

5.0 PROJECTED INDUSTRIAL LAND REQUIREMENTS 1994-2016

5.1 Estimating Demand

Estimating the demand for future industrial activities is not straight forward. There are a number of variables which can affect industrial development including the state of both the local and national economy and the discovery and development of new technologies. There are no set formulas for calculating demand. The best that can be done is to identify trends and extrapolate these over the planning period. Two distinct trends have emerged this far. These are:-

1. The high number of service related industries operating; and
2. The low average site coverage ratio.

This section compares these trends to trends in population growth over the same period. Once a relationship is established estimates can be made for future industrial land requirements.

5.2 Identifying trends and Establishing a Relationship

The results of the Land Use Survey in the previous section (4.3) reveals a dominance of businesses which cater for, and rely on, the local residential market. For example there are a large number of service oriented businesses such as motor mechanics and spray painters. Manufactured and retail goods also reflect a local market theme (eg. the sale of kitchens, car parts, carpets etc).

Based on this reliance the assumption is made that any increase in the local population will trigger an increase in the number of business activities operating as they attempt to supply the new demand.

The Hibiscus Coast Urban Development Strategy has forecast population figures to 2016. In calculating these projections the Hibiscus Coast was divided into 31 Planning Area Units (PAUs). Projections were made for each of these PAUs and then combined to give a total for the Coast as a whole.

By establishing a residential catchment for the Whangaparaoa Industrial Area the populations of the PAUs within that area can be added. This will give future population projections for the catchment. Comparisons are then made between the existing catchment population and the amount of industrial land utilised at that time (ie 1989 and 1994). These comparisons are then extrapolated out to 2016 by relating them to the projected population figures for the catchment area.

5.3 Whangaparaoa Industrial Area Residential Catchment

For the purposes of this study the residential catchment of the Whangaparaoa Industrial area includes all those areas east of the intersection of Vipond Road and Whangaparaoa Road. This takes in PAUs 14 to 31 and is termed the Eastern Peninsula Area. For the residential population west of this area Silverdale and Orewa become the focus for servicing requirements as they are closer and more easily accessed. The Whangaparaoa Industrial Area Residential Catchment Map (Map 5.1) on the following page outlines the extent of the catchment.

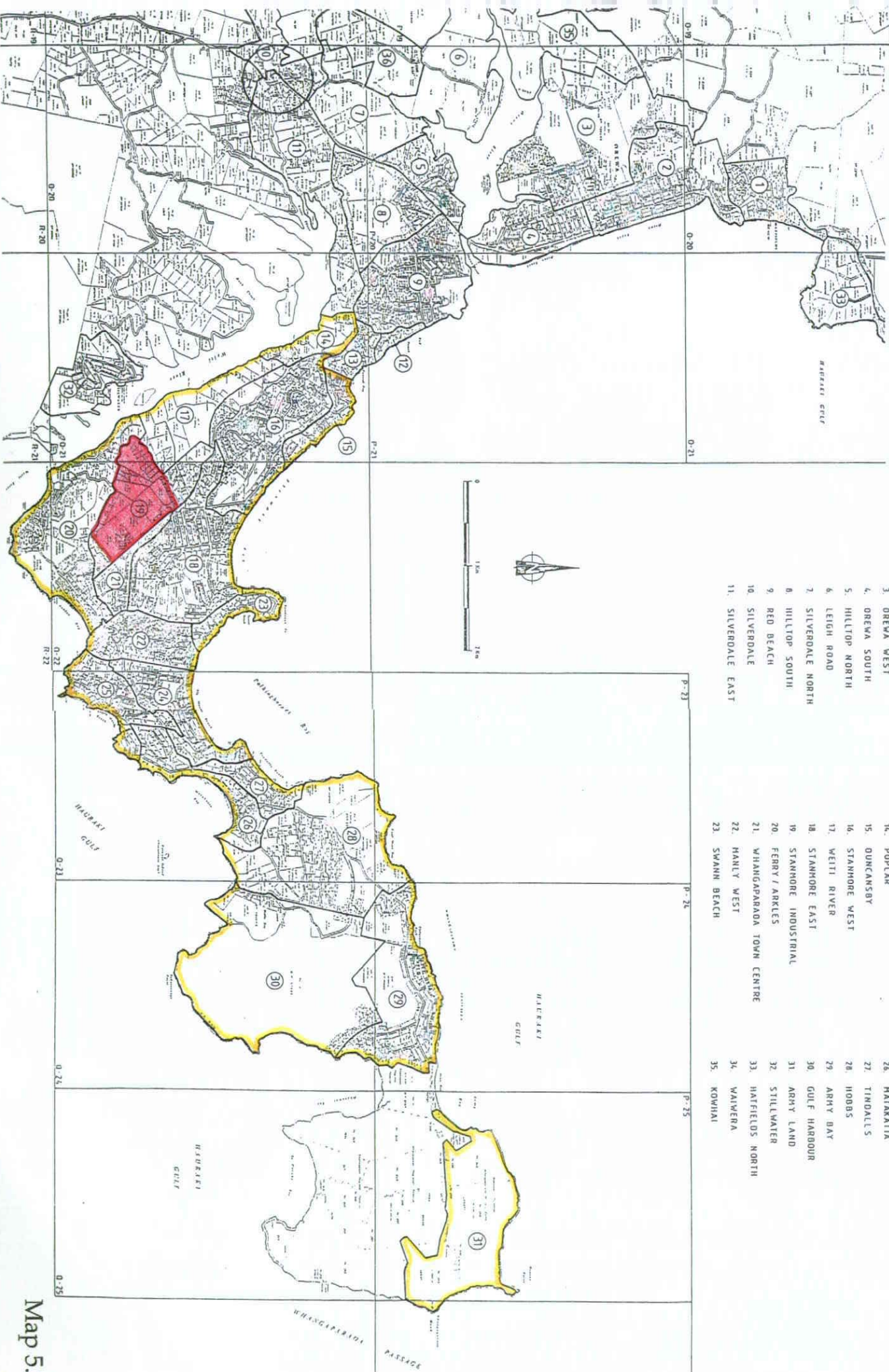
5.4 Population Projections 1989-2016

The 1989 population of the catchment area was 9,940. By 2016 this is projected to reach 19,630. This is an increase of 97% or of about 9,690 people.

WHANGAPARAOA INDUSTRIAL AREA RESIDENTIAL CATCHMENT (PAU's 14-31)

HIRISLIUS LUASI URBAN DEVELOPMENT STRATEGY PLANNING AREA UNITS (1991)

- | | | | |
|---------------------|------------------------------|---------------------|---------------------|
| 1. HATFIELDS | 12. CHELVERTON | 24. MANLY FLAT | 36. SILVERDALE WEST |
| 2. OREWA NORTH | 13. PUAWAI BAY | 25. LITTLE MANLY | |
| 3. OREWA WEST | 14. POPLAR | 26. HATAKATIA | |
| 4. OREWA SOUTH | 15. DUNCANSBY | 27. TINDALLS | |
| 5. HILLTOP NORTH | 16. STANMORE WEST | 28. HODDS | |
| 6. LEIGH ROAD | 17. WETLI RIVER | 29. ARMY BAY | |
| 7. SILVERDALE NORTH | 18. STANMORE EAST | 30. GULF HARBOUR | |
| 8. HILLTOP SOUTH | 19. STANMORE INDUSTRIAL | 31. ARMY LAND | |
| 9. RED BEACH | 20. FERRY / ARKLES | 32. STILLWATER | |
| 10. SILVERDALE | 21. WHANGAPARAOA TOWN CENTRE | 33. HATFIELDS NORTH | |
| 11. SILVERDALE EAST | 22. MANLY WEST | 34. WAIWERA | |
| | 23. SWANN BEACH | 35. KOWHAI | |



Map 5.1

5.5 Modelling Industrial Land Requirements to the Year 2016

Four models have been used to calculate the future industrial land requirements. Each model calculated industrial floor area requirements to the year 2016. The floor areas are then converted to a net land requirement (ie. no provision for roads, drainage or services) using the average site coverage ratio calculated in Section 4.4. A gross land area is then obtained by adding a further 20% (an allowance for roading etc) to this net figure.

Four methods were used for projecting industrial land requirements in order that a range of variables could be included. An explanation of the four models follows:-

5.5.1 Model 1

The most simplistic model. This calculated the percentage increase in population between 1994 and 2016. This increase is then applied to the known industrial floor area of 1994 (19335m²) to give a projected floor area for 2016. (ie. a population increase of 97% for the period translates to a 97% in floor area).

5.5.2 Model 2

The 1994 population and industrial floor areas are compared. A ratio is established. This is then applied to the population projections to give a projected floor area requirement for the period.

5.5.3 Model 3

Similar to Model 2 however the population/industrial floor area ratio is calculated for 1989 as well as 1994. The difference between these two ratios (0.2375) is noted. For each successive five year period from 1994 this difference is added to the population/floor area ration creating an exponential or cumulative relationship. This model adds a further dimension to the population/industrial floor area ratio by including a factor which accounts for agglomeration. (Agglomeration being the attractiveness of an area to a business due to the presence of other businesses. This may be due to economies of scale, competition or just the benefit of clustering.)

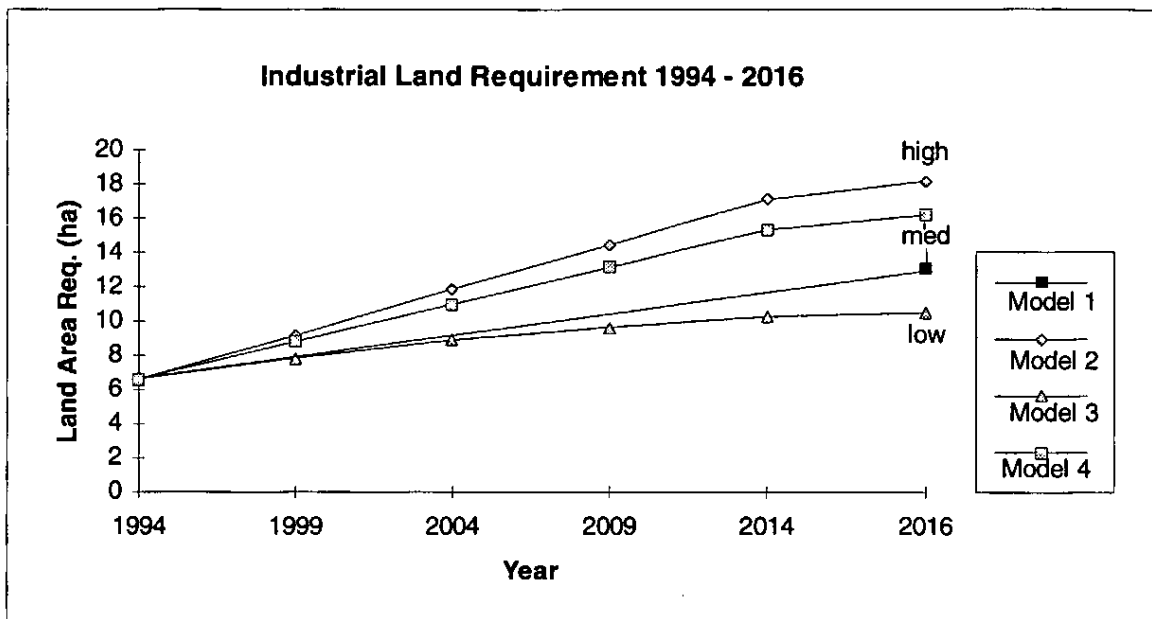
5.5.4 Model 4

The increase in industrial floor area for the five year period 1989 and 1994 is calculated. This is then added to each of the subsequent five year periods to give a final projection for 2016. No relationship to population is used. This model was used as a check against the other models.

5.5.5 Results

The application of the four models resulted in floor area projections ranging from 30707 m² to 53164 m². (Table 5.1- Floor Area Projections 1994-2016: Appendix 3).

These Floor Area figures were then converted into a gross land area requirement figure (ie the total amount of land required including that for roading). The Industrial Land Requirement 1994-2016 graph (Graph 5.1) shows that the land required for existing and future industrial purposes is **between 10.5 hectares and 18.2 hectares**.



Graph 5.1

5.6 Total Industrial Land Required 2016

Model 2 projects an industrial activities land area requirement of 18.2 hectares by 2016. This projection is the highest of the four models. It is the favoured option for the following reasons:

- Although the highest of the four projections, Model 2 still only represents just over half of the area currently earmarked for industrial purposes. With the degree of uncertainty that surrounds industrial development it is recommended that the most generous projection be adopted to allow for contingencies. Once land is lost from the industrial "pool" it is difficult to replace.
- The topography of the land within the area identified for industrial purposes is not conducive to high intensity industrial development. Therefore more land will be required than would be the case for a level area.
- As this area has a high visual profile there should be an emphasis on landscaping. This will further limit the amount of land available for industrial development.
- The need to set some industrial land aside for stormwater management purposes ie. stormwater retention pond (refer to section 6.2).
- Development of a Structure Plan will create a degree of certainty for the area by indicating preferred roading patterns and the type and location of development. This certainty may encourage development which would otherwise not have occurred.

5.7 Recommendation

1. That approximately 18 to 20 hectares of land be retained for industrial purposes. This means that 15 to 17 hectares of land presently zoned for industrial activities can be reallocated.