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**MINARY REPORT
THE STUDY GROUP
ON RESTRUCTURING
BOMBAY**

PREAMBLE: 1.01 The Study Group was established on 17th June, 1968, to study the possibilities of restructuring Bombay along an east-west axis. The group constituted had following members:-

1. Shri S.V. Desai Chairman.
2. Shri B.G. Fernandes Member
3. Shri C.M. Correa Member
4. Shri S.B. Patel Member
5. Shri J.G. Keskar Member-Secretary.

1.02. Shri J.G. Bodhe and Shri R.S. Khambatta, were co-opted as members at a later date. Prof. Andrade and Prof. Fisher from the Ford Foundation also attended the meetings on invitation. Two officers from TCPO and Ford Foundation also assisted the group. The group first met on the 11th July 1968 and had seven meetings thereafter. The members of the group also inspected the Trans-Thana, Uran, and Nhava-Sheva areas on 16th September 1968.

1.03. The following terms of reference were decided upon in the first meeting :-

- I. To identify those areas of policy and action which affect the growth of Bombay and to analyse their effects over the next 10 or 20 years.
- II. To define the objectives in light of I above.
- III. To evaluate the present urban structure.
- IV. To consider various alternatives for restructuring the city.
- V. To suggest the strategy of implementation.

1.04. The object of submitting this Interim Report to the Board is to acquaint the members with the thinking of the Study Group.

1.1. Areas of the policy and action affecting the growth of Bombay have been analysed under the following headings :-

- 1) Office employment;
- 2) Industrial land policy.
- 3) Port expansion.
- 4) Land policy and metropolitan land use structure.
- 5) Transportation;
- 6) Location of housing areas;
- 7) Utilities and services,

We would proceed to briefly deal with each of the above items in the following paragraphs.

1.1.1. Office employment in Greater Bombay:- We believe that the growth of office employment is a factor deserving close attention in analysing growth of Greater Bombay. Although complete statistics in this respect are not available considerable information about employment trends in the area covering Greater Bombay is obtained from the quarterly and annual employment market reports published by the Director of employment after periodical surveys. These reports are based on returns from all public sector establishments and from establishments in the Private sector employing 25 persons and above.

1.1.2. Table No.1 in the Appendix shows the growth of employment from 1961 onwards in the various branches of public sector including offices, transport undertakings etc. It will be seen from this table that from 1962 to 1967 public sector employment in Bombay has increased from 3,47,388 to 4,24,378 i.e. by about 22%.

1.1.3. Table No.2 indicates extent of employment in the "services" category, Most of this activity is conducted in offices. Employment shown under "Services" heading however excludes office employment in Railways, BEST, Port Trust etc. which is included in "Transport and communication" category. Same is the case in respect of office employment in the "Manufacturing and Utilities" establishments. Office

employment in private establishments, employment of more than 25 persons is also not compiled. For these reasons the employment shown in the Services category is a gross under-estimate of the total volume of office employment in Bombay. This is confirmed by the fact that although table No.2 indicates a total employment in the services category of 1,47,000, a survey carried out by the Traffic Cell in 1968 reveals that office employment in Greater Bombay is 4,87,000 of which Government and Semi-Govt. employment accounts for 3,72,000.

1.1.4. Tabel No.2 indicates that the employment in the services category increased by nearly 28% from 1962 to 1967. Further more growth in the public sector has been 32.6% as against 18% in the private sector. During the same period total industrial employment has increased from 5,22,862 to 5,66,530 i.e. by only about 8%.

1.1.5. It is commonly believed that the recent phenomenal growth of Bombay is mainly due to the growth of industrial employment. The statistics mentioned above however show that office employment has in fact grown faster than industrial employment. This high proportion of growth in office sector is typical of all metropolitan cities around the world. London, Paris, New York etc. have imposed restrictions for the past 30 years or more on establishment of industries in or nearabout the city and in spite of these restrictions they have continued to grow, chiefly on account of growth in office employment. Employment pattern of the advanced countries show that as economy develops ^{and} technology improves and the services sector increases at a much faster rate. The rate of growth of office employment in Bombay may therefore be even faster during the coming years.

1.1.6. The position in Bombay is further aggravated by the fact that most of the growth in office employment takes place in the south end of the island. In 1957, out of the total Government staff employed within the limits of Greater Bombay about 38% was employed in 'A' ward. In 1967 the position had further deteriorated with almost 42% of the

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total Government jobs being in the southern tip of the island. The high rate of growth of office employment coupled with continued imbalance in the location of work places and housing has created serious transportation and other problems in the city which would aggravate in future. From this arises an urgent need for restructuring the city and of giving it a new orientation.

1.2.1. Industrial land policy:- The industrial policy of Government embraces not only aspects of industrial locations but also the fiscal policy and Government's approach to the distribution of industries in the Public and private sector. We will restrict ourselves to a study of the Government policy in respect of industrial locations, only. Government's broad approach to the industrial locations is contained in the various statements of policy made in the successive five year plans. In the Second Five Year Plan the necessity of a diffusion of industries had already been emphasised. In the third Five year plan a Special chapter was devoted to "Balanced Regional Development". Para 14 thereof mentions "The general approach has to be to avoid further concentration of industrial activity in areas where considerable development has taken place or has been planned; but expansion in existing industries in such areas cannot of course be ruled out if it leads to economy in production. Similarly as far as possible care must be taken to set up new industries away from large and congested cities."

1.2.2. Measures & incentives for decentralisation:- In keeping with this policy and the object of securing gradual decentralisation of industries and helping industrialisation of other under-developed areas, an Industrial Development Corporation was set up by the Government of Maharashtra under the Maharashtra Industrial Development Act, 1961. With the same object in view Government in Industries Department announced a package scheme of incentives for dispersal of industries. Nature of incentives offered to industries willing to locate outside the congested centres are:-

1. State Government support for obtaining industrial licence.

2. Relief from incidence of certain taxes, duties and rates like electricity, ^{tariff} tariff, sales tax, octroi duty, water royalties, non-agricultural assessment.
3. Guarantee to loans.
4. Contribution towards cost of feasibility study.
5. Contribution towards cost of industrial housing.
6. Advance supply of building materials on loan from a Revolving stock.
7. Preferential treatment in Government purchase programme.
8. Assistance in technical training of personnel.

1.2.3. In pursuance of Government policy of curbing further industrial growth in the already congested Bombay-Thana complex, Government in last two years, decided that no new industries shall be allowed to be established and expansion of industries shall not be permitted in the Bombay-Thana area excepting essential industries defined on the following criteria:-

(a) in the case of new industries:-

- i) whether the industry is ancillary to an existing industry in the Bombay-Thana area;
- ii) whether the industry will use as its raw material, by-products of an existing undertaking situated in that area;
- iii) whether the industry is export oriented and needs substantial quantities of imported raw material;
- iv) whether there are any compelling technical or economic considerations justifying the location of the industry in the said area.

(b) in the case of expansion of an existing industry whether the expansion:-

- i) is merely marginal;
- ii) is intended for the purpose of balancing of equipment;
- iii) involves the manufacture of new items;
- iv) does not involve the manufacture of new items not related to the manufacture of existing items.

(c) the industry is being shifted from an area which is or which is to become a non-industrial area to an industrial area, that is to say, an area in which industries are or are to be established.

1.2.4. The policy of not allowing new industries in Bombay was followed since 1966. Even prior to that, the Corporation's broad zoning plans drawn up in 1951 under the Municipal Corporation's Act, and thereafter development plan under the Town Planning Act, discouraged location of new industries in the city and had proposed locations in the northern and eastern suburbs. As an effect of this policy a number of new industries came up in the recent past in the suburban area, mostly along the major through traffic arteries. In 1956, the total industrial employment in the city was 3,38,350 and the industrial employment in the suburbs (H,K,L,M & N wards) was 57,812 (*). Corresponding figures for 1967(**) are: City 3,70,640, suburbs (H,K,L,M & N wards only) 1,51,547. Of the total increase in the industrial employment from 1956 to 1967 (which was 1,31,735) almost 76% was absorbed in the suburban wards (H,K,L,M & N P,R & T wards which were annexed to Bombay in 1967 also provided industrial employment to 44,433 persons in 1967.

1.2.5. A considerable industrial development has also taken place recently outside Greater Bombay in such locations as Thana and its suburbs, Atale, Shahad near Kalyan, Ambernath, Dombivli, Thana-Belapur area and Khopoli. This industrial development in the suburbs and even outside Greater Bombay indicates that the measures adopted for diverting industrial development outside the city have had a certain amount of success. The establishment of the Maharashtra Industrial Development Corporation and the projected bridge across Thana Creek, have also certainly helped in this process of diverting industries to the new centres outside Bombay. This shows that dis-incentives coupled with incentives can succeed in diverting growth of economic activities to desired locations and in curbing it in undesired locations. The

(*) Source:- "Work Wages & Well beings" by Prof.D.T.Lakdawalla.
 (**)The years 1956 and 1967 have been chosen for comparison because ward-wise distribution of employment was available.
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limited success which the above industrial location policy has achieved in Bombay has however not been enough to solve the problems of the city. Though the industrial employment has been relatively slow during the last few years, growth in office employment has been taking place at a much faster rate and the industrial location policy has thus only been able to touch the fringe of the problem. The persistence of the city's problems inspite of the relatively slow growth of industrial employment in the city over the past few years indicates that these problems are not likely to be solved merely by a policy of discouraging new industries within the limits of Greater Bombay. Bolder and more dynamic measures would be necessary for this purpose.

1.3.1. Bombay Port :- The Bombay Port is the premier port of India on the western seaboard of the country. The existence of a good natural port is one of the principal intrinsic locational advantages of Bombay and the port function would therefore continue to retain its importance unchanged.

1.3.2. The volume of traffic handled by the port has progressively increased. It has expanded from 6.5 million tonnes in 1945-46 to 18.20 million tonnes in 1966-67. The traffic projections in respect of dry cargo traffic are as under:-

Year	Dry Cargo (M.tonnes).
1965-66 (actual)	7.96
1966-67 (")	8.27
1970-71	9.00
1973-74	10.80
1975-76	11.80
1978-79	14.10

1.3.3. The oil cargo traffic is mainly handled at Butcher Island and the dry cargo traffic at the Princess, Victoria and Alexandra docks. The total capacity of the docks for handling general and bulk cargo after the dock expansion programme is executed and on the basis of an optimum berth occupancy ratio will be 8.2 million tonnes. The facilities available in the port will therefore progressively fall short of the

requirements, even after the dock expansion scheme is carried out. It will be necessary to create additional berths at a suitable location to cater to the needs of the increased traffic. After investigating the various possibilities in this respect the Bombay Port Trust have proposed that Nhava-Sheva on the Uran shores will be a suitable location for the creation of a satellite port. The Master plan prepared by the consultants of the Bombay Port Trust is being scrutinised by the Government of India and Port Trust and a final decision in this respect is likely to be taken in the near future. The Bombay Port Trust has already included an amount of Rs.13 crores for being spent on this project during the Fourth Five Year Plan.

1.3.4. Even as early as 1978-79 the Satellite port may have to handle a traffic of nearly 7 million tonnes as against 8.2 million tonnes handled at Bombay Port. The new Port will therefore have a rapid rate of growth and may soon be even bigger than the Bombay Port.

1.3.5. The decision of the Bombay Port Trust to create a satellite port on the western shores of the main land near Nhava-Sheva is certainly a very welcome decision in the context of the overall development of Bombay. It will substantially help in arresting the development of further ^{pressure} on the traffic arteries in the island of Bombay by enabling a considerable part of the bulk cargo traffic of the port to be transported directly to the up country destinations without having to pass through the heavily congested roads and railways of the city. A more welcome aspect of this decision is that it will provide a nucleus of development on the main land portion of the region which nurtured suitably, can develop into a dynamic growth pole and a real counter magnet for the island.

1.4.1. Aspects of land policy effecting metropolitan land use structure:-

We have already said herein before that the most important single factor responsible for an imbalanced structure in the metropolitan area is the over-concentration of services sector in the southern tip of the peninsula.

Government's decision of creating more land for commercial purpose in this southern tip is hardly a step which can restore the balance. Many committees, Study Groups and individuals have cautioned the Government in the past against the contemplated Backbay Reclamation project aimed at creating a huge new commercial complex near the existing C.B.D. At the cost of repetition however, we would again mention that the creation of this commercial complex almost equal to the existing Fort area is fraught with the risk of aggravating the structural imbalance to a point of break down. We would urge that no steps should be taken which would attract a substantially large number of commuters to this area.

1.4.2. The fixation of floor space indices as currently made closely follows the pattern of land values in the metropolis; floorspace index being higher for more costly lands and lower for the less costly ones. The F.S.I. could have been made instrumental in correcting the imbalance of the city structure. If the more distantly situated low priced lands had been allowed a larger floor space index and if lands in the congested portion of the CBD and in the Fort area had been allowed a lesser F.S.I., this would have amounted to providing natural incentives for dispersal away from centre. As it is, however, the fixation of a higher F.S.I. near the business centre and lower F.S.I. in the peripheral areas has only accentuated existing trends, both in land values and land uses.

1.5.1. Transportation:- The importance of adequate and efficient transportation in sustaining a metropolitan structure is self evident. In fact the present development of metropolitan Bombay is due in a large measure to the early development of a good communication net work which in the initial stages of development was quite efficient in moving goods and people throughout the metropolitan areas and to and fro. The north south major arterial roads reach right upto the C.B.D. and the central and western railways also penetrate right upto the core of the business district. These came in at quite an early stage

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of development and were undoubtedly responsible in promoting the growth. They were also however responsible for a deep entrenchment of the north-south pattern of development in the city. When pressure of traffic was not heavy, and when spare capacities were available on the roads and on the railways, the effect of the constraints caused by the peculiar geography of the island city were not very much felt. But as the island city came to be inhabited by larger and larger numbers of people, and as more and more commercial jobs continued to be created at the southern end, the transportation system began to experience an acute pressure. This has now developed to such an extent that it threatens to cripple the entire transportation network in the city.

1.5.2. The American firm of consultants which carried out surveys of vehicular traffic on roads in Bombay has come up with recommendations for construction of free ways and expressways to create additional road capacities and to give relief to the existing overcrowded roads. These proposals were estimated to cost Rs. 96 crores (at 1963 rates) and were aimed to meet the 1981 traffic demands. Obviously if traffic continues to develop, still further investments may be necessary after 1981.

Problem of mass commuters would remain entirely untouched even after this huge expenditure on the development of roads is incurred. The development of additional capacities for mass transportation of people could only be effected by evolving new modes for mass transit facilities. This could easily cost another Rs. 100 to 200 crores.

1.5.3. We believe that it would be possible to avoid most of these expenditure both on roads and ^{mass transit} transport by undertaking a programme of restructuring the landuse pattern of the city and thus removing the root causes of the problem. It would surely be possible to develop a major counter magnet at half the cost required for the development of new underground railway system, a system which will be inevitable only if no attempts are made to remove the inherent imbalance in the city structure and to give it a new direction of growth.

1.5.4. The determination of transportation cost is one of the important factors of any locational analysis. To a certain extent inherent advantages of any location may control and dictate the development of the transportation net work, but beyond a point the inherent benefits of the location, as also the benefits of external economies of concentration are off set by more than heavy investments required for the continuous augmentation of transportation. At this stage it is apparently more beneficial to divert development to a new location. In the case of the island city, we feel that this point of saturation has been reached and it is now time to undertake the development of an alternative metro-centre at an appropriate location.

1.6.1. Locations of Housing areas:- While dealing with the locations of office and industrial employment we have already indirectly referred to the imbalance between workplaces and housing areas. In all metropolitan areas every where, central area functions and the consequent high land values gradually displace housing (mainly middle and low income groups) from inner areas and push it to the fringe areas. In the case of Bombay there was only one direction in which housing could be so pushed out and that was the north. This meant that commutation distances were lengthening as housing areas were continuously being pushed out. These new housing areas have developed merely as dormitory areas. The present imbalance would be accentuated if more jobs are added in the south of Bombay because housing could only be added in the still more distance suburbs. From this point of view also serious rethinking would be necessary about policies and programmes likely to perpetuate the present structure.

1.7.1. Utilities & services:- Due to the high land values and congestion in the city area it is becoming progressively difficult to secure land for the augmentation of existing utilities and services catering to the day to day needs of the population. But apart from the question of land values, there are also other problems due to which augmentation of the capacities of existing utilities

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in the congested portions of the city is difficult.

1.7.2. Even though additional water may be brought to the city from the various sources and reservoirs in the far north, it may not be possible to supply all this water through the existing distribution mains. Obviously if the population in the city and the demand for water go on rising continuously it would become necessary at some stage to completely overhaul the existing distribution system. This would require a heavy capital outlay.

1.7.3. The provision for meeting substantial additional electrical loads in the city is also a costly proposition. It would be next to impossible to find out land for locating a new receiving station in the congested city area, which should be situated near the load centre. More intensive development in the city will however necessitate the transmission of the additional electrical power over long distances to meet the load requirements. It will not be possible in the developed areas of the city to have over-head transmission ~~towards~~^{towers} and it will be necessary to lay extra high voltage cables under-ground and utilize extra high voltage indoor switch gears both costing very considerably more than over head towers, requiring substantial amount of foreign exchange and involving heavy transmission losses. If new development is diverted to other areas it will be possible to do away with costly underground cables and make a substantial saving in the supply of electricity.

1.7.4. In general, cost of augmentation of services in developed areas is much more than the cost of developing new services of equivalent capacity in open areas.

1.8. CONCLUSION:- From the preceding examination of the areas of policy and action affecting the growth of Bombay it is abundantly clear that the root of the problems in Bombay lies in the imbalance in the land use structure which gets perpetually accentuated by the continued increase of office employment in the already heavily loaded southern tip. Any attempts which would leave this root proliferating further would therefore fail in solving the problems.

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OBJECTIVES

2.0. The broad policy objectives for achieving the restructuring of Bombay in the light of above can be defined as under:-

2.1. Rate of Economic growth:- It is essential to ensure that no attempt at restructuring the city results in lessening the tempo of economic development. The first objective would therefore be not to recommend any measures which will diminish the rate of economic growth but instead to plan in such a way that a desirable growth rate and the desired restructuring are achieved simultaneously.

2.2. Incentives for attracting mobile functions to a new area of development.:- To effectively restructure Bombay, it would be necessary to remove from it certain functions which are active as poles of major growth. The second objective would therefore be to identify those social and economic institutions which have a high relative mobility and which are also a strong centre of growth; and to create incentives so that these institutions are attracted to a new area of development.

2.3. Maximise returns:- Some of the expensive projects contemplated for the development of utilities, services and transport would become avoidable if the development pattern in Bombay could be altered. Since total resources available for development would be limited it would be necessary to select such solutions as would minimise total investments. The third objective would, therefore be to maximise returns from the investments available for metropolitan development.

2.4. Generate and Attract new Resources:- By a judicious choice of alternatives it would be possible to select solutions which not only give best returns on total investments but also attract and generate new resources. This aspect is even more important than maximising returns, where initial capital outlays are necessarily be limited. The Fourth objective would, therefore, be to select such solutions which would generate new resources.

2.5. Open ended solution :- Nobody can be absolutely certain of what will happen in future in respect of demographic, economic and social factors. Every planning solution should therefore be capable of providing a number of options to the next generation. The fifth objective would therefore be to ensure that the new plans provide an open ended solution:

2.6. Promote development of hinter land:- The sixth objective would be to restructure Bombay in such a way as would make an effective impact on the development of the hinter-land by its physical contacts and which would form the first link between Bombay and the undeveloped region situated further east.

EVALUATION OF THE PRESENT URBAN STRUCTURE

3.1. The possible ill effects of a policy resulting in the perpetuation of the existing structure of the city have already been referred to. Many of the problems of Bombay have obviously arisen from a concentration of a disproportionately large number of metropolitan activities on a small part of the island suffering from a number of planning constraints.

3.2. Since the island itself has a north south orientation, it was but natural that the growth followed a linear pattern. Every subsequent stage of development resulted in removing new housing farther and farther away from the city centre, perpetually increasing commuter-distances. Being surrounded by the sea on all but the northern side, the city can not grow in any other direction, but the north. This imposes severe limitations on development within the area of Greater Bombay.

3.3. The second planning constraint arising out of geography of the metropolis is limited land available for development within the island. Any attempts at redistributing users within the area of the island itself would therefore culminate in a closed situation at one stage or another, where the structure becomes incapable of expanding and becomes choked up. The island structure of the city is therefore not capable of providing an open ended solution to the growth of the metropolitan activities. The proposal for development of an alternative commercial centre within the area of Greater Bombay itself and at Bandra-Kurla would achieve marginal redistribution of activities would in course of time again result in a closed situation. It would not therefore be a longterm solution though capable of providing immediate relief.

3.4. The re-development of the island city on a massive scale is so difficult as to be impracticable. The provision of utilities, services and facilities for the increasing population is exorbitantly costly. The result of this is that the present structure is becoming more and more incapable of satisfying the daily needs and aspirations of the people.

3.5. It is not unusual in a developing country to see that metropolitan prosperity exists in an ocean of rural poverty. In the case of Bombay the metropolis is physically an island. The points of contact with the rest of the hinterland of the state are therefore limited even physically. Obviously, if the location of a metrocentre is more in land, retaining the benefits of port, sea side and water front, the surrounding population could profit to a much greater extent from the dynamic growth of the metropolitan centre.

3.6. The already large population size which the metropolis has reached at is itself another serious planning problem. The spiraling values of land in the metropolis are directly due to over increasing volume of all distributed activities. The enormous mass of humanity residing at subsistence and below subsistence levels in unplanned areas has created mounting social dissatisfaction, health hazards and even problems of law and order.

Alternatives for Restructuring

4.1. The following are the possible alternatives for achieving the desired restructuring of Bombay.

1. Allow the metropolitan city to grow to a certain size and absorb the rest of the growth in a number of small and medium sized New Towns.

2. Plan for a linear expansion or corridor development along existing and future communication routes with small urban communities connected by rapid transit system.

3. Expansion of the city across the creek by the development of a second Metro centre which will retain a visual connection with Bombay and will be a link between Bombay and the hinterland.

4.2. Development of a series of new towns around the metropolis is a classic and traditional solution. Analysis of the problem areas in the development of Bombay has however highlighted the necessity of diverting the employment intensive sophisticated office sector outside Bombay; and a series of small new towns will not therefore be an adequate solution. The types of activities in the tertiary sector which will have to be induced to locate themselves outside Bombay could only flourish properly in a metropolitan setting and not in several small new towns dispersed in the region. This is not to say that new towns will not be required at all. They will be needed around the various growing industrial centres in the region but will not be adequate as a measure for effective restructuring of Bombay, in terms of our second objective.

4.3. If New Towns is a classic solution, a corridor development is in many respects 'natural' solution. It is so much in the nature of things for physical development to spread along communication routes that a plan of this type will require the least amount of "effort" for guiding development. A corridor development may emphasise one or two preferential axes of development or may take

the shape of an outstretched palm in case of a multi corridor system. In the case of Bombay, the Bombay-Poona and Bombay-Baroda railway lines, and the Bombay-Poona and Bombay-Agra and the projected Bombay-Ahmedabad Roads would be the possible corridors along which small urban communities could be allowed to be developed. The failure of the urban corridors in terms of our objectives would however lie in the fact that they would merely be linear extensions emanating from the existing centre and would not be effective in evolving a new centre or focus for the large scale development of the office sector. Another limitation of the urban corridors arises out of the pressure that they inevitably create on the linear communication axes along which the communities are allowed to develop. Multiple urban corridors emanating from the existing metropolis really depend for their effectiveness on the existence of truly expressways and rapid transit routes linking the communities which would not be readily available around Bombay.

4.4. The third alternative consists of the development of a new Metro centre on the mainland which would provide the urban fabric necessary to attract away from Bombay employment intensive tertiary activities and would provide social, cultural and other amenities for the surrounding area. An ^{na}alysis of the various factors of growth of Bombay has made it abundantly clear that the rapid growth of office jobs and tertiary sector as a whole is in a large way responsible for the continued worsening of the situation in the Island City. Any solution which will fail in achieving a substantial relocation of the tertiary sector will only provide marginal relief. To be really successful in reorienting growth of Bombay new development will have to be of such an order and of such character as will be able to induce the sophisticated tertiary sector to locate itself away from the congested southern tip. The offices and other activities in the tertiary sector are very largely interdependent and it would be impossible to move them singly as in the case of industries. It has also been the experience everywhere that a modern office complex flourishes only in a metropolitan setting. In fact the Head offices of many industries located in Poona and elsewhere continue to have their establishment in Bombay. It is

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imperative, therefore, to provide a metropolitan fabric for the proposed new development, if a substantial growth of the offices sector is to be promoted in this new centre.

4.5. This would be able to take a large population and a large amount of office activity could be induced to locate itself here effectively achieving the object of giving Bombay a new east west structure to complement the existing north-south one. This would therefore be the most effective of these alternatives possible. The area which lies approximately between the new Bombay-Poona road and the Panvel-Uran road is ideally suited for the development of a new metro-centre in many ways. Firstly, some of the major inputs required for a metro-centre of the type desired have already been provided or are being provided. The Trans-Thana Creek bridge and the new expressway to Poona and the new Docks on the Nhava-Sheva shores contain within themselves the roots of large growth and it only stands to reason that the potential created by this investment is exploited to the full. In view of the existence of industrial zones planned by the MIDC and further likely development of port oriented industries around the port, a large growth potential in this area would be created any way. This would be useful in the development of a real metro-centre around the port area and the industrial areas. This area is again very ideally suited for a metro-centre because it will at the same time retain a visual connection with Bombay and have very close links with the rest of the areas of the region. The location is such that it will enable the metro-centre itself to grow and in its turn will activate the development of other new towns in the region.

4.6. One of the main problems of Bombay, as we see it, is the very large influx of population in the city. Some of these immigrants come to Bombay because of assured employment opportunities but quite a few merely gravitate towards the metropolis being attracted by its huge size. A series of new towns in the region, small and medium size will not be able to counter this gravitational attraction of Bombay for which purpose an urban mass of metropolitan size would be essential.

V

Strategy of implementation

5.1. The total urban population of the region is expected to rise from 46,42,000 to nearly 113,00,000 by 1991 according to the medium estimate of the Demography Study Group. According to the high estimate it could be nearly 123 lacs. This means that by 1991 the size of the urban population will be much more than double the 1961 figure. New urban facilities will have to be planned on a very massive scale. Even if the smaller urban centres outside Greater Bombay double their population by 1991, an urban population of the size of 60 to 70 lakhs will still want a suitable location. Some of it could be absorbed in Greater Bombay and other New Townships around the developing industrial belts. This will still leave a population of nearly 1½ to 2 millions which would have to be housed in a metro centre in the Trans Thana and Uran Sheva Nhava areas. This would indicate the general dimensions of the new development which would have to be planned on the mainland portion across the creek. The Uran-Sheva-Nhava area will have to take nearly a million population which at an average gross town density of 50-60 persons/Acre (with neighbourhood densities of 100-150 persons/acre) will require an area of 15 to 20 thousand acres, excluding that required for port activities, free trade zones and major port oriented industries.

5.2. Public ownership of all lands required for developing this township would have to be the key stone of the strategy of implementation. It would be desirable to acquire all the lands at one stage only, otherwise the activities of the public authority would increase the land values and the authority itself may suffer in subsequent acquisitions by having to pay higher compensations. If such acquisitions are not initiated the surpluses arising out the appreciations in land values would be entirely pocketed by speculators and the liability of providing utilities, services and facilities will fall on the shoulders of the Town Development Authority. The Town.

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Authority would be equipped with funds required for this purpose, Only if it raises its own resources by undertaking large scale city development programme as suggested.

5.3. As the development proceeds the land values in the new metro-centre will keep on appreciating. If the land is sold out right the increment in the land values would be pocketed by private purchasers and would not be available to the public authority. At the same time it would not be advisable to defer disposal until the land values attain a sufficiently high level, as this would mean keeping the funds locked up and unrevolving for long periods. It would therefore be necessary to devise a system which would keep the funds revolving and which would ensure that the periodical surpluses in land values would come back to the public authority. If the land is leased with a premium at the time of the lease and if a ground rent fixed at the time of the lease is made subject to revision after 10 or 20 years the subject mentioned above would be achieved. This would also have a further advantage of retaining public control on the lands in the township.

5.4. The basic value of land in the area where the development of new metro-centre is proposed would not be more than Re. 1/- p.s.y. The cost of development of land would be Re. 10/- per sq.yds and price of land in the city centre would easily be Rs.250/- p.s.y. atleast. Land could also be sold before the whole development is complete. On this basis even if the township authority is able to dispose off only a small portion of the land every year it will get enough funds for proceeding with the next stage of acquisition and development. Further sales would also provide money for constructing buildings for public purpose. As the development proceeds, the values of saleable land will also increase due to the multiplier effect which established functions will create the surplus available to the township authority could be utilised for similar further investments. Such an urban development activity undertaken by a public authority would greatly succeed especially in situation where natural demand coincides with the township's authorities activities. In the case of Trans-Thana and Uran-Sheva-Nhava areas a strong nucleus of H/1449(D)(500-3-69)

growth would be provided by development of industries and satellite port. Here, therefore, the investment made for urban development would be more than self generating. This action will also ensure that increase in land values will come back to public authority. The example of the Maharashtra Industrial Development Corporation, the Delhi Development Authority, the Capital Project Authority of Chandigarh provide sufficient corroboration for the above hypothesis. If initial funds required for the new metro-centre development are not provided the risks are that (1) ten times or more money will have to be spent for augmenting the services in Bombay and (2) the surplus created by Development around Nhava Sheva and Trans Thana area will only be pocketed by speculators and would be totally unavailable for meeting the needs of the community.

5.5. The acquisition of an area of 20,000 acres at an average rate of Re.1/- p. s. y. would require a total amount of Rs.10 crores. Even if 800 acres of land are disposed off with an initial premium of Rs. 25/- p.s.y. in the scheme mentioned above, the Public Authority would get back all the money required for the acquisition. The disposal of every subsequent acre will provide funds for development expenditure. It is therefore not essential to have total funds required for acquisition/development at the very beginning of the operations and a venture of this type can be started even if an initial fund of Rs. 10 crores is provided. The total cost of acquisition and development would be of the order of Rs.110 crores but as indicated above the Township Authority would be able to finance the project with an initial investment of Rs. 10 crores.

5.6. It is imperative that the amount of Rs. 10 crores is made available as early as possible.

5.7. Another important part of the strategy of implementation would be to ensure that Government plays a very active and positive role in this entire programme for restructuring. The whole idea about restructuring of the metropolis hinges around the offices sector being induced in a large way to locate itself in the new Centre. Government

is at the key position in this sector and a positive and determined lead from the Government by shifting its capital to the new centre would both act a catalyst and also induce confidence in the minds of the private sector about assured prosperity of the new development. The strongest growth pole among the various activities is Government and without Government participation the new metro centre can not succeed and in fact in Indian conditions Government is a very strong motive force in respect of all activities. It is therefore imperative that Government takes a bold decision of shifting capital to this area. Without such a commitment from Government the development of the metro centre would be slow and uncertain and incentive for the new offices to locate themselves in the area would be largely lacking. Government initiative in this project is therefore considered to be essential as also the necessity of obtaining the required funds quickly.

No. of Establishment and employment in Public Sector in Greater Bombay
from years 1961 to 1967.

Table No. I

Category of Estt.	1961		1962		1963		1964		1965		1966		1967	
	No.	Empl.	No.	Empl.	No.	Empl.	No.	Empl.	No.	Empl.	No.	Empl.	No.	Empl.
Union Govt.	186	67,171	195	65,347	203	79,230	215	79,565	195	84,161	194	87,804	191	89,536
State Govt.	218	41,258	229	43,594	245	46,852	250	50,700	243	51,098	246	56,778	246	58,386
Local Bodies.	86	69,919	103	67,566	85	81,827	89	884,468	85	90,553	83	88,827	89	92,354
Banking.	16	61,11	18	65,54	21	7,301	24	8,054	22	9,000	23	9,994	23	10,716
Railways.	25	91,167	30	94,795	29	97,873	29	100,038	29	100,463	29	96,536	29	96,470
Quasi Govt.	59	54,562	68	69,432	75	61,347	78	65,964	80	69,598	79	73,539	82	66,816
Total	590	330,188	643	347,388	660	374,426	685	392,780	653	404,873	651	413,319	660	424,378

1. Railways Category is a part of Union Govt. However, it is not included in it but shown separately.
2. Banking Category is a part of Quasi Govt. However, it is not included in Quasi-Govt. but shown separately.
3. Quasi-Govt. includes State Bank, Reserve Bank, Housing Board, Government of India Undertakings, I.S.R.T.C. L.I.C., B.P.T., Bombay Labour Board, State Financial Corpn. of India etc. but banking is shown separately.
4. Local bodies include all offices working under Bombay Municipal Corporation.

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GROWTH OF EMPLOYMENT IN GREATER BOMBAY FROM JUNE 1962 TO MARCH 1968

H/1449(D)(500-3-69)

Year	Manufacturing				Reporting establish ments.	Utilities.			Transport and Communication			
	Reporting establish ments.	Public	Private	Total		Reporting establish ments.	Public	Private	Total	Reporting establish ment.	Public	Private
1	2	3	4	5	6	7	8	9	10	11	12	13
March 1962				440,140				6704				163,745
June 1962	1,094	3,335	437,092	446,427	28	1,483	5,080	6563	112	159,281	5,123	164404
Sept. 1962	1,235	9,844	469,883	479,727	27	1,445	5,054	6499	118	160,899	5,120	166019
Dec. 1962	1,215	11,014	465,847	476,861	21	1,538	4,028	5566	132	158,776	6,933	165711
March 1963	1,185	11,601	469,736	481,337	21	1,837	4,102	5939	132	161,873	6,366	168741
June 1963				448,192				5645				171704
Sept. 1963	1,031	11,552	436,114	447,666	20	1,594	4,297	5891	126	166,387	6,268	172655
Dec. 1963	1,085	11,669	458,495	470,162	19	1,768	4,325	6088	129	161,413	6,912	168325
March 1964				495,011				6175				181980
June 1964	1,348	11,744	511,745	525,520	22	1,834	4,264	6098	142	176,336	7,079	183415
Sept. 1964	1,238	11,995	491,288	503,243	21	1,690	4,152	5842	141	179,728	6,966	186694
Dec. 1964	1,291	12,708	504,747	507,455	22	1,841	4,346	6187	140	181,716	6,967	188683
March 1965	1,291	12,770	507,723	520,493	22	2,065	4,396	6461	144	183,150	6,701	189851
June 1965	1,357	12,748	515,308	528,056	24	1,943	4,418	6361	147	184,614	7,945	192559
Sept. 1965	1,401	12,656	510,407	523,063	24	2,020	4,699	6719	150	185,131	8,421	193552
Dec. 1965	1,421	12,548	513,519	526,067	24	2,059	4,844	6903	157	186,062	7,725	193787
March 1966	1,401	12,255	523,499	535,704	23	2,045	4,892	6937	146	186,696	8,359	195055
June 1966	1,367	12,182	520,970	533,152	22	2,420	5,097	7517	140	188,477	3,299	195776
Sept. 1966	1,197	26,739	504,552	531,311	23	14,278	5,041	19319	139	187,639	7,231	194870
Dec. 1966	1,363	26,903	508,560	535,463	24	13,322	5,283	23605	137	180,323	7,072	187395
March 1967	1,343	26,724	511,946	538,670	24	18,469	5,563	24082	139	181,004	7,197	180201
June 1967	1,366	33,407	509,873	543,280	23	13,137	5,339	23476	139	182,772	6,894	189666
Sept. 1967	1,373	33,649	499,889	532,538	23	18,047	5,367	2314	138	181,793	6,608	188397
Dec. 1967				523,095				24341				189605
March 1968		34,364	493,308	523,662		18697	5,717	24414		191581	6,559	198140

