

Figure 4.3.22 Increase in Higher Education Enrolment (Case 2)

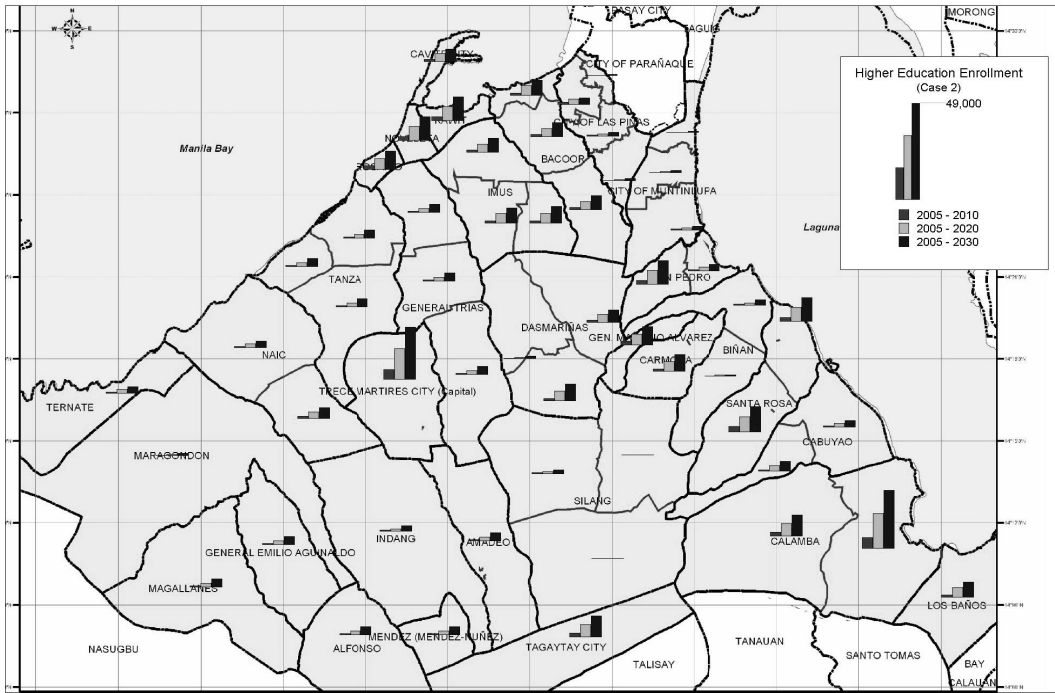
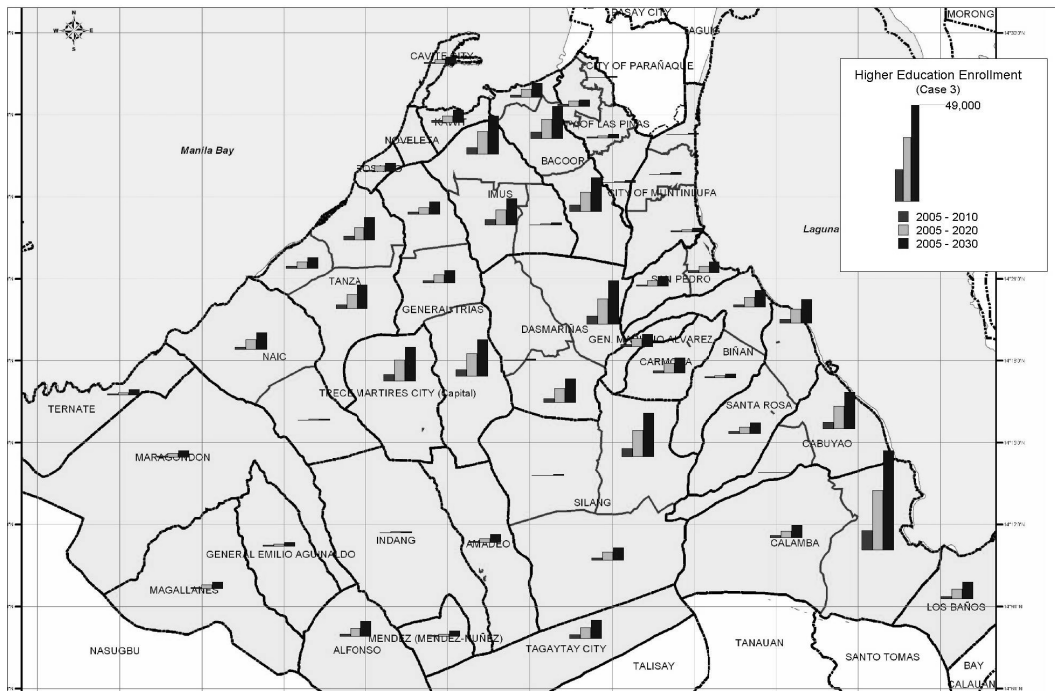


Figure 4.3.23 Increase in Higher Education Enrolment (Case 3)



4.3.4 Car Ownership

In 2001, the International Labor Organization (ILO), with assistance from the Department of Interior and Local Government (DILG), conducted a survey of “Integrated Rural Accessibility Project (IRAP III)” which included counts on motor vehicle ownership by type. The survey area included many municipalities of this study area. In terms of the municipalities which were not surveyed in the IRAP III,

the car ownership rate of the other municipalities which have similar socio-economic characteristics are applied. Based on IRAP III, the number of cars in the study area is estimated to account for approximately 489 thousand as of 2005.

According to the statistics of Land Transportation Office, the registered number of motor vehicles accounts for 4.76 million in the Philippines and 1.51 million in NCR. The category of motor vehicles includes not only 4-wheel cars but also motorcycles, tricycles, etc. In recent years, the rate of increase of motorcycles and tricycles is faster than that of 4-wheel cars. For the years 1994-2004, the number of 4-wheel motor vehicles increased from 1.72 million to 2.91 million by 70%. On the other hand, the number of motorcycles and tricycles increased from 0.62 million to 1.85 million by 298%. The annual increase rates of per capita car ownership of 4-wheel motor vehicles registered is as follows: 3.37% in the Philippines, 2.34% in NCR and 4.48% in Region IV.

Table 4.3.7 Increase of Motor Vehicles, registered in the Philippines (1994-2004)

| | 1994 | 1999 | 2004 | Increase rate 1994-2004 |
|---|-----------|-----------|-----------|----------------------------|
| Motor Vehicles registered, total | 2,341,469 | 3,533,732 | 4,760,593 | 106% |
| Motorcycles and tricycles | 624,292 | 1,144,666 | 1,847,361 | 196% |
| Motor vehicles, excluding motorcycles and tricycles | 1,717,177 | 2,389,066 | 2,913,232 | 70% |

Source: Land Transportation Office

Table 4.3.8 Increase Rate of Per Capita Motor Vehicles Registered (excluding motorcycles and tricycles)

| | Annual increase rate, 1995-2000 |
|-------------|---------------------------------|
| Philippines | 3.37% |
| NCR | 2.34% |
| Cavite | 4.48% |
| Laguna | 1.71% |

Source: Calculation from statistics of Land Transportation Office.

Case 1: The current trend shall continue and the number of cars in each municipality will increase at the current trend. In total, the number of cars in the study area will reach 2.25 million in 2030.

Case 2: Reflected by the urban hierarchy, car ownership rate will increase in each municipality and the number of cars in the study area will account for 2.45 million.

Case 3: The number of cars in the southern municipalities will increase more rapidly than in the northern municipalities. The number of cars in the study area will account for 2.53 million in 2030.

Figure 4.3.24 Increase in Number of Cars (Case 1)

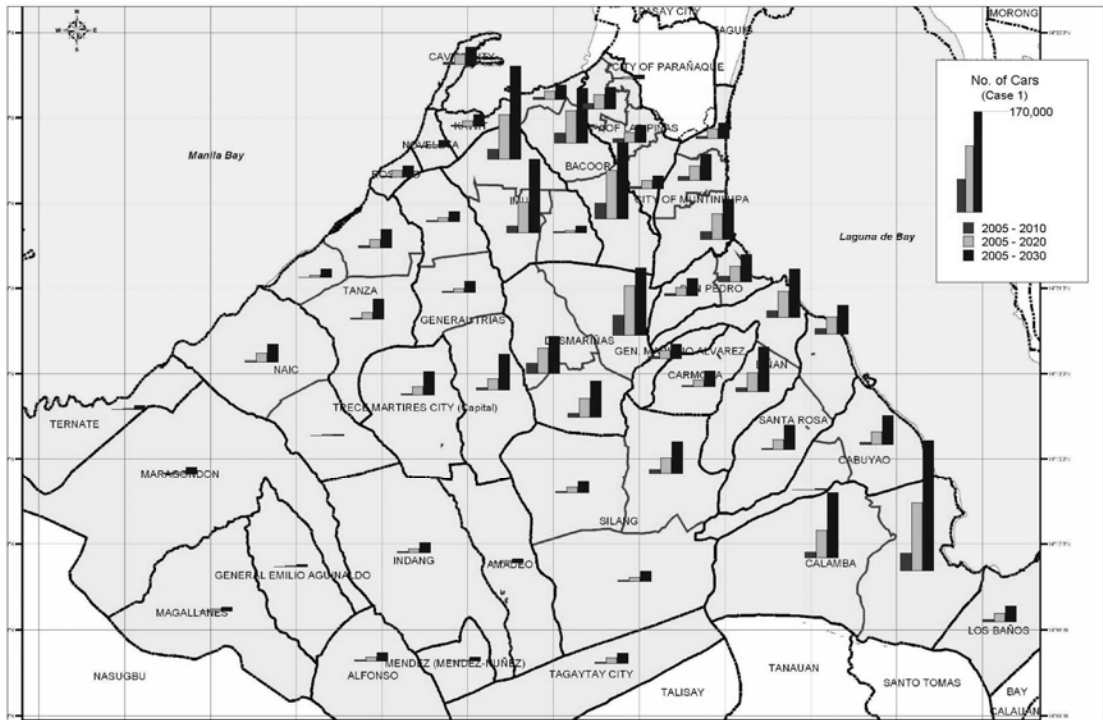


Figure 4.3.25 Increase in Number of Cars (Case 2)

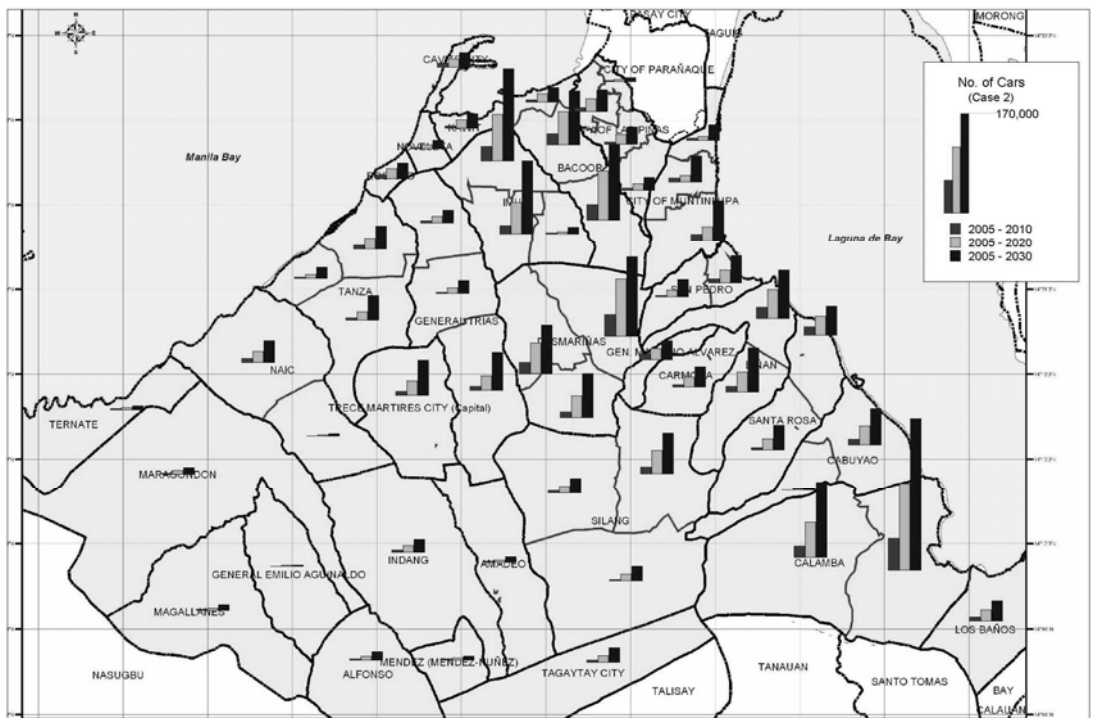
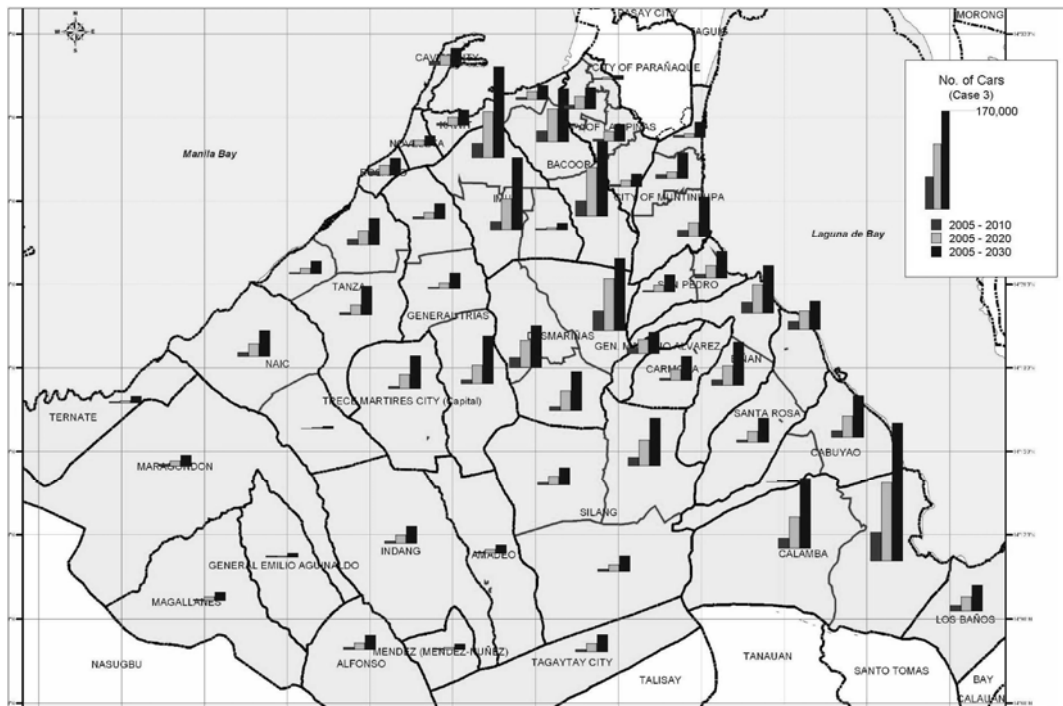


Figure 4.3.26 Increase in Number of Cars (Case 3)



4.4 Integration and Harmonization of the Three Scenarios

4.4.1 Advantages and Disadvantages of the Three Scenarios

1) Advantages and Disadvantages of Scenario 1

The advantage of Scenario 1 is that this scenario is the most likely to occur in the short term, at least five years or so. However, since the situation is continuously changing, the trend case will not always be the most possible case in the long term, say 20 or 30 years from now. Thus, taking into consideration the recent tendencies, the development pattern of Scenario 1 is very much northern area-biased and is strongly reflected by “Dependency on Metro Manila”. The future pattern of industrialization and urbanization is likely to change the regional development pattern of CALA from northern-area-bias to more-regionally balanced structure.

Still mainly due to Metro Manila-dependency, high urbanization will be concentrated in the northern area such as Bacoor, Imus and Dasmariñas, and this will continue for some time. However, such northern-area-biased growth may not be accommodated anymore. The current capacity of connecting Metro Manila and CALA is approximately 500,000 PCU/day: 353,100 (8 roads including 2 highways) + 148,000 (Skyway: committed). On the other hand, if we adopt Scenario 1, the future demand volume of North-South direction is forecasted to reach around 1.1 million PCU/day which exceeds the current capacity volume. It is, however, difficult to construct new roads in the narrow connection area. As a matter of fact, the geographic situation of Metro Manila and CALA Area is entirely different from other Metropolis such as Tokyo, KL, Bangkok, etc. For instance, Tokyo is situated in Kanto Plain and any directions to connect with its suburb are widely open. But the

connection point between Metro Manila and CALA is narrowly closed in by Manila Bay and Laguna Lake.

In summary, advantages/disadvantages of Scenario 1 are as follows:

- Very high traffic volume between Metro Manila and CALA Area
- Very high Metro Manila-dependency
- Not enough consideration on the recent tendency for regional self-dependent growth
- Tendency for northern area-biased development
- Too much dependence on the existing urban centers
- Not enough attention on the effectiveness of regional development policy and efforts of the provincial governments
- Unchanged W/R ratio of 0.882 indicates no improvement, thus too pessimistic


2) Advantages and Disadvantages of Scenario 2

Scenario 2 is based on the urban center network plan proposed in the WB CALA study report. It is hypothetically conceived so that the hierarchy of urban center network may be realized in the future. Because of its characterization in comparison with the other scenarios, Scenario 2 is considered an extreme case. It does not give due consideration on the industrialization factor which is at present evidently taking place and thus strongly influencing regional development of CALA. In addition, in this scenario, the W/R ratio is forecasted to exceed 1 and reach 1.082 in 2030, a rather very optimistic forecast in terms of realizing regional independency.

In summary, advantages/disadvantages of Scenario 2 are as follows:

- Very conceptual to realize the proposed urban hierarchy structure
- Very little consideration given on trend tendency, particularly on industrialization factor
- Remote area will remain less-developed
- W/R ratio:1.082 in 2030 is too optimistic

Figure 4.4.1 Traffic Demand Forecast at the Junction Part of Metro Manila and CALA

| | Screen Line Location | Traffic Volume crossing the Screen Line (000PCU/day) |
|--------------|---|--|
| Scenario I |  | 1,084 |
| Scenario II | | 786 |
| Scenario III | | 778 |

3) Advantages and Disadvantages of Scenario 3

Scenario 3 is also a hypothetical case. It is a scenario in which the industrialization factor is to work very strongly. Since industrialization tends to take place in the middle to southern areas, which still has ample vacant land and not so much congested yet as compared with the northern area, it is expected to result to a “regionally-balanced development.” However, Scenario 3 has an extreme tendency to suppress the further growth of existing urban centers and has very optimistic forecast of rapid growth of the less-developed southern area. However, with the availability of green and good arable land in the southern area, environmental consideration requires that rapid development in southern area should be carefully planned. In addition, this scenario indicates the W/R ratio to exceed 1 and reach 1.095 in 2030. Again, such forecast of regional independency is very optimistic.

In summary, advantages/disadvantages of Scenario 3 are as follows:

- Very little consideration given on trend tendency
- Does not fully consider regional development to be accelerated by urban center development
- Too restrictive in terms of further development of northern area

- Rapid development in southern area needs due environmental consideration
- W/R ratio: 1.095 in 2030 is too optimistic

4) Next step: Integrating the three scenarios

Each of the three scenarios has its respective positive and negative aspects, and it is necessary to make adjustments in view of complementing one another's disadvantage. It is needed to formulate the best socio-economic development framework by integration and harmonization of the three scenarios after evaluation of the three scenarios mentioned above. In this integration, various regional growth factors shall be taken into account and adjusted in comparison with one another. Due considerations on the regional development policy of the two provinces are reflected into this scenario and development characterization of individual municipalities are realistically depicted.

For this vision, the W/R ratio shall be forecasted to reach slightly less than 1 in 2030. This looks fairly realistic, not too optimistic, and nor pessimistic. This integrated scenario is prepared as follows:

- Balancing among various regional growth factors
- Due consideration on regional development policies of the two provinces
- Detailed positioning and characterization of individual municipalities are envisioned
- W/R ratio: less than 1 but almost 1 in 2030 (It looks realistic in comparison with the present level of 0.893.)

4.4.2 Regional Development Vision

The foreseen regional development vision is the interplay of various growth components which are basically found in the first three scenarios discussed. Several sectors are regarded to contribute in the symphonic development of the area rather than just one or two particular sectors leading growth in the study area. Thus, elements of scenarios 1 to 3 are combined to formulate this future vision of regional growth of the CALA Analysis Area.

In addition, it is of great importance to reflect the spatial development policies and strategies of the provincial governments concerned on the foreseen regional development vision. Existing plans and studies have been reviewed in Chapter 2.

In terms of spatial development strategies, the PFP of Cavite (2005-2010) suggests the three scenarios. Before mentioning the three scenarios, it presumes that the tendency of urbanization and industrialization will continue to be strong. Both of them will be key factor in the regional growth of the future. It forecasts that meanwhile, high urbanization will continue to occur particularly in areas proximate to Metro Manila, such as Bacoor, Kawit, Noveleta, as well as the resettlement

area like Dasmariñas. On the other hand, industrialization will also continue particularly in the municipalities where the industrial estates have been developed.

Based on the trend tendency discussed in the previous subsection, the Provincial Government of Cavite, advocates three alternatives of spatial development strategies: 1) Multi-Centered Development; 2) Rural Industrialization and 3) Primary Industrial and Urban Growth. All three alternatives pay much attention to improvement of intra-regional disparities within Cavite Province, and endeavors to promote growth of less-developed area rather than already-developed area.

The strategy of Multi-Centered Development is to create a balanced urban center network development throughout the whole area of the province by locating and building new centers, based on the municipalities' uniqueness and potentiality.

The strategy of Rural Industrialization is to put emphasis on the importance of the rural area development from the viewpoint of regional balance. The strategy intends to promote not only strengthening agriculture but also increasing non-farm employment and production.

The strategy of Primary Industrial and Urban Growth is to continue and intensify the regional development axis along the Governor's Drive. It is expected that rapid industrialization and marked urbanization will take place along the axis.

In any strategies, due consideration is given in view of dispersing concentric development. As a matter of fact, industrialization is undergoing the shift from the northern area of Cavite City, Noveleta and Rosario to the middle belt area along Governor's Drive. Urbanization is also gradually developing from North to South.

In view of reflecting these spatial development policies and strategies onto the regional development vision as well as integrating the three scenarios, the future regional development of the CALA Analysis Area in terms of spatial development is envisioned as follows:

1) Regional Growth Pole

- Dasmariñas (in association with Imus, General Trias and Tanza)

Dasmariñas is adjacent to the above said NCR conurbation area. It also has the locational advantage. It is at the crossroad of two existing prime access to Aguinaldo Highway and Governor's Drive. Taking this to its advantage, it has developed rapidly in recent years. Private sector initiated large scale developments (residential subdivisions, large shopping centers and industrial complex) are actively taking place in Dasmariñas. It has flat lands which is easy to be converted to urban land use. Moreover, large-scale resettlement projects have recently been implemented in Dasmariñas. In addition, urban development activity will likely expand to the neighboring municipalities of Imus and General Trias. These two municipalities are largely undeveloped, and both have plenty of vacant lands. Rapid urbanization will likely to take place in these

two municipalities. Thus, Dasmariñas area, in linkage with Imus and General Trias, will likely become a regional growth pole.

- Calamba

Calamba is advantageously located to the crossroad of primary transport route to/from Metro Manila, Batangas, the eastern part of Laguna, Quezon, and Bicol. Since all regional offices and services of the National Government will be transferred to Calamba, it will inevitably strengthen its urban status and will have the opportunity to be furthermore developed.

2) Administrative Center

- Trece Martires City

Trece Martires City functions as the provincial administration center of Laguna Province. Most of the areas in Trece Martires City, however, are undeveloped yet. It has ample land availability. It will play the role of providing social infrastructure and service (education, health care, entertainment, shopping etc.) to its hinterland, the western coastal towns of Tanza, Naic and Ternate, and the uplands of Trece Martires-Indang Road.

3) Dispersed Sub-center of Metro Manila

- Muntinlupa and Las Piñas

High-end commercial and residential developments are now taking place in Muntinlupa and Las Piñas, and those developments are expanding to Bacoor. The Alabang CBD is, as it were, a sub-center dispersed from Makati. High-rise office buildings, large shopping centers and luxurious hotels have been constructed in Alabang to attract companies and residents in the central part of Metro Manila. It will be one of the dispersed sub-centers of Metro Manila CBD. Advanced economic function will be located in such areas as Las Piñas, Muntinlupa and Bacoor. These developments have been initiated by the private sector so that these areas will probably continue to grow even without official promotional development measures.

4) Urban Centers for Steady Growth and Urban Renewal

- Bacoor

As an existing urban center, Bacoor has grown to receive the population spill-over of Metro Manila. The characteristic of the municipality is mainly residential. However, it is also equipped with various urban functions and amenities. In view of urban development issues of the municipalities, priority should be given on urban renewal rather than large scale new development.

5) Urban Centers for Controlled Growth and Urban Renewal

- Cavite City, Kawit, Noveleta and Rosario

Cavite City, Kawit, Noveleta and Rosario are already grown to be substantially large urban centers. The municipalities, however, have almost no room for

further urban development. They are surrounded by coastal lines and municipal boundaries. Thus, they will have to be mutually dependent with the surrounding municipalities with ample vacant lands such as General Trias and Tanza.

6) Urban Centers for South Super Development Magnet

- Cabuyao, Carmona, Biñan, San Pedro and Santa Rosa

Cabuyao and Carmona are still abundant in undeveloped lands. Urbanization trend, however, has taken place in the municipalities and land use of the municipalities has been undergoing rapid transformation. Santa Rosa has also been experiencing not only rapid urbanization but also large-scale industrial development. Those municipalities are advantageously located along the big transport axis of South Super Expressway which connects Metro Manila and this study area and even encompasses to Batangas. For many international manufacturing firms, this transport axis is essential to pursue large-scale production and new business venture. To their benefit, locational advantage of these municipalities will provide them high potential of growth under strong trend of urbanization and industrialization.

7) New Urban Center with Limited Area

- General Mariano Alvarez

As in the case of Santa Rosa, Cabuyao and Carmona, GMA is also advantageously located along the South Luzon Expressway. However, the land area of GMA is limited (9.4ha) thus it is expected to grow slowly but steadily.

8) Agri-business Center

- Silang

The land use in the south western part of the study area is mainly agriculture. Silang is advantageously located to function as gateway and service center to the agriculture production area. Silang itself is abundant in agricultural resources. It is deemed essential to keep in mind that unplanned development shall not take place in Silang. Silang is hoped to play the role of processing, marketing and distribution center for agri-business.

9) Nature Preservation and Resort Center

- Tagaytay City, Los Baños and Ternate

Tagaytay City is highland area and is endowed with recreational resources: mountain-view, lake view, cool weather, fresh air. It has ample opportunity for further development for tourism and sightseeing. There is also a big demand for high-end weekend or vacation houses. Likewise, Los Baños is endowed with hot springs and mountain resort resources. On the other hand, Ternate is an ideal location for marine resorts. It should be noted that those natural