(1) Since the above mentioned figures is an average daily number of workers the actual number of workers as on pay-roll of the factories is likely to be somewhat higher, and (2) it is possible for a large number of the existing factories which are working at below capacity today to increase employment by working to a fuller capacity and by switching over to two or three shifts depending upon the demand for their products and availability of raw materials, etc.

6.3. From Appendix "B" it will be amply clear that about 76 per cent. of registered factories in Greater Bombay, employing over 85 per cent. of workers are located in the Island area. It is significant that newly established industries like art-silk, plastics, rubber goods, etc., are found in larger proportions in the suburban areas. By and large, the factories in Bombay Island are bigger in size than in the suburban area which came to be occupied predominantly in war and post-war period.

6.4. It is also of interest to note that a large proportion of the factories (24·14 per cent.) is found in the congested residential areas of C and D Wards. From the standpoint of employment, marked concentration is to be found in G-South Ward comprising Race Course, Lower Parel, Elphinstone Road, Worli and New Prabhadevi localities, with over 52 per cent. of cotton textile mills of Greater Bombay. Concentrations of employment are also noticeable in F-South Ward (15·08 per cent.) and E-East (10·58 per cent.) which again have sizeable proportions of cotton textile mills and other industries.

6.5. So far as the questions of congestion in Greater Bombay and its attendant effects on the population are concerned, both the concentration of factories and the concentration of labour-force in certain areas, amongst other factors, are important. The concentration of industrial units in the predominantly residential localities affects the residents of the localities whereas concentration of labour-force in certain areas tends to give rise to slums in these and other neighbouring areas. This feature of housing is still further accentuated because those who cater to the needs of the resident working population by establishing restaurants, laundries, etc., also tend to set up their establishments in these localities and the persons employed therein, prefer to stay round

about. It is, therefore, not without significance that some of the worst slums are found in those localities of the Greater Bombay where labour-force is concentrated.

6.6. In recent years, i.e., since 1951, there has been a *net* increase of 336 *working* factories from 3,064 in 1951 to 3,400 in 1957. The increase in the average daily number of workers has been of the order of 55,000. While within the short time available to them it has not been possible for the authorities concerned to analyse the data with a view to ascertain in which particular localities of Greater Bombay have these new factories amenable to the Indian Factories Act came to be established in the least few years, it has already been observed in para 6.3 that new industries are found in larger proportions in the suburban areas so far as the establishment of new industrial units in Greater Bombay is concerned. Analysis of licences issued under the Industries (Development and Regulation) Act, 1951, as amended in 1956, also reveals the fact that new undertakings licensed for Greater Bombay are being established in large proportions in the suburban areas. Statement "F" attached to Appendix "B" shows that of the 64 such licences issued, undertakings which have large employment potential are to be located in suburban areas. It is, however, to be noted that considerable substantial expansion is envisaged in the G-South, F-South and E-East Wards which are already heavily marked with large employment concentrations.

6.7. Taking an overall picture of recent developments of industries coming under the purview of the Industries (Development and Regulation) Act, 1951, it is to be observed that of the 459 licences issued in Bombay State for schemes of establishing new undertakings, substantial expansion of and manufacture of new articles in the existing undertakings, as many as 265 licences are for Greater Bombay. Their employment potential is approximately over 22,000 persons. Since these figures refer to the period since the implementation of the said Act to 31st March 1958, it is likely that some of these schemes have already been completed. In the light of the figure of 55,000 additional employment given above, it would appear that a sizeable increase in employment has taken place in industries not covered by the Industries (Development and Regulation) Act. It is quite likely that since a good many industries were not classed as scheduled industries under the Act until it was amended in 1956, some new large-scale industrial undertaking might have come up or substantial expansion might have taken place in the existing large-scale units, without requiring any licence. Again several small-scale registered factories which do not require such licence under the Industries (Development and Regulation) Act, 1951, or its amended form in 1956 might have been established. The increase in employment due to such factories is naturally not reflected in the figure of 22,000 but would be included in the figure of 55,000.

6.8. We have also been given to understand by the authorities concerned that such information regarding small industrial units not amenable to Indian Factories Act, 1948, as may enable us to analyse the distribution of such small factories according to different zones marked out by the Municipal Corporation is not readily available. However, we have been informed that there are about 2,000 factories, small and medium sized which have been given permission for limited periods in the Island and about 450 in the Suburbs,

Hardly about 2 per cent. of them have shifted to suitable areas. This information would, therefore, give some idea about the magnitude of the problem of resiting small and medium sized units in suitable areas.

6.9. We would like to suggest here that as proper and up-to-date statistics are not readily available in all such matters today, effective steps should be taken to collect and collate them.

7. Approach to the Problem.

7.1. Several factors have contributed in bringing about the prevailing conditions of congestion in the City and the consequent spectre of slums, shortage of housing accommodation, shortage of open spaces, and heavy traffic loads. We do not propose to deal with these various factors but shall examine only two questions which the Industrial Location Panel is called upon to consider, viz. (i) the concentration of existing industries and (ii) the future growth of industries in Greater Bombay.

7.2. As regards the concentration of existing industries, we feel that it is not desirable to call upon them to shift outside the Greater Bombay area. These industries have invested substantial amounts, they depend on several special facilities peculiar to Bombay City and are, to a great extent, mutually interdependent for each others' products. Asking the industries to shift from their present sites and to get themselves established outside the City will generally lead to disruption of a vital wing of our national economic life.

7.3. It is also important to observe that some of the existing industrial undertakings are not working to their full capacity or are not working more than one shift, for one reason or another. It is possible that circumstances may change in the future and these industrial undertakings may work more than one shift or run to a fuller capacity. Taking a larger and long-term view of the impact of the increase in production on the general economy of the country, and in encouraging the export drive, we are of the opinion that, subject to the local regulations, no impediments should be put in their way either in running more shifts or working to their fuller capacity.

7.4. We may, however, mention that if some industrial undertakings decide of their own accord to shift from the Bombay Island area to the suburban area or from either the Island or the suburbs of Greater Bombay to an outside place, all possible encouragement should be given to them. In fact, we would suggest that circumstances should be created whereby sufficient positive encouragement and incentives are provided to industries to shift their existing industrial undertakings of their own volition. This is bound to help decentralisation of industries in the State. It is pertinent to observe in this connection that absence of essential facilities like transport, electricity, water-supply, etc., needed for the development of the resources in the mofussil areas and their existence for a long time in Bombay, have attracted industries towards Bombay. Moreover, the additional special facilities of the Bombay Port, the existence of well-established markets and the large facilities obtainable from the Banks and Commercial Houses in the City, and several other factors of a similar nature which it takes long to provide elsewhere, have led the industries to establish in the Island of Bombay. Consequently even those

industries which could have conveniently established themselves outside Greater Bombay, if necessary facilities were available, are found in this City drawing men and materials from distant places. To serve such industries a large number of industrial units have also been established and the growth of industries in this comparatively small area has proceeded in a snow-ball fashion. Further, Financial, Industrial and Business Houses and various other Organisations have also established themselves in Greater Bombay area which provides the talent, drive and guidance which industrial development vitally needs. For want of adequate demand on them as also due to lack of adequate facilities outside this area they are not prone to move out or expand their activities outside Greater Bombay.

7.5. The question of preventing further over-concentration of industries has to be considered from a number of angles. The Industrial Location Panel desires to examine only one important and wider aspect of the matter, namely, the locational decentralisation of industries in different parts of the Bombay State. Such decentralisation will also induce the commercial banking and other organisations to spread their activities to the different parts of the State.

7.6. Decentralisation is necessary in order that the working population of different areas in the State is least disturbed from their place of domicile through reduction of the need to migrate in search of employment. In our opinion, concentration of industries in some few places may tend to disrupt the family life by separating the workers from their families and drawing the workers away from their own environments. This phenomenon gives rise to a series of social and other problems about which we need not deliberate here. However, this aspect of the problem deserves to be considered. It has been also the common experience that suitable and homely environs and mental composure of the workers are reflected in better production. We welcome, however, the new policy of the Government to persuade the employers to establish suitable homes for their employees and create proper environments for workers, near the place of their work. That will conduce both to their mental peace and working strength.

7.7. Apart from this, it is important that local resources are developed and utilised in the regions, locally, to the extent possible. For this purpose, adequate facilities are necessary in those different parts of the State which hold out possibilities of such industrial development. It has already been noted that the absence of essential facilities like transport, electricity, water-supply, etc., in mofussil areas have naturally been responsible for the gravitation of industries towards the cities. It has, however, to be remembered that the special facilities which a major port which the city like Bombay can provide will not be normally available in the mofussil area. If, however, necessary facilities are created under priority and in advance of industrial development in the mofussil areas, they will give a great impetus to industrialists not to urge for the substantial expansion of the capacity of their existing industrial undertakings in Bombay and will also give them positive encouragement to start new industries—at least such industries as are amenable to successful establishment—outside Greater Bombay. While we feel that we should not advocate any policy of compulsion in this matter, we are convinced that the

policy of persuasion coupled with all the usual facilities in the mofussil will go a long way in the successful implementation of the policy of decentralisation. However, under exceptional circumstances, where the question of the general health and hygiene of the community are concerned resort to compulsion may have to be taken.

7.8. Reference has been made by us in subsequent paragraphs to the question of carefully examining the impact on traffic loads due to either the substantial expansion of capacities of existing industrial undertakings or the establishment of new units. In order that our suggestion may be properly understood, we make the following observations.

7.9. The existing facilities for the movement of present traffic both on the road and on the rail in the Island of Bombay and in the Suburbs fall far short of the present requirements. They do not meet either the requirements of safety or of movement in time. The problem has become so acute and desperate that the study group has been asked to consider and examine the scheme for underground Railways for relieving congestion in the central and the southern areas of the island. Even the main roads which bear the greatest load of traffic both in the east and in the west are narrow and dangerous at many places to human life and goods. The two Express Highways, the decision for the construction of which was taken several years ago, have not yet been constructed. Similarly, several other roads for which schemes have been prepared, are yet in the stage of consideration. The traffic is, however, constantly on the increase. With the expected growth of population in the Suburbs and the establishment of some new industries in that part of Greater Bombay, it is obvious that the traffic is bound to witness an enormous further rise. It is, therefore, necessary to so expand the facilities on the roads and on the rails in advance which would not only meet the present needs but also make it possible for a planned industrial development as recommended by us in the later paragraphs, and provide facilities for the travelling public without facing the continuous danger of risk to life. We would, therefore, very strongly urge that with a view to remove the existing difficulties and dangers and lack of proper and adequate facilities for movement of all sorts of traffic and with a view to meet all the needs of the future, as a result of the growth of population and industries in Greater Bombay, immediate steps should be taken to ensure, establish and expand as required in advance the present meagre facilities both on the road and on the rail and remove the potential danger that exists in the present system to human life. It is argued that resources for road and rail development are limited. They will have, therefore, to be allotted in a manner which would also meet the claims of areas other than Greater Bombay. We must, however, point out that in view of the vital importance of the all-round development of Greater Bombay to the national economy, the highest priority should be allotted to the requirements of the Island of Bombay and the Suburbs for meeting all the needs of the safe, quick and proper movement of traffic in this region. It is from these wide and vital angles that the question connected with the traffic loads in sanctioning the expansion of existing industries and the starting of new industries should be examined.

7.10. In our Report, we envisage considerable development of industries in a planned manner in the extended suburbs of Greater Bombay. In order that an orderly development of this area is brought about, we would suggest that the immediately outlying areas beyond the northern boundaries of Greater Bombay, viz., areas upto Bassein creek on the Western Railway and upto Thana creek on the Central Railway side, should also be developed and plans for the purpose prepared by the authorities concerned and the Municipal Corporation may be consulted for this purpose.

7.11. A related aspect to which we would like to refer here is the aspect of housing accommodation for industrial workers in Greater Bombay. Having regard to the conditions of congestion in this area, we feel that any programme of industrial development (e.g. establishment of a new factory, substantial expansion of or manufacture of new articles in the existing factory, etc.) resulting in the addition to the present labour-force, will require a simultaneous provision for a suitable proportion of this expected additional number of workers. We feel that employers of industrial undertakings carrying out such programmes of industrial development have some obligation to the community at large to make their contribution to the solution of the problem of housing accommodation for industrial workers. The extent of this responsibility and the manner in which it should be discharged, are questions which, we feel, fall within the purview of the Housing Panel. We would, however, recommend that necessary conditions and procedures may be laid down by Government in consultation with the representatives of industries in Greater Bombay. In case industrialists are themselves called upon to build tenements for industrial workers we would recommend that Government should give all possible encouragement to them in the shape of suitable relief from local and central taxation, subsidies and loans on a generous scale and liberal terms, and assistance in securing land and building materials, etc. to the extent possible. Wherever we have made recommendations regarding industrial development in Greater Bombay area, this general approach to the housing problems should be kept in view.

7.12. In the light of these observations, we feel that in the location of new industries a scheme of priorities will have to be pursued along the following lines:—

(i) All industries which can be conveniently located in or near the regions where basic raw materials are grown or found will have to be established in or near these regions. This will be particularly so in the case of industries using bulky or weighty raw materials.

(ii) If for one reason or another, it is not possible for the industrialists to establish units away from Bombay, then it should be considered whether they can locate their undertakings in some satellite townships around Bombay, whereby congestion in the city can be avoided and yet the industrialists may have the benefit of their close contacts with Bombay.

(iii) Only where it is not possible to take recourse to either (i) or (ii) above, the authorities concerned should consider the question of recommending the undertaking to come up in Greater Bombay. Here also, as far as possible, the extended suburban areas should have preference.

7.13. It is with this in view that we make the recommendations in the subsequent portions of our report. Though we have not made any specific recommendations in regard to (i) in paragraph 7.12, we are of the opinion that plans should be made to develop certain suitable areas in different regions of the State and suggestions should be made as regards the possibilities of new industries which can be developed in these regions. We are given to understand in this connection that the Department of Industries has published a Brochure indicating the possibilities of establishing new industrial undertakings in the Districts of the State during the Second Five-Year Plan period and we are told that at present it is engaged in preparing a Master Plan for the industrialisation in Bombay State in consultation with the interests concerned, which will make some more detailed suggestions regarding location of new industries in different parts of the State and also refer to the facilities which may have to be created for industrial development.

8. Industries in Bombay Island.

8.1. Having regard to the concentration of industries in Bombay Island area, we feel that some specific measures will have to be taken to arrest the unplanned growth of industries. With this in view, we make the following recommendations. These are separately stated for large-scale, small-scale and cottage-scale units.

8.2. *Large-scale units.*—(1) *No new industrial units should ordinarily be located in the Bombay Island area.* However, the question of locating new large-scale units in the industrial area north of the Docks belonging to the Port Trust or in some new industrial zones which may be marked out of areas likely to be reclaimed or which may otherwise become available at a future date may be considered on the merits of the particular case taking into consideration various factors and particularly (i) traffic loads, (ii) employment potential, (iii) typical features, e.g. processing of large quantities of imported materials mainly for export of finished products, availing of the port facilities, and (iv) Government policy regarding export promotion in respect of candidate industries.

(2) Applications for substantial expansion of and manufacture of "new articles" in the existing industrial units located in the Island area, under the Industries (Development and Regulation) Act, should not ordinarily be recommended to Government of India by the State Authorities. This general rule should also apply to large scale units which are not amenable to registration under Industries (Development and Regulation) Act. Exceptions to this general rule may have, however, to be made in deserving cases where (i) such schemes form an integral part of the process carried on in an existing industrial undertaking, (ii) such schemes do not envisage appreciable increase in employment potential, undue increase in traffic loads, etc., (iii) such expansion is for the purpose of preventing the undue loss or improving the working efficiency of the existing units or for balancing the existing industrial undertaking and (iv) the Government policy requires such expansion, as for instance, for export promotion purposes, etc.

(3) As regards shifting of large-scale units, we would rely on the positive encouragements and incentives to be given for location of industries in the suburban area and satellite towns, and watch the progress in the matter for some time, say a period of 5 years. This will make it possible to secure sufficient open area for industrial units from the island of Bombay to shift voluntarily to the suburbs. As regards the large-scale units located in the residential zones marked out by the Municipal Corporation which have a nuisance value to the residents of the locality, their shifting in a suitable manner may have to be considered on the merits of the case.

(4) Where large-scale units desire to shift to approved sites in approved suburban areas, all possible facilities and encouragement should be offered by the authorities concerned.

(5) We would emphasize that all land owning public authorities should pursue the general policy in respect of location of industrial units, which may be enunciated by Government in consultation with them after consideration of the recommendations of the Study Group.

(6) It may be mentioned that according to the information supplied by the Bombay Municipal Corporation, about 1.73 square miles have been allocated for the use of "light industries" and 2.56 square miles for the "heavy industries" including Docks. Approximately 0.06 square miles in the "light industries" area and 0.12 square miles in the "heavy industries" area are at present vacant for establishment of new industries or for shifting existing ones which are located in residential areas. However, apart from the considerations of the available areas open for industrial expansion, there are various other considerations which would have to be borne in mind before new industries are permitted to be established in the Island area. The fact remains that any further expansion of industries is, as in the case of the development of other activities, likely to increase the congestion of population and aggravate the conditions of social and economic life of the working class and the health and hygiene of the population as a whole; and this may also cause heavy pressure on important services and amenities.

8.3. We may state here that it is possible to implement a policy relating to the locations of the new industrial undertakings etc., under the existing provisions of the Industries (Development and Regulation) Act, 1951, as amended in 1956. This Act provides under Section 11 (2) that Central Government may impose such conditions including, in particular, conditions as to the location of undertakings as may be deemed fit. It may be added that State Government is called upon to make necessary recommendations in respect of applications under the Act and if a general approach is adopted in regard to location of new large-scale undertakings or substantial expansion of and manufacture of "new articles" in the existing factories in Greater Bombay, it would be possible to give effect to it through the recommendations of the State Government to Government of India. Similarly, the existing provisions of the Building Control Act and the need for taking permission of the Bombay Municipal Corporation under Section 390 of the Bombay Municipal Corporation Act for establishment and working of a factory or workshop using

mechanical (including electrical) power, regulate the actual siting of a factory in Greater Bombay. Under the recently implemented Bombay Town Planning Act, 1954, the Corporation has acquired powers to regulate the use of lands and buildings.

8.4. *Small scale units.*—(1) We feel that the case for small-scale industrial units is on a somewhat different footing in so far as the question of shifting them is concerned. These industrial units are required to be provided with better facilities of housing their production equipment and supplies of power, water and other services have to be arranged adequately. According to information available from Bombay Municipal Corporation, many of these units are located in residential areas and thereby come under the class of “ non-conforming ” establishment. From this point of view, and looking to the present locations of small-scale industries in the Island, it can be argued that it can greatly improve their working if they are shifted to areas where they can get better facilities. On the other hand, it is also felt that because of the contacts that these small-scale units have developed during their years of existence with large-scale industrial units and business houses and in general with the consuming organisations, it may not be practicable as a general rule to expect them to shift to areas far away from the Island of Bombay. Having regard to these considerations, it is felt that a programme of establishing series of industrial estates in the Island area should be planned. It is suggested that provision should be made to accommodate about 2,000 of the existing small scale units in a bout 20 industrial estates in the Island areas on the basis of each Industrial Estate, on an average providing accommodation for 100 units. Because of the expensive land, ground and three storied structures with all essential facilities to accommodate light machinery on upper floors and heavy machinery on the ground floor may be desirable. The requirement of land would be from 2 to 3 acres for each Industrial Estate in the Island area. These should be selected in industrial zones and should be able to provide storage space, transport facilities for trucks, etc. Thus about 60 acres of area would have to be reserved for housing of small-scale units in the Island area in the existing industrial zones and new industrial zones which may become available in future.

(2) We also feel that ordinarily no new small scale factories should be permitted to be established in the Island area. However, special types of small-scale industries particularly those catering to the needs of other industrial units and requiring to be in their close proximity may be permitted on the merits of the scale after taking into account the increase in traffic load employment, etc. But these small-scale units should establish themselves in industrial estates or industrial zones in the Island of Bombay.

8.5. *Cottage-scale units.*—(1) Industrial units which are not amenable to the Indian Factories Act are generally service industries and workshops operating in small establishments or vocational institutions which hire premises for the purpose.

(2) It is felt that in regard to such cottage-scale vocational establishments it is not appropriate to ask them to shift to other areas and these should be allowed to run as at present, subject nevertheless to the municipal regulations.

It is likely that with a view to adding to the income of family, such activities might also increase. However, since this is not likely to bring any marked congestion in the Island, there need not be any bar to such activities.

(3) As regards the service industries and workshops operating on cottage-scale basis, the Municipal Corporation regulates the growth of such establishments by a proper system of licensing. Activities of the type such as bakeries, flour-mills, automobile workshops, laundries, etc., if worked on cottage-scale, would continue to operate in "Local and Central Business Zones" located adjacent to residential zones in the Island, provided they are not located in residential buildings and are not a source of nuisance to the nearby residences.

(4) If some manufacturing establishment operating on cottage-scale want to shift to industrial states in the City as proposed above, they should be given all possible facilities to do so in order that the establishments are allowed to work in agreeable accommodations provided with services and to have an opportunity to grow into small-scale registered factories.

9. Industrial development in suburban areas.

9.1. We have been given to understand that about 12.47 square miles of land have been allocated for industrial use in the suburban areas. Although accurate information in regard to the area occupied at present by industries is not available from the appropriate authorities, we understand that roughly about $\frac{1}{3}$ of this area is already occupied by the existing industries in this area and the rest of it is available for development. It is also understood that whereas 12.03 square miles of land is already developed for residential use, some 40 square miles are proposed to be developed for the same purpose. At the rate of population density of 50 persons per acre of residential areas, this area when developed can support a population of about 13 lakhs people. If a higher rate of 75 persons per acre of the residential area is taken, the area when developed, can support about 19 to 20 lakhs of people. Quite a sizeable proportion of this population would be coming from outside the city. As a substantial part of this additional population will have to find means of livelihood in the suburbs, it will all the more be necessary to allow further industrial expansion in the industrial area which is still available in the suburbs. However, if more industries can be established on the suburban side, it does not mean that any indiscriminate growth of industries should be allowed in this area. We feel that such industries which can be conveniently establish themselves outside Greater Bombay should not advisedly be established in Greater Bombay. With a view to achieve the object of decentralizing industries which depend to a large extent on the bulky raw materials like minerals, agricultural and forests products, etc., or intermediate products like oil-cakes for solvent extractions, etc., should better be established in areas where such bulky raw materials are available in the Districts. This would also serve the purpose of lessening the strain on the transport system and preventing the cross movements of goods.

9.2. With a view to developing new industries in the suburbs particularly the large-scale ones, the railways will have to provide the necessary additional railway facilities. The increase in load on the road traffic will also increase considerably and prompt and effective action will have to be taken in.

enlarging the facilities of road transport. It is of vital importance from all points of view that the two Express Highways, decision for the construction of which has been taken several years back, should be completed most expeditiously, so as to facilitate movement of heavy industrial traffic and reducing the general strain on the road system. The programme for other connecting roads in Greater Bombay should be completed without further delay. The industrial zones specially for large-scale industries in the extended suburbs of Greater Bombay should be developed in the proximity of highways. Having regard to the various considerations, recommendations in respect of large-scale, small-scale and cottage-scale units are made below :—

9.3. *Large-scale Industries.*—(1) All facilities and encouragement should be given to those industrial units which want to shift their existing factories from the Island area to suitable sites in the suburban areas.

(2) While there should be no general ban on starting new large-scale units in the suburban areas, such industries which depend to a large extent on imported raw materials and export finished goods in substantial measure or which are necessary for feeding the existing industries with some intermediate parts or carrying out special jobs for large-scale units should have a high priority in their establishment in the suburban areas. The establishment of such industries should take into account the various aspects regarding increase in traffic load, power, water supply requirements, etc.

(3) Establishment of large-scale industries requiring heavy machinery and equipment should be allowed to be established only on the recent extensions of the Bombay Municipal Corporation limits, viz. areas beyond Bhandup on the Central Railway side and areas beyond Jogeshwari on the Western Railway side.

(4) We feel that in order to make the required quantity of waste products in the Slaughter House available for further processing in the by-products recovery plants, etc., on a profitable basis, centralisation of slaughter in a modern Slaughter House is essential. It may be added that hairs, hoofs, horns, bones, intestines, sinews, fats, levers, glands, blood and other materials which were formerly regarded as wastes and are still so disposed of today by butchers, constitute some of the most important raw materials for utilisation for a variety of products of industrial importance. We are given to understand in this connection that Bombay Municipal Corporation has acquired a site at Devnar in Chembur area for shifting the present Bandra Slaughter House and modernising the same as also for establishing obnoxious industries such as fishmeal fertilizers, etc., and we recommend that this should be done at the earliest in order that some special industries based on these materials can be started in the suburban area.

9.4. *Small scale Unit.*—In regard to small-scale units, we feel that conditions should be created to enable more and more small-scale units to come up in a planned manner. With this in view, we propose that two specific types of facilities should be created :—

- (1) Industrial Estates and
- (2) Lands developed for industrial use.

(1) As regards the first proposal, we feel that some of the existing small-scale industries both in the suburban areas as well as from Island area may be attracted to house themselves in industrial estates. In addition, new units might also want to get industrial space in these estates. With this in view, we suggest that a programme for establishing 25 industrial estates in suburban areas be planned for the next 5-7 years. The pattern of such industrial estates would be somewhat different from that for the Island area. Each industrial estate should have a larger area of about 5 acres and if need not be with multiple-storeyed buildings but may have only one storey above the ground floor. Special assistance might be given to attract small-scale units operating heavier types of machinery. In addition, sufficient space should be provided for godowns common show-rooms, banks, truck movements and other facilities, welfare amenities like canteen, first aid centre, etc. Facilities of power and water supply, drainage, approach roads and internal communications should also be provided in advance of the actual establishment of factories in these buildings. The estates when developed may also be given the facilities of a post office, floor-telephones, etc. The lay out of the estate should be such as to suit the needs of individual units. 25 such estates would require about 125 acres of land in the industrial zones of the suburbs. In selecting the sites traffic loads should be taken into consideration.

(2) In addition to making provision for industrial estates, we also feel that 10 industrial areas should be developed, each measuring 10 to 15 acres and the lay out should be planned in advance with regard to the provision for roads, drainage, power and water supply, watchmen's residences, etc., so that the growth of industries in the developed industrial areas comes about without creating problems of congestion and haphazard growth on the site. While facilities should be provided and plots charted out in these industrial areas, steps should be taken to acquire land as and when necessary. The actual development of plots can also be taken up as and when necessary. These developed areas would be suitable for units requiring special accommodation. Some of the units in the areas may grow into large scale. Provisions should be made for such future expansions.

9.5. *Cottage-scale units.*—We have no special recommendations to make in respect of cottage-scale units except to say that what has been stated in paragraph 8.5. above holds good for the development of cottage units in the suburban areas also.

9.6. It seems to us that particular attention will have to be paid in the suburban areas to attract the existing large and small-scale units from the Island as it does not seem possible nor desirable to compel the existing units to shift from one place to another for several reasons. Such conditions can be created by giving proper facilities as enumerated above and also by substantial relief in rates, duties and taxes both local and central.

10. Development of satellite townships in outlying districts.

10.1. In 7-13 we have remarked that so far as priority recommended in 7-12 (i) is concerned, we have no specific recommendations to make. Our terms of reference, however, state that " the progress in establishment of

Industrial Estates elsewhere in the State as programmed in the Second Five-Year Plan period may be ascertained". We had no opportunity to visit any of these industrial estates. It will, therefore, be appreciated that the Panel cannot make any observations regarding the nature and the extent of progress made in these industrial estates. We are, however, informed by the Director of Industries that the Government have embarked on a programme of establishing 16 industrial estates in the various parts of the State during the Second Five-Year Plan period and financial provision of Rs. 149 lakhs has been made for that purpose. He has further given us the information that it is proposed to establish these industrial estates in the following places :—

- | | |
|---|-----------------------------|
| (1) Bhavnagar, | (9) Atale (near Kalyan), |
| (2) Gandhidham, | (10) Hadapsar (near Poona), |
| (3) Rajkot, | (11) Kolhapur, |
| (4) Ahmedabad, | (12) Karad, |
| (5) Baroda, | (13) Malegaon, |
| (6) Udhna (near Surat), | (14) Nagpur, |
| (7) Bapty Road in Bombay Island, | (15) Amravati, and |
| (8) Marol-Andheri areas in Suburban Bombay, | (16) Nanded. |

We are informed that except for Atale, all other Industrial Estates are planned mainly for small-scale industries. It is, therefore, desirable to develop industrial areas outside Greater Bombay which will be available for locating large scale units also. We, therefore, suggest that in the interest of dispersal of industries such a programme should be given high priority.

10.2. In paragraph 7.12 (ii) we have already observed that satellite townships should be developed so that the objects of encouraging the establishment of new undertakings outside Bombay and of providing encouragement and incentives to the existing industries to go out of the island can be achieved. These satellite towns should be within a few hours' distance from the city of Bombay. That will enable both the industrialists and the industries to maintain close contacts with the city. Fortunately, there appears to be considerable scope for developing satellite townships in places which are not far too distant from the city.

10.3. It is, however, a matter of vital importance that the necessity and desirability of a well balanced industrial development both in the north as well as in the south of Bombay should form the most fundamental consideration in the creation of satellite towns. With the additional power likely to be available from the Koyna Hydel Project, starting from April 1961, it may be possible to augment power supply on the Bombay-Poona Transmission Lines. In the same way schemes like the Koyna Valley should be developed as rapidly in the north as in the south. Immediate action should be taken to make additional power available for the Virar-Bulsar-Surat and Igatpuri-Nasik tract.

10.4. Suitable areas for satellite townships in the Districts of Kolaba, Thana, Nasik and Surat which are in close proximity to Bombay should be developed. We understand that in the Colaba District in particular, rivers like Patalaganga and Kundalika offer considerable facilities for the purpose of such industries, which require large quantities of water and facilities for discharging trade waste, etc. No time should be lost in exploring the possibilities of such rivers and other water ways in the north which may supply large quantities of water as the rivers Patalaganga and the Kundalika can do. We would also suggest that special consideration should be given to the existence of or possibilities of developing the facilities of minor ports in selecting sites for satellite townships.

10.5. It is a matter of great urgency that active steps are taken to connect the island with the mainlands both in the south as well as in the north. If the island is thus connected with the mainlands in both the directions, areas both in the south as well as in the north could be opened up for further industrial development. It has been brought to our notice in this connection that there is a proposal for constructing a bridge connecting Trombay with Belapur (near Thana). There is also a proposal of connecting the island from Bhayander with the mainland in the north by the construction of a bridge over the Bassein creek, which can carry the road traffic beyond Bassein. We have not gone into the practical possibilities of these proposals but we are of the opinion that if it is possible to connect the island with the mainlands in both these directions by the construction of two bridges, as referred to above, it will have our full support.

10.6. The exact sites of such industrial towns will have to be decided after proper surveys are carried out for the purpose. We are therefore of the opinion that the programme which is mentioned in a subsequent paragraph, should be given the highest priority as the development of such satellite townships within a few hours' distance from Bombay will have a very salutary effect in the long run not only in removing the existing congestion but also in making the planned development of industries in all these areas more effective in the future than it has been in the past.

10.7. We recommend that 6 suitable sites each measuring about 500-750 acres to begin with for location of Industries and additional suitable area for nearby resident colonies should be developed within the next 5 to 7 years. These areas should provide in advance of actual establishment of industries, water and power supply and drainage facilities. Both the approach and the internal roads should be laid out before the industries commence their work and railway should be called upon to provide sidings to ensure the efficient and economic operations of industries in time. Arrangement for providing the necessary housing for the workers of the factories established in the satellite towns will also have to be made simultaneously. It should be seen that all this development is brought about in a planned manner so that social economics and other complex problems arising out of congested and haphazard growth of industries are avoided right in the beginning of the industrial growth. The actual acquisition of the land should take place at the right time sufficiently before the coming in of the industries in this area.

10.8. We feel that in initial period of at least 5 to 10 years, the residential colonies and industrial areas should be managed by separate Town Administrations so as to permit sufficient time to industries for their sound establishments before they are in a position to bear a reasonable burden of taxation imposed by local authorities.

10.9. It will be necessary to take early decision in regard to the places where the proposed satellite towns will be created. We also feel that wide publicity should be given to the scheme for the establishment of such satellite towns mentioning particularly certain special features of the sites, which may enable industrialists to decide what attractions these different satellite towns would provide for them.

11. Financial implications of the proposed scheme.

11.1. The schemes for provision of 20 industrial estates in the island area, 25 in the suburban areas and 10 industrial areas in the suburbs are likely to cost about Rs. 8.7 crores. Rough estimates are as follows :—

	Rs. in lakhs.
(1) 20 industrial estates in the Island of Bombay (including land, building and facilities).	400
(2) 25 industrial estates in suburbs of Bombay with 5 acres of land each (including land, building and facilities).	400
(3) 10 industrial (developed) areas of 10 acres each in suburbs of Bombay (with roads, drains, water supply and power).	70
Total ..	870

11.2. As regards the scheme for 6 satellite towns it is difficult to work out estimates as these would depend upon locations, extent of development necessary, proximity to various essential amenities, e. g. rivers or lakes, highways railway lines, creeks, etc. No estimate for expenditure has, therefore, been indicated in this report for the development of 6 satellite townships.

11.3. Having regard to the considerable investment necessary and in view of the fact that these facilities would be needed not all at once, it is suggested that the aim should be to bring about the completion of the proposed development within a period of 5/7 years. The actual phasing of development is not gone into any detail.

11.4. Since no single existing authority can undertake such enormous task upon itself, a proper organisation having complete responsibility vested in it by statute may be necessary in order to carry out the task envisaged. A statutory Corporation, the Board of which should consist of interests concerned would seem to meet the need for carrying into effect the proposed development programme and it would need the initial funds to the tune of about:

Rs. 4 crores. Such a Corporation may expect to receive all practicable assistance from the various authorities concerned with acquisition and/or leasing of land, supply of power and water, construction of roads and railway links/siding, post and telegraph offices, installation of telephones, banks and other requisite services. The Central and the State assistance in the form of loans and subscriptions towards share capital and all essential details will have to be worked out by a competent body or organisation.

11.5. We hope that with a boldness and determination and with the co-operation of all interests, the recommendations of the Panel relating to programmes for industrial development of greater Bombay in particular and of the outlying and distant areas in general will be implemented without in any way affecting the well being of the community resident in Greater Bombay. We feel that such a programme would in fact make for healthier and more agreeable living conditions to the residents of Bombay and would raise the living standards in the mofussil areas.

BOMBAY :
17th October 1958.

M. R. MANDLEKAR,
M. A. MASTER,
K. V. APTE,
N. V. MODAK,
S. V. DESAI,
I. B. PATEL,

APPENDIX "A".

Statement showing the suggestions made to the Industrial Location Panel by the various Parties.

No.	Name and address of the Party.	Letter Number and date under which suggestions have been made.	Suggestions made by the various parties.
1	2	3	4
1	Secretary, Bombay Press Owners Association, 190-B, Gaiwadi, Girgaon, Bombay 4.	Nil. dated 4th July 1958. Transmitted under Public Works Department No. S-23/ILP Study-group dated 15th July 1958.	<p>(i) Small industries now already located in their places need not be disturbed. They consume very limited Electric Power. Besides the location of their workers are in Industry's surroundings and it is very easy and convenient for them to attend to duties in a reasonable time. Shifting of small industries will naturally upset them.</p> <p>(ii) In course of time when the Koyna and other projects will guarantee electricity more power/energy should be freely allotted for the betterment of small industries. Preference should first be given to small industries because their requirements are small and their existence means employment of so much labour.</p>
2	Lalji Pendse, M.P. *198, Charni Road, Bombay-4 [(*) Rajya Sabha].	Nil. dated 10th July 1958. Transmitted under Public Works Department No.S-23/ Study Group, dated 15th July 1958.	<p>(i) No representative of the small factories and traders as also of common people have been included in the group.</p> <p>(ii) Small factories or workshops should in no case be removed. Considering the nature of their work and their weak financial position as also of their clientele which is chiefly local, they have no resources to invest in capital construction for workshop and workmen.</p> <p>(iii) Dislodging them, therefore, will entail their ruin. The small fish will vanish and big shark will rise on their carcasses.</p>
3	Shri Y. A. Hafiz, President, District Local Board, Kolaba.	K. L. F./Adm/1814 of 1958-59, dated 17th July 1958, Transmitted under D. O. No. S-23/Study Group, dated 23rd July 1958.	<p>(i) The Industrial Locations in Bombay are also not planned, it is observed that hundreds of small industrial plants are located in the residential areas of Bombay. There was a Master Plan for Development of Greater Bombay and the industrial area was specifically separated from the heart of the City, but this as not successful and still many industries are in the City.</p>

APPENDIX "A"—contd.

Serial No.	Name and address of the Party.	Letter No. and date under which suggestions have been made.	Suggestions made by the various parties.
1	2	3	4
			<p>(ii) The City is growing on the three sides viz. : Virar, Kalyan, and Thana; but nobody has seriously studied the possibility of bridging Bombay, with Uran from the fourth side.</p> <p>(iii) In America on the river Mississippi, there is a bridge, the length of which is more than 8 miles. The distance between Uran and Bombay is only 6 miles and if we study the hydrographic survey made by the Indian Navy, we will see that two miles near Bombay, there is a hard roof of rock and it will not be very costly for the construction at least in the first section. The total cost will not exceed Rs. 14 Crores (Fourteen).</p> <p>(iv) If the Bombay-Uran bridge is built, then all the traffic coming from Poona side will be directed from Panvel to Uran and on to Bombay. Then about 20 miles run can be saved by this route. The traffic on the Bombay-Konkan-Goa Road can be diverted from Mile No. 54 to Chirner and on to Govandfata and Uran.</p> <p>(v) Government can recover most of the cost of construction by levying a tax on this bridge. Rs. 4 on vehicular traffic passing over the bridge should be taxed and annas two per head (passenger) should be charged Rs. 10,000 per day can be earned by this taxation.</p>
4	Shri V. H. Satam, B.A. (Hons.), 18, Tribhuvan Road, Girgaum, Bombay-4.	No. Nil, dated 29th July 1958. Transmitted under P. W. D. Letter No. S-23/Study Group, dated 29th July 1958.	(i) Suggests joining up Uran by providing Ferry Services to carry buses, etc. by open deck steamer between these two islands. The scheme envisages the provision of all weather transport facilities over sea between Bombay City and Uran.

- 5 The Secretary, The East-Indian Cotton Association Ltd., The Cotton Exchange, Marwari Bazar, Bombay-2. 17773/AI/155, dated 20th July 1958. Transmitted under P. W. D. Letter No. S-23/ Study-Group dated 31st July 1958.
- 6 Secretary, Silk and Art Silk Mills, Association, Resham Bhavan, 78, Veer Nariman Road, Bombay. No. G/28/1270/58, dated 2nd August 1958.
- (i) A good number of residential quarters require to be pulled down owing to their having become inhabitable. They may be pulled down after providing facilities to the residents and no new houses should be constructed in such places so that wherever convenient they may be used as open spaces, children park, etc.
- (ii) With a view to provide more space, the space occupied at present by Sea between Nariman point and Colaba point be *reclaimed* and the same be utilised to the best purpose available.
- (iii) No further industries either big or small be allowed to be built in the City and gradually small scale industries be removed to places beyond Bandra and Kurla and big industries shifted to places beyond *Thana and Andheri*.
- (i) At the time of the discussion with Shri N. V. Modak, Special Engineer Bombay Municipal Corporation, the Association was assured that no mill was ever refused a "No Objection Certificate" and the Municipal Corporation was embarking on the Project of establishing Municipal Industrial Estates to rehabilitate such mills which are required to be shifted by the Corporation. The Assurance was greatly welcomed and in fact the Association has shown considerable interest to the Bombay Municipal Corporation in setting up an Industrial Estate for the Rayon Weaving Industry.
- (ii) In fact, the Bombay Municipal Corporation have been kind enough to suggest a site on Bombay-Agra Road at Bhandup which has been inspected by some of the members of the Association. The Bombay Municipal Corporation should give the Association details regarding the estimated cost of land, etc., in order to enable the Association to implement the scheme of an industrial estates for Rayon Weaving Industry.
- (iii) Classification of the Art Silk or Rayon Weaving Industry : It has been described as a consumer goods industry.
- (iv) The Industry should be treated as "*Light Consumer Goods Industry*."

APPENDIX "A"—*contd.*

Serial No.	Name and address of the Party.	Letter Number and date under which suggestions have been made.	Suggestions made by the various parties.
1	2	3	4
7	The Secretary, The Motor Manufacturers' and Importers' Association, Bank of Baroda Building, Appollo Street, Bombay.	No. 213/1, dated 4th August 1958, Transmitted under P. W. D. Letter No. S-23/ Study/Group, dated 6th August 1958.	<p>(i) Automobile workshops and Service Stations are at present classified under "Light Industries". They are not engaged in manufacturing process and as such, they do not cause the nuisance generally with manufacture <i>viz.</i> : smoke, obnoxious odours, constant loud noise, etc.</p> <p>(ii) Some of the members have received notices for removal of their existing workshops and service stations under the re-planning proposed on the Master Plan.</p> <p>(iii) In fact, consideration should seriously be given to the location of additional service stations and workshops in the heart of the city to serve the important public purpose of keeping the transport moving quickly and efficiently, which is very essential particularly in a commercial city like Bombay, where the need for increased transport facilities is greatly felt.</p>
8	Shri I. A. Issac, Superintendent, Branch.F.S. (Koyna) F. D.	Number Nil, dated 31st July 1958, Transmitted under Public Works Department No. S-23/ Study-Group dated 5th August 1958.	<p>Taxis are in great demand mainly because the buses, trams and trains services are causing great hardships to the passengers.</p> <p>(1) Buses should start with about half a dozen empty seats to lift up few passengers at the next stop at least at peak hours.</p> <p>(2) To avoid congestion there should be one train at an interval of 3 to 4 minutes as promised by the Railway some time back.</p> <p>(3) The passers by at Girgaon and Kalbadevi must be compelled to take to foot-path in order to relieve the congestion.</p> <p>(4) Introduction of staggering of office hours.</p> <p>The Offices of the Government of Bombay—10-30 to 5-30 p.m. The Offices of the Government of India—10-00 to 5-00 p.m. Private firms —11-00 to 6-00 p.m.</p>

This timing should be changed after every six months,

- 9 Shri P. T. Gohil, Engineers and Contractors, Kann Kunj, Next to City Light, Lady Jamshedji Road, Bombay No. 16. No. Nil, dated 30th July 1958. Transmitted under P. W. D., letter No. S-23/Study-Group, dated 4th August 1958.
- 10 Mohmedbhoy I.M. Rowjee, Moobarak Manzil, 56-52, Hughes Road, Bombay. No. Nil, dated 30th July 1958. Transmitted under P. W. D., letter No. S-23/Study-Group, dated 6th August 1958.
- 11 Mr. Parvathi Kailas Pathy, Joint Convenor, Bombay Pradesh Bharat Sevak Samaj, Government Hutment 6/A, Cooperage, Bombay 1. No. Nil, dated 1st August 1958. Transmitted under P. W. D., No. S-23/Study-Group, dated 6th August 1958.
- (5) All the open-fields (Esplanade, Oval Lloyds, Recreation ground, etc. should be kept green through-out the year by watering. A garden is said to be a lung of a City. Therefore, plantation of trees should be encouraged.
- (6) No licences should be issued for establishment of new industries in the metropolitan area of Bombay. They should be allowed to do so in the suburbs.
- (7) Old Mills should be scrapped and re-built in the suburbs. Land and open space at concessional rates and inducement should be given to build quarters for employees.
- (8) Rates of taxes in suburbs areas (*urban immoveable property tax*) should be reduced.
- (i) All the Mill hands should be shifted from the City proper and the shifts should be so arranged with staggering hours as to avoid pressure on the available transport specially when the office-going people need it most. In other words, the traffic pressure will be even almost throughout the day.
- (ii) Satellite Townships should be started with complete units of schools. Markets and providing each Township with small scale and light-medium and heavy industry. There are number of small villages in and around Greater Bombay.
- (iii) The greatest thing through oversight that has been committed by the originators of the Master Plan is to try to establish Industrial areas with the result that the land around Andheri-Kurla Industrial area has shot up to Rs. 15 per square yard.
- No new industry employing over 100 persons should be located in the city.
- Industrial development and other factories should not be constructed to the South of Andheri and Kurla. So that places of work may gradually shift towards the North where more accommodation is available.

APPENDIX "A"—contd.

Serial No.	Name and address of the Party.	Letter Number and date under which suggestions have been made.	Suggestions made by the various parties.
1	2	3	4
12	Shri Yogendra Nath Raj, Indus. Court, A Road, Marino Drive, Bombay.	No. Nil, dated 28th July 1958. Transmitted under P. W. D. No. S-23/Study Group, dated 6th August 1958.	<p>(i) Government should allow private parties to float companies to whom 99 years' lease may be granted on a annual rent which may be fixed up according to particular area.</p> <p>(ii) With the co-operation of the Bombay Municipal Corporation, Government should give encouragement to such companies.</p>
13	S. B. Kaira, Bodke Building, S. Patel Road, Mulund, Bombay No. 49.	No. Nil, dated 29th July 1958. Transmitted under P. W. D. No. S-23/Study Group, dated 6th August 1958.	<p>(ii) No new factories as defined in the Factories Act should be allowed to be established within the radius of 50 miles of the city of Bombay with immediate effect unless it is absolutely necessary in the best interest of the State.</p> <p>(ii) Scattering of factories and industries in the various parts of our State will result in a healthy growth of the surrounding country side in the spheres of economy, health, sanitation etc. many problems like slums, can be avoided over there (in the country side) by a little planning in the new industries areas.</p> <p>(iii) New Industrial Units should provide 40 per cent. of the housing needed for their work people by undertaking construction themselves.</p> <p>(iv) Morning hours of attendance of the employees of Government Departments, Commercial Firms, Banks, Insurance Companies (other than Life Insurance which is nationalised) should be arranged in such a way that congestion can be relieved.</p>
14	New Standard Engineering Co., (Pvt.) Ltd., Carroll Road, Bombay 13.	1901/K, dated 31st July 1958 ..	<p>(i) No more new industrial units be allowed to establish within the city itself.</p> <p>(ii) Municipal Corporation should be prevailed upon by the panel to declare a region on the eastside of Western Railway between Goregaon and tations as a heavy Industrial Zone.</p>

- 15 (Note on the City's problems by one Shri T. Gay) News item, Times of India, 3rd July 1958, by Shri T. Gay. Transmitted under P. W. D., letter No. S-23/Study-Group, dated 31st July 1958. Let there be a Ten Year Plan after the excess figure is determined, 10 per cent. of this amount chosen *by lot* from *all* the industrial concerns in the whole Island will each year be removed to spacious areas. Government will give land free. Other concessions will be income-tax rebates, long term loans.
- 16 Shri G. J. Desai, B.E., F.R.I.C.S., M.T.P.I., Arbitrator, Town Planning Scheme, Bombay (Retired Consulting Surveyor to Government of Bombay). No. ARB/TP/Misc/328, dated 11th August 1958. Transmitted, under P.W.D., letter No. S-23/Study Group, dated 14th August 1958. (i) Congestion can only be avoided by establishing new self-contained industrial towns, not within easy reach of Bombay i. e. at least 50 miles or so beyond the City. The suburbs of Bombay up to Kalyan and Virar should be reserved for providing for the natural increase in the existing population and industries.
- (ii) Permanent solution for this problem is to establish new self-contained industrial towns away from City if possible, attempts should be made to establish industries in the vicinity of some of the existing smaller towns which will provide employment to people who come from nearby villages.
- (iii) No further industries should be established within 50 or 60 miles of Bombay and for this purpose legislation may have to be resorted to, if necessary.
- 17 The Honorary Secretary, The Bombay Shroffs Association, 233-A, Shroff Bazar, Bombay 2. No. S/131/2014, dated 8th August 1958. Transmitted under P. W. D. No. S-23/Study-Group, dated 18th August 1958. (i) Measures should be undertaken to develop small and medium scale industries in the villages which will give occupation to the educated and also labour. As industries will grow up in these areas, the migration of the population therefrom to the Cities will stop.
- (ii) *Decentralization of Industry.*—The Committee is in favour of the Decentralization of industry. The Committee members approve of the States Master Plan which permits building of new industries beyond Kurla. The area from Kurla to Kalyan is fast developing into an industrial area. It is necessary to build up wider and stronger roads from the City up to Kalyan so as to meet the needs of the developing larger traffic.
- (iii) The slaughter house at Bandra should be removed to a distant place. It is a nuisance and besides a source of danger not only to the health of its residents, but also to that of so many people who pass by it in trains. The policy of removing this place of stench and filth is already decided upon by Government. Its removal will release a large piece of land for housing purpose.

APPENDIX " A "—concl'd.

Serial No.	Name and address of the Party.	Letter No. and date under which suggestions have been made.	Suggestions made by the various parties.
1	2	3	4
18	Maharashtra Chamber of Commerce, 12, Rampart Row, Fort, Bombay 1.	No. MCC/31-1363, dated 14th August 1958. Transmitted under P. W. D., No. S-23/ Study-Group, dated 22nd August 1958.	<p>(i) <i>Divi-Dasgaon Railway.</i>—In order to relieve, the great congestion of population in Greater Bombay and in order to connect the only unconnected link on the Western Coast of the Country, this Chamber has since long been advocating the construction of Divi-Dasgaon Railway which is a part of the ultimate Western Coastal Railway joining Bombay to Mangalore. When the Divi-Dasgaon Railway is constructed, it is possible that new areas will be brought within easy reach from Bombay City, such as for example Panvel, and it is possible that new satellite towns will spring up, which will absorb the growing population of this fast expanding city.</p> <p>(ii) <i>Rail-cum-Road Bridge over Thana Creek connecting Kurla to Karjat.</i>—Dispersal of industries and migration of the population to farther northern suburbs will also be achieved with the construction of the Kurla-Karjat Railway link. This pre-supposes the construction of the rail-cum-road bridge over the Thana Creek at Trombay. It has been estimated that this bridge would cost to the tune of rupees six crores.</p> <p>(iii) <i>Under sea connection between Bombay and Uran.</i>—When this connection is made possible, Uran and other nearby coastal areas come easily nearer as suburbs and satellite town of Greater Bombay.</p> <p>(iv) <i>Industrial Estates for Small Scale Industries.</i>—The present acute problem of congestion and over-loading on traffic is responsible to the haphazard growth of Industries big and small all over the city and the remedy lies chiefly in re-organising these industries in a disciplined manner by setting up industrial estates.</p> <p>(v) <i>Facilities for shifting of Industries.</i>—Now-a-days, it is a common practice for industries in the City of Bombay receiving notices calling upon them to shift to suburban areas, while, the Chamber supports the setting up of industrial zones. The chamber feels that a High Power Committee consisting of representatives of industry, Government and Municipal Corporation, be formed to assist and advise in a practical and constructive way the actual shifting of the industries.</p>

19 Shri N. G. K. Murti, L.S.E., Chief Engineer, Koyna. D. O. No. KPC/7321/T, dated 22nd August 1958.

20 Shri S. M. Kini, B.Sc., B.E., M.I.E., M.A.M., SOC., C.E. Letter, dated 29th August 1958.

If we linked up Nasik-Deolali area with the Bombay Hydro Power System and draw up a plan for industrial estate in that above area, it will be possible to encourage some of the expanding industries to shift or locate new Industries in this area:

- (i) Our first problem will be to see that this major industry which is mostly located in the Parel Area is rationalised by having its workers within the area of walking distances, say a mile or so, so that the workers will be in a position to reach their places of work from their own homes, not taking recourse to the overcrowded trains or the over-crowded buses or trams.
- (ii) It would be better to see that the workers in these heavy Industries are provided with accommodation within the vicinity of about half a mile or one mile from their own place of work so that in future we may not repeat the mistakes of the past, creating a transport problem.
- (iii) Shri Modak in his Master Plan had given us a clear perspective as to how the original City limits could be properly rationalised by taking the overspill of the population and providing for their accommodation in the suburbs.
- (iv) In Bombay, we find that instead of satellite Towns springing up around the City, the city itself is growing larger and larger as one unit with more of industries which attract more workers and employees thereby creating the housing problem more and more acute.
- (v) As a matter of fact, the problem of congestion has to be solved at the highest national level by locating industries in the various States of the Indian Union, around the provincial centres and other large towns creating fresh townships, if necessary, instead of locating them within the city corporation limits and making the city itself grow faster and larger. It is at this time that a bold and dynamic policy has to be laid down so that no new industry will be allowed in the City proper.
- (vi) When the present slums are being eradicated and the population transplanted in their own field of work in their new environs, the slums will have to be eradicated, giving place to new buildings in their places to meet the local demand. The object is to see that the people are not far-flung from their own place of work, thereby relieving the transport problem of the present day.

APPENDIX "B".

A note on distribution of existing industries in Bombay Municipal Limits.

1. *Present position of Industries.*—According to Chief Inspector of Factories, there were in 1957, 11,539 registered factories and 10,550 working factories in Bombay State, out of which 3,539 registered factories and 3,400 working factories were in Bombay Municipal limits. It will thus be seen that Bombay accounts for about one-third of the total number of factories in this State. This can be considered a very high degree of concentration in view of the fact that Greater Bombay accounts for only about 0·1 per cent. of the total area of the State. Further, it will be seen from the accompanying statement "A" that out of these 3,400 factories, more than 75 per cent. of the factories are located in Bombay island thus showing a very high degree of concentration in the island. These 3,400 factories in Greater Bombay account for over 44 per cent. of about 10,00,000 number of workers employed in the registered factories of Bombay State.

Coming to the wardwise distribution of factories, it is seen that C, D and E wards together account for about 42 per cent. of the factories in Bombay Municipal area. Thus it can be said that the city proper (excluding A and B wards) south of Parel, which incidentally contains some of the most congested localities in Bombay, accommodates more than two-fifth of the total number of factories. Other important areas are southern parts of F and G wards comprising Worli, Parel and Sewri areas which account for more than 15 per cent. of the total factories. Thus about 57 per cent. of the factories are located in a more or less contiguous area ranging from Dadar in the North to Carnac Road in the South. In the case of suburban areas, which altogether account for about 24 per cent. of factories, the distribution in terms of percentages of total number of factories appears to be more or less even in the different wards. However "N and T" wards comprising Kiroli-Ghatkoper to Mulund and Gundgaon, and areas from Andheri to Malad show higher concentration as compared with other wards.

From the point of view of labour employed, the concentration pattern is patently different from that in the case of number of factories. Major concentrations of working force are found in wards G-South (30·39 per cent.), F-South (15·08 per cent.), E-East (10·58 per cent.), and G-North (9·32 per cent.). Elsewhere the percentages of workers employed range from 6·35 per cent. downwards. In C and D wards taken together, which have 24 per cent. of factories in Greater Bombay, the percentage of workers employed is only 6·20; whereas G-South and F-South wards, which have respectively 7·40 per cent. and 7·91 per cent. of factories, show over 30 per cent. and 15 per cent. of labour force.

In Bombay island area which accounts for almost 76 per cent. of factories, the percentage of labour employed comes to over 84. This is obviously due to the larger average size of factories. As can be seen from Statement C, the average size of factory, in terms of workers per factory, is highest in G-South, followed by F-South, and G-North, the figures of average number of workers per factory in these wards being 562, 261 and 241 respectively. F-South, F-North and E-East have also average number of workers per factory well above 100. It is of interest to note that in suburban areas, L, M and N and T wards have comparatively large-scale factories. B, C and D wards in the Island and H-West and P wards on the suburban side are areas having comparatively small-sized factories.

This is the existing pattern of distributions of factories and labour force in different wards of Greater Bombay. The Statements attached also show similar distributions for some industries. However, from the point of view of number of factories, total labour strength and average size of factories, cotton textile with 3·63 per cent. of total number of factories 46·93 per cent. of total labour strength in Greater Bombay factories, and average size of over 1,400 per factory, and Engineering industry with 23·11 per cent. of total number of factories, 13·19 per cent. of total labour strength, and 78 workers per factory are the two important groups of industries. The Miscellaneous group comprising all other industries not separately shown in the Statement also constitutes an important group, but within this group, individual sub-groups of industries do not claim separate attention.

2. *Recent growth of Industries in Greater Bombay.*—The following series gives the number of working factories registered under the Indian Factories Act, 1948 and the average daily number of workers employed therein from 1951 to 1957:—

Year.			Number of factories working.	Average number of daily workers.
1951	..	..	3,064	3,83,892
1952	..	..	3,204	3,73,860
1953	..	..	3,071	3,68,587
1954	..	..	3,117	3,42,519
1955	..	..	3,282	4,11,395
1956	..	..	3,297	4,20,991
1957	..	..	3,400	4,45,005

APPENDIX "B"—*contd.*

It will be seen that during the last 7 years, the number of working factories has increased by 338 i.e., by more than 10 per cent. over the figure for 1951. In the same period, the average number of workers has gone up by about 61,000, i.e. by about 16 per cent. over the figure, for 1951. In fact labour strength was on the decline till 1955 and was lowest in 1954, during this period. A large part of the overall decline in average number of workers in Bombay State during this period is accounted for by this decline in labour force in Bombay City. In 1955, however, the employment had shown considerable increase, being as much as 20 per cent. over the lowest level in 1954, although the number of working factories did not show any substantial increase. It is, however, to be noted that the figures of labour are in terms of average daily number of workers employed and hence the pay-roll figures are likely to be somewhat higher than the figures given above. It is also significant to note that during these seven years, the number of working factories increased substantially in 1952, 1955 and 1957.

In this connection, it is worthwhile to consider the recent growth of large-scale industries as can be envisaged by the licences issued under Industries (Development and Regulation) Act, 1951. It is seen from the Statement "F" that since the date of implementation up to May 1958, in Bombay State, 119 licences have been issued for new undertakings of which 64 are in Greater Bombay, 237 licences have been issued for substantial expansion of the existing undertakings of which 110 are in Greater Bombay, and 103 licences have been issued for new articles to be manufactured by existing units of which as many as 91 are in Greater Bombay. Thus the concentration of industries in Greater Bombay is likely to increase still further on the assumption that all these licensed schemes materialise. It will be seen that new undertakings are now being located in M and N wards i.e., Chembur-Trombay and Bhandup-Vikhroli-Mulund areas. In B, C and D wards no new undertaking has been licensed under this Act.

The labour potential appears to be highest in 'M' ward, i.e., Chembur-Trombay area, followed by 'N' ward. The exact number of undertakings which have gone into production by now is not known.

Substantial expansion-licences find concentration in E-East, F-South, G-South and N wards and from the point of view of increase in labour strength also, these wards are important. New article-licences are not of much importance from the point of view of employment.

The overall likely result of these 265 licensed schemes in the Greater Bombay is that the labour strength would increase by over 22,000. Part of this increase has, no doubt, taken place and is, therefore, already included in the employment figures from 1952 to 1957 given above.

STATEMENT

Industrywise and Wardwise statement showing percentage

Serial No.	Wards.	Cotton Textiles.	Art-Silk and Silk.	Dyeing and Belaching.	Food Industries.
1	2	3	4	5	6
1	"A"	0.79	....	1.16	7.98
2	"B"	0.79	0.49	6.93	9.57
3	"C"				
4	"D" 1			1.7	
5	"D" 2	14.29	8.29	23.70	26.05
6	"D" 3				1
7	"E" East	4.76	12.20	4.62	10.64
8	"E" West	17.46	0.49	4.05	12.77
9	"F" North	....	0.49	1.16	1.06
10	"F" South	15.08	11.70	4.62	6.38
11	"G" North	6.35	9.27	4.05	9.03
12	"G" South	30.16	12.68	4.62	4.79
Total in Bombay Island.		89.68	55.61	54.91	88.27
13	"H" East	....	....	0.58	....
14	"H" West	....	....	....	3.19
15	"K" North	0.79	....	0.58	1.06
16	"K" South	....	8.79	8.67	1.60
17	"L"	5.56	10.73	3.47	1.60
18	"M"	0.79	....	2.32	0.54
19	"N" and "T"	0.79	15.12	8.67	2.66
20	"P"	2.39	8.29	14.45	0.54
21	"R"	....	1.46	6.35	0.54
Total in Suburbs ..		10.32	44.39	45.09	11.73
Grand Total ..		100.00	100.00	100.00	100.00

"A"

of factories in Greater Bombay during the year 1957.

Vegetable Oil, Vanaspati, Groundnut decortication etc.	Chemicals, Paints and Varnishes and Glassware.	Plastics.	Rubber.	Paper and Paper- board.	Printing and Lithography.
7	8	9	10	11	12
....	3.24	4.00	....	....	34.31
7.27	4.63	2.00	....	....	6.54
6.36	11.11	9.00	11.67	10.00	2.01 39.54
42.73	8.80	8.00	1.67	10.00	5.89
5.45	4.17	3.00	1.67	20.00	4.87
2.73	1.85	3.00	5.00	....	....
20.00	10.18	7.00	1.67	....	1.96
1.82	15.28	6.00	....	....	1.31
4.54	8.80	6.00	6.66	....	3.27
90.90	68.06	48.00	28.34	40.00	97.39
1.82	2.78	8.00	1.67	10.00	0.65
....
3.64	5.09	5.00	1.67	....	....
....	4.17	9.00	6.66	....	0.65
....	6.02	2.00	1.67	10.00	....
....	2.31	1.00	3.34	....	....
2.73	5.55	4.00	18.33	30.00	1.31
6.01	4.63	7.00	29.99	10.00	....
....	1.39	16.00	8.33	....	....
9.10	31.94	52.00	71.66	60.00	2.61
100.00	100.00	100.00	100.00	100.00	100.00

STATEMENT

Serial No.	Wards.	General Engineering.	Textiles and Machinery and Accessories.	Automobiles, Coach Building, repairs, etc.	Metal.
1	2	13	14	15	16
1	"A"	.. 5.10	....	15.07	....
2	"B"	.. 4.23	....	....	3.03
3	"C"	} .. 31.96	22.22	53.42	30.31
4	"D" 1				
5	"D" 2				
6	"D" 3				
7	"E" East	.. 14.45	9.26	2.74	14.14
8	"E" West	.. 7.60	3.70	2.74	6.06
9	"F" North	.. 2.38	3.70	1.37	3.03
10	"F" South	.. 7.48	9.26	....	11.11
11	"G" North	.. 5.10	5.56	5.47	4.04
12	"G" South	.. 0.60	9.26	9.60	6.06
Total in Bombay Island		.. 84.90	62.96	90.41	77.78
13	"H" East	.. 0.75	1.85	1.37	....
14	"H" West	.. 0.12	....	....	....
15	"K" North	.. 0.75	1.85	....	1.01
16	"K" South	.. 2.86	9.26	1.37	....
17	"L"	.. 2.50	5.56	6.85	2.02
18	"M"	.. 0.12	....	....	2.02
19	"N" and "T"	.. 3.75	12.97	....	10.10
20	"P"	.. 3.25	3.70	....	6.06
21	"R"	.. 1.00	1.85	....	1.01
Total in Suburbs		.. 15.10	37.04	9.59	22.22
Grand Total		.. 100.00	100.00	100.00	100.00

"A"—*contd.*

Saw Milling Furniture making and Woodware.	Tanning, Footwear and Leather Manufacturing.	Miscellaneous.	All Industries.
17	18	19	20
3.42	4.00	4.20	6.48
3.42	....	7.05	4.90
11.98	20.00	23.25	24.14
19.66	8.08	12.48	11.98
2.57	....	5.10	5.90
1.72	....	2.23	1.81
5.13	....	8.90	7.91
....	56.00	2.47	5.24
2.56	4.00	7.05	7.40
50.46	92.00	72.82	75.76
1.72	....	1.85	1.32
....	....	0.49	0.32
0.81	....	1.98	1.44
5.13	....	6.30	4.20
....	4.00	5.44	3.74
....	....	4.82	1.61
2.56	....	4.57	5.07
39.32	4.00	0.74	4.90
....	....	0.99	1.64
49.54	8.00	27.18	24.24
100.00	100.00	100.00	100.00

STATEMENT

Industrywise and Wardwise statement showing percentage of

Serial No.	Wards.	Cotton Tixtles.	Art-Silk and Silk.	Dyeing and Bleaching.	Food Industries.
1	2	3	4	5	6
1	"A"	8.86	....	0.18	6.22
2	"B"	0.04	0.05	1.25	17.56
3	"C"	0.40	2.64	14.97	25.76
4	"D" 1				
5	"D" 2				
6	"D" 3				
7	"E" East	6.95	10.81	3.06	14.66
8	"E" West	9.29	0.10	2.39	8.52
9	"F" North	....	0.30	0.22	0.50
10	"F" South	16.82	7.93	11.61	2.98
11	"G" North	9.72	30.76	19.65	6.19
12	"G" South	52.04	23.65	8.94	3.06
Total in Bombay Island ..		96.12	76.24	62.27	85.45
13	"H" East	....	....	0.28	....
14	"H" West	....	....	....	1.66
15	"K" North	0.02	....	0.35	0.38
16	"K" South	....	3.36	4.49	7.01
17	"L"	3.56	7.91	8.93	0.79
18	"M"	0.06	....	4.86	0.84
19	"N" and "T"	0.22	8.60	11.11	3.44
20	"P"	0.02	3.58	4.84	0.25
21	"R"	....	0.31	2.87	0.27
Total in Suburbs ..		3.88	23.76	37.73	14.55
Grand Total ..		100.00	100.00	100.00	100.00

"B".

Factory Workers in Greater Bombay during the year 1957.

Vegetable Oil Vanaspoti and Ground nut decortication, etc.	Chemicals, Paints and Varnishes and Glasware.	Plastics.	Rubber.
7	8	9	10
....	0.53	11.66	....
3.47	1.04	1.13	....
10.88	5.06	6.40	9.29
24.19	8.51	5.58	1.55
3.85	6.45	1.11	0.34
17.46	1.24	1.08	26.67
31.63	14.59	2.69	2.73
1.24	11.35	7.86	....
2.37	16.99	4.00	12.55
95.09	65.76	41.51	53.13
1.16	1.78	1.00	0.12
....
1.09	5.15	2.50	12.65
....	9.56	6.90	3.52
....	2.51	0.73	0.35
....	2.48	0.15	3.79
2.51	9.65	1.65	13.27
0.15	2.73	10.04	10.44
....	0.38	35.52	2.73
4.91	34.24	58.49	46.87
100.00	100.00	100.00	100.00

STATEMENT

Serial No.	Wards.	Paper and Paperboard.	Printing and Lithography.	General Engineering.	Textile Machinery and Accessories.	
1	2	11	12	13	14	
1	"A"	..	....	41·89	5·13	....
2	"B"	..	....	1·90	0·84	....
3	"C" }	..	....	....	....	....
4	"D" } 1	..	31·05	28·83	11·04	13·37
5	"D" } 2	..	....	....	....	....
6	"D" } 3	..	....	....	....	....
7	"E" East	..	1·73	13·09	22·96	15·35
8	"E" West	..	14·40	3·11	5·98	2·06
9	"F" North ..	..	....	....	4·68	1·38
10	"F" South	..	....	1·24	10·04	2·69
11	"G" North	..	....	2·27	3·38	9·00
12	"G" South	..	....	5·27	16·56	5·95
Total in Bombay Island ..		..	47·18	97·60	80·61	49·80
13	"H" East	..	2·73	1·28	0·72	1·07
14	"H" West	..	....	....	0·01	....
15	"K" North	..	....	....	0·21	5·95
16	"K" South	..	....	0·32	2·18	10·51
17	"L"	..	5·00	....	3·34	17·97
18	"M"	..	....	....	0·08	....
19	"N" and "T"	..	35·28	0·80	10·30	9·79
20	"P"	..	9·81	....	1·94	3·57
21	"R"	..	....	....	0·61	1·24
Total in Suburbs ..		..	52·32	2·40	19·39	50·20
Grand Total ..		..	100·00	100·00	100·00	100·00

"B"—*contd.*

Automobiles, Coach Building, repairs etc.,	Metal	Saw Milling, Furniture making and Woodware.	Tanning Footwear and Leather Manufacturing	Miscellaneous.	All Industries.
15	16	17	18	19	20
9.40	....	1.76	1.83	3.29	3.43
....	0.35	1.42	....	2.34	0.89
18.86	14.15	10.86	15.42	9.28	6.20
1.44	15.65	29.13	4.74	12.04	10.58
3.55	1.57	1.13	....	3.29	6.35
0.53	20.47	2.40	....	2.84	2.05
....	9.38	10.07	....	27.66	15.08
23.60	3.97	....	64.78	4.16	9.32
7.99	2.00	2.22	5.47	6.09	30.39
65.37	67.54	58.99	92.24	70.99	84.29
1.37	....	7.42	....	2.96	0.73
....	....	....	....	0.15	0.04
....	2.26	3.17	....	2.22	0.86
0.15	....	4.82	....	5.08	2.00
33.11	19.68	....	4.56	3.24	4.50
....	1.03	....	....	7.56	1.37
....	5.95	2.25	....	4.28	3.76
....	2.50	23.35	3.20	1.99	1.51
....	1.04	....	....	1.53	0.94
34.63	32.46	41.01	7.78	29.61	15.71
100.00	100.00	100.00	100.00	100.00	100.00

STATEMENT

Industrywise and Wardwise statement showing the average number

Serial No.	Wards.	Cotton Textiles.	Art-Silk and Silk.	Dyeing and Bleaching.	Food Industries.
1	2	3	4	5	6
1	"A"	.. 1,908	....	13	25
2	"B"	.. 95	12	58	58
3	"C"	.. 50	41	52	31
4	"D" 1				
5	"D" 2				
6	"D" 3				
7	"E" East	.. 2,584	113	55	44
8	"E" West	.. 942	25	49	21
9	"F" North	.. ....	80	16	15
10	"F" South	.. 1,976	86	207	15
11	"G" North	.. 2,710	424	400	22
12	"G" South	.. 3,055	238	159	20
Total in Bombay Island		1,898	175	94	31
13	"H" East	.. ....	....	40	....
14	"H" West	.. ....	....	....	17
15	"K" North	.. 34	....	50	12
16	"K" South	.. ....	49	43	140
17	"L"	.. 1,133	94	212	14
18	"M"	.. 153	....	173	50
19	"N" and "T"	.. 500	73	106	41
20	"P"	.. 3	55	28	15
21	"R"	.. ....	27	37	16
Total in Suburbs		.. 1,436	68	69	40
Grand Total		.. 1,771	128	82	32

"C"

of workers per factory in Greater Bombay during the year 1957.

Vegetable oil, Vanaspoti and Groundnut decoloration etc.	Chemicals, Paints and Varnishes and Glassware.	Plastics.	Rubber.	Paper and Paper board.	Printing and Lithography.
7	8	9	10	11	12
....	15	186	....	....	66
27	20	36	....	....	16
95	41	49	79	250	39
32	87	45	92	14	120
39	138	23	20	58	37
357	60	23	527	....	....
88	129	24	162	....	34
38	67	83	....	....	94
20	174	42	186	....	87
58	87	55	185	95	54
36	58	8	7	11	106
....
17	91	32	750	....	....
....	206	49	52	....	27
....	38	24	21	40	....
....	96	10	113	....	....
51	156	26	72	95	33
9	53	91	34	79	....
....	25	141	32	....	....
30	96	72	65	71	50
56	90	64	99	81	54

STATEMENT

Serial No.	Wards.	General Engineering.	Textile Machinery and Accessories.	Automobiles, Coach, Building, repairs, etc.	Metal.
1	2	13	14	15	16
1	"A" ..	78	....	81	....
2	"B" ..	16	....	....	10
3	"C" ..	27	28	46	41
4	"D" 1				
5	"D" 2				
6	"D" 3				
7	"E" East ..	124	77	69	97
8	"E" West ..	61	26	168	23
9	"F" North ..	155	18	50	589
10	"F" South ..	105	14	....	74
11	"G" North ..	52	75	559	86
12	"G" South ..	196	30	108	29
Total in Bombay Island.		74	34	92	76
13	"H" East ..	76	27	130	....
14	"H" West ..	7	....	....	....
15	"K" North ..	22	150	....	195
16	"K" South ..	59	53	14	....
17	"L" ..	105	151	627	850
18	"M" ..	50	....	....	45
19	"N" and "T" ..	215	35	....	51
20	"P" ..	47	45	....	36
21	"R" ..	48	34	....	90
Total in Suburbs ..		101	63	469	127
Grand Total ..		78	47	130	87

"C"—concl.

Saw Milling, Furniture making and Woodwear.	Tanning, Footwear and Leather Manufacturing.	Miscellaneous.	All Industries
17	18	19	20
15	20	61	73
12	....	26	25
27	31	31	35
44	26	75	121
13	....	49	147
42	....	99	155
58	....	241	261
....	51	131	243
26	60	67	562
35	44	76	152
129	....	124	76
....	....	23	18
110	....	87	81
28	....	63	65
....	50	46	164
....	....	122	116
26	....	73	102
18	35	208	42
....	....	120	78
25	43	83	89
30	44	78	137

STATEMENT " D ".

Industrywise statement of percentage of Factories and Workers in Greater Bombay during the year 1957.

Serial No.	*C. M. I. No.	Name of the Industry.	Percentage of	
			Factories.	Workers.
1	2	3	4	5
1	18	Cotton Textiles	3.63	46.93
2	53	Art-Silk and Silk	5.90	5.50
3	49	Dyeing and Bleaching	4.98	3.00
4	1, 3, 4 and 7	Food	5.41	1.26
5	8 and 44	Vegetable Oil, Vanaspati and Groundnut decortication etc.	3.17	1.29
6	9, 13 and 21	Chemicals, Paints and Varnishes and Glass-ware.	6.22	4.09
7	38	Plastics	2.88	1.34
8	31	Rubber	1.72	1.25
9	16	Paper and Paper Board	0.29	0.17
10	45	Printing and Lithography	8.81	3.47
11	24, 25, 26, 27, 28 and 29.	General Engineering	23.11	13.19
12	62	Textile Machinery and Accessories	1.55	0.53
13	56	Automobiles, Coach Buildings, repairs etc.	2.10	1.99
14	22 and 23	Metal	2.85	1.82
15	40 and 41	Saw Milling, Furniture making and Wood-ware.	3.37	0.73
16	11 and 30	Tanning Footwear and Leather Manu-facturing.	0.72	0.23
17	10, 14, 17, 19, 32, 33, 34, 35, 37, 39, 42, 43, 46, 47, 48, 50, 52, 55, 57, 58, 61, and 63.	Miscellaneous	23.29	13.21
Total ..			100.00	100.00

*There are no factories in Greater Bombay under C. M. I. Nos. 2, 5, 6, 12, 15, 20, 36, 51, 54, 59 and 60.

STATEMENT "E".

Wardwise distribution of areas in Bombay Municipal Limits.

Ward.	Area covered.
"A" ..	.. Colaba and Fort area up to Carnac Road.
"B" ..	.. Area east of Mahomedali Road from Carnac Bridge to Sandhurst Road Railway Station.
"C" ..	} The area west of Mahomedali Road from Crawford Market, Dhobi Talao and Marine Lines Railway Station to Bellasis Road including Malbar Hill, Cumballa Hill, Tardeo and Mahalaxmi.
"D" 1 ..	
"D" 2 ..	
"D" 3 ..	
"E" East ..	.. Mazgaon, Byculla and Reay Road.
"E" West ..	.. Lamington Road North, Jacob Circle and Arthur Road.
"F" South ..	.. Lalbaug, Parel and Sewri.
"F" North ..	.. Naigaum, Dadar and Matunga (East of Railway lines), Sion and Vadala.
"G" South ..	.. Race Course, Lower Parel, Elphinstone Road, Worli and New Prabhadevi.
"G" North ..	.. Dadar and Matunga (West of Railway lines), Mahim and Dharavi
"H" East ..	.. Bandra, Khar and Santacruz (East of Railway lines).
"H" West ..	.. Bandra, Khar and Santacruz (West of Railway lines).
"K" South ..	.. Vile Parle and Juhu.
"K" North ..	.. Andheri, Jogeshwari, Vesava and Madh.
"L" ..	.. Kurla, Sakinaka and Chendavli.
"M" ..	.. Chembur, Mankhurd and Trombay.
"N" ..	.. Kirol, Ghatkopar, Vikhroli and Bhandup.
"P" ..	.. Goregaon, Malad and Manori.
"R" ..	.. Kandivli, Poisar, Borivli and Dahisar.
"T" ..	.. Mulund and Gundgaon.

STATEMENT "F".

Wardwise statement of Licences granted to the industrial concerns in Greater Bombay since the implementation of the Industries (Development and Regulation) Act, 1951, to May 1958.

Serial No.	Wards.	No. of licences granted.			No. of workers.			Total	
		N.U.	S.E.	N.A.	N.U.	S.E.	N.A.		
1	2	3	4	5	6	7	8	9	
1	"A"	..	1	1	..	55	..	..	55
2	"B"	..	..	..	..	..	..	..	..
3	"C"	..	..	..	..	..	..	..	..
4	"D" 1	..	..	..	..	..	..	..	..
5	"D" 2	..	..	..	..	..	..	..	..
6	"D" 3	..	..	..	..	..	..	..	..
7	"E" East	..	2	10	7	98	672	268	1,038
8	"E" West	..	1	3	..	70	120	..	190
9	"F" North	..	2	9	6	78	461	N. I.	539
10	"F" South	..	5	18	10	939	1,407	42	2,388
11	"G" North	..	4	4	5	1,091	436	69	1,596
12	"G" South	..	2	30	35	151	1,600	34	1,785
Total in Bombay Island ..		..	17	76	70	2,482	4,696	507	7,685
13	"H" East	..	2	..	3	120	..	30	150
14	"H" West	..	..	..	..	..	..	..	..
15	"K" North	..	2	3	2	590	265	224	1,079
16	"K" South	..	..	4	..	..	103	..	103
17	"L"	..	2	6	5	262	344	64	670
18	"M"	..	7	3	..	4,762	625	..	5,387
19	"N" and "T"	..	11	13	9	1,682	853	144	2,679
20	"P"	..	1	2	1	42	121	10	173
21	"R"	..	..	..	1	..	..	37	37
Total in Suburbs ..		..	25	31	21	7,458	2,311	509	10,278
Licences issued for Bombay but the exact locations of which are not indicated.		..	22	3	..	4,337	82	..	4,419
Grand Total ..		..	64	110	91	14,277	7,089	1,016	22,382

Total Licences issued in Bombay State.

N. U.	..	..	119 Licences.
S. E.	..	..	237 "
N. A.	..	..	103 "

N. U. = New Undertaking.

N. A. = New Articles.

S. E. = Substantial Expansion.

N. I. = Not Indicated.

**REPORT OF THE
LAND AND OPEN SPACES AND OTHER COMMUNITY
REQUIREMENTS PANEL.**

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REPORT OF THE LAND AND OPEN SPACES AND OTHER COMMUNITY REQUIREMENTS PANEL.

By Government Resolution, Political and Services Department, No. MIS-1157/76643-B, dated 14th March 1958, Government appointed the Study Group under the Chairmanship of Shri S. G. Barve, I.C.S., to consider problems relating to congestion of traffic, deficiency of open spaces and playing fields, shortage of housing and over-concentration of industries in the metropolitan and suburban areas of Bombay City and to recommend to Government specific measures in this regard. The Study Group held its first meeting on the 21st May 1958 immediately after all the bodies who were requested to nominate members for constituting the Study Group had communicated the names of their nominees to the Chairman. In the first meeting of the Study Group it was considered how the wide range of subjects covered by the terms of reference of the Group should be tackled and after discussing the matter generally it was decided to appoint five panels to consider specific groups of subjects as under :—

- (i) Housing and Housing Finance Panel,
- (ii) Building Materials Panel,
- (iii) Land and Open Spaces and other Community Requirements Panel,
- (iv) Industrial Location Panel,
- (v) Communications and Traffic Panel.

2. Appointment of the Panel.

The following were appointed as members of the Land and Open Spaces and Other Community Requirements Panel :—

- (1) Shri S. G. Barve, I.C.S., Secretary to Government, Convener.
Public Works Department.
- (2) Shri N. V. Modak Member.
- (3) The City Engineer, Bombay Municipal Corporation. Do.
- (4) The Collector of Bombay Do.
- (5) The Educational Officer, Bombay Municipal Corporation. Do.
- (6) The Estate Agent and Land Manager, Bombay Municipal Corporation. Do.
- (7) The Labour Welfare Commissioner Do.

Shri Jasjit Singh, I.A.S., who was appointed as a member of the Panel in his capacity of the Collector of Bombay, was continued as a member even after he relinquished charge of the post of Collector.

The Study Group was originally asked to submit its report to Government within three months of its constitution. As the first meeting of the Study Group was held on 21st May 1958, it could be deemed to have been constituted from that date. The Panels were, therefore, asked to send their reports to the Study Group by the 20th July 1958 in order to enable the Study Group to submit its report to Government in time.

Requests having been received from certain bodies for extension of the time-limit for sending in their suggestions, the time-limit for receiving suggestions had to be extended upto the end of July and the panels were requested to submit their reports by the end of August 1958. This had to be further extended later.

3. Terms of reference of the Panel.

The Land and Open Spaces and Other Community Requirements Panel was asked to consider the extent of areas available for development (both for industries and residential areas), the element of high land prices as deterrent to building activity, control of speculation in land prices, zoning and regulate on of land use, etc. The Panel was also required to assess the present extent of open spaces with reference to the requirements on a reasonable basis in the congested areas of the City. It was asked to take into account requirements of schools, hospitals and other public institutions as well as requirements of spaces for clearance of existing slums.

4. Meetings of the Panel : Proceedings.

(1) The Land and Open Spaces and Other Community Requirements Panel held in all four meetings. At the first meeting held on 18th June 1958, the position regarding availability of open spaces in the City and the need for such open spaces for the various purposes was generally discussed and it was decided to collect information regarding—(i) density of population in the city by Election Wards, (ii) list of open spaces in the Island of Bombay (open spaces not less than 1/2 acre in area) together with the information about ownership by categories viz., whether vesting in State Government, Government of India, Municipal Corporation, Bombay Port Trust, Private bodies, etc., (iii) requirements of (a) open spaces in the City for Schools and Educational Institutions inadequately housed—both public and private—and playing fields for these institutions and (b) of open spaces for Balwadis and for recreat on for the adult population in the congested areas of the city. It was also decided to compile (i) a list of milch cattle stables cleared from the Island since 1946, showing the land released thereby and how it was disposed of, prices paid for it and also, (ii) a list of milch cattle stables still existing in the Island showing the area occupied, the number of animals kept and the programme of shifting them. It was also decided to compile a list of slums in the Island and to collect information regarding the scheme, if any, prepared by the Municipal Corporation for the removal of slums. It was decided to obtain estimates of the price of land in the different areas of the city as well as also the increase in the values of land since 1940. A list of Government open lands outside the Bombay Island was also proposed to be drawn. The City Engineer, Bombay Municipal Corporation, was requested to give a note on the datum or standard of requirements of open spaces for Bombay Island together with a note on the existing provisions regarding Zoning in the City, the adequacy and the present day policy of the Municipal Corporation in enforcing Zoning regulations, etc.

(2) The second meeting of the Panel was held on the 19th August 1958. The Collector of Bombay had, by that time, supplied a large scale map of the Island of Bombay indicating parks and open spaces either unbuilt or built

with katcha structures or hutments. As the map was based on the information compiled by the Collector's office some 3-4 years ago, it was felt that it would not give a correct idea of the position as it stood in 1958. It was, therefore, decided to have, as far as possible, up-to-date information regarding the availability of open spaces either unbuilt or built with katcha structures or hutments. The Collector having expressed the need for special field staff for this purpose, Government was moved to sanction the required staff.

It is also decided to prepare through the good offices of the Education Officer of the Bombay Municipal Corporation a statement indicating the requirements (if possible ward-wise), of the Educational Institutions in the city in respect of play-grounds and also in respect of sites required for construction of buildings or for extensions to the existing buildings used for Educational Institutions.

The Panel reviewed the position regarding open spaces available in the city as revealed by the map supplied by the Collector and took the view that having regard to the great dearth of open spaces in the Island and particularly in the congested areas, the panel would have to consider whether, as and when old buildings fall down or were demolished, attempt should not be made to meet the needs of the city for open spaces and play-grounds in each locality, further construction on the area of open land of the demolished building being allowed only if it was clear that the requirements of the locality in respect of (i) sites for educational institutions, (ii) open spaces for play-grounds and (iii) other public purposes could be met otherwise.

The Public Health Engineer of the Bombay Municipal Corporation indicated that, as a result of a recent survey undertaken by the Municipal Corporation, it was found that a fairly large number of buildings in the Island and particularly in the central region of the Island of Bombay which was most congested, were old and in a dilapidated condition. It was felt that when these buildings fall down a fairly large area of land would be available which could be used for providing open spaces or for making it available for school buildings, play-grounds for schools or for other public requirements.

On the question of providing housing to those dishoused by the demolition or collapse of the old buildings, the Panel thought that while it was desirable to provide housing for such persons as near their old places of residence as possible, it might not be possible to adhere to this principle in many cases in view of the acute shortage of open spaces in the island and that such persons may have to be provided with housing in the northern borders of the island or in the adjoining areas near the northern borders where it appeared large buildable areas were likely to be available.

The Panel also considered the question of compensation for the acquisition of land that would be available after the demolition or collapse of the old buildings in the congested areas and expressed the view that in view of the possible difficulties of the local authority in finding funds for the acquisition of large areas of land for the various purposes, the valuation of land would have to be on a reasonable basis excluding therefrom the element of speculation and of the steep rise in prices of land that had taken place during recent years

The Panel also took note of the tendency on the part of some owners of land to keep the plots vacant and undeveloped and only waiting for an opportunity to dispose of the plot at a high price when prices of land shoot up as a result of development taking place round about the area. In order to discourage such a tendency the Panel thought that it might be necessary to examine the possibility of imposing a differential and heavier municipal tax on such vacant sites. It also thought that it might be necessary to make provision to spread out the payment of compensation for lands acquired by the local authority over a fairly long period in order to enable the local authority to acquire necessary areas of open spaces for the various purposes and not be inhibited in so doing by the limitation of resources immediately available for financial outlay.

It was observed that in the city one came across a number of open plots reserved in layouts of building for play-grounds for children or gardens or open spaces, which were, however, lying neglected and derelict. These areas if properly taken care of could be used as play-grounds or open spaces. The Panel considered that the Municipality should explore the feasibility of taking over under its close surveillance, if not under direct Municipal management, such plots as were reserved as play-grounds in layout of building areas sanctioned by it from time to time.

The meeting also considered whether the land leased to the Royal Western India Turf Club for the Race Course could not be put to a better use than at present. It was felt that the area inside the Race Course tracks could be used as a play-ground for children even under the existing terms of the lease with the Club. The lands outside the Race Course tracks could also be utilised as a park or garden for the benefit of the city's population. The Education Officer of the Bombay Municipal Corporation was requested to consider the desirability of preparing a scheme for the use of the Race Course grounds for the school children.

The Chairman also went round the City and the suburban areas thrice in the months of August and September accompanied by the Municipal Officers to have an idea of the extent of land that may be available or reclaimable either for use as open spaces for or building purposes for the dispersal of population, if necessary, in the suburban area. Shri N. V. Modak, Consulting Engineer; Bombay Municipal Corporation and member of the Panel accompanied the Chairman on one of these occasions to show to him certain sites which the Bombay Municipal Corporation was either contemplating to acquire or had acquired for its housing programme or sites which could be acquired for such purposes. The City Engineer, Bombay Municipal Corporation, another member of the Panel and Shri K. V. Apte, member of the Study Group, also accompanied the Chairman during one of these visits. During the course of his visits to these areas, the Chairman was shown large pieces of land which could be reclaimed or made available either for use as open spaces or for building purposes. This point is further dealt with in the subsequent paragraphs.

The third meeting of the Panel met on the 5th December 1958, to discuss a draft of the report based on the views expressed by the members at the earlier meetings and approved the draft together with the conclusions and

recommendations of the Panel with a few verbal corrections except in the following respects. It was considered that the estimate given by the Education Officer of the Bombay Municipal Corporation needed to be further discussed with her. It was decided that this estimate as well as the requirements of land for additional school buildings and for play-grounds and the basis on which the estimate was framed should be discussed by the Secretary of the Study Group, the Public Health Engineer and the Planning Officer of the Bombay Municipal Corporation with the Education Officer and a revised estimate framed, if necessary. It was also decided to ascertain the basis on which the requirements of land for hospitals and dispensaries was assessed by the Municipal authorities who had furnished the estimate. It was also felt that the Planning Officer of the Bombay Municipal Corporation should be requested to give a note on suitable residential density standards to be adopted for the city and suburbs on the basis of the standards adopted in other countries and to revise, if necessary, paragraph 8 of the draft in the light of these.

The fourth meeting of the Panel met on 24th December 1958 and adopted the report as finally revised on the basis of the scrutiny suggested in the third meeting of the Panel and suggestions received from a member of the Panel.

5. Recent increase in the population of the Island.

Bombay Island extending to the Colaba point in the south and Mahim creek in the north, has been steadily growing in population over the last thirty years. The Statement of population increase (*vide* Appendix I) will show that there has been a phenomenal increase during the period from 1941 to 1958 (only 18 years) i.e. the population of the Island of Bombay has shot up from 14·89 lakhs in 1941 to 31 lakhs (estimated) at the close of 1958 (more than 100 per cent. increase). In its forecast of population, the Bombay Rent Enquiry Committee, appointed by Government in 1938, had estimated that the population of Bombay City by 1958 would be about 17·85 lakhs. The Bombay City and Suburban Post War Development Committee appointed by Government in 1945 estimated that the population both in the city and suburbs was not likely to exceed 30 lakhs at the end of the next 50 years. These forecasts were, however, based on the "normal" increases, as they appeared to these bodies; but those were belied. The growth of the city has been abnormal in recent years for the following principal reasons:—

- (i) Phenomenal development in industrial activity from 1941,
 - (ii) Refugee influx after partition, together with the natural increase of the population,
 - (iii) the general trend of urbanisation in the country, etc.
- The population of the Island itself at the close of 1958 is estimated at 31 lakhs. This gives a gross density of 180 persons per acre. A good deal of the area is of course taken up by business premises, railway yards, salt pans, docks and industries, land for public use like roads, etc. Density for the residential area alone will work out much higher. According to the tentative zoning proposals of the Bombay Municipal Corporation the residential area of the Island would be about 8,274 acres. The net residential density in the proposed residential area of 8,274 acres with the present population would, therefore, work out to 375 persons per acre.

This enormous increase in population has resulted in congestion of traffic deficiency in open spaces, play-fields for schools, over-crowding in trains, overcrowding in houses, creation of slums, etc. This has also constituted an increasingly intolerable burden on the sanitary services and public utilities of the Island.

6. Population of Suburban Areas.

The limits of the Municipal jurisdiction of the Bombay Municipal Corporation were extended once in the year 1950 to Jogeshwari on the Western Railway side and Bhandup on the Central Railway side, and again extended in February 1957 to Dahisar towards the Western Railway and upto Mulund on the eastern side. The jurisdictions of both the Commissioner of Police, Bombay and the Collector of Bombay Suburban District are now co-terminus with that of the extended Municipal jurisdiction. The area of the suburban part of Bombay is 142·81 square miles. Thus the total area of Greater Bombay as of today is 169 sq. miles (Bombay Island—26·19 and extended limits 142·81 sq. miles).

The population figures for the suburban areas of Bombay City are given below :—

Year.	Population of original suburbs.	Population of extended suburbs.
1941	2·05 lakhs	....
1951	5·1 lakhs	1·60 lakhs
1958 (end) ..	10·00 lakhs	2·00 lakhs

It will be apparent from the above figures that a major part of the recent increase in the population relates to the Island area. Thus the population of the Island area increased by 16 lakhs during 1941 to 1958 as against an increase of 7·95 lakhs in the suburban area (as per 1951) jurisdiction.

7. Density of Population.

The appended statement (Appendix II) gives the density of population with reference to the election wards in the Island of Bombay on the basis of population in 1931, 1941 and 1951. The statement will show that the average gross density in the island was 139 persons per acre in 1951 and would be 375 per acre with reference only to the residential zone proposed in the tentative zoning plan of the Bombay Municipal Corporation. It was, however, more than 700 in several localities. The statement will also show an all round increase in population in all wards, the increase being nearly 100 per cent. or more in some localities as compared to 1941. This was the position in 1951. The population of the Island at the close of 1958 is estimated at 31 lakhs

on the basis of the formula adopted by the Director General of Health Services, Government of India, for estimating increase in population. This formula is as under :—

“Formulae for estimating the mid-year estimated population—

$$P_n = P \frac{1951 (2000 \text{ plus } ng.)}{(2000 \text{ minus } ng.)}$$

P 1951 denotes the 1951 census population

n denotes the number of years after 1951 and

g denotes the mean decennial growth rate during the decade 1941-50 and is calculated as

$$g = \frac{P \ 1951 - P \ 1941}{P \ 1951 + P \ 1941} \times 200$$

P 1941 denotes the 1941 census population”.

The figures of births and deaths for the year ending 31st March 1958 for the city and the suburbs were :—

	Births.	Deaths.	Difference.
City	63,949	33,267	30,682
Suburbs	22,612	6,762	15,850
	<u>86,561</u>	<u>40,029</u>	<u>46,532</u>

Thus there is a net annual increase in population of the order of 46,500 persons, even leaving out the influx into the city.

8. Extent of over-crowding in the Island.

On the basis of the increase in population *in the past* (i.e. annual increase equal to the decennial average of 1941-1951) the population of the Island in the next 10 years would be about 50 lakhs. This will give a gross density of 298 persons per acre for the entire area of 26.19 sq. miles and a density of 604 persons per acre for the proposed residential zone of 8274 acres in the Island. As against this it may be pointed out that the Master Planners* proposed a density of 175 persons per acre in the residential areas in the Bombay Island in the first few projects, going down gradually to about 140 persons per acre. The density proposed by the Master Planners did not include park areas which were to be created as each project was built up. In the administrative County of London development plan of 1951 one of the main objectives has been to achieve principal density zones, generally decreasing from the centre, and averaging 200, 100 and 70 persons per acre. These are plot densities, the average density of each residential zone being much below the above figures. Already the present population of Bombay constitutes such a burden on the public utility services of the City and creates

*N. B.—Para 14 (page 11) of the Outline of the Master Plan for Greater Bombay by Shri N. V. Modak and Mr. Albert Mayer.

such problems of traffic congestion, shortage of open spaces etc., that it is fairly evident that the prospect of such an increase in population in the absence of specific measures for discouraging the growth must be viewed with concern and alarm. In fact, the present population itself has reached the stage where it is necessary to take steps to discongest the Island to the extent possible.

According to sub-section (4) of section 379-A of the Bombay Municipal Corporation Act, 1888, a room used exclusively as a dwelling shall be deemed to be "overcrowded" when the number of adult inmates is such that the amount of floor space available for each adult inmate is less than 25 superficial feet and, for each person under the age of 10 years less than $12\frac{1}{2}$ superficial feet or when the air space for each adult inmate is less than 250 cft., two children under 10 years of age counting as one adult. The Bombay Municipal Corporation Act prescribed a clear superficial area of not less than 100 sq. feet for every habitable room but the building bye-laws amended in 1946 prescribed an area of 180 sq. feet for a single room tenement and an area of 240 sq. feet for a double room tenement in chawls. The dimensions of ordinary rooms in the Development Department Chawls range from $16\cdot2' \times 9\cdot9'$ to $17\cdot2' \times 10'$. The minimum and maximum size of a room in the Municipal Chawls (including the Improvement Trust Chawls also) is 110 sq. feet and 176 sq. feet respectively. Private buildings having the same class of tenements rarely, if at all, have rooms larger than this. According to the census of 1931, 74 per cent. population of the city was occupying one-room tenements measuring about 100 sq. feet and the average number of persons in each of them was 4.01. The total number of persons living in rooms each occupied by 6-9 persons, 10-19 persons and 20 persons and over was 2,56,379, 80,133 and 15,490 respectively. Every third person in the city thus lived in such frightfully overcrowded conditions. A sample survey taken during the census of 1951 showed that about 46 per cent. of population was living at the rate of more than 7 persons in single room tenements. Thus, the overcrowding, bad as it was in 1931, shows a further intensification during this period.*

9. Land short for all requirements e.g. open spaces, schools, slum resettlement, additional housing, etc.

This overcrowding in the city has resulted not only in pressure on utility services but also on reducing the rate of available open spaces for the city's population. Even at the time of the preparation of the Master Plan in 1947 by Shri N. V. Modak and Mr. Albert Mayer, it was observed by the Master Planners that the Bombay Island had "a shamefully negligible land of 550 acres of open spaces much of which badly situated with respect to accessibility to those who need it most." The position has not improved since then. These open spaces include about 170 acres in Fort, 21 acres in Kennedy Sea Face area, 28 acres in Malabar Hill area, about 13 acres in Mazgaon (Baptista Garden), 47 acres of Victoria Garden, 60 acres in Mahalaxmi

*A survey of 17,490 residential buildings (48.6 per cent. of the total residential buildings in the island) taken by the Bombay Municipal Corporation in 1956 revealed that out of a total number of 1,04,634 dwelling units in these 17,490 buildings, 131,662 units of 80 per cent. of the whole number are one room units.

area (Willingdon Sports Club and Hornby Vellard area) and 23 acres of Shivaji Park. A statement giving details of these locations and area occupied by parks and playgrounds, both public and in charge of clubs or in private ownership is appended (*vide* Appendix III). This will show that whatever open areas are available are concentrated in certain localities only, many of the locations being remote from the areas needing them most. Many of the schools in the city are without their own buildings being housed in hired buildings and most of them have no playgrounds for the children to play. The open spaces available are concentrated at a few points. From the report of the Education Officer, Bombay Municipal Corporation, we find that less than 25 per cent. of the Municipal Primary Schools in the Island of Bombay are housed in their own buildings.

As many as 330 municipal schools in the city and 140 in the suburban areas are occupying rented buildings. Besides, the schools are reported to be in need of over 6,000 additional class rooms.

Similarly, of the private primary, pre-primary and secondary schools in the island, 144 are in rented buildings and of 116 such schools in the suburban areas, 49 are in rented premises. These schools require 1,928 additional class rooms of which as many as 1,418 are required in the island limits. Hardly any school in the city has a good compound or a playground. This is so in the central part of Bombay and particularly in B, C and D Wards, where there is not a single good sized playground in or about these wards with the exception of Northbrook Garden along Grant Road. Almost all rented premises used by the Municipal Schools are unsuitable due to odd sizes of rooms, insanitary conditions, bad lighting, etc. At present, as many as 50 to 55 pupils are accommodated as a rule in a room of 400 sq. feet in area as against 42 to 45 pupils for whom this area is considered necessary.

10. Space requirements of Educational Institutions.

A statement showing the requirements of space for construction of school buildings and open spaces for play-grounds for pre-primary, primary and secondary schools as prepared by the Education Officer, Bombay Municipal Corporation, is appended (*vide* Appendix IV). The statement will show that the requirement of land for these schools and for playgrounds for them immediately and in the course of the next 10 years would be as under :—

	Immediate requirements.			Future requirements.			Grand Total.
	Schools.	Play-fields.	Total.	Schools.	Play-fields.	Total.	
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Island ..	115·16	354·79	470	46·07	130·34	176·41	646·41
Suburbs ..	57·25	229·83	287	151	510	661	948

Thus an area of 646 acres would be required for primary and secondary schools alone. The basis on which the estimate is framed is at the rate of

2 sq. yards per pupil for school buildings in the island limits and 3 sq. yards per pupil in the suburbs and a slightly more liberal scale of 4 sq. yards per pupil in the extended suburbs where sufficient land would be available. The estimate of additional class rooms required is based at the rate of one class room for every 40 pupils. At present a number of schools are being held in double sessions. In estimating the requirements for these schools a single session has been kept in view. A word may be said here about the shift system in primary schools. The Panel is informed by the Education Officer, Bombay Municipal Corporation, that about 50 per cent. of the Municipal Primary Schools meet in double sessions under which children of the Upper Primary Standards attend school from 7-30 a.m. to 12-50 p.m. with a 50 minutes recess at about 10-10 a.m. ; those in the Lower Primary Standards attending school from 1-10 p.m. to 5-50 p.m. with a recess of 30 minutes at about 3 p.m. These school hours are odd for both categories of children as the Upper Primary Standard pupils have to leave home very early at about 7 a.m. when it is not possible for them to have a full meal, with the result that they come to school almost hungry and cannot apply properly to their studies. It is also not possible for them to remain at school in such a condition for about five hours and they have, therefore, to be given a long recess of about 50 minutes at about 10-10 a.m. to enable them to go home for their meals. As they have to leave home early in the morning they cannot also help (this is particularly upsetting in the case of the more grown-up age groups among girls) their parents in their domestic work. Again when they return from school at 1 p.m. their parents are away at work. Thus they are deprived of not only the care of the parents in the mornings but are again left alone and unchecked in the afternoons to loiter about in the streets neglecting their own studies distracting other students and becoming generally a nuisance to locality.

The younger children similarly are required to attend school at about 1 p.m. an odd hour again for them to be at school. When they find their elder brothers and sisters returning at home, at that time, they too are inclined to stay away from school. Even at school they cannot attend to their lessons properly at this hour as they come to school soon after meals and are inclined to be sleepy.

Due to these odd hours, it is also not possible to attend to the extra curricular activities of the school ; nor is it possible for the school authorities to complete the school curriculum in the time available for academic instructions in schools meeting in double sessions. It is understood from the Education Officer, Bombay Municipal Corporation that about 50 schools are held in three shifts, the afternoon session being split up in two shifts for the Lower Primary Standards in some localities, where there is a great dearth of school buildings. These double shifts in the afternoon are, no doubt, being abolished wherever it is possible to secure accommodation. This, however, indicates the extent of scarcity and dearth of space for school buildings.

Altogether it would appear that the double shift system is highly inconvenient to the parents, school children as well as the school authorities. The Panel understands that it is disapproved of strongly by all educationists. While it is true that a double shift system prevails, for several reasons, in many other

towns in our country as well as in many other countries of the World, it could hardly be gainsaid that, in the special conditions that obtain in Bombay City as described in the foregoing paragraphs, it ought to be a desideratum of policy to put an end to the double shift system as soon as practicable. In the European countries in which the double shift system prevails, probably the standard of parental attention to school children is higher than with us; particularly so in the family circumstances prevalent in Bombay City where quite frequently both the father and mother have to go to work to win the family bread. Besides, the fact that in such schools in European countries generally a mid-day meal is provided to the school children must make a great deal of difference to the difficulties arising out of the double shift system.

We do not expect that it would be possible in the immediate future to undertake a wholesale abolition of the double session altogether, having regard both to difficulties of finance and space. Nevertheless, in the above circumstances we have thought fit to estimate our requirements of space on the basis of single sessions.

For a playground, an area of $2\frac{1}{2}$ sq. yards per pupil in the island and 4 sq. yards per pupil in the suburbs and extended suburbs has been proposed. We realise that it is extremely difficult to make space available in the island and particularly in the congested areas of the island where it will be difficult, not only in view of the financial implications involved, but for sheer want of space. We would, therefore, advocate the possibility of providing common playgrounds for groups of schools in each locality. This would result in a reduction of the overall requirements of space for playgrounds for these schools. The $2\frac{1}{2}$ sq. yards per pupil proposed in the island is estimated after taking into account the possibilities for such intensive use of playground space.

Playgrounds for secondary school children, who want more space for playing games like foot-ball, cricket, etc., has been proposed on a slightly more liberal scale, viz., 10 sq. yards per pupil in the island limits and 20 sq. yards per pupil in the suburbs.

It is understood that about 30,000 to 40,000 additional pupils of school-going age who are not at present attending the primary schools will come to school if compulsion is rigorously enforced. In addition, it is expected that about 5,000 more pupils will be admitted to schools annually during the next about three years, after which it is assumed that the number of school-going children in these schools will remain static if not decrease if the house building activity is mainly confined to the suburban area resulting in a shift of population from the city to the suburbs.

Similarly, it is expected that in addition to about 1,04,256 children who are attending secondary schools at present, an additional number of about 60,000 pupils would attend schools in the island. When this number is reached the total number of school-going pupils in secondary schools would be about 1,64,000 which should ordinarily be the school-going population for a total residential population of about 31,00,000 at the rate of little over 5 per cent. of this population. Once the measures for the discongestion of the island come into force and the population of the island ceases to increase thereafter, no more increase in the school-going pupils is expected in secondary schools. For

this additional number of about 60,000 pupils in the island an area of 25 acres for schools and 104 acres for play-fields at the rate of 2 sq. yards for school buildings and 10 sq. yards for playgrounds would be required. In the suburbs, for the assumed population of 25 lakhs, the number of school-going children at the rate of 5 per cent. of this population should normally be 1,25,000 ultimately, as against which the number attending secondary schools in the suburbs at present is reported to be about 35,425. Provision has, therefore, been made for an additional 93,000 pupils ultimately in the suburban areas for which on the basis of 3 sq. yards for school buildings and 20 sq. yards per pupil for playground, an additional area of 58 acres for schools and an area of 386 acres for playgrounds would be needed.

In addition, to the above, an area of about 87 acres for construction of buildings, 4 acres for hostels and 24 acres for play-fields for colleges is estimated to be required.

11. Slum areas in the City.

The island of Bombay is also strewn with a number of slum areas which have added to the congestion. A statement of slums in the island obtained from the Municipal Corporation is appended (*vide* Appendix V). A total of 144 slums have been listed. They house a total of 83,451 families. The population of 4,15,875 lives in these slums. Of the 8,951 buildings in these slums, 7,288 buildings are pucca structures, 1,663 being temporary sheds and 4,238 are only huts. The population of 4,15,875 on an area of 877 acres gives a density of 474 persons per acre. Density in some of these slums is as high as 1,175 persons per acre. These slums, which have not even the minimum amenities of life necessary for the maintenance of physical and social health, are a menace to the public health not only of the inmates of the slums but also of the city as a whole. The Bombay Municipal Corporation has it is understood, a programme for clearance of these slums and it has made a beginning by undertaking a slum clearance scheme in a slum locality known as Kamathipura. A programme of slum clearance covering an outlay of Rs. 140 lakhs to be executed during the Second Five-Year Plan period has been accepted by the Government of India. This includes removal of slum on municipal as well as private lands involving construction of 2,342 new tenements in the Plan period. A further programme of slum clearance and construction of tenements of Rs. 80 lakhs for the Second Plan period has also been submitted by the Municipal Corporation to the Government of India for their sanction. If these slums are to be cleared, and it is necessary to clear them as soon as possible, an area of about 1,386 acres will be required for rehabilitating these 4,15,875 slum dwellers on the basis of a density of 300 persons per acre. It is expected that storeyed buildings will be built up on such plots and that ground floor structures will be replaced by multi-storeyed buildings reducing thereby the land occupied at present by the structures in the slums. Apart from rehousing slum-dwellers, we consider that a portion of the land in these slum areas when rebuilt should be reserved for essential community purposes for which extremely inadequate land is available in the island. We are suggesting elsewhere appropriation of privately owned open or scarcely-built up plots towards making up the deficit of such requirements. Obviously the same rule should apply to the land-lords of slum plots. This will

no doubt result in the shifting of a portion of the population of slum dwellers from the original place of their residence and their rehousing in areas not in close proximity of that location. In view however, of the peculiar position of Bombay City where extreme congestion and paucity of open land exists in the island area we feel that just as for the rest of the population we have to look for area for "deficit housing" principally in the suburbs, likewise in the case of slum dwellers a proportion of them must expect to be housed in suburban structures. We suggest, therefore, that about 50 per cent. of the area occupied at present by these slums should be appropriated as and when it becomes available towards essential community requirements viz. for recreation facilities, school buildings, school playgrounds, hospitals, etc. This will leave an area of about 440 acres out of the 877 acres of slum areas. This area of 440 acres will make it possible to rehabilitate a population of 1,32,000 slum dwellers on the basis of a density of 300 persons per acre, leaving a population of 2,83,875 slum dwellers to be rehabilitated. These we consider should be housed in the suburban areas, as many as possible being rehabilitated on lands in the periphery of the island. Ordinarily it would be necessary to find out an additional area of 946 acres if these slum dwellers were to be housed in the island limits only. As pointed out in a subsequent paragraph it is extremely difficult to procure so much land within the island limits for this purpose. We consider that in the suburban areas the density should normally be 150 persons per acre while it may be slightly higher say 200 persons per acre on the periphery of the island. For rehabilitating the surplus population of 2,83,875 slum dwellers of the island, it would therefore be necessary to provide an additional area of about 1,420 acres in the immediate vicinity of the island limits.

From the list of slums appended to the report and further list of unbuilt or partially built slums in the island supplied to us by the City Engineer, Bombay Municipal Corporation, it appears that fairly large areas under slums are located in the outskirts of the island to the North. The area of unbuilt and partially built slums in ward* No. 34 in the extreme north of the island, comprises an area of 378 acres and contains a slum population of about 46,000 persons. The fact that a high proportion of the slums are concentrated in this area makes the problem of resettlement somewhat easier than it would be otherwise. We expect a considerable fresh area to become available just across Mahim Creek and Sion and the relocation of slum dwellers in this area will not have taken them far away from their original residences at any rate so far as this slum population is concerned.

12. Requirements of space for housing.

There are about 4,08,097 tenements of all categories in the Island of Bombay and about 1,65,576 tenements in the suburbs. This accommodation may be said to be enough for about 28 lakh persons. In the island alone, there is a population of 31,00,000 out of which the population of 4,15,875 of slum dwellers has been taken into account in the previous paragraph. For the remaining population of about 27,00,000 it would be necessary to have about 5,40,000 tenements, thus leaving a deficit of 1,32,000 tenements for a population

*Mahim-Dharavi area.

of about 6,60,000. This additional population will require an area of about 2,200 acres of land at the rate of about 300 persons per acre. This will be in addition to the space required for rehabilitating the slum dwellers who cannot be accommodated in the original slums as indicated in the previous paragraph.

Similarly, in the suburbs there are only 1,65,576 tenements for a population of 12 lakhs estimated at present. According to the formula of decennial increase in population it is expected that the population of the suburbs will be well over 25 lakhs by 1968. For this population alone, it will be necessary to provide about 5,00,000 tenements as against which there are only 1,65,576 tenements at present. It will thus be necessary to provide about 3,34,000 additional tenements to house adequately the estimated population of about 25 lakhs, even apart from the additional tenements that will be required for housing the population likely to shift from the island to the suburbs. For these additional tenements alone an area of about 11,000 acres will be needed in the suburban areas of Greater Bombay on the basis of a density of 150 persons per acre.

13. Requirements of hospitals.

From the information received from the Executive Health Officer, Bombay Municipal Corporation, it appears that the existing Government, Municipal, as well as private hospitals provide about 5,700 beds in the island and about 1,600 beds in the suburbs. From a discussion with the Executive Health Officer, of the Bombay Municipal Corporation, it appeared that, in view of the peculiar position in which Bombay city is placed and the facilities for specialist treatment available in Bombay a fair assessment of needs would be to estimate them at the rate of 4 beds for a population of 1,000 persons. At this rate it would be necessary to provide hospital accommodation for about 12,000 beds in the island alone, as against which provision for about 5,700 beds exist in the hospitals in the island leaving a deficit of about 6,300 beds. For the suburban assumed population of about 25 lakhs it is considered necessary to provide at least 7,500 beds at the rate of 3 beds for every 1,000 persons, as against which about 1,600 beds are now provided in the existing hospitals. For the additional 6,300 beds required to be provided in the island limits, it is considered necessary to provide land at the rate of 60 sq. yards per bed (this is inclusive of space required for providing housing within the hospital compound for $\frac{1}{3}$ rd of the essential staff including resident doctors, nurses ward boys, class IV staff, etc.) at which rate an area of 80 acres would be required. It is understood, however, that some of the existing hospitals have already in hand, at present, an expansion programme which is in the process of execution and that some other hospitals can provide additional room for expansion. In view of this we consider that an area of about 50 acres should be adequate for additional hospital accommodation in the island.

In the suburbs, it is considered that provision for land should be made on a slightly more liberal scale of about 100 sq. yards, per bed, at which rate it will be necessary to provide about 120 acres in the suburbs for the provision of additional medical facilities for the expected population of 25 lakhs.

14. Standard for open spaces.

Laying down standards of open spaces required for different purposes for the highly built up areas of the city is a very difficult proposition. For instance, in London the County Council in 1945 adopted a standard of 4 acres per 1,000 population *plus* 3 acres outside the Administrative Country which has an area of 117 sq. miles. It has also decided as its immediate objective to provide 2½ acres per 1,000 population in those areas where the provision falls short of that figure. For these standards, London, with its population of about 33,50,000 persons would require about 8,369 and 13,392 acres respectively, i.e., about 11.2 per cent. and 17.9 per cent. of its total acreage. On these standards the City of Bombay with its population of about 31 lakhs and an area of 26.19 sq. miles would require 7,750 acres (12.10 sq. miles) and 12,400 acres (19 sq. miles) respectively of its areas as open spaces, which amounts to an absurdity.

However discouraging the difficulties may be, if Bombay's future development is to proceed on a planned basis, some standard for open spaces in the city has to be adopted, to be achieved in the foreseeable future, say over a period of 20 years or so.

The difficulties are not so very great in the suburbs and the wooded hills in the Salsette Island offer excellent opportunities for the creation of a system of parks. There is a large amount of virgin land which could be prevented from being built over and the rate of land for acquisition is also not high.

The Master Planners considered reservation of an area at the rate of 4 acres per thousand necessary for the population of the City. With the ultimate thinning of the population in the island to 13 lakhs as contemplated by them an area of 5,200 acres was necessary in their computation. In view, however, of the negligible area of open spaces available in the Island and the prior claim of housing on vacant sites, they proposed reservation of an area of 2,300 acres ultimately in the island limits. The population of the Island instead of thinning down to the figure of 13 lakhs as contemplated by the Master Planners has gone up to as much as 31 lakhs at present and there is no immediate prospect of the population coming down in the immediate future. This state of affairs affects the issue in two ways; while need for new open spaces has increased, the possibility of getting them has further dwindled. Having due regard to all relevant factors, however, we consider that less ambitious targets must be set if we are to aim at a realistic rather than a merely academic programme.

As regards the Greater Bombay area, the Master Planners considered that open spaces at the rate of 4 acres per thousand population should be adequate. On this basis an area of about 10,000 acres (*plus* some area to meet the deficit of such open spaces in the Island) would have to be provided in the suburban areas of the city for the assumed population of 25 lakhs in the suburban areas.

15. Space for Industries.

We also find from the report of the Industrial Location Panel that provision will have to be made in the Island itself for the location of 20 industrial estates in the Industrial Zone. Each industrial estate is estimated to require about

3 acres of land. For these 20 industrial estates, it will, therefore, be necessary to provide about 60 acres of land in the Island limits. In the suburban areas it has been suggested that in all provision should be made for about 25 industrial estates to be located in these areas at the rate of about 5 acres of land for each estate. It has also been suggested that provision should be made for about 10 industrial areas each measuring about 10 acres in the suburban areas. This will require another 100 acres in the suburbs.

16. Requirements of Open Space in the Island of Bombay.

It will appear from the above that, in a nutshell, the requirements for space computed for the purposes mentioned above would be as under:—

Requirements of space in the Island of Bombay :

(for the next about ten years)

	Acres.	Remarks.
For parks, gardens, playgrounds, green belts, etc.	3,000	
For industrial estates ..	60	This will be required in the Industrial Zone.
For housing those evicted from slum areas	946	
For educational institutions, Balwadis, etc.,	470	
Area required to be provided for new schools for additional pupils.	176	
For hospitals ..	50	

N. B.—This budget of land requirements in the Island does not include the land for building the 1,32,000 additional tenements necessary for the adequate housing of the present island population.

Some additional land in the industrial zone would be needed for exceptional industrial locations which it may be found necessary to allow within the island limits. Altogether on these calculations, an area of more than 4,600 acres would have to be provided in the island as against the area of 8,274 acres of the proposed residential zone. Thus it is obviously impossible to provide for all this area within the island limits only, as the additional land required is more than half of the total land available in the residential zone. This reinforces the conclusion, even otherwise manifest, that it is essential (a) to devise ways and means to discongest the city and (b) to take special measures to provide for the additional land necessary even on the minimal calculations. The bulk of the remaining land required for these purposes would, therefore, have to be provided outside the island.

It is necessary, therefore, to fix an order of priority in the various requirements theoretically estimated.

The land required for provision of school buildings or for play-grounds must necessarily be provided within the close proximity of the residential

areas for the benefit of the population for which these are required. Similarly for hospitals also the land required must necessarily be in close proximity of the residential areas. For the schools an area of about 470 acres is required immediately and of another 176 acres during the next 10 years as and when the number of children attending schools goes up from year to year and the need for opening more schools arises. For hospitals an area of about 50 acres would have to be provided in addition on a priority basis.

Considering the requirements for parks and gardens and playfields etc. and the limited area (8,274 acres) that would be available in the proposed residential zone a large measure of the requirements in respect of parks and open spaces would have to be provided outside the island and it will be necessary to content ourselves by providing the minimum area for this purpose within the island limits. In view of the acute dearth of space available in the island limits realistically speaking we feel it would be ambitious enough to aim at a further area of say 500 acres to be provided in the next ten years within the island limits in addition to the open spaces already available. For meeting the bulk of remaining requirements it will be necessary to look for other areas outside the island limits. Likewise the major part of the additional housing for the present island population must be provided by housing activity in the suburbs. To consider one category of such additional housing although it would be necessary to provide some areas within the island for a proportion of the population of slum dwellers and for those who are deprived of their residences by the collapse of the old buildings occupied by them the additional accommodation will have to be looked for in the main outside the island limits.

A number of industries have been occupying valuable space in the residential areas in the island. Under the Zoning regulations these must be shifted elsewhere. We realize that it will be difficult in many cases to seek a solution in terms of compelling them to shift outside the island. Steps must, however be taken to facilitate and assist such of the industries as are willing to shift outside the island. There are we are told about 4,000 such factories or industries established within the island limits. While it may be possible to accommodate half the number of such units by providing separate multi-storeyed industrial estates in the proposed Industrial Zone in the island the remaining units must perforce be induced to shift to locations outside the island as and when opportunity occurs.

Rail/Bus concession for population shifting to suburban areas.—As it may be difficult for some of the slum dwellers to shift to areas further away from their place of earning, it may be necessary to provide concessional rail/bus tickets to mitigate the hardship that may be caused to them by having to reside further away from their place of work.

17. Requirements of land in the suburban areas.

As stated above we consider it necessary to reserve an area of about 10,000 (15.6 sq. miles) acres as open spaces and green belts etc. in the suburban areas of the city to provide adequately for the requirements of the estimated population of 25 lakhs in the suburbs and to make up for the shortage of such open spaces in the island. For accommodating the anticipated population of

25 lakhs it would be necessary to provide residential area of a little over 16,000 acres (25 sq. miles) in the suburbs. It would in addition be necessary to provide for the slum dwellers resettled in the suburbs the housing necessary to make up the deficiency of tenements in the island for its population and other "overspills" from the island to the suburbs. In addition it may be necessary to provide adequate area for the industrial estates proposed to be reserved in the suburban areas of the city and for large industries located in the island which may desire to shift to the suburbs in course of time.

Similarly adequate areas of land will have to be earmarked and reserved in advance of development for recreation purposes such as open air theatres, museums, fair grounds, stadia, circus sites, etc. as also for burning and burial grounds and crematoria.

18. Availability of land in the suburbs.

From the tentative zoning proposals of the Bombay Municipal Corporation it appears to us that out of the 142 sq. miles of total area available in the suburbs an area of about (i) 52 sq. miles for residential locations, (ii) about 12 sq. miles for industrial units, (iii) about 10 sq. miles for Government and Public use, (iv) about 21 sq. miles for green belts would be available in addition to about 18 sq. miles of low lying marshy land, 6 sq. miles for aerodrome and about 8 sq. miles of hilly areas, etc.

It appears, therefore, that here, in the suburbs, no difficulty is likely to be experienced in the provision of spaces for various "overhill" requirements of the island and the local requirements of the suburban areas. Here we also have the National Park which has an area of 5,152 acres. The Aarey milk colony which accommodates about 15,000 milch cattle has also an area of about 3,169 acres. These and in particular the National Park will provide recreation facilities for the city and the suburban population wanting to have an outing on Sundays and holidays. It will of course be necessary in addition to provide locally open spaces in all suburban residential localities for the daily recreation of the local residential population and for use as play fields.

Since discongestion of the island is a clear and inescapable desideratum of Bombay's town planning, it becomes pertinent to investigate more closely what areas are available proximately for accommodating such overspill. So far as housing or building sites are concerned, the following possibilities hold out good promise in our opinion for the immediate future.

Government has taken up the project of constructing two Express Highways—one on the west running east of the Western Railway and parallel to it from Bandra to Ghodbunder and another east of the Central Railway from Sion to Thana. On both sides of the Western Express Highway alone, according to the estimate of the Municipal officers, an area of about 6,000 acres suitable for residential development would be almost immediately available. Similarly large areas of land would be available after reclamation along side of the Eastern Express Highway also. These areas could be developed presently and made available over and above the ready land already in the suburbs for meeting the requirements of building sites in the suburban areas of Greater Bombay.

19. Reclaimable sites.

We also give below a list of some of the sites on the northern borders of the island where large pieces of land can be developed and made available for use as housing sites or open spaces or for some of the other community requirements for the relief of the island population.

(i) *Area bounded by Western Railway on the west, Santacruz Air Port on the north, Bombay-Agra Road on the east and Mahim-Dharavi Road on the south (about 2,135 acres).*—Here an area of about 2,135 acres (415 acres south of Mahim creek and 1,720 acres above the Mahim creek) would be available with an average filling of about 4 feet—5 feet. The Bombay Municipal Corporation, it is understood, has before it for consideration a scheme for making this area available for housing purposes by the Dutch method which dispenses with full filling. The scheme contemplates employment of pumps for pumping out water at high tide. The Bombay Housing Board has already constructed some buildings in this region and the Government of Bombay has also constructed quarters for their class III and class IV servants in the area north of the Mahim creek.

(ii) *Creek area between Wadala and Chembur.*—This area measures about 2,365 acres and contains several salt pans. On an average it requires filling up to a depth of 2 feet to 5 feet. From the discussion the Chairman had with the Deputy Salt Commissioner, Bombay, it appeared that the salt pans in this area manufacture about 8 to 10 lakhs maunds of salt which is only about 10 per cent. of the Bombay-Suburban production, the total production for Bombay area being about 150 lakhs maunds. The removal of these salt-pans will not make any significant or irreplaceable difference to the country's salt production. Salt pan lessees are licensed by the Salt Department for periods corresponding to those for which land has been leased to them by Government. Salt is prepared from high tide water entering into the pans through the creek twice a month. The Panel was given to understand that sewage water contaminates the salt pans as the drainage water runs into the creek and the creek water at the high tide is utilised for manufacturing brine. It would appear that even apart from the undesirability of using scarce land in the proximity of the congested urban conurbation of Bombay for salt manufacture, on the grounds of the health hazard itself, the removal of the salt-pans was justifiable. It would seem that large portions of these lands may not require much of filling; if only the creek water was prevented from entering into these areas by constructing some sort of a retaining wall, the area could be reclaimed. An area of about 2,365 acres in this region can thus be developed without much difficulty and it would not significantly affect the production of salt.

In addition to the above some of the areas suggested by the City Engineer, Bombay Municipal Corporation for reclamation are indicated below :—

- (i) Area of about 150 acres west of the Mahim Causeway south of Bandra ;
- (ii) Area of about 275 acres near Vikhroli ;
- (iii) Area of about 300 acres near Bhandup Railway Station and about 300 acres near Mulund Railway Station ; and
- (iv) Creek land measuring about 400 acres north of Andheri-Versova Road.

According to the City Engineer, Bombay Municipal Corporation, the above Areas can be reclaimed by filling them up to a depth ranging from about 3 feet to 5 ft.

Similarly it would be possible to reclaim about 575 acres in the Back-bay Reclamation area and about 129 acres west of the Hornby Vellard near the Race Course.

20. Availability of land across the Thana Creek.

Large tracts of land could be made available for development in the suburban areas of the city and it would be possible, in our opinion, to make sufficient land available in the suburbs for the various requirements of the island mentioned in this report. It would, no doubt take some time before all these areas are developed and made available for use. Similarly large areas of land admeasuring about 25 sq. miles would be available across the mainland east of the Thana creek in the Thana-Belapur region up to the range of hills beyond Thana-Belapur road, if a rail-cum-road bridge is constructed as recommended by the Communications and Traffic Panel. This area in the Thana taluka is readily available for development. We have enquired and have been informed that the problem of water-supply to this area is fairly easily tractable. Further east, beyond the range of hills in Thana district and down south in the Kolaba district fairly large areas would be opened out in the Thana taluka of the Thana district and Panvel taluka and Uran Mahal of the Kolaba district for development, if the rail-cum-road bridge project materialises.

21. Need for planned development in the suburban areas.

As stated above, the land available in the suburban areas of Bombay would, if and when developed, be found adequate for various purposes. It would be necessary, however, to take steps to ensure that sufficient buildable land is ready and available as and when required and that blocks of such buildable land are developed in advance for making them available for various purposes so that the suburban areas may be developed on proper lines and that haphazard growth of the suburban area is checked. It will be necessary, for this purpose, to prepare plans in advance for the development of large blocks of land by the local authorities so that the city as it grows in the suburbs develops on proper lines with proper lay-out of roads and with adequate reservation for various community uses. For instance, it would be necessary to provide sufficient land for open spaces and play fields in the suburban areas as and when these areas develop. It would also be necessary to reserve adequate areas for school buildings, for play-grounds and for hospitals, markets, etc. in proper locations so that haphazard growth is not permitted and the suburban area develops in a planned manner.

Following the application of the Town-Planning Act, 1954, the Municipality will now be required to prepare a detailed development plan for all the area in its jurisdiction and it would seem that the means are now readily available for enforcing and controlling in the above manner the development of the suburbs.

22. Shifting of milch cattle to suitable locations.

We may advert to the problem of providing space for the maintenance of milch cattle in suitable stabling conditions. Almost all the milch buffaloes in the island have been removed and very few that remain can, it is understood, be accommodated at the Aarey Milk Colony. In the suburbs, however, except for the cattle stabled at the Aarey Colony, the milch cattle stables are generally being maintained in highly insanitary conditions. The milch cattle owners dump the cattle dung indiscriminately and in spite of vigorous prosecutions under the Municipal Act, it has been difficult to check the dumping of cattle dung at unauthorised places. There are about 54,000 milch cattle in the suburban areas of Greater Bombay and more are being added each year and unauthorised and insanitary ramshackle stables are cropping up constantly in the suburban areas. The Milk Department has a scheme for starting a second settlement of milch cattle which would accommodate about 17,000 cattle in all, of which 10,000 to 12,000 would be in milk and 5,000 to 7,000 would be dry. This second settlement is likely to be established outside Greater Bombay limits. It is considered that, apart from the 15,000 milch cattle which may ultimately be housed at the Aarey Colony, provision will have to be made for keeping a further number of 10,000 milch cattle on a permanent basis under suitable stabling conditions in the suburbs. These cattle would together serve as a stand-by for meeting the needs of the town in case of failure or interruption of supplies from outside sources during natural calamities or in emergencies. It will also be necessary to keep as an interim measure, the remaining 40,000 cattle in suitable locations in areas specially reserved for them in the suburbs, until it is possible to make other arrangements for the supply of milk to the city. Indeed, during this interim period arrangements will have to be made for keeping the entire cattle population of 50 to 60 thousand under suitable sanitary conditions. Provision should also be made by the local authorities for reserving areas for dumping cattle dung in suitable locations. The requirement of land for these purposes is, however not a serious problem. An area of 1,000 acres will be required according to the Milk Commissioner for the adequate stabling of this cattle population and its ancillary requirements. Suitable land is available to a sufficient extent in the suburbs to permit of this. The problem is, therefore, simply one of municipal regulation and control.

While it would not be difficult to secure the necessary land in the suburbs for the suitable stabling of the milch cattle population—interim of about 55,000 and eventually of 10,000 head of cattle,—the Panel would suggest that the following may also be considered.

The area of the Aarey Colony exceeds 3,100 acres. As at present, it provides accommodation for 15,000 cattle. It seems, however, that there are large areas of surplus land available in the colony wherein it may be possible to accommodate at least some of this additional cattle population under suitable conditions. In the Aarey Colony proper, Government have themselves undertaken at the expenditure of public funds full provision for the stabling of the cattle, the housing of the cattle owners and attendants, paddocks and various other auxiliary arrangements. It may be possible to widen and diversify this experiment by allowing in a suitable sector of the Aarey Colony

area milch cattle to be kept by their own owners, subject only to minimum hygienic and sanitary regulations, more or less on the lines on which it is recommended above that the Municipality may provide for the location of stables. Such arrangements would obviously entail a great deal less capital expenditure on buildings and other services than in the case of the Aarey Colony proper. The cattle owners could be given the option of selling their milk at the prescribed rates to the Aarey Colony Dairy or vending it on their own. The proximity of the Aarey Colony Dairy would itself presumably be a strong incentive towards such cattle-owners selling their milk to the Dairy instead of transporting it on their own over considerable distance to the City. Apart from helping to solve the problem of private milch-cattle stables in the suburban area, such an arrangement might open out possibilities of bringing a larger supply of milk under regulation in the City and would presumably thus subserve the objectives of Government in setting up the Aarey Colony and in undertaking other arrangements for procurement and distribution of milk to the City of Bombay.

As at present, the Aarey Colony area affords a very welcome open space and recreational facilities to the public of Bombay City and the authorities of the Milk Department must be complimented on the way they have made this available. A reservation of some portion of the area of Aarey Colony could well be made for the above-mentioned purpose without derogation either to the main purpose of the Colony or to these recreational facilities.

23. Establishment of an additional business centre.

We also feel that one of the important measures which would help in discongesting the island of Bombay and relieve to some extent the flow of traffic towards the south, would be to establish a large commercial and business centre to the north of the Island in the Bandra-Kurla region as an alternative to the present centre in the south of the Island. Development of such an alternative centre, somewhat on the lines of what Connought Circus and its environs are in New Delhi, as an addition to the original commercial and business centre in old Delhi, is highly desirable. The area north of Dharavi bounded on the west by the Western Railway line, on the north by the Santa-cruz Air Port, on the east by Bombay-Agra Road and on the south by the Mahim creek, if reclaimed, together with some of the open areas immediately south of Dharavi would probably furnish the best location for such an alternative centre of business. This commercial and business centre would be conveniently located for the traffic coming from the north, south and the east. As elsewhere stated, the Bombay Municipal Corporation has also prepared an outline of a scheme for reclaiming and developing this area after discussion with the Dutch Experts and it is understood that the Municipality proposes to take up the scheme by stages.

It is also understood that the Bombay Municipal Corporation has long had under contemplation the shifting of the present slaughter house at Bandra located immediately to the south-west of this area to a new site at Devnar. We suggest that the shifting of the slaughter house may be expedited. The land released by the shift may possibly be found suitable to make an immediate beginning towards establishing eventually a business-*cum*-commercial centre in this area.

We also consider that in addition to the business centre proposed in the Bandra-Kurla region adequate area should be reserved under the development plan which is under the preparation of the Bombay Municipal Corporation for the eventual establishment of another marketing centre further north in the Salsette Island.

24. Provision of spaces for various Community uses in the Island.

The bulk of future developmental or house building activities would have to be in the suburban areas only as it is not possible to allow any expansion or development in the island limits which, with its present population of 31 lakhs, has reached and indeed exceeded the saturation point. As it is, it is quite impossible to provide amenities upto a reasonable standard for the existing population of 31 lakhs in the island. Any fresh house building activity within the island must clearly be restricted to the marginal and unavoidable requirements.

We have set out above the requirements of additional land for various purposes in the island and shown how even on minimal standards, these requirements are difficult to meet. In the suburbs, we have seen that sufficient land is available for the suburban needs as well as for the overspill requirements of the island. Nevertheless, assuming even the maximum overspill of the island into the suburbs and the full development of peripheral lands, it is obvious that there is an irreducible core of requirements of the island population which must anyhow be met. We must now consider how this space may be procured.

For certain purposes, e.g., schools and school playgrounds, inescapable housing needs, minimal open spaces, etc., land will have to be provided in the island itself.

This would be a difficult problem to tackle but does not appear to us insurmountable or altogether insoluble. We append to this report a list of unbrilt or partially built areas in the Island of Bombay supplied by the Collector of Bombay after a field survey by special staff sanctioned for the purpose at his request (*vide* Appendix VI). A survey taken by the Bombay Municipal Corporation recently has also revealed that the number of premises built up to the ground and the ground and one storey level or premises not fully built up in the island is very large. This is more so particularly in the B, C, D, E, F and G, wards where it avaries from 24 to 90 per cent. In a city like Bombay where land values are so high and where several areas are badly congested, it would appear anomalous to allow such uneconomic structures to continue to occupy valuable space. If and when these ground and one storeyed structures are replaced by multi-storeyed structures it would be possible to release some of the space occupied by these structures at present, for various community uses mentioned above.

We are also told that about 18,000 out of 36,000 buildings in the island are old ; some of them may collapse or may have to be pulled down during the course of the next 15 years. One thousand of these buildings are due for immediate demolition and 10,000 during the next 10 years and 7,000 after 15 years from now. After the collapse of the buildings, it would be possible to make available the area that may be required in the various localities for various public

uses and to allow building construction only in those areas where after meeting the need for space for these public requirements, opportunity will have to be taken to ensure that the need for space for various public community requirements like open spaces for recreation, school buildings, school play-grounds, hospitals, etc. is adequately met before building construction is permitted. It should be possible in our opinion by proper planning and by proper watch on the future building activity to ensure this and we believe that it would not be difficult to meet at least the minimum requirements of space for the various community uses within the island limits.

We may also recall, in this connection, the action already taken in recent years on these lines.

In the year 1917, there were in all 70 milch cattle stables in the island of Bombay. The total area occupied by these stables was about 2,64,681 sq. yds. i.e. to say an area of 54½ acres. We understand that the Bombay Municipality has acquired about 29 private stables covering an area of about 28 acres approximately. In acquiring 29 stables, properties admeansurig about 5.5 acres used for residential purposes were excluded. The details of these stables are given in the appended statement (Appendix VII). An area of about 20 acres out of the area acquired is available for use for building purposes or for use as open space.

There are still about 9 stables covering an area of about 4 acres in the city from which the milch cattle have not still been removed. The number of cattle in these stables is 424. We understand that the Milk Commissioner has a programme of accommodating in the Aarey Colony all the cattle now accommodated in these stables. There are yet about 32 structures which were formerly used as milch cattle stables and from which have been completely removed today. The area occupied by the structures is about 17 acres. The majority of these structures are at present used as godowns and petty workshops by making suitable partitions. These areas could be utilised either as open grounds so badly needed in the thickly populated areas in which they are located or for school building purposes or for school play-grounds and, if these needs are adequately met by areas available elsewhere in the same locality, for house building purposes. The total available area yet to be acquired is about 21 acres in addition to the area of 20 acres already acquired upto now.

25. Availability of open spaces in and round about the Island limits for recreation.

We also had a rapid reconnaissance made of the possible reclaimable and other sites within the island limits in order to assess the availability of land required for use as open spaces or for other community requirements. The possible sites suggested for this purpose are :—

(1) *Mahalaxmi Race Course and adjoining areas : (225 acres).*—We understand, that the Mahalaxmi Race Course land has been leased to the Royal Western India Turf Club for a period of 30 years ending in 1974. The general consensus of opinion of the Panel is that considering the extreme congestion in the town, extreme paucity of open spaces and the very suitable location of this site with reference to the crowded areas

of the city and especially the congested mill area across the railway line, it is highly desirable that the area if and when it is divorced from its present use should be used as an open space, play ground and a park. The area at present occupied by the Western India Turf Club is about 10,22,806 sq. yds. It appears that one of the conditions of the lease is that the land exclusive of and encircled by the racing track should be available for being used as an open space and play ground by the public of the city under reasonable conditions. Thus it seems to be intended that the land within the racing track should be used as open space or playground when the race meetings are not on and that sufficient and easy access should be available to the public on all sides of the Race Course for so doing. It is not clear why having regard to these conditions this land has not been available for use by school children and others in the neighbouring areas. Many of the members of the Panel observed that to the best of their knowledge the right of the public to use this space as open play ground was very little known and hardly at all exercised. It appeared to the members that even apart from the larger question of eventually relocating the Race Course elsewhere, here and now, it would be possible by proper provision of access, etc. and other arrangements to be made by the Corporation, in consultation with the Turf Club, to open out this area for being used as an open space for the public or as a play ground for school children and possibly a portion of it could even be laid out into a garden.

Apart from the lands under use for the Race Course, it would appear that a portion of the area included in the lease of the Turf Club is shown therein as a park and a play-ground. It is not clear whether it is not possible to use this land as a public park. In that event the ground enclosed by the racing track which must necessarily be kept open and uncovered could be supplemented under a suitable layout, by a park with trees on this adjoining piece of land. It also appears that in the vicinity of this area there is a possibility of some more land of the order of about 25 acres being appropriated towards use as a park supplemental to the Race Course areas. A portion of this land has, it is understood, been reserved towards requirements for the expansion of the sewage purification works. Exclusive of this and taking into account the land that would be released by the Hindu Burial Ground from this area (removal of which it is understood is already under way) a sizeable plot of land would be available for being used as a park or play ground or open air space.

(2) *Low-lying area West of the Hornby Vellard : (120 acres).*—It is understood that the Municipal Corporation has a scheme for putting up a retaining wall to join up the two ends of this small bay partly for use in the monsoon as a surplusing arrangement for the storm water drainage of the city. During heavy showers it was found that the storm water of the city was not cleared up and traffic had to be interrupted in certain areas. It appeared that a surplusing arrangement like this may be of help in this connection. Apart from this, the land would be available in part as an open ground for use by school children or the general public, when it is not in use as a surplusing arrangement in the monsoon. It appears on the whole, that it will be well worth while exploring the possibility of reclaiming this site for

a combination of purposes, namely, ancillary to the storm water drainage system of the city and as an accession to the recreational open space facilities in the fair season.

(3) *Area west of the Annie Besant Road.*—It is understood that the Bombay Municipal Corporation was planning to make available very soon, as an open air space and park, an area of about 15 acres of land west of the Annie Besant Road.

(4) *Back Bay Reclamation Block No. III (157 acres).*—It is possible to obtain this area admeasuring about 157 acres by filling. A small portion of this area has been filled by dumping debris from the city buildings. This is, however, a very slow process and it will take many years to fill this block by this method. It is understood that the Bombay Port Trust has a scheme for dredging the silted areas in the harbour. If this silt is available and is found suitable for filling, it would be possible to fill this block without much extra cost to Government. The cost of filling this block otherwise is estimated at about Rs. 470 lakhs.

A further area of about 417.56 acres can be reclaimed if Back Bay Reclamation blocks IV, V and VI are also filled up.

(5) *Elephanta Island : (3.12 sq. miles).*—It is also felt that it might be possible to develop the Elephanta Island as a nearby recreation centre for the city. It may be considered whether it will not be feasible for the Bombay Municipality itself to take up the development of this land as a recreational centre. At present the Island has been included in the Kolaba district and is in the jurisdiction of the Kolaba Collectorate. The development of the Elephanta Island as a recreation centre would be considerably accelerated and would come about far more quickly, naturally and happily if this was undertaken by the Bombay Municipality. Obviously the Elephanta Island would be used as a recreational centre almost entirely by the citizens from the Bombay Municipal area. The project of developing a recreational centre at Elephanta Island has very little integral relationship with the problems of the Kolaba Collectorate, whereas it is integrally connected with the problems of the Bombay Corporation. Its inclusion in the Bombay Collectorate for purposes of revenue jurisdiction would seem to be more appropriate.

26. High Prices of land in the Island.

After providing for the accommodation of the maximum overspill from the Island to the suburbs, allowing for the development of the considerable areas on the Northern and Eastern periphery of the Island, one is nevertheless left with the need to appropriate towards high priority community requirements, additional space for the minimal needs of the residual island population. If land is to be acquired for the purpose, the question of the cost of such acquisition becomes a vital issue.

It would be necessary to provide public funds for the acquisition of all areas which are open and unbuilt or may become so available in the Island for these priority needs, as and when particular pieces of land designated for particular purposes as per the "Development Plan" become available.

Prices of land have risen enormously since 1940. This acts as a great deterrent in the acquisition of land for such purposes. The accompanying list (Appendix VII) of milch cattle stables acquired for various municipal purposes will show that the price of land occupied previously by milch cattle stables in the Island varied from Rs. 25 to Rs. 150 per square yard when the land was acquired by the Municipality. The remaining area of about 21 acres of land from which milch cattle have been removed or will be removed very shortly but which has yet to be acquired is estimated to cost about Rs. 2 lakhs per acre i.e., 42 lakhs. The Collector of Bombay has estimated in general terms that the rise in the values of land in the city from 1940 till the present time ranges from 100 to 500 per cent. The minimum and the maximum rate per square yard in the city at present is reported to be varying from Rs. 10 to Rs. 40 (minimum) and Rs. 100 to Rs. 1,100 (maximum) per square yard depending upon the locality in which the land is situated. This will show that it would be a gigantic task for the civic body to go in for wholesale acquisition of land at current rates for the various purposes for which land would need to be procured. We also do not see why an owner of land which was valued at say Rs. 5 to Rs. 10 per square yard not long ago should be given a fantastic price today merely because circumstantially and without any special effort on his part to develop the land, the prices of land have gone up. In this context it would be useful to quote below the remarks of the Rent Enquiry Committee appointed by the Government of Bombay in 1938. While referring to the price of land the Committee stated as under :—

“Land in Bombay has become costly. There is a constant pressure of population on land for occupation; on the other hand there is a constant demand for land for possession by the moneyed class. Bombay is an alluring place where fortunes are made and unmade. Increase in wealth excites the instinct of possessing landed property and in boom periods, like the one witnessed soon after the War, an increasing number of people begin to roll in wealth; keen competition follows and a race ensues for possessing immovable property. Fancy prices are quoted and accepted and in this way the cost of land goes up by leaps and bounds. In the Fort area, for instance, bargains for land were struck for several hundreds of rupees per square yard.”

Unless steps are taken to see that the speculative element in the price of land is taken away it will be impossible to embark on any sizeable programme for acquisition of land. We feel, therefore, that the prices of land will have to be pegged below the so called “market price”, when it is required for essential public requirements, a principle already accepted in the Land Acquisition (Bombay Amendment) Act, 1948.

27. Acquisition of land for public use under the Bombay Town Planning Act, 1954.

Under the new Bombay Town Planning Act, 1954, the Bombay Municipal Corporation has to make a declaration of its intention to prepare a Town Planning scheme and publish the same in the Official Gazette and local newspapers. On such declaration the local authority is empowered to exercise interim control on the development of the area pending the preparation of the scheme and its final sanction by the State Government. This gives

Municipality the power to "freeze" land for a while so to say with a view to appropriating it eventually towards the best community use. The Municipality has already made a declaration of its intention to prepare such a scheme. This should make it possible for the Municipality now to freeze the land required for public purposes and appropriate it eventually towards the best possible use.

28. Immediate measures for meeting shortage of space for community uses.

The foregoing paragraphs will show that the problem of providing open space is not altogether insurmountable and that with a properly phased programme it should be possible to solve it over a period of ten to fifteen years. Immediately, however, it is also possible for the Corporation, in our opinion, to relieve the acute shortage of space required for recreation or play fields by adopting the following measures :—

Park in the Race Course area.—We have already stated earlier in the report that the lease of the race course grounds contains a provision for keeping the area within the race tracks as an open space and playground for use by the public when the race meetings are not on. The land within the race course tracks can be used as a playground for school children. The land outside the race course tracks but within the limits of the area leased to the Royal Western Indian Turf Club together with a piece of land admeasuring about 25 to 30 acres adjoining it can be developed into a good park of about sixty-five acres as suggested earlier. A scheme for the use of the Race Course area within the race course track for school children may be formulated in consultation with the Race Course authorities.

Elephanta Caves : The development of the Elephanta Island as a recreation centre.—This will make available an area of 3·12 square miles (within easy and cheap access if ferry services are improved) to the citizens of Bombay for their holiday camps or picnic parties.

Beach Roads.—The Bombay Municipal Corporation should launch a programme for the development of Beaches like Chowpatty, Mahim, Juhu, Versova, Marve and seaside promenades wherever possible and create facilities for the citizens to have long walks on the beaches and enjoy the sea breeze.

Park west of Annie Besant Road.—We understand that the Bombay Municipal Corporation is proposing to have a park of about fifteen acres on the land adjoining the sea beach west of the Annie Besant Road and south-west of Worli Hill. This project, we recommend, may be completed as soon as possible.

Area west of Hornby Vellard.—An area of about 120 acres can be made available here for use as play-field if the Bombay Municipal Corporation carries out its proposed scheme of putting a retaining wall to join the two ends of this bay.

Area west of Mahim Causeway and south of Bandra.—It will be possible to reclaim an area of about 150 acres, here if the land south of Bandra is filled up.

We have elsewhere listed some of the areas on the periphery of the Island that seem to lend themselves to reclamation. The area of the Back Bay Reclamation Blocks III and IV, the Mahim-Sion area, the salt-pans east of Sion are

large tracts available for such reclamation. Somewhat larger open spaces may be kept in these areas than are necessary for the own requirements of these areas themselves when reclaimed to help make up to that extent the acute deficiency of such space in the island.

29. Shifting of offices, etc. outside the City to remove congestion.

Having regard to the need for dis-congesting the island as far as possible, it has been suggested that it should be considered whether certain institutions and establishments which could as well be located (and sometimes with *advantage* so located) outside Bombay in some mofussil town should not be shifted to release valuable space occupied by them at present.

So far as dis-congesting the island by removal of factories and industrial establishments is concerned, the problem has been considered by the Industrial Location Panel. The complexities of the problem are evident. It is obvious from a consideration of the matter as set out in the Report of that Panel that the relocation of existing industries outside Bombay City, is going to be a very problematic, difficult and complex proceeding. It is also to be remembered that so far as private enterprises are concerned it is generally in view of tangible economic advantages that the private entrepreneur establishes his factory or establishment at a particular location. The presumption would be that private industries, which function under the constant discipline of economic competition, would have been established elsewhere or would cling to a Bombay location only when the advantages of so doing preponderate over the disadvantages. In the case of Government or semi-Government institutions and establishments, however, the economic considerations may not always have been decisive. Bombay is the capital of the State and it is obviously essential for the prompt and efficient conduct of Governmental business that Government offices and establishments closely connected with the seat and headquarters of Government should be located in Bombay City. While this is the irreducible core of Government offices and establishments which must be located in Bombay City, we believe that a closer examination would probably show that there are other offices and establishments which could without any serious disadvantages (and indeed in many cases more advantageously) be relocated in some suitable mofussil town. Such relocation will not only release valuable and scarce space in Bombay island but also help the growth and development of the mofussil towns to which such offices and establishments are shifted. We mention below a few instances at random which occur to us in this connection as *illustrative* of the point that we wish to make. No doubt there are others, not only within the ambit of the State Government's activities but also in the ambit of the Central Government's activities. It is not possible for us to undertake an individual examination on merits of the possibility of relocation with reference to such offices and establishments. Nor indeed is it possible for us even to make a comprehensive list of the offices and establishments which may be considered for such relocation. We can only suggest the desirability of examining these possibilities to the appropriate authorities and support our observations by quoting a few instances that occur to us.

(1) *Veterinary College, Bombay.*—*Prima facie* it would appear that this establishment should be shifted out of Bombay limits and located somewhere

in a suitable mofussil centre. The virtual disappearance of the hackney carriage from the streets of Bombay would appear to have removed even the limited justification that there could have been at any time for locating of the State's only veterinary college establishment in the heart of Bombay City. If this college is shifted outside, an area of about nine acres would be available.

(2) *Head Offices of the Bombay State Road Transport Corporation.*—The operations of the Corporation extend over practically the entire areas of the former Bombay State comprising 13 districts in Maharashtra and 9 districts in Gujarat. It is possible that the Corporation's jurisdiction will extend to the new component areas of the State as well. The Corporation does *not* operate within the Greater Bombay limits wherein the B. E. S. T., operates. It would appear *prima facie* that there are strong grounds for locating the headquarters of the State Transport in a suitable mofussil centre. The Corporation may of course maintain suitable depots, bus stations and other field units for operating its Konkan services which terminate at Bombay City. It may also perhaps find it necessary to maintain a nucleus of establishment for purchase of stores and spare parts in Bombay City having regard to the special advantages of such a location. The rest of the headquarters organisation of the State Transport could conveniently be shifted to another headquarters. The total number of State Transport employees within Bombay City, we learn, is sixteen hundred. The relocation of the headquarters would presumably result in the shifting of perhaps a thousand or twelve hundred families outside of Greater Bombay.

(3) *Railway Workshops.*—The Central and the Western Railways whose operations are similarly not confined to Bombay City only but extend to a much larger area, even beyond the borders of the Bombay State, are employing between them about 70,000 men for their workshop and administrative offices. For their workshops alone, it is understood, they are employing about 18,000 men (13,000 by the Central Railway and 5,000 by the Western Railway). The Central Railway has a Locomotive Workshop at Parel and a Carriage and Wagon Workshop at Matunga occupying an area of 42 and 35 acres respectively and employing 8,000 and 5,000 men respectively in these workshops. Western Railway has a Carriage Workshop at Parel occupying an area of 39 acres and a Wagon Workshop at Mahalakshmi occupying an area of 17 acres. It employs 5,000 men for these workshops. The Western Railway has also a Loco-workshop at Dohad. It is understood that the Carriage Workshop is carrying out the work of repairs to the Suburban coaches also. It appears to us, however, that it might be possible to relocate the Loco-workshop (or some components of it) as distinct from the carriage work-shop and its location at a terminal point has no special advantage. Similarly the Wagon Workshop need not necessarily be kept within the Bombay City limits. It is understood that the question of shifting the Repairs Section to the Parel Loco-Workshop was considered by the Central Railway in the past and that it was considered feasible to transfer the Repair Section and to locate it at Itarsi. It was then decided to appoint a Special Officer to investigate the matter further. But it seems that no further action has been taken in the matter after 1948.

We appreciate of course that in common with the heavy factories, the translation of the Railway Work-shops to other sites would present complex and costly problems. Heavy machinery is not easily shifted. Then, on new locations fresh problems of housing would presumably arise. However, if a measure of discongestion of the island must be attempted—and we are quite clear that it has to be—an objective assessment of these difficulties must be made. Industry will naturally expect Government to give a lead where practicable. It may be found on closer examination that if not in their entirety, some operations of these workshops could be so relocated. It may be that still other operations would lend themselves to relocation in the suburbs. We feel that the urgency and importance of exploring these have not received adequate attention hitherto and we strongly recommend that the position may be closely examined.

Some of the units in the Administrative Offices of the two Railways might also conveniently be located at other places and need not necessarily be at the terminal point in Bombay from an operational point of view.

(4) Similarly, it is not quite necessary, generally speaking, to locate institutions like the Beggars' Home, Leper Asylums, Reformatories or Certified Schools for Children, to more than the minimum necessary extent within Bombay City limits. These institutions could conveniently (and perhaps with advantage to the inmates as well as the staff) be located outside Greater Bombay. Of course, like other Cities, Bombay must also have "Remand Homes" for beggars and children going to reformatories and certified schools. But the need for such "transit accommodation" must be distinguished from the locating of such institutions substantively in Bombay, particularly in the Bombay Island.

(5) On the same analogy, it appears to us that the Central Jail at Arthur Road could be shifted to another suitable place in the suburbs or preferably in the mofussil.

We append below a statement showing the number of inmates and employees comprising at present the establishment of these institutions:—

Names of institutions.	Location and/or names.	No. of inmates or employees in these institutions.	Area occupied by these institutions.
1	2	3	4
(i) <i>Beggars' Homes</i> : Two.	(1) One at Chembur	.. 370 inmates + 58 staff.	35 acres.
	(2) Another at Worli	.. 600 inmates + 70 staff. <hr/> 670	1.34 acres.
(ii) <i>Leper Asylum</i> : One.	Acworth Leprosy Home at Wadala.	469 inmates + 49 staff.	17 acres.
		<hr/> 518	

Names of institutions.	Location and/or names.	No. of inmates or employees in these institutions.	Area occupied by these institutions.
1	2	3	4
(iii) <i>Reformatories and Certified Schools</i> : Three.	(1) David Sassoon Reformatory, Matunga.	424 inmates + 67 staff. <hr/> 491	8 acres.
	(2) Chembur Home for Boys, Chembur.	423 inmates + 72 staff. <hr/> 495	140 acres. (Approximate).
	(3) Children's Home, Umar-khadi, Bombay 9.	562 inmates + 73 staff. <hr/> 635	4.19 acres.
(iv) <i>Jails</i> : One.	Arthur Road	574 inmates + 79 staff. <hr/> 653	3½ acres,

Apart from the space released by the institutions themselves, such relocation would release housing space in Bombay at present occupied by the above establishments.

Such cursory examination of the operations of the Government Central Press as we have been able to make would appear to show that the Press establishment in Bombay (representing about a quarter of the printing capacity at the disposal of the Bombay Government) is engaged almost wholly on work which due to its urgency is integrally connected with the Head Quarters of Government and must be located at the Capital and close to the Legislature and the Sachivalaya.

It would be pertinent to point out in this connection that there are about 1,60,000 employees of Central Government Establishments serving in Greater Bombay limits. In addition, there were about 37,000 Bombay Government employees in the year 1957. Since then, additional staff has been sanctioned in some of the Offices in Bombay. For instance in the Secretariat and in the offices of the Heads of Departments an *ad hoc* increase of 25 per cent. was made by Government following the reorganisation of States. The number of Bombay Government employees in Greater Bombay limits may, therefore, be roughly estimated at about 40,000 now. These two lakhs of families are an important component of the six lakhs of families in the island of Bombay. They contribute substantially to the shortage of housing and congestion of the island. A systematic examination by the appropriate authorities of the feasibility of relocating the offices and establishments (a) in the suburbs and (b) preferably outside the Bombay area altogether is clearly called for.

The present position regarding housing of Bombay Government employees in Bombay area would seem to reinforce these conclusions.

It is understood that about 1,300 employees are on the waiting list of the Controller of Accommodation and that another 2,500 are on the waiting list of the Public Works Department for allotment of residential accommodation. A further 3,000 Class IV Government employees are on the waiting list of the Director, Development Department Chawls, for allotment of accommodation. It is possible that quite a large number of the employees on the waiting list of the Controller of Accommodation may also have applied for accommodation to the Public Works Department. A small number out of the 1,300 employees on the waiting list of the Controller of Accommodation are Class IV servants, some of these may also have applied for accommodation to the Director, Development Department Chawls for allotment of accommodation.

Although, therefore, there may be some duplication, it would appear that quite a few thousand employees of the Bombay Government in Bombay City are on the waiting list for allotment of accommodation. More than 1,300 Government employees from the incoming areas have been housed in the tenements built under the Subsidized Industrial Housing Scheme which have to be vacated and more than 2,400 employees are at present occupying requisitioned premises. The Government housing programme undertaken so far has been very modest compared to the number of persons on the waiting list for Government accommodation, and it will apparently take years before it is possible to provide accommodation for all persons on the waiting list and for those housed in tenements constructed under the Subsidized Industrial Housing Scheme and those occupying requisitioned premises. In view of the difficulties and hardships involved to the Government servants for want of accommodation and the enormous expenditures involved in constructing tenements for all these men, it would obviously be to the advantage of the Government as well as to the general advantage, for the authorities closely to examine how far it is possible to relocate the Government offices and establishments outside Greater Bombay area.

It is true, no doubt, that in the event of some of the offices being shifted to areas outside Greater Bombay it might be necessary to secure office accommodation and to provide housing to the staff to be transferred to the new locations. In some cases, at any rate, it may not be difficult to secure hired accommodation in the mofussil areas at reasonable rents. Even if it is necessary in a number of cases to provide accommodation by new construction they will be less costly in the mofussil areas than in Bombay, among other things for the reason that land would be available at cheaper rates. Besides, it would not be necessary to go in for multi-storeyed structures requiring scarce building materials like steel. Apart from these direct advantages to Government, there will be very important indirect benefits from the pursuit of such a policy. Such a policy will be doubly beneficial, bringing greater prospect and importance to mofussil centres and simultaneously relieving the pressure on land and housing in Bombay area. For these indirect advantages alone the policy would be worth pursuing even if it did not also entail a saving in costs to Government and indeed even if it had entailed slight additional costs

30. Need for a survey of present land uses and a plan for future land uses.

We have set out in the foregoing the available data regarding—

- (a) the state of congestion on the island of Bombay ;
- (b) the paucity of open spaces for recreational purposes, for school buildings, school play-grounds and other community requirements ;

while setting the available data regarding these inadequacies we have presented some estimates about probable requirements.

We have also set out information regarding the land resources that could be pressed into service to meet these requirements, particularly—

- (a) the possibilities for making additional land available by reclamation, etc., within the island area or on its peripheral margins in the north and east ;
- (b) the need for “ freezing ” and the possibility of appropriating towards such essential community uses existing unbuilt areas and other land released by demolition of old buildings, etc.

While these are the broad lineaments of our line of approach to the problem we are conscious that for the process of actual planning it will be necessary to undertake—

- (a) a detailed survey of land use at present ; and
- (b) assess specifically requirements for future land use by localities ;
- (c) and designate specific plots ; for particular requirements to be so acquired as they become available ;
- (d) it will also be necessary to enact powers to enable the local authority to appropriate such land towards such purposes.

Land is the basic resource for purposes of town planning. So far as the suburban areas are concerned, the resources are available in sufficient plenitude to permit of such detailed planning being done in a more leisurely manner. For the suburban areas as at present it would be necessary to lay down only the “ planning grid ” so to say ; that is to say the general framework of reservation of areas under broad zonal arrangements, laying down the principal communications system, etc. So far as the island is concerned however, it is essential to undertake a comprehensive land use survey and analysis forthwith as well as provide for a comprehensive, detailed and specific plan for future land use requirements.

All this work relating to land use survey and land use planning is a very elaborate and complex proceeding and will call for a considerable administrative effort. We might point out that for the development plan in terms of the Bombay Town Planning Act, 1954 such survey and planning will have to be undertaken forthwith by the Municipal Corporation. We understand this has already commenced.

Under the Bombay Town Planning Act, 1954, every local authority has to carry out the survey of the area within its jurisdiction and within 4 years of the date of the Act coming into force (1st April 1957) publish the development plan and submit it to the State Government for sanction. The Bombay Municipal Corporation has very recently declared its intention to prepare such a development plan for Greater Bombay. The development plan is to indicate the manner in which the development and improvement of the entire area within the jurisdiction of the local authority is to be carried out and regulated. In particular the development plan is to contain the following proposals, namely :-

(a) proposals for designating use of the land for the purposes such as residential, industrial, commercial and agricultural ;

(b) proposals for designation of land for public purposes such as parks, play-grounds, recreation grounds, open spaces, schools, markets or medical, public health or physical culture institutions, etc.

Section 11 of the Act empowers the local authority to acquire any land designated in the development plan for purposes specified in clause (b) etc. of Section 7 of the Act. There are provisions in the Act to prevent property-owners taking any action with reference to their properties contrary to the requirements of the development plan.

Neither the Study Group nor the Panel could possibly undertake such a detailed survey. We had necessarily to go on the basis of the extant data. Unfortunately, neither the Municipal authorities nor the Collector of Bombay had information readily available as to the unbuilt properties in the island of Bombay and their location. This information, however could be compiled on the basis of the records in the Collectorate of Bombay and at our instance this Study Group moved Government to sanction some additional field staff in the Collector of Bombay's office for compiling this data and for carrying out some field survey to check up its accuracy. The results of this have been referred to in paragraph 24 in the foregoing. On the basis of the information collected we have prepared large-scale maps of the island of Bombay marking out therein such areas at present unbuilt up. Copies of these have been supplied to the Municipality and it is hoped that they would be of use to the Municipal authorities who will eventually prepare the development plan for the island of Bombay in terms of Section 7 of the Town Planning Act.

It will appear from the statement of open unbuilt plots and katcha structures, etc., in Appendix VI of the report, that comparatively larger areas of open unbuilt plots are to be found mainly in the northern outskirts of the Island. The statement of slums in Appendix V of the report also reveals that fairly large areas of unbuilt or partially-built slums are to be found near the northern borders of the Island and particularly in Ward No. 34 (Mahim-Dharavi), in the extreme north of the Island where the area of unbuilt or partially-built slums is estimated at about 378 acres with a slum population of about 46,000 persons. In the congested wards on the other hand very little unbuilt land is now left or is likely to be forthcoming in the near future. *Prima facie* it would appear therefore that an attempt must be made to eke out the deficiency of land in the congested areas by providing for larger open spaces and

reservation for public purposes on these outskirts of the island. Even if this entails a revision of town planning schemes not yet finalised—presumably these schemes allow for open spaces etc. sufficient for the needs of the particular localities and not to a sufficient extent to help make up the deficit of the congested middle portions of the island—we would recommend that the Municipality may consider initiating such revision wherever still practicable.

As indicated earlier in the report, even on a very conservative estimate, the probable requirements of land in the island alone would be of the order of about 14 or 15 hundred acres for (i) parks and gardens (on the minimal estimation), (ii) educational institutions, (iii) hospitals, (iv) industrial estates and (v) other exceptional public requirements.

All this land will not be available at once, nor is it possible to acquire all the 1,400 acres of land in one lot. Care will have to be taken, at the same time, to ensure that all land considered suitable for various community uses and in order of its ready availability is quickly designated as such in order to prevent its being appropriated for other non-public uses. Fortunately such a course of action is feasible under the Bombay Town Planning Act, 1954. A phased programme for the acquisition of land at the rate of, say 100 to 120 acres a year, spread over a period of about 10 to 12 years would have to be adopted.

The cost of acquiring about 120 acres of land annually would, however, be enormous. The Municipality was required to incur expenditure at the rate ranging from Rs. 25 to Rs. 150 per square yard for the acquisition of land formerly occupied by milch cattle stables. These acquisitions relate to prices in the year 1948. Even at this rate it would cost about Rs. 1½ to Rs. 2 lakhs per acre to acquire land similar to that of the milch cattle stables. The cost of acquisition of about 120 acres per annum would be of the order of not less than Rs. 180 to Rs. 240 lakhs per annum. The Local Authorities will have to meet this call in addition to the many other developmental calls being simultaneously made on it, e.g. developing large blocks of land to make them ready in advance of the spread of house-building activities; clearance of slums and rehousing of slum-dwellers; improving the communications system and so forth. It is going to be a gigantic task for the local authority to finance all this expenditure. It might, indeed, be found altogether impossible if in addition to the many other calls the local body has to make payment of land compensation at the present market prices and in one lump sum. We, therefore, feel that compensation for the land designated for all public uses under the development plan which is being prepared by the Bombay Municipal Corporation should be made payable at the rate prevailing on 1st January 1948 just as it is being done in the case of acquisition of land for housing schemes under the Land Acquisition (Bombay Amendment) Act, 1948.

Even if a phased programme for acquisition of this land is adopted and even if the compensation payable is on the 1948 valuation, it will still be far too heavy a burden on the local authority, in our opinion to make provision for payment of all the sums due for the compensation payable for the 100 to 120 acres of land annually as mentioned above, in addition to the other expenditure which it may be required to incur for other developmental purposes. We think, therefore, that provision should be made to spread to payment of

compensation for such land over a number of years, exceptions being made, if necessary, in the case of petty owners of land receiving small sums in whose case payments could be made in lump sums up to a certain amount. Such a course of action has been adopted among others by the U. P. Government in connection with the abolition of Zamindari under the Zamindari Abolition and Land Reforms Act, 1950.

31. Summary of Conclusions and Recommendations.

(1) The problem of land and open spaces and other community requirements is particularly difficult within the island of Bombay. Outside the island of Bombay, i.e. in the Suburbs of Greater Bombay, provided suitable steps are taken for reserving grounds for such open spaces and community requirements, it is easily practicable to provide for such requirements not only of the present suburban population and of the likely increases therein but also for the overspill of the island population into the suburban areas.

(2) The problem of finding open spaces for the requirements of the island population and the problem of discongesting the island of some of its excess population would be greatly eased and facilitated if over and above the existing suburban areas the other large areas available on the other side of the Thana Creek are opened out by constructing a rail-cum-road bridge across the Creek.

(3) The problem of open spaces, recreational areas and land for essential community requirements arises in its most intractable form within the island of Bombay and with reference to the large population at present inhabiting it.

There has been a tremendous growth in the island population more especially since 1941. The population in the island which in 1941 was 14.89 lakhs is estimated to have increased by the end of 1958 to 31 lakhs, that is to say more than doubled itself. Projecting the same rate of increase in population over the next 10 years the island will come to be inhabited by 50 lakhs of people in another 10 years' time.

This increase in population over the last 20 years or so has resulted in intolerable densities of population per acre over a major part of the island and more especially in certain over-concentrated wards. Play-grounds and open spaces available for recreational purposes in the city are grossly inadequate. The meagre area of public open spaces available in the island is besides very unevenly distributed, large portions of it being badly situated with reference to accessibility from the thickly inhabited areas in the city.

(4) If suitable school buildings and play-grounds for school children are taken as a typical instance of the shortage of space for community requirements in the island, a highly deplorable situation is revealed. Only a small proportion of schools are housed in suitably designed buildings; very few of them have compounds and hardly any of them adequate play-grounds. It is estimated by the Education Officer of the Bombay Municipality with reference to the requirements of schools and educational institutions that a minimum additional space of 115 acres for purposes of school buildings and 355 acres for

purposes of play-grounds and a further 176 acres for additional classes and play grounds for the additional pupils to be admitted to school in the next ten years is essential even on conservative standards of provision for these purposes.

(5) Yet another fact of this evil of overcongestion in the city is the highly deplorable position regarding housing. A total number of 144 slums covering a total area of 877 acres, have been listed by the Municipality. These comprise a total of 83 thousand odd families and a population of over 4 lakhs. Apart from the existence of slums there is acute shortage of housing in the city for sheltering its population of nearly 30 lakhs. A very high proportion of the city's population perhaps of the order of 40 to 50 per cent. lives at the rate of 7 persons or more in a single room.

One of the principal difficulties in providing additional housing for easing the housing situation in the island of Bombay is the difficulty of finding building sites at reasonable rates.

The bulk of future developmental or house building activity must obviously be located in the suburban areas outside the island of Bombay.

(6) Dormitory suburbs are normally considered undesirable. If one were town planning afresh, one would locate industry and residential areas for those working in the industrial units distinct and apart from each other but in close mutual proximity so as to avoid unnecessary long distance travel and the consequent evils of traffic congestion, etc. In the present undeveloped portions of the suburban areas, where one would be writing on a clean slate so to say, we would advocate that this must invariably be done. So far as the island area is concerned, however, this would not be practicable.

A very high proportion (76 per cent.) of the industrial establishments in Greater Bombay area are located in the island. The prospects of removal of existing factories outside the island of Bombay in the immediate future are not at all bright. Since the island has very limited scope for further building activity we must look to providing in the suburbs residential areas for a proportion of the population who will continue to find their employment in the industrial establishments located on the island. Fortunately there are large areas presently available and others capable of being made available very soon within close proximity of the eastern and northern limits of the island.

To look at the same matter from another point of view, the shortage of one lakh and thirty two thousand tenements, apart from those required for the rehabilitation of slum-dwellers, which must be made good to eliminate over crowding in the island for its present population will have to be found by fresh construction and located principally in the suburbs.

(7) Such suburban development will be greatly helped by the suggestion made from the point of view of traffic by the Communications and Traffic Panel for the location of an alternative commercial business centre north and south of the Mahim Creek. Such a commercial and business centre would be conveniently located not only with reference to the suburban areas

in the Salsette island but also with reference to Chembur and Trombay and the probable development on the other side of the Thana Creek when the Thana creek-rail-cum-road bridge is constructed.

(8) Apart from improvement of the traffic arteries connecting the suburban areas to the island and carrying the traffic across the island longitudinally to the present centre of activities in the Fort Area, it should be considered whether for encouraging suburban development, rail and bus fares should not be further "flattened" out along the principle of telescopic rates. Indeed, it has been suggested for encouraging wide dispersion in the suburbs that a flat rate may be charged from Andheri to Bhayandar on the Western Railway and from Kurla to Thana on the Central Railway.

(9) For clearing slums in the island which cover an area of 877 acres it is estimated that an additional area of 946 acres would be required. Having regard to the extreme shortage of space for further building activities in the island, it is inevitable that a substantial portion of the slum-dwellers will have to be housed outside the island. Considering the complexities and difficulties of slum removal, schemes must be drawn up specifically to overcome the disinclination of slum-dwellers to be re-housed away from the original locations. Apart from reserving areas out of the suburban tracts coming under development immediately north and east of the island for such rehousing schemes for slum dwellers, the grant of tapering subsidies i.e. to say progressively diminishing concessions until they disappear over a period of say 4-5 years, to cover the cost of transport may also have to be considered.

(10) In the Master Plan of Bombay City published in 1948 estimating the population inhabiting the island at 23 lakhs, the Master Planners estimated that the island area was adequate for housing in reasonable conditions a population of approximately 13 lakhs. They, therefore, advocated discongesting of the island to the extent of ten lakhs of population. It is obvious that with the figure at which the present population of the island stands at present namely over 30 lakhs, it is practicably impossible to envisage a reduction in this population to the order envisaged by the Master Planners or for that matter anywhere near it.

(11) While it is evident to us that a measure of discongestion of the population from its present intolerable figure must be pressed for, we are not oblivious to the difficulties in the way of achieving this in practice. The extent of discongestion will depend upon the speed and efficacy of measures adopted for—

(a) encouraging suburban development ;

(b) bringing about re-location of industrial units outside the island. Both these measures would necessarily be spread out over a space of time. Some further relief might also be forthcoming from re-location of Government offices and establishments outside of Bombay City.

Having regard to the complexity of these measures, and uncertainty of the response to them, it is not possible to predict the extent of discongestion that could be achieved. While, therefore, we strongly advocate measures—

(a) for preventing further congestion in the city, and

(b) for attempting all possible discongestion of the existing population of the island ;

It would be profitless for us to base our calculations about requirements of open spaces, etc. on the basis of some hypothetical figures (of the order of 20 lakhs or so as sometimes suggested) as the ultimate population of the island.

(12) The 646 acres of land estimated as required for educational institutions, balwadis, etc. should be considered as a priority charge on the unencumbered space becoming available in the city in appropriate locations. The small area of 60 acres or so required for industrial establishments to achieve zoning of industries within the island should also be regarded as a priority requirement.

(13) On the modest basis of $1\frac{1}{2}$ acres for 1,000 population in the island and $2\frac{1}{2}$ acres outside, the present population of the island would require 4,500 acres within the island and 7,500 acres in the suburbs. The area in the suburbs (including therein the Elephanta islands) could be provided without difficulty.

There would, however, appear to be little prospect of being able to provide anything like 4,500 acres as open spaces within the island. In our opinion the provision of a further 500 acres or so as open spaces (apart from school playgrounds) within the island would be an ambitious enough target to aim at for the immediate foreseeable future.

Apart from this area and the further much larger supplementary area to be provided in the suburbs, if the provision of open spaces is made on a generous scale in the areas *on the periphery of the island* which can be made available for residential purposes by measures of reclamation as suggested elsewhere, a substantial measure of relief would have been achieved for the Island population.

Apart from these, an area of land (which it is not possible to estimate with any measure of accuracy, but which would be probably of the order of a few hundred acres) would be required in the Island for the unavoidable resettlement within the island of the slum population and the population of collapsed or demolished buildings.

(14) Even the provision of the land necessary for these priority requirements within the island will not be practicable unless the following measures are taken for appropriating open sites as they become available towards community purposes at reasonable prices, namely (i) reclamation of sites, (ii) "Freezing" of open spaces required for community requirements, (iii) appropriating towards such requirements, these sites as they happen to become available.

Furthermore it will be necessary to provide for the payment to be made by the Corporation (and other public authorities) as compensation for the land to be phased out over a number of years to bring the outlay within the bounds of practicable municipal finance. The Land Acquisition (Bombay Amendment)

Act, 1948 already recognises the principle of limiting the payment of compensation for land acquired for "housing Schemes" to the prices as they existed on 1st January 1948. We would advocate the extension of the same limitation to all requirements of land for all public purposes.

Having regard to the fact that the bulk of industrial and low income housing must be "subsidised", the provision of such housing by whatever agency would have to be deemed as a "public purpose" in this context.

(15) It is essential for securing early relief that energetic steps are taken for increasing the pool of available land within and in the immediate vicinity of the island of Bombay by pursuing the various schemes for reclamation enlisted in foregoing paragraphs 19 and 28 of this Report.

Apart from such reclamation as Government or the Municipality may find it practicable to undertake themselves, or for which they may be specially advantageously placed to undertake, the possibility of enlisting private enterprise for the purposes of such reclamation ought to be explored. Additional land is urgently needed within the island and in its close proximity for relief of the island population; Government's resources both financial and organisational are limited. It should be possible to supplement Government and Municipal efforts by awarding to private parties on a competitive basis reclamation of sites on suitable terms and subject to suitable safeguards regarding the prices to be charged for the land thus reclaimed. While the need for land for community requirements in and near the island of Bombay is very great, quite large areas are available for reclamation within or in the immediate periphery of the island and, therefore, competently and energetically handled, the situation is not so desperate and beyond retrieve as, may appear at first sight.

(16) The problem of private sites for milch cattle in the suburban areas of Greater Bombay is quite easy of solution. There is plenty of suitable land available for the purpose and the problem is one principally of Municipal regulation i.e., reservation of areas and controlling and regulating the construction of milch cattle stables and sanitary supervision over their cleanliness, and over the disposal of dung.

(17) Measures may also be taken for the full utilisation of building sites within the island at present left unbuilt or inadequately built over. Apart from such of this land as may be required for community purposes, incentives and penalties should be devised for encouraging the building up of such lands and to penalize their being left unbuilt or inadequately built over.

(18) As a lead to relocation of private industries, it would be well worthwhile of the State and Central Governments and other public authorities closely to examine the possibilities of removing offices and establishments under their control from the island of Bombay :—

(a) preferably, to some mofussil centre ;

(b) failing that, at any rate to the suburbs of Greater Bombay.

(19) As an immediate measure for provision of open spaces and recreational facilities within easy reach of the island population, we recommend the exploration of—

(a) the possibility of setting up almost forthwith a park extending over 65 acres near the Race Course at Mahalaxmi ;

(b) the possibility of using the Race Course grounds within the Race Course track for use as a play-ground by school children in an organised manner from the nearby schools in Municipal Wards D and E.

(c) the possibility of developing Elephanta island as a recreational centre for the population of Bombay island and of organising easy and cheap ferry services across to it from several points on the main island.

(d) The feasibility of taking over under close Municipal surveillance, if not direct Municipal management plots reserved as play grounds in different layouts of building areas sanctioned by the Municipality from time to time.

N. V. MODAK	}	<i>Members.</i>
JASJIT SINGH		
K. B. CARNAC		
K. KHANDWALA		
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S. G. BARVE (*Convener.*),

SACHIVALAYA :
BOMBAY.

PART II—APPENDICES

APPENDIX I.

Statement of the increase in population during the last fifty eight years in the Bombay island limits and Suburban limits.

Year.	Place.	Population.	Increase or decrease.	Percentage increase or decrease.	Remarks.
1	2	3	4	5	6
1901	Bombay City (Island)	.. 7,76,006 persons.	....	....	(i) The Bombay limits extended originally upto Mahim creek to the North from Colaba point to the South.
1911	Do.	.. 9,79,445 persons.	+2,03,439	+26.2 per cent.	
1921	Do.	.. 11,75,914 persons.	+1,98,469	+20.06 per cent.	
1931	Do.	.. 11,61,383 persons.	-14,531	-1.24 per cent.	
1941	Do.	.. 14,89,883 persons.	+3,28,500	+28.30 per cent.	
1951	(i) Do.	.. 23,29,020 persons.	+8,39,137	+56.32 per cent.	(ii) From 15th April 1950 the jurisdiction was extended upto Jogeshwari and Bhandup to the North.
1951	(ii) Suburban area including extended suburbs.	6,69,920 persons.	....	....
1958*	(i) Bombay City (Island) (December end).	31,00,000 persons.	+7,71,980	} Estimated.	(iii) Limits of Bombay have been further extended from 1st February 1957 to Dahisar and Mulund in the North.
1958*	(ii) Suburban area including extended suburbs.	12,00,000 persons.	+5,30,080		

*At the end of 1958 the population of Bombay Island and Suburbs is estimated on the basis of the formula adopted by the Director General of Health Services.

APPENDIX II.

Statement showing ward-wise, area in acres, the population and density in Bombay City (Island).

Ward.	Locality.	Area in acres.	Population.			Density (per acre).			Remarks
			1931	1941	1951	1931	1941	1951	
1	2	3	4	5	6	7	8	9	10
A.	Upper Colaba ..	605·77	436	8,301	13,728	·719	13·703	22·7	
	Middle & Lower Colaba ..	790·88	19,954	33,520	39,160	25·230	42·383	49·5	
	Fort Southern ..	454·26	3,495	13,394	16,840	7·693	29·485	37·7	
	Fort-Northern ..	89·70	25,832	28,550	36,628	287·982	318·350	408·33	
	Esplanade ..	648·41	14,303	18,468	41,786	22·058	28·4	64·4	
	Total of A Ward ..	2,589·02	64,020	1,02,230	1,48,142	24·7	39·5	57·2	
				average density.					
B.	Mandvi ..	171·60	41,706	38,914	36,407	243·04	226·8	212·1	
	Chakla ..	45·16	18,037	22,054	29,427	399·4	488·3	651·6	
	Umarkhadi ..	94·95	41,594	52,282	80,472	438·6	550·6	847·5	
	Dondgri ..	296·50	13,028	21,762	32,546	43·9	73·39	109·8	
	Total for B Ward ..	608·21	1,14,365	1,35,012	1,78,852	188·3	221·98	294·06	
C.	Kharatalao ..	57·36	23,243	37,069	32,160	405·2	646·25	460·66	
	Kumbharwada ..	42·5	32,027	29,855	44,699	761·6	709·9	1,062·99	
	Bhuleshwar ..	43·22	35,106	27,667	59,021	812·26	640·14	1,365·58	

APPENDIX II—contd.

Ward.	Locality.	Area in acres.	Population.			Density (per acre.)			Remarks
			1931	1941	1951	1931	1941	1951	
1	2	3	4	5	6	7	8	9	10
O.	Market	.. 81.75	38,651	34,384	55,008	472.79	420.59	672.85	
	Dhobitalao	.. 114.63	44,372	46,990	69,697	387.08	409.9	618.17	
	Fanaswadi	.. 102.39	32,077	35,937	56,985	313.28	350.08	556.54	
					Average density.				
	Total for C Ward	.. 441.40	2,05,476	2,11,902	3,17,570	465.50	480.06	719.46	
D	Khetwadi	.. 153.71	39,307	52,684	70,071	255.72	342.74	455.88	
	Tardeo	.. 146.92	31,748	35,212	51,438	216.09	239.66	350.10	
	Girgaum	.. 114.42	38,786	53,955	69,893	338.97	471.55	610.84	
	Chowpaty	.. 106.52	16,197	22,752	33,670	152.56	213.59	317.29	
	Walkeshwar	.. 584.20	22,734	25,151	39,357	38.91	43.05	67.36	
	Mahalaxmi	.. 680.02	36,569	54,622	61,194	53.77	80.32	89.98	
	Total for D Ward	.. 1,785.79	1,85,341	2,44,376	3,25,623	103.78	136.84	182.22	
E.	Mazgaon	.. 544.41	43,153	44,337	54,323	79.26	81.44	99.78	
	Tadwadi	.. 359.90	40,338	38,869	59,025	112.81	108.05	164.0	
	1st Nagpada	.. 96.20	7,223	11,090	20,642	75.08	115.28	214.57	

2nd Nagpada	..	88.53	21,032	30,890	39,388	243.06	354.67	455.10
Kamathipura	..	60.32	37,571	42,409	57,370	622.86	703.06	951.09
Byoulla	..	536.27	91,985	96,478	1,45,894	171.52	179.9	272.05
Total for E Ward	..	1,830.55	2,41,302	2,99,085	4,28,080	131.81	163.38	233.85
F. Parel	..	560.59	63,560	71,426	1,11,277	113.38	127.41	198.49
Sewri	..	1,129.59	26,756	31,864	63,087	23.06	28.2	55.9
Naiganm	..	425.08	....	52,165	1,06,061	....	122.71	249.5
Matunga	..	388.46	....	43,757	53,229	....	112.64	137.02
Sion	..	2,727.89	69,198	22,040	77,199	25.36	8.07	28.22
					Average density.			
Total for F Ward	..	5,231.61	1,59,514	2,21,252	4,10,853	30.49	42.29	78.64
G. Dadar	..	1,450.38	49,244	50,612	1,40,366	....	34.89	96.78
Mahim	..	370.74		44,705	64,084	132.82	120.58	172.80
Prabhadevi	..	489.46	1,14,531	58,798	81,581	....	120.12	166.69
Worli	..	915.11		56,664	98,380	125.22	61.92	107.50
Chinchpokli	..	477.31	....	59,757	1,49,309	....	125.19	312.81
Love Grove	..	708.76	....	4,699	10,513	....	6.62	14.89
Total for G Ward	..	4,411.76	1,63,775	2,75,235	5,44,225	37.12	62.38	123.35
Harbour, Docks, Railways and unknown.	..	....	27,590	35,994	27,113	....	....	....
Grand Total	..	16,751.42	11,61,383	14,89,883	23,29,020	69.33	88.94	139.03

APPENDIX III.

Statement of Parks and Playgrounds in the Island

Serial No.	Ward No.	Description of the Ward.	Survey No.	In charge of	Area in		Name, if any, of the park or maidan.	Open to all.	Remarks.		
					Sq. yards.	Acres.					
1	2	3	4	5	6	7	8	9	10		
1	1	Colaba	..	6	Government of India	51,556	10.65	Parade Ground	..	In charge of Military.	
2				10	Do.	..	22,222	4.59	Do.	Do.	
3				19	Bombay Port Trust	..	4,000	.83	Garden	..	In charge of Port Trust.
4				20	Private	..	8,444	1.74	Cusrow Baug	..	Private.
5	2	Fort	..	21	Bombay Port Trust	..	12,042	2.49	Public Park, Opposite Y.M.C.A.		Port Trust.
6				22	Government of Bombay.		49,349.7	10.20	Cooperage	..	Open to all.
7				23	Do.	..	22,000	4.55	Price of Museum.	Wales	Do.
8				24	Do.	..	1,00,664	22.66	Oval	..	Do.
				25	Do.	..	18,444	3.81	University	..	In charge of University.

10		29	Private	..	28,667	5·92	Brabourne Stadium ..	Open to Mem- bers of the C.C.I.
11		30	Do.	..	4,444	·92	Do. ..	Do.
12		31	Do.	..	7,556	1·56	Do. ..	
13		32	Municipality	..	12,071	2·49	Elphinstone Circle ..	Open to all.
14	3 Bori Bunder ..	35	Government of Bom- bay.		1,43,056	29·56	Cross Maidan ..	Open to all.
15		36	Private	..	16,000	3·31	Bombay Gymkhana ..	Open to Mem- bers of the Gymkhana.
16		37	Do.	..	7,778	1·61	Bombay Gymkhana Tennis Courts.	Do.
17		38	Government of Bom- bay.		1,69,481·17	35·02	Esplanade Maidan ..	Open to all.
18		39	Municipality	..	4,466	·92	Bhatia Baug ..	Do.
19		40	Government of Bom- bay.		1,16,889	24·15	Llyods Recreation Ground.	Do.
20		42	Do.	..	6,237	1·29	Play-ground ..	Do.
21		43	Do.	..	7,333	1·52		Do.
22	5 Dongri ..	53	Government of Bom- bay, Municipality.		1,556	·32		Do.
23	6 Umerkhadi ..	46	Do.	..	5,333	1·10		Do.

APPENDIX III—*contd.*

Serial No.	Ward No.	Description of the Ward.	Survey No.	In charge of	Area in		Name, if any, of the park or maidan.	Open to all.	Remarks.
					Sq. yards.	Acres.			Private or in charge of clubs or institutions.
1	2	3	4	5	6	7	8	9	10
24			50	Government of Bombay Municipality.	4,444	·92		Open to all.	
25			51	Do. ..	6,611	1·37		Do.	
26	7	Kharatalao ..	54	Do. ..	2,318	·48		Do.	
27	8	Kumbharwada ..	55	Do. ..	13,946	2·88	North Brook Garden.	Do.	
28	10	Dhobitalao ..	59	Government of Bombay.	20,019·56	4·14	Parsi-Gymkhana ..		Open to members of the Gymkhana.
29			60	Do. ..	20,484	4·23	Islam-Gymkhana ..		Do.
30	11	Fanaswadi ..	61	Do. ..	20,961	4·33	Hindu-Gymkhana ..		Do.
31			62	Do. ..	11,667	2·41	Wilson College, Gymkhana.		Do.
32			63	Do. ..	12,836	2·65	Medical College Gymkhana.		Do.
33			64	Do. ..	9,246·66	1·91	City Police Play-ground.		Do.
34			6	Do ..	4,873	1·01	Catholic Gymkhana ..		Do.

35	12	Girgaum	..	72	Do.	..	21,222.16	4.38	Charni Road Garden.	Restricted to Children.
36	13	Khetwadi	..	67	Municipality	..	4,450	.92		Open to all.
37	14	Walkeshwar	..	7	Do.	..	25,290	5.23	Gowalia Tank Play-Ground.	Do.
38				74	Do.	..	9,404	1.94	Graden Opp. Hughes Road (Hanging Garden).	Do.
39				75	Do.	..	2,249	.46		Do.
40				76	Do.	..	3,482	.72	Band Stand, Chow-patty.	Do.
41				77	Do.	..	53,624	11.08	Opp. Hanging Garden (Malabar Hill Slopes).	Do.
42				78	Do.	..	10,847.76	4.1	Kamala Nenru Park..	Do.
43				79	Do.	..	58,689	12.13	Hanging Gardens ..	Do.
44				85	Government of Bombay.		18,222	3.76		Do.
45				87	Do.	..	3,556	.73		Do.
46				89	Private	..	2,187	.45		Private.
47	15	Mahalaxmi	..	100	Do.	..	8,667	1.79	Petti Bungalow ..	Do.
48				103	Do.	..	24,824	5.13	Beach Candy Swimming Pool.	Open to members of the Club.

APPENDIX III—contd.

Serial No.	Ward No.	Description of the Ward.	Survey No.	In charge of	Area in		Name, if any, of the park or maidan.	Open to all.	Remarks.	
					Sq. yards.	Acres.			Private or in charge of clubs or institutions.	
1	2	3	4	5	6	7	8	9	10	
49			105	Municipality	..	3,718	·77		Open to all.	
50			106	Do.	..	1,348	·28		Do.	
51			107	Do.	..	55,907	11·55	Garden Opp. Willingdon Sports Club.	This area is being built up.	
52			108	Private	..	2,39,262	49·43	Willingdon Sports Club.	Open to members of the Club.	
53	16	Tardeo	..	69	Municipality	..	2,964	·61		Open to all.
54				71	Do.	..	8,747	1·81	Gilder Tank	.. Do.
55	18	Nagpada	..	115	Do.	..	66,688	13·78	Baptista Garden	.. Do.
56				121	Government of Bombay.		9,333	1·93	Evangelist Mission	.. Leased to the Mission.
57				193	Municipality	..	2,427	·50	Municipal Garden	.. Open to all.
58				194	Do.	..	4,676	·97	Do.	.. Do.
59				195	Do.	..	2,831	·58	Do.	.. Do.
60				196	Do.	..	6,952	1·44	Do.	.. Do.

61	19	Mazgaon	..	128	Railway	..	3,111	64			Open to the Members of the Railway Institute.
62				131	Government of Bombay.		8,076	1-67		Open to all.	
63	20	Byculla West	..	198	Municipality	..	12,264	2-53	Municipal Garden	..	Do.
64				199	Do.	..	5,833	1-21	Do.	..	Do.
65				200	Do.	..	9,333	1-93	Municipal Garden Playground.		Do.
66				201	Do.	..	7,185	1-48	Willingdon Garden	..	Do.
67	22	Ghorupdeo	..	137	Do.	..	2,30,260	47-57	Victoria Garden	..	Do.
68	23	Sewri	..	253A	Bombay Port Trust.		14,605	3-02	Dufferin Playground.		In charge of Port Trust.
69	24	Lal-aug	..	211A	Municipality	..	2,222	46	Ganesh Galli Maidan.		Do.
70				216A	Government of Bombay.		3,778	78	Lal Maidan	..	Do.
71	25	Parel	..	211	Municipality	..	11,778	2-43	Nare Park	..	Do.
72				212	Do.	..	3,111	64	....		Do.
73				123	Do.	..	6,667	1-38	Kamgar Maidan	..	Do.
74				215	Railway	..	13,333	2-75	Central Railway Playground.		Open to members of the Railway Institute.
75				216	Do.	..	6,644	1-37	Do.	..	Do.
76	26	Neigaum	..	229	Private	..	18,222	3-76	St. Xavier's College Playground.		Private.
77				230	Municipality	..	8,000	1-65	Municipal Playground		Do."

APPENDIX III—*contd.*

Serial No.	Ward No.	Description of the Ward.	Survey No.	In charge of	Area in		Name, if any, of the park or Maidan.	open to all	Remarks.
					Sq. yards.	Acres.			Private or in charge of clubs or institutions.
1	2	3	4	5	6	7	8	9	10
78			231	Government of Bombay.	21,111	4.36	Police Playground ..		Open to police constabulary force.
79			232	Do. ..	10,000	2.07	Do. ..		Do.
80			233	Do. ..	13,778	2.85	Do. ..		Do.
81			239	Private ..	14,889	3.08	Near Spring Mill ..		Private.
82			240	Do. ..	9,756	2.02	Do. ..		Do.
83			250	Do. ..	20,267	4.19	Purandare Stadium ..		Open to members of Medical College Cricket Club.
84			275	Municipality ..	16,444	3.40	Playground (Wadala).	Open to all.	
85	27	Matunga ..	254	Private ..	26,000	5.37	Playground (Parsi Colony.)		Private.
86			255	Do. ..	2,267	.47	Playground ..		Do.
87			256	Do. ..	2,600	.54	Do. ..		Do.
88			257	Municipality ..	4,983	1.03	Garden ..	Open to all.	

89		258	Do.	..	8,000	1-65	Playground	..	Do.	
90		259	Do.	..	0,533	1-35	Municipal Garden	..	Do.	
91		260	Do.	..	1,778	·37	.....		Do. ●	
92		261	Do.	..	2,667	·55	Garden—Chandaavrkar Street.		Do.	
98		26	Do.	..	1,167	·24	.....		
94		271	Private	..	11,778	2-43	Khalsa College Play-ground.			Open to college students.
95		272	Do.	..	14,667	3-03	V. J. T. I. Playground			Do.
96		280	Municipality	..	54,667	11-29	Playground Opp. Ruia College.		Open to all.	
97.	28	263	Do.	..	4,000	·83	King's Circle	..	Do.	..
98.		264	Do.	..	3,111	·64			Do.	..
99		265	Do.	..	833	·17			Do.	
100		266	Do.	..	1,589	·33			Do.	
101		267	Private	..	13,496	2-70	Indian Gymkhana playground.			Open to Gymkhana members only.
102		269	Do.	..	42,222	8-72	Don Bosco High School playground.			Open to School students.
103		269A	Do.	..	21,778	4-50	Playground	..		Private.
104	28	274	Municipality	..	3,222	0-71	Cultivation	..		Restricted.
105		279	Do.	..	8,667	1-80	Playground Near Sin-dhi Colony.		Open to all.	

-APPENDIX III—contd.

Serial No.	Ward No.	Description of the Ward.	Survey No.	In charge of	Area in		Name, if any, of the park or maidan	Open to all	Remarks. Private or in charge of clubs or institutions.
					Sq. yards.	Acres.			
1	2	3	4	5	6	7	8	9	10
106	29	Love Grove	340A	Municipality	1,733	0.36	Labour Welfare play-ground.	Open to all.	
107			340B	Do.	1,333	0.28	DeLisle Road play-ground.	Do.	
108			341	Railways	71,556	14.78	Western Railway Sports Ground.		Open to members of Railway Institute.
109			343	Municipality	7,18,948	148.54	Race Course		Open to members of W.I.T. Club.
110			346	Private	92,227	19.06	National Sports Club.		Open to members of the Club.
111			368	Municipality	14,000	2.89	Haji Ali Garden	Do.	
112	31	Worli	321	Private	524	0.11	Cultivation		Private.
113			322	Do.	6,946	1.44	Do.		Do.
114			323	Do.	5,298	1.09	Do.		Do.
115			331	Government of Bombay.	6,356	1.31	Lawn between Chawls at Worli, Ambedkar Maidan.		Restricted for inhabitants of the chawls.

116		333	Do.	..	21,378	4.42	Jamboorie Worli.	Maidan,	Do.
117		334A	Do.	..	6,500	1.34	Lawn between B.D.D. Chawls.		Do.
118		335	Municipality	..	7,556	1.56	Garden	..	Do.
119		336	Do.	..	5,556	1.15	Do.	..	Do.
120		337	Do.	..	3,667	0.76	Do.	..	Do.
121		338	Private	..	5,032	1.04			Private.
122	32 Prabhadevi	309	Municipality	..	39,778	8.22	Nardulla Tank Park.		Do.
123		314	Private	..	5,900	1.22	Cultivation	..	Do.
124		315	Do.	..	6,985	1.44	Do.	..	Do.
125	33 Dadar	281	Municipality	..	3,455	0.71	Veer Kotwal Garden		Open to all.
126		282	Do.	..	1,10,100	22.75	Shivaji Park	..	Do.
127		283	Private	..	34,452	7.12	David Sassoon Indus- trial School.		Do.
128		283A	Government of Bombay	..	5,820	1.20	Cultivation	..	Restricted.
129		287	Private	..	7,556	1.56	Antonio D'Silva School Playground.		Open to School Student.
130		289	Private	..	36,000	7.44	Ruparel College Play- ground.		Open to College Students.
131	34 Mahim	285	Municipality	..	8,656	1.79	Municipal Garden	..	Open to all.
132		286	Do.	..	5,232	1.08	Do.	..	Do.
133		292	Private	..	13,479	2.78	Cultivation		Private.
134		295	Do.	..	15,780	3.26	Do.	..	Do.

APPENDIX III—concl'd.

Serial No.	Ward No.	Description of the Ward.	Survey No.	In charge of	Area in		Name, if any, of the park or Maidan.	Open to all	Remarks, Private or in charge of clubs or institutions.	
					Sq. yards.	Acres.				
1	2	3	4	5	6	7	8	9	10	
135			301	Private	..	10,782	2.23	Scottish Orphanage	..	Private.
136			303	Do.	..	7,331	1.51	Cultivation	..	Do.
137			304	Municipality	..	12,978	2.68	Plyground	..	Open to all.
					747.18		337.27		409.91	
			Acres.							
Open to all			..	337.27						
Restricted to the use of members of the Clubs, Gymkhanas, etc.			..	409.91						
Total			..	747.18						

APPENDIX IV.

I. *Statement showing total area required for buildings and play-fields for Schools.*

Name.	In the Island of	In the Suburban
	Bombay.	areas of Bombay
	Acres.	Acres.
1. Municipal Primary Schools	77·42	38·23
2. Private, Pre-primary, Primary and Secondary Schools.	37·74	19·02
	<u>115·16</u>	<u>57·25</u>

II. *Statement showing total area required for play-fields for Schools.*

1. Municipal Primary Schools	114·04	60·44
2. Private, Pre-primary, Primary and Secondary Schools.	240·75	169·39
	<u>354·79</u>	<u>229·83</u>

III. *Future requirements of Primary and Secondary Schools.*

	In the Island	In the Suburbs
	(School buildings.)	(School buildings)
	Acres.	Acres.
1. Primary Schools	21·07	93·00
2. Secondary Schools	25·00	58·00
	<u>46·07</u>	<u>151·00</u>
	(Play fields)	(Play fields.)
	Acres.	Acres.
1. Primary Schools	26·34	124·00
2. Secondary Schools	104·00	386·00
	<u>130·34</u>	<u>510·00</u>

IV. *Requirements of Colleges.*

	Acres.
For College buildings	87·02
For College Play-grounds	24·00
For College hostels	4·17

APPENDIX IV—*contd.*

MUNICIPAL SCHOOLS OF GREATER BOMBAY.

Information regarding open spaces in respect of Municipal Primary Schools of Greater Bombay.

Ward (Election ward wise.)	No. of Schools in the ward	No. of pupils.	No. of rooms available.		No. of additional rooms required.	Space re- quired for construction.	Space re- quired for play-grounds.
			Municipal.	Rented.			
1	2	3	4	5	6	7	
A 1	7	3,392	61	12	24	Sq. yards. 1,920	Sq. yards. 8,480
A 2	2	748	..	7	19	1,520	1,870
A 3	8	4,523	18	31	96	7,680	11,307·5
B 4	6	2,927	15	28	59	4,720	7,317·5
B 5	10	3,329	18	46	66	5,280	8,322·5
B 6	12	8,585	127	17	88	7,040	21,462·5
C 7	12	4,134	..	70	104	8,320	10,335
C 8	8	5,076	18	46	109	8,720	12,690
C 9	9	7,119	22	56	156	12,480	17,797·5
C 10	13	6,787	13	66	157	12,560	16,967·5
C 11	6	4,254	..	51	107	8,560	10,635
D 12	12	8,660	5	100	212	16,960	21,650
D 13	8	4,448	12	55	100	8,000	11,120
D 14	15	8,214	14	97	192	15,360	20,535
D 15	9	6,056	12	70	140	11,200	15,140
D 16	15	6,313	46	76	112	8,960	15,782·5
E 17	7	3,641	47	8	45	3,600	9,102·5
E 18	16	9,027	27	86	169	15,920	22,567·5
E 19	10	6,850	..	71	172	13,760	17,125
E 20	16	8,339	57	80	152	12,160	20,847·5
E 21	9	5,172	43	52	87	6,960	12,930
E 22	9	4,277	..	44	107	8,560	10,692·5
F 23	14	6,071	5	61	147	11,760	15,177·5
F 24	10	6,665	..	74	166	13,280	16,512·5
F 25	14	7,742	50	81	144	11,520	19,355
F 26	19	8,016	47	74	155	12,400	20,115

APPENDIX IV—*contd.*MUNICIPAL SCHOOLS OF GREATER BOMBAY—*contd.*

Ward (Election ward wise.)	No. of Schools. in the ward.	No. of pupils.	No. of rooms available.		No. of additional rooms required.	Space re- quired for construction.	Space re- quired for play-ground.
			Municipal.	Rented.			
1	2	3	4		5	6	7
						Sq. yards	Sq. yards.
F 27	16	8,654	63	68	154	12,320	21,635
F 28	23	7,965	44	102	156	12,480	19,912·5
G 29	16	9,696	26	112	217	17,360	24,240
G 30	9	4,711	4	77	114	9,120	11,777·5
G 31	12	3,850	3	66	94	7,520	9,625
G 32	13	8,406	....	107	211	16,880	21,015
G 33	21	14,956	9	132	365	29,200	37,390
G 34	26	12,217	48	95	258	20,640	30,542·5
	412	2,20,790	854	2,218	4,684	3,74,720	5,51,975
						77·42 acres.	114·04 acres.
H 35	20	6,890	59	54	114	13,680	27,560
H 36	19	8,317	57	68	151	18,120	33,268
N 37	9	4,993	46	7	79	9,480	19,972
K 38	35	10,476	52	114	210	25,200	41,904
L 39	18	11,646	22	99	270	32,400	46,584
M 40	29	8,055	30	64	172	20,640	32,220
N 41	19	7,192	30	55	150	18,000	28,768
P 42	21	5,668	43	24	99	15,840	22,672
R 43	30	6,808	25	64	146	23,360	27,232
T 44	11	3,079	25	8	52	8,320	12,316
	211	73,124	389	557	1,443	1,85,040	2,92,496
						38·23 acres.	60·44 acres.

N.B.—A class-room would accommodate 40 pupils. The total number of pupils in each ward is divided by 40 which gives the requirements of class-rooms in that ward. From these, the existing class-rooms owned by the Municipality are deducted giving the requirements for new class-rooms in that ward. The space requirement for school buildings is 2 sq. yds. per pupil and the space requirements for play-ground is estimated at 2·5 sq. yds. per pupil in the Island. In the Suburbs the space requirement for school buildings is 3 sq. yds. per pupil and the space requirement for play-ground is 4 sq. yds. per pupil. In the extended Suburbs the space requirement for school buildings is 4 sq. yds. per pupil and the space requirement for play-ground will be 4 sq. yds. per pupil.

APPENDIX IV—contd.

Wardwise statement showing open spaces in respect of Private, Pre-primary, Primary and Secondary Schools in Greater Bombay including City, Suburbs and Extended Suburbs.

Ward (Election Ward wise.)	Number of pupils in pre-primary schools.	Number of pupils in primary schools.	Number of pupils in secondary schools.	Number of pupils in Grand Total.	Number of rooms available.		Number of rooms required.	Space required for construc- tion.	Space required for play- ground.	Remarks.
					Owned.	Rented.				
1	2	3	4	5	6	7	8	9	10	11
								Sq. yds.	Sq. yds.	
A 1	180	170	340	690	8	8	10	800	3,825	Space required is calculated as under:—
A 2	405	2,202	2,716	5,325	79	62	55	4,400	32,685	(1) For the Island.
A 3	120	1,473	4,354	5,947	83	92	66	5,280	47,222·5	Each class will accommodate 40 pupils.
B 4	....	966	1,666	2,632	25	55	41	3,280	19,075	
B 5	200	2,000	2,116	4,316	93	25	15	1,200	26,160	Total number of pupils (Column 5) divided by 40 minus class rooms owned (Column 6) is equal to additional class rooms required.
B 6	196	2,304	2,431	4,931	40	..	84	6,720	30,070	
C 7	....	1,377	....	1,377	10	25	25	2,000	3,442·5	
C 8	50	369	....	419	..	10	10	800	922·5	Space required for building is calculated at 2 sq. yds. per pupil or 80 sq. yds. per class room.
C 9	58	2,401	3,179	5,638	49	95	92	7,360	37,792·5	
C 10	118	2,018	1,797	3,933	45	37	54	4,320	23,015	Space required for play-grounds is calculated at the rate of 2½ sq. yds. per pupil and 10 sq. yds. per pupil for secondary schools.
C 11	196	2,023	2,786	5,005	73	60	53	4,240	32,917	
D 12	450	2,466	2 813	5,729	36	184	108	8,640	34,205	

(2) For the Suburbs.

D	13	300	2,156	4,650	7,106	76	125	102	8,160	51,890	The space required for buildings is calculated at 3 sq. yds. per pupil or 120 sq. yds. per class room.
D	14	531	2,529	4,505	7,505	152	146	38	3,040	51,372.5	
D	15	609	2,305	1,146	4,060	56	52	46	3,680	17,222.5	
D	16	283	1,394	1,038	2,714	..	65	63	5,440	13,865	For play-grounds the space required is calculated at the rate of 4 sq. yds. per pupil for primary schools, 20 sq. yds. per pupil for secondary schools
E	17	150	461	66	1,275	31	30	1	80	7,792.5	
E	18	75	2,976	2,729	5,730	156	31	..	..	34,730	
E	19	45	908	670	1,683	14	21	29	2,320	9,120	
E	20	160	433	802	1,385	12	19	23	1,840	9,102.5	
E	21	175	750	725	1,650	15	20	27	2,160	9,125	In the extended suburbs, however, area for school buildings is calculated at the rate of number of pupil \times 4 sq. yds. or additional class rooms multiplied by 160 sq. yds.
E	22	..	275	345	620	10	12	6	480	4,137.5	
F	23	..	..	..	..	..	..	..	..	....
F	24	..	275	..	275	..	5	7	560	687.5	
F	25	593	1,545	3,874	6,012	131	20	20	1,600	42,602.5	

APPENDIX IV—contd.

Ward (Election Ward wise.)	Number of pupils in pre- primary schools.	Number of pupils in primary schools.	Number of pupils in secondary schools.	Number of pupils Grand Total.	Number of rooms available.		Number of rooms required.	Space required for construc- tion.	Space required for play- ground.	Remarks.
					Owned.	Rented.				
1	2	3	4	5	6	7	8	9	10	11
								Sq. yds.	Sq. yds.	
F 26	225	525	338	1,088	35	9	4,692.5	The information is based on about 75 per cent. replies received by the Education Officer, Bombay Municipal Corporation from the Secondary Schools. It has been ascertained from the Educational Inspector, Bombay, that there were 104,256 pupils in the secondary schools in the island and 35,425 pupils in the suburbs in 1958-59 as against which the number accounted for in this statement compiled by the E. O., B. M. C. is 69,104 in the island and 29,574 in the suburbs. Provision, therefore, has been made for this additional number of students (35,152 in the island and 5,851 in the suburbs) at 2 sq. yds. per pupil in the island for school buildings and 10sq. yds. for play-fields and at 3 sq. yds. per pupil for school building and 20 sq. yds. for play-grounds in the suburbs and extended suburbs.
F 27	745	357	8,567	12,886	178	185	145	11,600	94,605	
F 28	970	4,784	7,393	13,111	228	56	100	8,000	85,890	
G 29	..	..	450	450	..	9	12	960	4,500
G 30	..	250	369	619	13	..	3	240	4,315	
G 31	..	425	75	500	12	..	1	80	1,812.5	
G 32	90	1,944	1,100	3,134	40	25	30	3,120	15,860	
G 33	227	2,204	4,503	6,934	64	122	110	8,800	50,540	
G 34	110	1,711	959	2,780	42	30	28	2,240	13,867.5	
	7,250	51,253	69,104	1,27,569			1,418	1,13,440 23.44 Acres.	8,19,152 169.25 Acres.	

H	35	410	4,776	6,753	11,939	450	55	..	..	1,54,104
H	36	400	4,717	4,089	9,806	234	55	12	1,440	1,12,648
K	37	483	2,551	3,946	6,980	173	34	2	240	80,124
K	38	440	2,084	1,913	4,437	89	43	22	2,640	46,596
L	39	..	1,200	742	1,042	23	28	26	3,120	19,640
M	40	75	1,015	2,510	3,600	53	21	37	4,440	54,260
N	41	130	3,639	1,991	5,100	30	45	99	11,880	42,376
P	42	956	4,265	4,528	9,749	90	90	154	24,640	1,07,020
R	43	30	3,666	2,662	8,328	103	59	106	16,960	16,7,304
T	44	155	1,647	170	2,272	5	62	52	8,320	7,528

3,079	29,560	29,574	64,213	510	73,680	7,01,260
					Sq. yds.	Sq. yds.
					(15.22	(144.80
					Acres.)	Acres.)

Additional space for 35,152 secondary school pupils in the island and 5,851 in the sbuurbs.

	For buildings.		For play-grounds.	
	Sq. yds.	Acres.	Sq. yds.	Acres.
Island	.. 70,304	14.3	3,51,520	71.5
Suburbs	.. 17,533	3.8	1,17,020	24.5

APPENDIX IV—*concl'd.**Increase expected in Primary Schools (For Next ten years).*

Year.		Pupils.	Area of land for school construction.	Play-ground area required.	
			Sq. yds.	Sq. yds.	
1959-60	.. City	.. 17,000	34,000	42,500	For purposes of calculating the areas required for school buildings and play grounds in this statement, the standards adopted are as under :—
	.. Suburbs	.. 15,000	45,000	60,000	
1960-61	.. City	.. 17,000	34,000	42,500	Island : For school building 2 Sq. Yds. per pupil and for play-ground 2 1/2 Sq. Yds. per pupil.
	.. Suburbs	.. 15,000	45,000	60,000	
1961-62	.. City	.. 17,000	34,000	42,500	Suburbs and extended Suburbs : 3 Sq. Yds. per pupil for school buildings and 4 Sq. Yds. per pupil for play-grounds.
	.. Suburbs	.. 15,000	45,000	60,000	
1962-63	.. City	.. 17,000	34,000	42,500	Suburbs and extended Suburbs : 3 Sq. Yds. per pupil for school buildings and 4 Sq. Yds. per pupil for play-grounds.
	.. Suburbs	.. 15,000	45,000	60,000	
1963-64	.. City	.. 17,000	34,000	42,500	Suburbs and extended Suburbs : 3 Sq. Yds. per pupil for school buildings and 4 Sq. Yds. per pupil for play-grounds.
	.. Suburbs	.. 15,000	45,000	60,000	
1964-65	.. City	.. 17,000	34,000	42,500	Suburbs and extended Suburbs : 3 Sq. Yds. per pupil for school buildings and 4 Sq. Yds. per pupil for play-grounds.
	.. Suburbs	.. 15,000	45,000	60,000	
1965-66	.. City	.. 17,000	34,000	42,500	Suburbs and extended Suburbs : 3 Sq. Yds. per pupil for school buildings and 4 Sq. Yds. per pupil for play-grounds.
	.. Suburbs	.. 15,000	45,000	60,000	
1966-67	.. City	.. 17,000	34,000	42,500	Suburbs and extended Suburbs : 3 Sq. Yds. per pupil for school buildings and 4 Sq. Yds. per pupil for play-grounds.
	.. Suburbs	.. 15,000	45,000	60,000	
1967-68	.. City	.. 17,000	34,000	42,500	Suburbs and extended Suburbs : 3 Sq. Yds. per pupil for school buildings and 4 Sq. Yds. per pupil for play-grounds.
	.. Suburbs	.. 15,000	45,000	60,000	
1968-69	.. City	.. 17,000	34,000	42,500	Suburbs and extended Suburbs : 3 Sq. Yds. per pupil for school buildings and 4 Sq. Yds. per pupil for play-grounds.
	.. Suburbs	.. 15,000	45,000	60,000	

Total requirements—

	For school buildings.		For play-grounds.		Total Acres.
	Sq. yds.	Acres.	Sq. yds.	Acres.	
For Island	.. 1,02,000	21·07	1,27,000	26·34	47·41
For Suburbs	.. 4,50,000	92·98	6,00,000	123·97	216·95

N.B.—In the City there are about 40,000 students of compulsory age who are not attending school. It is assumed that all these students will be brought on the school roll within a period of three years. It is also assumed that there would be an increase of 5,000 pupils in municipal schools every year for the first three years and that there would be no increase in the number of pupils thereafter on the assumption that the population of the island will cease to further increase by then. As regards the suburbs and the Extended Suburbs, it is assumed that the population of those areas would increase to about 25 lakhs in the next 10 years and therefore the total School going population in these areas would be about 2,50,000. In the Suburban area it is also assumed that there are a large number of children of compulsory school going age who are not attending school and this number would be wiped out in the first few years and therefore the increase in Municipal Primary Schools is taken at 15,000 per year for next 10 years.

APPENDIX V.

Statement of slums (Wardwise) in the Island.

(G.C.R.) MO-B F 5472-13 (725-5.01)

Ward.	Number of slums in the Ward.	Area in acres of unbuilt or little built slums.	Total area in acres of slums including unbuilt or little built slums.	Number of buildings.	Number of residential buildings.	Number of non-residential buildings.	Number of families.	Number of families of industrial workers.	Population	Minimum density per acre of population in slums.	Average density per acre of population in slums
1	2	3	4	5	6	7	8	9	10	11	12
1	1	....	8.90	179	155	24	1,543	302	8,387	942	942
2	..	....	....	....	....	....	....	....	....	....	....
3	6	....	11.70	346	303	43	2,638	....	13,722	652	1,173
4	8	....	6.70	141	106	35	1,361	65	7,243	442	1,081
5	7	....	6.80	157	137	21	1,787	135	8,053	688	1,184
6	5	....	9.30	149	124	24	2,613	893	11,489	757	1,235
7	5	....	20.90	502	437	125	4,318	39	19,164	720	917
8	6	....	29.80	597	476	121	6,873	323	29,791	696	1,000
9	3	....	8.00	212	147	65	1,607	45	6,935	792	867
10	6	....	15.80	422	381	41	3,365	262	16,853	718	1,067
11	4	....	16.00	269	210	59	3,105	35	12,530	417	283
12	8	....	19.30	400	358	42	3,567	316	16,071	626	833
13	4	....	20.10	219	182	37	2,906	137	11,929	382	594

APPENDIX V —contd

Ward	Number of slums in the Ward	Area in acres of unbuilt or little built slums.	Total area in acres of slums including unbuilt or little built slums.	Number of buildings.	Number of residential buildings.	Number of non-residential buildings.	Number of families.	Number of families of industrial workers.	Population	Minimum density per acre of population in slums.	Average density per acre of population in slums
1	2	3	4	5	6	7	8	9	10	11	12
14	3	3.40	15.40	187	154	33	1,141	58	5,506	294	358
15	4	1.80	7.80	80	70	10	947	187	4,245	416	544
16	8	7.40	14.40	114	108	6	2,411	761	10,926	411	759
17	1	....	60.00	949	843	106	6,884	2,310	60,000	1,000	1,000
18	4	....	10.00	278	229	49	2,736	452	13,617	828	1,362
19	2	....	3.00	59	55	4	589	199	3,164	931	1,055
20	3	....	12.50	143	108	35	2,436	965	11,782	745	943
21	8	7.70	14.80	188	157	31	2,432	1,268	11,226	491	759
22	6	18.60	25.40	297	221	76	3,541	1,967	16,636	444	655
23	9	35.60	35.60	291 +906 huts.	238 +906 huts.	53	3,104	1,904	14,621	241	411
24	5	7.50	24.50	289	249	40	3,658	2,349	18,231	318	744
25	....	....	....	....	....	....	....	....	....	....	....

C.C. 5172-100 (A.P. No. H 5172-100)

26	1	....	1-30	32	21	11	213	136	1,065	819	819
27	1	17-70	17-70	156	135	21	964	528	4,913	278	278
28	2	12-70	12-70	72 +29 huts.	68 +29 huts.	4	279	30	1,395	100	110
29	8	....	7-40	74	68	6	1,410	1,006	7,268	609	982
30	1	....	1-60	17	17	....	225	131	1,075	672	672
31	1	37-50	37-50	663 +125 huts.	611 +125 huts.	52	2,511	406	10,641	284	284
32	8	17-10	25-60	275	254	21	2,074	1,004	10,258	262	401
33	2	7-10	8-20	41	41	....	487	467	2,210	241	270
34	4	330-90	368-30	1,093 +3,178 huts.	928 +3,178 huts.	165	9,726	4,059	44,929	93	122
<hr/>											
Total	..	144	505-00 acres.	877-00 acres.	8,951 +4,238 huts.	7,591 +4,238 huts.	1,300	83,451	23,058	4,15,875	

APPENDIX VI-A.

Statement showing Open Spaces (Categorywise) in each Ward in the Island.

Ward No.	Area covered.	Area of open (unbuilt) plots. Sq. yds. (Acres).	Area of plots with katocha structures or huts. Sq. yds. (Acres).	Area of plots with single storeyed. structures. Sq. yds. (Acres.)	Area of old cementries not in use. Sq. yds. (Acres).	Parks and playfields. Sq. yds. (Acres).	Total Sq. yds. (Acres).	Remarks. (Prominent open sites included in col. 7) (Figures in bracket indicate area in acres).
1	2	3	4	5	6	7	8	9
1	Colaba	.. 10,11,334 (208·95)	40,057 (8·28)	1,10,805·9 (22·89)	19,416 (4·01)	86,222 (17·81)	12,67,834·9 (261·94)	Paradeground (15·24 acres).
2	Fort	.. 35,185·96 (7·27)	.... ....	88,333 (18·25)	.... ....	2,04,237·7 (54·59)	3,87,756·66 (80·11)	Public Park (2·49), Cooperage (10·20), Prince of Wales Museum (4·55), Oval (22·66), University Gardens (3·81), Brabourne Stadium (8·40), Elphinstone Circle (2·49).
3	Bori Bunder	.. ....	....	7,111 (1·47)	4,664·95 (·96)	4,71,240·17 (97·36)	4,83,016·12 (99·79)	Cross Maidan (20·56), Bombay Gymkhana (4·92), Azad Maidan (35·02), Llyods Recreation Grounds (24·15).
4	Mandvi	.. ....	....	....	....	....	....
5	Dongri	.. ....	....	....	....	1,656 (·32)	1,656 (·32)	
6	Umerkhandi	.. ....	8,471 (1·75)	21,512 (4·44)	....	16,388 (3·39)	46,371 (0·58)	Municipal Playgrounds (3·39).

7	Kharatalao ..	....	....	....	....	2,318 (.48)	2,318 (.48)	....
8	Kumbharwada ..	....	....	....	1,987 (.41)	13,946 (2.88)	15,933 (3.20)	Northbrook Garden (2.88).
9	Market ..	10,710 (2.21)	....	....	....	....	10,710 (2.21)	
10	Dhobitalao ..	13,322 (2.75)	....	....	....	40,503.56 (8.37)	53,825.56 (11.12)	Parsi Gymkhana (4.14), Islam Gymkhana (4.23)
11	Fanaswadi ..	....	....	....	20,326.42 (4.20)	59,583.66 (12.31)	79,910.08 (16.51)	Hindu Gymkhana (4.33), Wilson College Gymkhana (2.41), Medical College Gymkhana (2.65), City Police Playground (1.91), Catholic Gymkhana (1.01).
12	Girgaum ..	....	....	....	....	21,222.16 (4.38)	21,222.16 (4.38)	Charni Road Gardens (4.38).
13	Khetwadi ..	....	....	5,358.25 (1.11)	....	4,456 (.92)	9,814.25 (2.03)	
14	Walkeshwar ..	34,134.68 (17.38)	....	1,00,150.48 (20.69)	....	1,96,550.76 (40.61)	3,80,835.92 (78.68)	Gowalia Tank Playground (5.23), Hanging Garden (Hughes Road) side (1.94), opp. Hanging Garden (11.08), Hanging Garden (12.13), Kamla Nehru Park (4.1).
15	Mahalaxmi ..	23,555.92 (4.87)	15,565.86 (3.22)	1,22,696.20 (25.35)	....	3,33,726 (68.95)	4,95,543.98 (102.39)	Beach Candy (5.13), Willingdon Sports Club (40.43), Garden Clerk Road (opp. Willingdon Sports Club (11.55).
16	Tardeo ..	....	....	....	....	11,711 (2.42)	11,711 (2.42)	

APPENDIX VI-A—contd.

Ward No.	Area covered.	Area of open (unbuilt) plots.	Area of plots with katcha structures or huts.	Area of plots with single storeyed structures.	Area of old cementaries not in use.	Parks and playfields.	Total.	Remarks. (Prominent open sites included in col. 7) (Figures in bracket indicate area in acres).
1	2	3	4	5	6	7	8	9
17	Kamatipura ..	....	2,260 (47)	....	21,450 (443)	....	23,710 (490)	
18	Nagpada ..	....	13,210 (273)	9,377 (194)	....	92,907 (1919)	1,15,494 (2386)	Baptista Garden (13.78). Municipal Gardens (3.49).
19	Mazgaon ..	19,827 (410)	1,04,871 (2166)	38,101 (787)	7,292 (151)	11,187 (231)	1,81,278 (3745)	
20	Byoulla (West)	....	17,011 (352)	....	....	34,615 (715)	51,626 (1067)	Municipal Gardens (7.15).
21	Byoulla (East)	....	4,889 (101)	26,666 (551)	....	....	31,555 (652)	
22	Ghorupdeo ..	51,287 (1060)	90,274.78 (1865)	1,13,657 (2348)	....	2,30,260 (4757)	4,85,478.78 (10030)	Victoria Garden (47.57).
23	Sewri ..	1,32,146 (2730)	....	....	....	14,605 (302)	1,46,751 (3032)	Dufferin Playground (3.02).
24	Lalbaug	1,54,363 (3189)	10,074 (208)	....	....	6,000 (124)	1,70,437 (3521)	Ganesh Galli Maidan (.46), Lal Maidan (.78).
25	Parel ..	....	14,856 (307)	....	....	41,533 (858)	56,389 (1165)	Nare Park (2.43), Kamgar Maidan (1.38) Central Railway Playground (4.12).

26	Naigaum	..	1,63,384 (33·70)	8,222 (1·70)	56,845 (11·74)	....	1,32,467 (27·37)	3,60,918 (74·57)	St. Xavier's Playground (3·76), Municipal Playground (4·30), Police Playground (8·48), Purandare Stadium (4·19).
27	Matunga		9,389 (1·94)	....	....	....	1,37,107 (28·33)	1,46,496 (30·27)	Municipal Gardens (5·46), Khalsa College Playground (2·43), V.J.T.I. Playground (3·03), Playground Opp. Ruia College (11·29).
28	Sion	..	1,956 (·40)	1,93,778 (40·04)	....	....	99,118 (20·48)	2,94,852 (60·92)	Indian Gymkhana Playground (2·70) Don Bosco High School Playground (8·72).
29	Love Grove	..	6,25,077 (129·15)	....	....	....	8,99,797 (185·91)	15,24,874 (315·06)	Labour Welfare Playground (0·36), West- ern Railway Sports Ground (14·78), Race Course (148·54), National Sport Club (19·06), Haji Ali Garden (2·89).
30	Lower Parel		40,548 (8·38)	....	....	....	....	40,548 (8·38)	
31	Worli	..	45,247 (9·35)	....	7,151 (1·48)	....	68,813 (14·22)	1,21,211 (25·05)	Ambedkar Maidan (1·31), Jamboorie Maidan (4·42).
32	Prabhadevi	..	80,758 (16·69)	....	8,486 (1·75)	....	52,663 (10·88)	1,41,907 (29·32)	Nardulla Tank Park (8·22).
33	Dadar	..	20,889 (4·32)	18,501 (3·82)	51,388 (10·62)	....	1,97,383 (40·78)	2,88,161 (59·54)	Veer Kotwal Garden (0·71), Shivaji Park (22·75), David Sassoon Industrial School (7·12), Ruparel College Play- ground (7·44).
34	Mahim	..	11,54,262 (238·48)	28,621 (5·91)	37,458 (7·74)	....	74,238 (15·34)	12,94,579 (267·47)	
			36,77,375·56 (759·79)	5,79,661·64 (117·91)	8,05,095·83 (166·33)	75,136·37 (15·52)	36,16,354·01 (747·18)	87,44,623·41 (1,806·74)	
			acres.	acres.	acres.	acres.	acres.	acres.	

N. B.—The above statement is prepared from the list of open and unbuilt spaces compiled by the office of the Collector of Bombay at the request of the Study Group. The list of parks and playfields given in column 7 of the statement includes acres in the charge of clubs, gymkhanas, etc. e.g. Willingdon Sports Club, Race Course, Gymkhana grounds, etc.

APPENDIX VI-B.

Particulars of land required and land available or likely to be available in the island on the basis of the recommendations of the Land and Open Spaces and Other Community Requirements Panel.

Land required.	Acres.	Land that would become available.	Acres.
1	2	3	4
For existing schools ..	470	440 acres of total slum area minus 250 acres of area included in open and unbuilt plots.	190
For new schools ..	176	85 acres south of Mahim Creek (415 acres—330 acres of Dharavi slum area).	85
For accommodating 6,60,000 persons inadequately housed.	2,200	To be reclaimed west of Hornby Vellard ..	129
For housing those evicted from slum areas.	946	Milk stables acquired	20
For hospitals ..	50	Milk stables to be acquired ..	21
For parks, play-grounds, etc. (requirement at the rate of 1½ acre per 1,000 persons will be 4,500 acres).	3,000	Half of the area of 166 acres which may be available after replacement of ground and one storey structures (<i>vide</i> appendix VI-A).	83
		Half of the area (118 acres) of katcha structures or huts (<i>vide</i> appendix VI).	59
For 20 industrial estates ..	60	Old cementries not in use (<i>vide</i> app. VI-A) ..	15·52
	6,902	Open unbuilt plots (<i>vide</i> app. VI-A) ..	755·87
		Reclamation in Back-bay Blocks Nos. 3,4, 5 and 6.	574·56
		Area west of Annie Beasant Road ..	15
		Veterinary College (if shifted) ..	9
		Railway Workshops (if shifted) ..	77
		Parks and play-ground area (inclusive of Race Course area and areas in possession of clubs, gymkhanas, etc. Inclusive also of 30 acres adjoining the race course).	746
		Salt pans, inclusive of the area known as Wadia Mahal.	1,100
		Beggars' Homes, etc. (if shifted) ..	34
			3,913·95

APPENDIX VI-B—*contd.*

Land required.	Acres.	Land that would become available.	Acres.
1	2	3	4
<i>Outside the Island—</i>			
		*Salt Pans	1,365
		*Areas North of Mahim Creek in the Bandra-Kurla Regin.	1,720
		*South of Bandra and West of Mahim Causeway.	150
		Elephanta Island	2,000
		Area near Vikhroli, Bhandup and Mulund Railway Stations and Creek land north of Andheri-Versova Road.	1,275
		Beggars' Home etc. (if shifted) ..	175
		In addition, there are numerous low laying and marshy areas (about 18.42 sq. miles) in the suburbs which can be reclaimed. On both sides of the Western Express Highway alone about 6,000 acres of land would be available for development. In addition an area of about 52 sq. miles for residential use, 12.47 sq. miles for public use, 9.97 sq. miles for Government and public use, 21.16 sq. miles of green belt etc. is likely to be available in the suburbs.	

*Those areas are in the immediate vicinity of the island.

APPENDIX VII.

STATEMENT A.

List of milch cattle stables sites acquired for various municipal purposes.

Serial No.	Location.	Division.	C. S. No.	Approximate Area acquired, if any, in sq. yards.	Approximate rate of land.	Present position.
1	2	3	4	5	6	7
					Rs.	
1	60, Chandanwadi ..	Bhuleshwar ..	435	1,468	150	Cattle removed. Site not vacant.
2	15, 1st Panjarpole Lane ..	Do. ..	3,147	873	150	Cattle removed.
3	31-33, 1st Panjarpole Lane ..	Do. ..	3,152	621	150	Cattle removed. Site not vacant.
4	1, Falkland Road, 8th Cross Lane.	Do. ..	952	1,500	40	Cattle removed. Site not vacant.
5	301 AB, Falkland Road ..	Do. ..	953	2,600	40	Cattle removed. Site not vacant.
6	52A, Khetwadi Back Road ..	Do. ..	879	1,145	50	Cattle removed. Site not vacant.
7	49 ABC, Arthur Road } 420 ACE, Arthur Road }	Tardeo ..	343	18,200	60	Cattle removed. Site mostly vacant.
8	48AB, Mohamedan Street ..	Byculla ..	1,549	<i>Nil.</i>	35	Cattle removed. Site mostly vacant.
9	58-60, Mohamedan Street ..	Do. ..	1,079	3,340	35	Cattle removed. Vacant.
10	80BG, Lamington Road ..	Tardeo ..	332	7,142	60	Cattle removed. Vacant.
11	118 FEGH, Lamington Road ..	Do. ..	326	5,116	60	Cattle removed. Site not vacant.

12	40 CE, Clerk Road	..	Byoulla	..	2,017	Nil	40	Cattle removed. Site not vacant.
13	42 EF, Clerk Road ..	..	Do.	..	2,016	Nil	40	Cattle removed. Site not vacant.
14	56 EI, Clerk Road ..	..	Do.	..	2,000	10,971	40	Cattle removed. Site not vacant.
15	449 AB, Delisle Road	..	Do.	..	2,056	1,851	35	Cattle removed. Site vacant (laid out into a garden for children).
16	530 AB, Delisle Road	..	Do.	..	2,022	4,345	40	Cattle removed. Site Vacant (in/o of C. S.).
17	544 ABCD, Delisle Road	..	Do.	..	2,023	5,788	40	Cattle removed. Site vacant (in/o of C. S.).
18	662-664, Hains Road	..	Do.	..	1,969	3,325	35	Cattle removed. Site vacant (structure for housing construction).
19	666-A, Hains Road	..	Do.	..	1,968	3,076	35	Cattle removed. Site vacant (Structure for housing construction).
20	7 A-15, Milk Street	..	Do.	..	1,922	4,045	35	Cattle removed. Site vacant (Structure for housing construction).
					Ex-Trust plot.			
21	49 E, Ripon Road ..	..	Do.	..	1,975	1,966	35	Cattle removed. Site vacant (Work of buildings for housing in progress).
22	41 EN, Ripon Road	..	Do.	..	1,969	7,094	35	Cattle removed. Site vacant (Work of buildings for housing in progress).
23	40-50, Tank Pakhadi Road	..	Do.	..	1,842	6,960	35	Cattle removed. Site vacant (Work of buildings for housing progress).
					Ex-Trust Plot.			
24	52-58, Tank Pakhadi Road	..	Do.	..	1,843	6,010	35	Cattle removed. Site vacant (Work of buildings for housing in progress.)
					Ex-Trust Plot.			
25	31 C, Elphinstone Road	..	Parel Sewri	..	94	9,445	35	Cattle removed. Site vacant.

APPENDIX VII—*contd.*STATEMENT A—*contd.*

Serial No.	Location.	Division.	C. S. No.	Approximate Area acquired, if any, in sq. yards.	Approximate rate of land.	Present position.
1	2	3	4	5	6	7
					Rs.	
26	120 B, Curry Road	.. Lower Parel	187	1,725	35	Cattle removed. Site vacant. (Structures for housing constructed).
27	293 AE, Delisle Road	.. Do.	.. 80 & 90	10,613	35	Cattle not removed.
28	299 CDE, Fergusson Road	.. Do.	.. 263	4,050	30	Cattle not removed.
29	1171, Fergusson Road	.. Do.	.. 436	12,107	25	Cattle not removed.

APPENDIX VII—*contd.*

STATEMENT B.

Statement showing the Stables on private lands containing Milch Cattle at present.

Location of the Stable.	Whether on Private or Municipal land.	Area occupied by the stable (in sq. feet.)	No. of animals stabled at present.	Dates on which the stable is to be shifted.	Approximate rate of land per Sq. yard.	Name of the ward.	Particulars of Milch cattle Stable cleared since 1940 and the land thereof used at present.
1	2	3	4	5	6	7	8
					Rs.		
1. 16, Water Street	Land purchased by Municipal Corporation.	67,232	Nil.	Stable completely vacated in May 1958.	35	E	.. The land is lying unoccupied.
2. 79-81, Sayani Road.	Private Land	27,700	Nil.	Stable completely vacated in February 1958 and animals shifted to Aarey colony.	35	G	.. The land is used for carpentary workshop and timber godown.
3. 38-A, Mogul Lane.	Do.	2,875	40	Not known	20	G	
4. 77-AB, Mogul Lane.	Do.	11,424	78	Do.	20	G	
5. 315-B, Delisle Road.	Do.	19,200	120	Do.	50	G.	
6. 415, Tulsi Pipe Road.	Do.	9,900	40	Do.	40	G	
7. 415-A, Tulsi Pipe Road.	Do.	22,704	100	Do.	40	G	

APPENDIX VII—*contd.*

STATEMENT B—*contd.*

Location of the Stable.	Whether on Private or Municipal land.	Area occupied by the stable (in sq. feet.)	No. of animals stabled at present.	Dates on which the stable is to be shifted.	Approximate rate of land per Sq. yard.	Name of the ward.	Particulars of Milch cattle Stable cleared since 1940 and the land thereof used at present.
1	2	3	4	5	6	7	8
					Rs.		
8. 28-AB, Parel Tank Road.	Private Land	.. 2,250	45	85 per cent. animals so far removed and the stable about to be vacated completely.	20	F	.. Half the structure of the stable has been demolished. The remaining portion about to be demolished.
9. 47-P, Parel Chawl Road.	Do.	.. 2,000	41	70 per cent. animals so far removed and the stable will be vacated shortly.	60	F	.. The structure of the stable is partly demolished and further demolition is in progress. Construction of chawls started on the land.

APPENDIX VII—contd.

STATEMENT C.

Statement showing the Structures formerly used as milch cattle stables and from which milch cattle have been completely removed.

Serial No.	Location of the old stable.	Name of the owner.	Area in Sq. yards.	Approximate rate per Sq. yard.	Ward.	How the old stable structures are used at present.
1	2	3	4	5	6	7
				Rs.		
1	21-C, Sindhi Lane ..	.. Nathubhai Abdullabhai ..	561	100	C	.. Cement godown and bamboo matting works, etc.
2	391-D-E-H-, Grant Road	.. Y. N. Killedar and M. N. Killedar.	....	70	D	.. Vithaldas Goculdas Market.
3	216-A, Falkland Road	.. Noor Mahomed Ahmed ..	} 1444	35	D	.. Godowns.
4	216-C, Falkland Road	.. Do. ..		35	D	.. Godowns.
5	216-D, Falkland Road	.. Do. ..		35	D	.. Godowns.
6	54A, Tardeo Road ..	.. Fazal Mulraj ..	2600	40	D	.. For others and Dyeing Works.
7	4046-I, Arthur Road	.. Devsh bhai Avasi ..	1696	40	D	.. Godowns and Residences.
8	463, Arthur Road ..	.. Ismail Jan Moahomed ..	1700	40	D	.. Glass Processing Laboratory.
9	493A-C, Arthur Road	.. Laxmidas B. Ghaswala ..	5435	40	D	.. Residential buildings and cottage industries.
10	73-B, Banganga ..	.. H. H. Lakdawalla ..	364	60	D	.. Residence and Dhobi Ghat.
11	12-14, Hariram Bhimji Wadi	.. Bai Valibai widow of Madhavji Hariram.	3011	40	E	.. Godown.
12	7-21A, D'Lima Street	.. Sir, Mohomed Usuf ..	2072	40	E	.. Workshop.
13	541, Ripon Road ..	.. Mr. Ismailji Alibhai Rangwalla	4158	40	E	.. Residence and Workshop.

APPENDIX VII—*concid.*STATEMENT C—*conid.*

Serial No.	Location of the old stable.	Name of the owner.	Area in Sq. yards.	Approximate rate per Sq. yard.	Ward.	How the old stable structures are used at present.
1	2	3	4	5	6	7
14	384, 384-B, Arthur Road	.. Haji Umar Haji Musa Bharucha.	3600	40	E	.. Residence and workshop.
15	382, Bapty Road	.. Bombay Municipal Corporation.	889	40	E	.. Small workshop and Motor Garages.
16	6AB, Byculla Station Road	.. Kanji Jiwan ..	2266	35	E	.. Residence and workshop.
17	10A, Byculla Station Road	.. Bombay Municipal Corporation.	1289	..	E	.. Residence and godowns and petty workshops.
18	74 AB, Byculla Station Road	.. Ahmed Kasam Basar ..	689	35	E	Workshops.
19	100, Byculla Station Road	.. Haji Dawood Ahmed Basar ..	933	35	E	.. Petty workshops.
20	624A, Hains Road ..	.. Esmail Mahomed ..	3111 ..	35	E	.. Workshops and godowns.
21	659, 659A, Hains Road	.. Bombay Municipal Corporation.	2933	35	E	.. Construction of new buildings for housing the dishoused tenants from the locality.
22	7-7A, Mussa Killedar Street	.. Abdul Kadar Ibrahim Killedar.	6783	35	E	.. Workshop and godowns.
23	29—43, Mussa Killedar Street	.. Bai Rahimabai Mahomed Abba Juma and others.	5483	35	E	Workshop and godown.
24	10A, Pais Street ..	.. Mahomed Ismail Killedar ..	6050	35	E	.. Factory and godowns.
25	22A-B C-D, Pais Street	.. Abdul Talyad Sk. Sarafalli ..	3289	35	E	.. Factory and Godowns.
26	30A, Pais Street ..	.. Adam Mussa Bharucha ..	6000	35	E	.. Factory and godowns.
27	32-34-A, Pais Street	.. Abdul Tayed Sk. Sarafalli ..	6400	35	E	.. Factory and godowns.
28	31-A, Ripon Road	.. Durkoji Rokadoji ..	871	40	E	Workshops and residence.
29	65, Ripon Road	.. Haji Dawood Ahmed Basar ..	944	40	E	.. Workshop, Godown and Residence
30	67AL, Tank Pakhadi Road	.. Chaganlal Naraindas ..	7167	35	E	.. Godowns.
31	390EF, DeLisle Road	.. Mr. Kantilal Kodarlal Parekh.	1417	30	G	.. Godown and workshops.
32	6G, Plannel Street	.. Mr. Paramandas Karsondas ..	1545	30	G	.. Godowns.

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