

# Chapter 7

## Physical Development Plan

### 7.1 Introduction

In view of the need to sustain the vital role of Angeles City in the Global Gateways framework, long-term capital investment to ensure access and connectivity between commodities and people is imperative. Decisions in this regard will dwell on at least three basic questions, namely: a) what type of infrastructures to be built; b) their location; and, c) timing. To ensure continuity of economic activities, road construction and maintenance must consider an “all-season” type of engineering interventions both for external and internal mobility. Complementation of land transport and air transport assumes foremost importance. Linkage of the City and the Clark Special Economic and Freeport Zone would require adaptation to communications technology of global standards. Local policies on physical development shall consider structures and technology that are in harmony with the City’s unique natural resource endowment and capacity.

### 7.2 Challenges

#### 7.2.1 Land Use

- Zoning Violations and Enforcement. Full compliance to the provisions of the existing Zoning Ordinance has yet to be realized. This is

expected since some commercial establishments may have to relocate elsewhere and/or put up additional investments on mitigating measures in order to address land use conflicts and incompatibility issues. Nonetheless, the City is exerting efforts to address this concern.

- *Declining supply of agricultural lands.* As the most dominant urban center in Central Luzon that is strategically located right at the heart of the Metropolitan Clark Area, the land demand for urban expansion in Angeles City is very high. In 2007, the City Agriculturist's Office documented about 1,284.752 hectares of land devoted to Agriculture. On the premise that urbanization does not happen overnight, these remaining agricultural lands must be protected from conversion for food security and livelihood reasons.
- *Emerging land use conflicts in residential zones.* A number of residential subdivisions in Angeles City especially those built decades earlier were originally intended as low density residential areas or R-1 in the Zoning Ordinance. Today, the strong demand for commercial land necessitates the transformation of their original use into commercial or mix uses. However, R-1 only allows low intensity commercial activities such as those that do not generate heavy traffic. On one hand, enterprising property owners want zoning upgrade. On the other hand, some homeowners would like to maintain the original ambiance of their residential neighborhood. These opposing views create tension and reduce socio-economic productivity. The City must take the lead role in addressing this concern.

## 7.2.2 Infrastructure Support

### 1. Transportation

- **Road.** As of 2008, Angeles City has a road density of 3.985<sup>1</sup> kilometer for every square kilometer, which is actually higher compared with the national road density of 0.63<sup>2</sup>. However, using the City's projected population data from its 2007 Socio-Economic Profile (SEP), its kilometer road density per 1,000 population is 0.71, which is immensely lower than the standard urban road density of 2.4<sup>3</sup> kilometer per 1,000 population ratio. In addition, road congestions are being experienced in the central business district (CBD) area of the City particularly along the MacArthur Highway. Other concerns that impede road accessibility are the following:

1. Absence of New Road Network System or local access roads to major transport utilities of the City such as SCTEx, NLEx and Diosdado Macapagal International Airport (DMIA);
2. Lack of funding support for the implementation of the proposed East Circumferential Road (ECR) Project; and,
3. Lack of protection for all road pavements.

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<sup>1</sup> Angeles City SEP 2008

<sup>2</sup> Infrastructure Development Chapter, Medium Term Philippine Development Plan 1999-2004.

<sup>3</sup> HLURB, CLUP Guidebook Volume 2, A Guide to Sectoral Studies in the CLUP Preparation, pp 208.

- **Traffic Management.** It was reported that the City has a pending traffic ordinance at the Sangguniang Panlungsod. This ordinance is assumed to respond to traffic management issues, as follows:
  1. Safety of pedestrians and commuters;
  2. Unorganized operation of public utility vehicles (PUVS). This includes the (i) unlimited and uncoordinated issuance of franchises resulting to voluminous number of vehicles (including tricycles in the City); (ii) illegal operation of “colorum” vehicles (jeepneys and tricycles); and, (iii) substandard tricycles; and,
  3. Illegal encroachment of buildings and business establishments on all roads.
  
- **Air Transport.** DMIA is currently being developed to be the *Premier Gateway Airport* of the [Philippines](#). As of the end of December 2008, DMIA<sup>4</sup> is averaging at least seventy-seven (77) flights per week in both international and domestic flights. This caters to various air carriers, among them are Tiger Airways of Singapore flying the Clark-Singapore, Air Asia of Malaysia Clark-Kuala Lumpur and Kotakinabalu, Asiana Airlines of Korea via Clark-Incheon in South Korea, and, local carriers Cebu Pacific Air via Clark-Hong Kong, Thailand, Macau and Singapore, and South East Asian Airlines (Seair) flies via Clark-Caticlan. This anticipated air traffic will directly emulate road traffic due to lack of local road accessibility to the airport.

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<sup>4</sup> Angeles City SEP 2008

- **Rail Transport.** In addition to being a fast and reliable transportation system, a railway is an alternative mode to the mainly road-based transportation system in the country. However, the uncertainty of the completion of the NORTHRAIL Project Phase I- Section 2 (Malolos to Clark Section) is the foremost concern. NorthRail aims to serve as a catalyst for the development of this area and the Clark - Subic corridor. Similarly, the dispersal of Metro Manila population towards Central Luzon and provision of a major trunkline to and from Metro Manila's LRT System are envisioned under the Project

## 2. Utilities

Basic and essential infrastructures for water, power and telecommunication are already in place in the City. However, upgrading and expansion of the existing coverage of these service utilities and provision of water and power source alternatives are essential to sustain current and future service requirements.

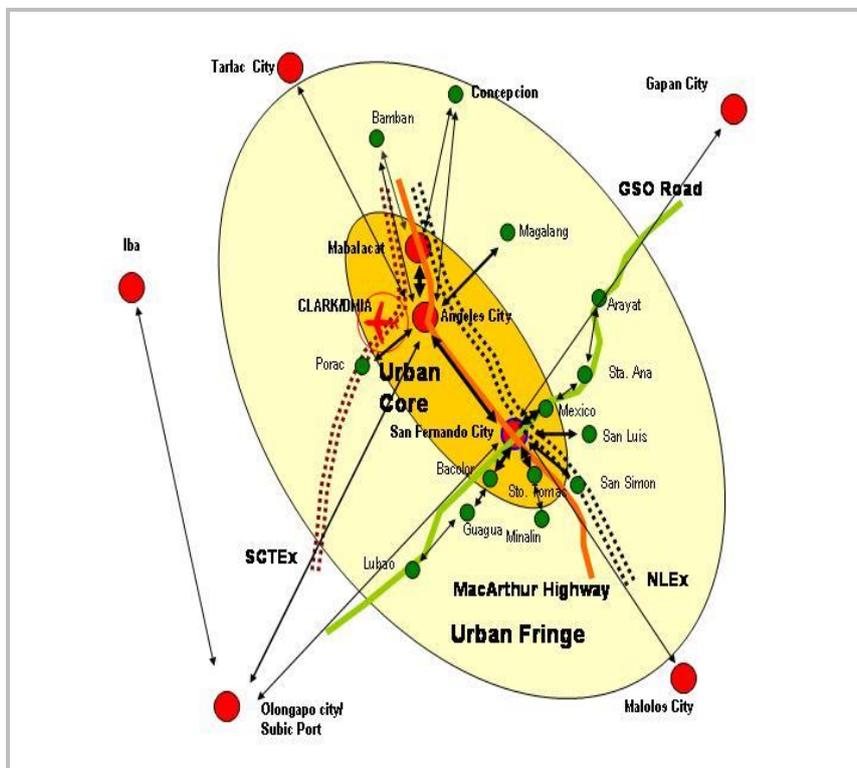
## 7.3 Potentials

### 7.3.1 Geographical Advantages: Within the Metropolitan Clark Area

With the encouraging location feature of Pampanga, it is said that the province is at the crossroads of regional development. Its major urban areas have rapidly grown into a metropolitan area or central place serving not only the requirements of Pampanga but of the region as well. This is a result of a

balanced mix of natural resource, human capital stock, and integrated infrastructure support.

Figure 7-1 Metropolitan Clark Area



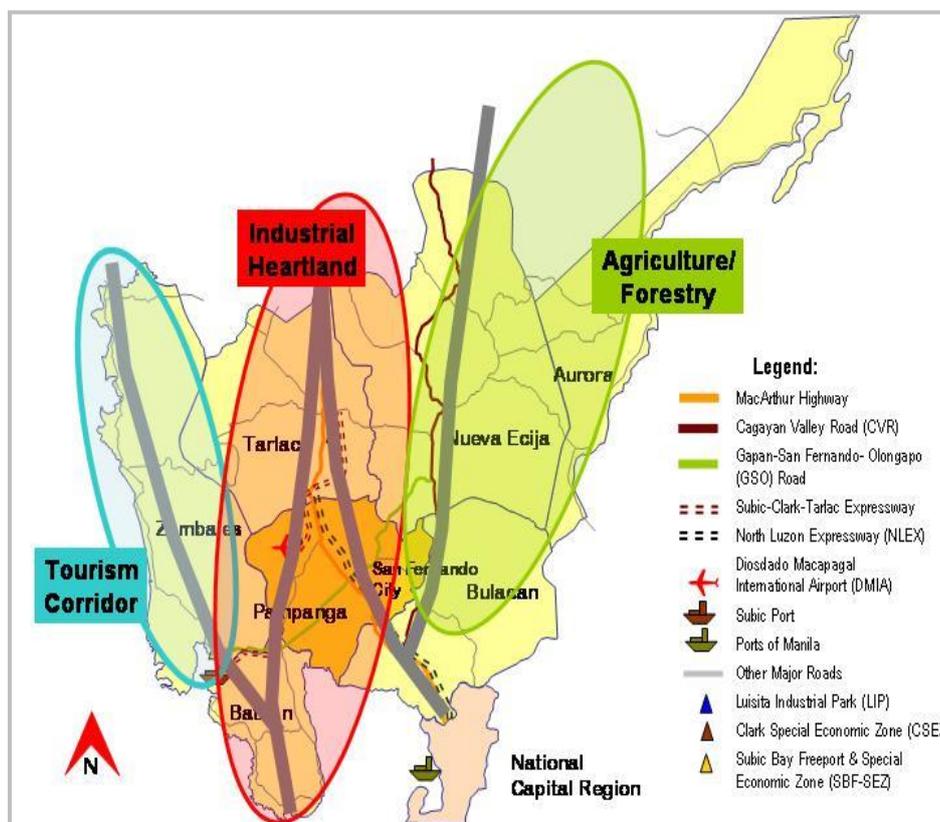
Source: Angeles City SEP, 2008

Shown in Figure 7-1 is the diagram of the Metropolitan Clark Area. The urban core may start from Sto. Tomas all the way to Mabalacat to include the adjoining municipalities of Mexico, Bacolor, and Porac. The urban fringe would be the rest of Pampanga to include Bamnan and Concepcion, in Tarlac Province. Due to the access provided by the established road systems, the Metro Clark Area could be easily accessed by the neighboring cities of Gapan, Olongapo, Malolos, and Tarlac.

Strategically located at the heart of Metropolitan Clark Area, Angeles City is expected to experience accelerated urbanization within the short and medium terms faster than its neighboring towns and cities within the metropolitan area.

**7.3.2 Within the Industrial Heartland of the W-Growth Corridor**

The W-Growth Corridor defines Central Luzon’s vital investment areas. These areas represent the key cities and municipalities of the region, which when plotted on the map form the shape of the “W”.



Source: Angeles City SEP, 2008

**Figure 7-2. The Central Luzon W-Growth Corridor**

Figure 7-2 shows the W-Growth Corridor diagram and highlights the following growth potentials areas:

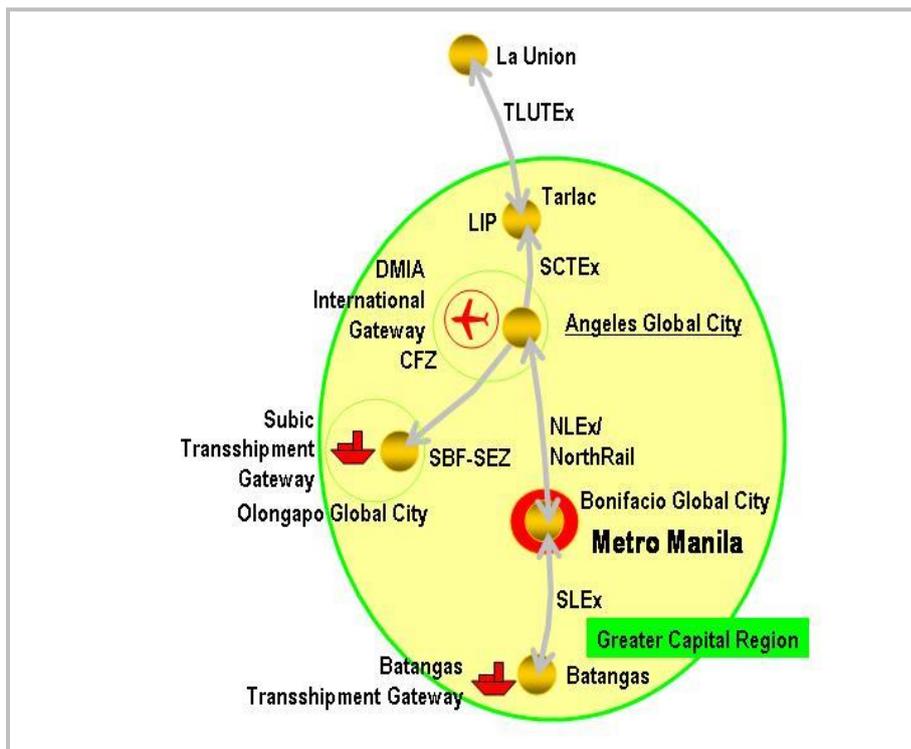
1. Western leg. This covers the entire Zambales and is intended for tourism development;
2. Inner legs. These comprise the cities of Angeles and Olongapo, all the municipalities/cities of Bataan, Pampanga and Tarlac and the western portion of Bulacan. These are envisioned to become the industrial heartland of the region; and,
3. Eastern leg. This leg is intended to meet the food and water security of the region and the country, and this covers Nueva Ecija, Aurora, and the remaining municipalities of Bulacan.

Angeles City forms part of the industrial development theme in the Central Luzon Regional Development Plan.

### **7.3.3 Inclusion in the Philippines' Global Gateways Development Framework**

As cited in the Angeles City Socio-Economic Profile (SEP) 2008, the concept of greater capital region was introduced in one of the studies prepared by the Japan International Cooperation Agency (JICA).

**Figure 7-3. Global Gateways Development Framework**



Source: Angeles City SEP, 2008

Due to proximity and access, as shown in Figure 7-3, it was observed that a conurbation with a radius of 100 kilometers from Metro Manila is increasingly becoming pronounced. The areas forming part of the conurbation include CALABARZON, Metro Manila, and Central Luzon. It must be noted that each of the said regions has its own respective strengths which when complemented by the other regions will likely produce a synergistic effect.

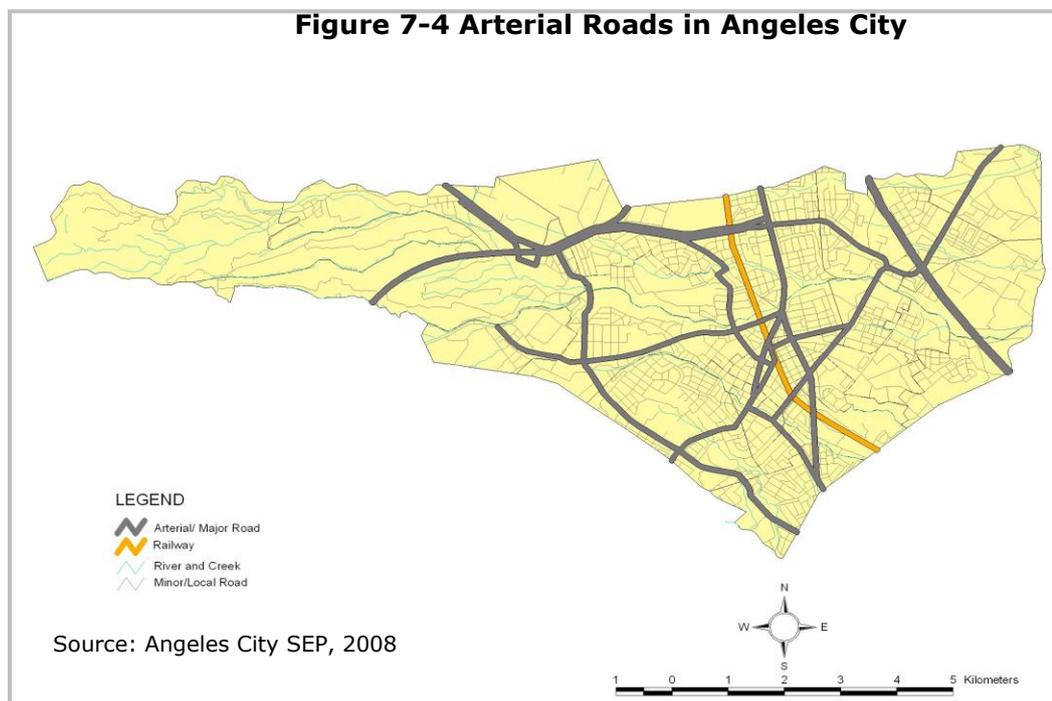
Metro Manila is a huge market for the produce of Southern Tagalog and Central Luzon. It is the country’s center of finance, trade and commerce, among others. Enhancing the transportation link between Metro Manila and its neighboring regions will redound to improved economies of scale that will benefit both the producers and the consumers in terms of improved

profitability (due to reduced transportation cost) and affordable prices (due to competition), respectively. This is just one illustration of the many potential benefits of agglomerating the regional economies under the greater capital region.

1. Presence of three major roads in the City

Figure 7-4 shows the following three arterial roads in Central Luzon that directly pass the city:

**a. MacArthur Highway.** This is the oldest inter-regional highway that connects Northern and Central Luzon provinces from the national metropolis. Its original name was the Manila North Road (MNR) but was renamed MacArthur Highway, after it was concreted in the middle of the twentieth century, since this was the route traveled by the American Liberation Forces led by General Douglas MacArthur from Pangasinan province to Manila when they liberated the country from the Japanese occupation forces.



The 5.44 kilometer portion in Angeles City starts at Km 81+260 (Boundary with the City of San Fernando) and ends at Km 86+700 (Boundary with the Municipality of Mabalacat).

**b. North Luzon Expressway (NLEX).** NLEX was formerly known as North Diversion Road. This is a limited-access toll expressway that connects [Metro Manila](#) to the provinces of the [Central and Northern Luzon](#) regions.

NLEX begins in [Quezon City](#) specifically at the [cloverleaf interchange](#) of Epifanio Delos Santos Avenue (EDSA), and ends at [Mabalacat](#), Pampanga.

**c. Subic-Clark-Tarlac Expressway (SCTEx).** This 94-kilometer four-lane expressway started its operation in April 2008. It serves as a direct and exclusive road connection between major development areas of Central Luzon (Subic, Clark and Tarlac). Its southwestern terminus is at the [Subic Bay Freeport Zone](#) in [Zambales](#), then passes through the interchanges of the [North Luzon Expressway](#) near the [Clark Special Economic Zone](#) in [Angeles City](#), and the Central Techno Park in [Tarlac City](#), [Tarlac](#). Its northeastern terminus is in La Paz, Tarlac.

2. A natural resource-rich area in the western area of the city

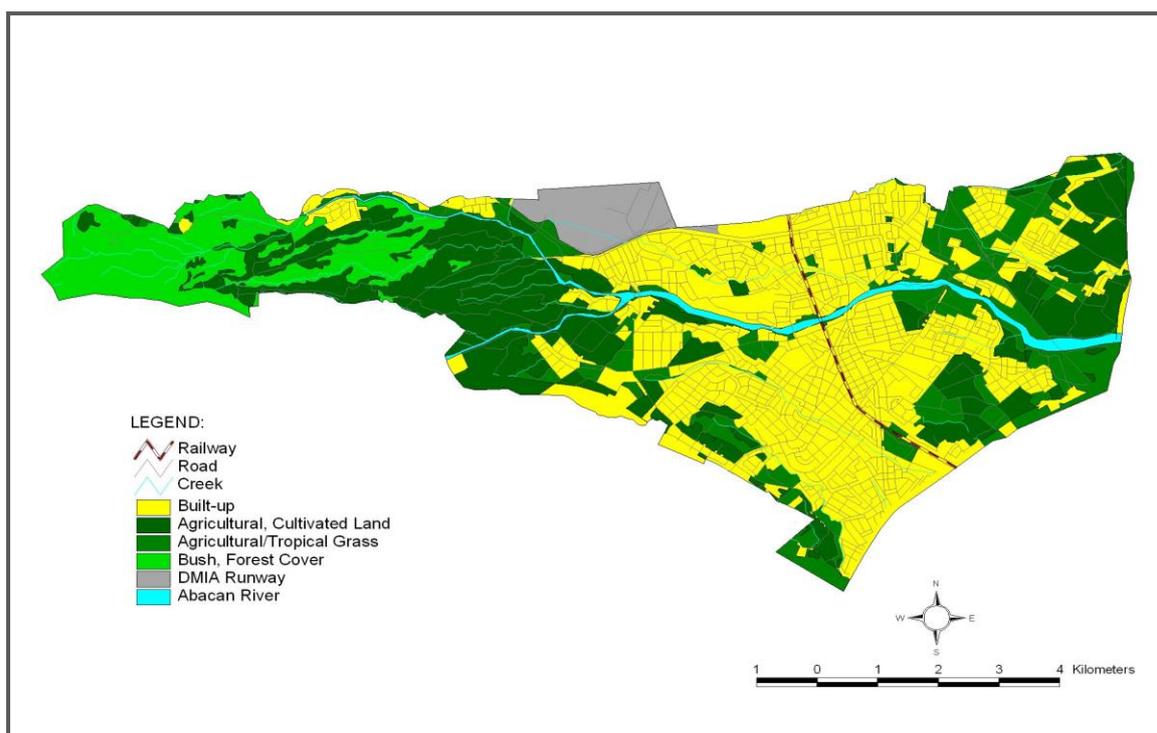
Table 7-1 shows that from the total City land area of 6,217.37 hectares, 698.42 hectares of which or more than eleven percent is considered bush or forest cover. This area is in Barangay Sapangbato

which is in western side of the City as shown in the 2009 General Land Use Map of Angeles City (Figure 7-5).

Table 7-1 Estimated Area and Percentage Share of the Different General Land Use Categories in Angeles City, 2009

No.	Land Use	Area (Ha)	Percent (%) Share
1	Built-up	2,762.08	44.43%
2	Agricultural/Cultivated Land	1,543.51	24.83%
3	Agricultural/Tropical Grass	843.75	13.57%
4	Bush/ Forest Cover	698.42	11.23%
5	DMIA Runway/ Complex	224.39	3.61%
6	Abacan River	145.22	2.34%
<b>Total</b>		<b>6,217.37</b>	<b>100.00%</b>

Figure 7-5 Existing General Land Use Map of Angeles City, 2009



Source: Angeles City CLUP, 2010-2020

## 7.4 Goals

Angeles City's physical development goal is to manage the growth of the City such that the feature of the built environment, including the nature, level and location of land using activities:

- Supports the envisioned role of Angeles City to be a world-class and environmentally sound residential center;
- Enhances economic productivity through light and export industries;
- Sustains the access to basic services;
- Develops an integrated infrastructure that sustains access to basic services; and,
- Creates a balanced and organized urban environment.

## 7.5 Objectives

The specific objectives that will have to be pursued to realize the physical development goal is to create a physical environment that will provide the following:

- 7.5.1 Clean, green and healthy community;
- 7.5.2 Settlement development directed away from environmentally critical and resource reserve areas;
- 7.5.3 Safe, efficient and reliable transportation system;

- 7.5.4 Adequate and effective drainage, sewerage, and flood control system;
- 7.5.5 Sufficient water supply system;
- 7.5.6 Stable power supply system; and,
- 7.5.7 Reliable and interconnected telecommunication facilities.

## 7.6 Targets

### 7.6.1 Land Use

- 100% of the open spaces of residential subdivisions are vegetated;
- 100% of the idle lands within the City are vegetated;
- 100% compliance to the Zoning Ordinance, the Building Code, and other development controls;
- Zero settlements in hazards-prone areas and resource reserves; and,
- Identified re-settlers.

### 7.6.2 Infrastructure Support

- The rest of the City can be accessed from the CBD not to exceed 45 minutes anytime of the day;

- 100% implementation of City and national traffic codes/laws that include the improvement of pedestrian and commuters' facilities and establishment of authorized terminals;
- Surrounding grade is fully drained within 10 minutes after a heavy downpour (25-year return period);
- Zero localized flooding areas in Angeles City;
- Established easement along the riverbanks;
- Prepared City Drainage and Sewerage Master Plan;
- Established new water source;
- Established other power source; and,
- Fully interconnected telecommunication providers within the City.

## 7.7 Strategies and Policies

### 7.7.1 "Super Regions" of the Philippines

The Super Regions harness the economic strengths of the major areas of the country as well as the knowledge and technology sector, with much larger economies of scale more attractive to investors, lenders and aid donors. These are informal groupings of parts of [regions](#) and [provinces](#) of the [Philippines](#) based on their economic strengths. This was established pursuant to Executive Order (EO) No. 561, series of 2006. The following Super Regions serve as development strategy groups:

- a. North Luzon Agribusiness Quadrangle (NLAQ). NLAQ is composed of the Cordillera Administrative Region (CAR), Regions I and II, and portion of Region III, specifically the Northern municipalities of Aurora, Nueva Ecija, Tarlac and Zambales. This development blueprint plans to boost agricultural production and economic activity in the North Luzon Agribusiness Quadrangle (NLAQ).
  
- b. Luzon Urban Beltway (LUB). This region acts as a globally competitive logistics and services center by improving and integrating the transport infrastructure system in the Super Region to better serve industries and travelers; ensuring the sufficient supply of power and reducing its costs; providing clean water; and addressing the flooding situation in its urban areas. This includes the southern part of Aurora, Nueva Ecija, Zambales and Tarlac, Pampanga, Bulacan, Bataan, National Capital Region Cavite, Laguna, Batangas, Romblon, Quezon, Mindoro and Marinduque.

To achieve this aim, the Government plans to develop major seaports in Subic and Batangas and improve roads and railways that will make access to the ports easier and faster. This involves the improvement of Ninoy Aquino International Airport (NAIA) and DMIA as premier gateways of the country, and the road and railway systems connecting these airports to the Subic and Batangas Ports, Metro Manila, and the rest of South Luzon.

To provide the growing energy requirements of the Super Region, the LUB priority infrastructure projects also include several power generation and transmission projects.

- c. Central Philippines. This Super Region is composed of the entire Bicol Region, Western, Central, and Eastern Visayas, the provinces of Romblon, Palawan, and Camiguin, and the island of Siargao. Its unique and lush natural wonders, as well as its warm and friendly people attract almost a third of the country's foreign tourists. Central Philippines is therefore envisioned to be the premier tourist destination in the country.
  
- d. The Mindanao Super Region, which is composed of Regions IX, X (except Camiguin), XI, XII, Caraga (except Siargao), and the Autonomous Region of Muslim Mindanao (ARMM), has a competitive edge in agribusiness, especially in high value crops, which can be further harnessed by major infrastructure support.

### **7.7.2 Global Gateway Logistic City**

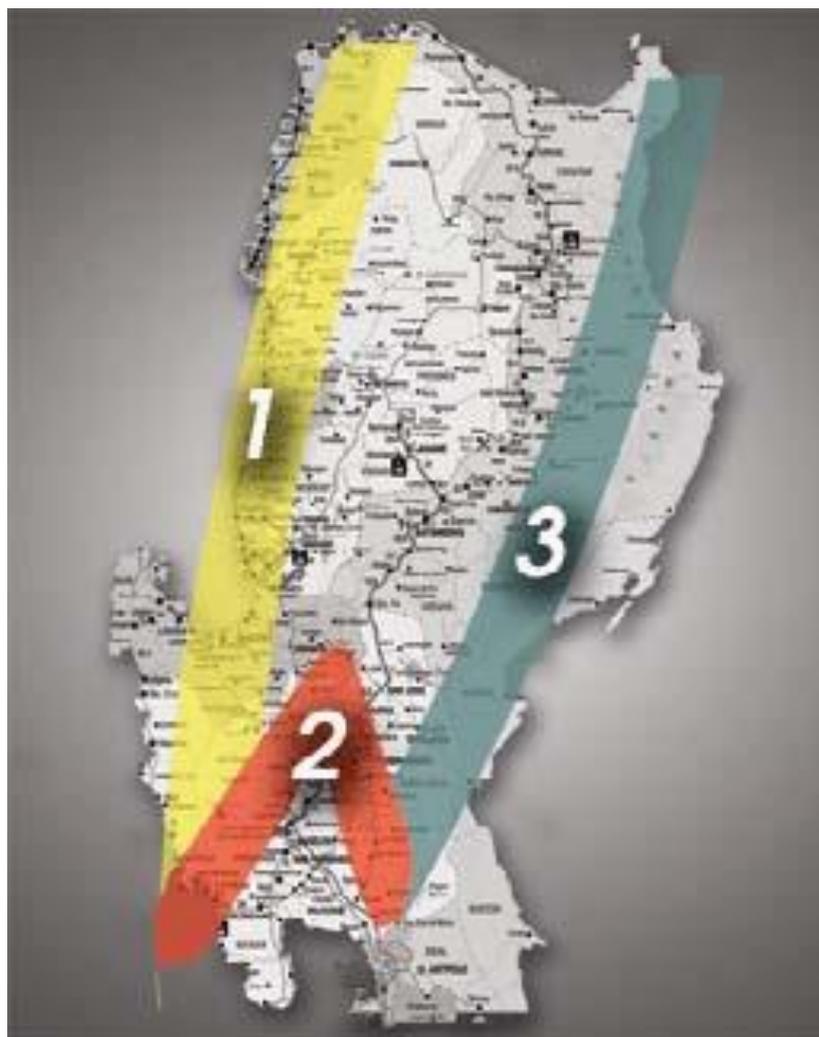
This is a 177-hectare Master Planned Aviation Oriented Logistics and Business Center of Excellence located at Clark Field, Pampanga, an hour north of Metro Manila. It will host business enterprises and operations with priority given to aviation and logistics related businesses, including but not limited to warehousing, distribution, transportation and related multi-nodal logistics; light industrial and manufacturing; administrative, management and

business offices and complementary commercial and retail operations that are present in and around major International Airports, Aviation Complexes and Aerotropolis. Over 4,500,000 square meters of turn-key facilities, ranging from warehouses and light industrial facilities to modern office buildings and commercial and retail outlets are being design-built for direct lease to locators.

This project is expected to create a minimum of 35,000 new jobs to a maximum of 70,000, depending on the mix of locators attracted to Clark and the final mix of facilities built over the seven year planned build-out period. The ground breaking ceremony of this project was held on 25 August 2008.

### **7.7.3 Expanded W-Growth Corridor**

As discussed under 7.3.1, the development of Central Luzon is anchored on the “W” growth corridor strategy that aims to maximize the comparative advantages of the seven provinces and the growth areas in the region. This corridor also enhances the development roles of the areas in the corridor and in effect prioritizes development interventions in the area to benefit the rest of the region.

**Figure 7-6 Expanded W-Growth Corridor**

Source: <http://www.northphil.gov.ph>

In 2002, this strategy was expanded up north as shown in Figure 7-6. This aims to transform North Philippines and the province of Aurora into the country's premiere investment and tourism destinations.

The Ilocos, Cagayan Valley and Central Luzon regions and the Cordillera Administrative Region (CAR) are collectively known as North

Philippines and have been tagged as "the place where things are looking up" for trade, investment, and tourism.

Patterned after the shape of Central Luzon, the expanded W encompasses the other regions in the North Philippines under the following development strategies:

**Leg 1.** This tourism belt includes the coastline of Ilocos down to La Union and Zambales that boasts of white sand beaches. Most popular are the beaches of Pagudpud, Ilocos Norte, dubbed the "Paradise of the North," and comparable to Boracay's world-renowned beaches. This also includes other tourist destinations like the cities of Vigan and Baguio, the Hundred Islands of Pangasinan and the Banaue Rice Terraces;

**Leg 2.** This covers the industrial growth corridor from Subic to Clark, and in Tarlac, which is currently being linked by SCTEx that makes Central Luzon the gateway and the major transport hub in North Philippines. The expansion of the NLEx and the construction of the SCTEx will make Central Luzon the bridge that will connect North Philippines to markets in Metro Manila, as it lays the base for heavy industrial ventures in Bataan, Bulacan, Tarlac, and Pampanga.

**Leg 3.** This leg stretches up from Nueva Ecija to the Cagayan Valley. This is a configuration eyed by development planners as the North

Philippines' agriculture and fisheries centers. The province of Nueva Ecija also leads in agricultural and fisheries research.

#### **7.7.4 Subic-Clark Alliance Development Council (SCADC)**

In 2001, the Subic Clark Area Development (SCAD) was created by virtue of a Memorandum of Understanding (MOU) signed by the respective concerned agencies, namely: Bases Conversion Development Authority (BCDA), Clark Development Corporation (CDC), Subic Bay Metropolitan Authority (SBMA) and Department of Trade and Industry (DTI).

The SCAD Task Force aims to ensure that Clark, Subic, and other economic zones in Central Luzon shall enjoy "common investment incentive packages, with the least amount of bureaucratic red tape".

To rationalize resources and harmonize strategies in the development of Subic-Clark Corridor, the Subic-Clark Area Development Council (SCAD Council) was created on 01 February 2006. SCAD Council was renamed as the Subic-Clark Alliance for Development Council (SCADC) in May 2006.

The principal objective of the SCADC is to ensure the development of Subic, Clark, and the area between them, otherwise known as the SCAD Corridor, into a logistics center in the Asia Pacific region.

## 7.8 Programs and Projects

### 7.8.1 Land Use Regulation Enhancement Program

#### 1. Strict Implementation and Compliance with Zoning Ordinance

Zoning violations occur, wherein a number of establishments issued with Certificate of non-Conformance (CNC) have yet to comply with the provisions of the Zoning Ordinance (ZO).

It was only after the approval of the Revised Zoning Ordinance (RZO) in 2000 that non-conforming establishments were issued CNC and were given ample time to conform to the ordinance. However, the implementation has not been fully realized.

### 7.8.2 Road Rehabilitation and Development Program

#### 1. Circumferential Road Development Project connecting NLEX and SCTEX

As shown in Figure 7-4, two arterial roads pass through the city, however, these two roads are not directly connected. In this regard, the project will involve the following components:

*Component 1.* Construction of SCTEX' Manuali Interchange Project;  
and,

*Component 2.* Construction of Pulung Maragul By-Pass / Diversion Road Project.

#### 2. Angeles City By-Passes Road Project

The City's major roads are already considered heavily congested, thus, construction of alternative routes or bypass roads will resolve road congestion and possibly bring in economic activities.

Possible inclusion in this project is the construction of the Diamond Bypass Road and Marisol-Pandan Road.

3. *Bicycle Lane Construction Project*

Due to increase in oil prices, people resort to other means of transportation like bicycles and motorcycles. The government has the moral responsibility of providing the need for infrastructure support to this option. Since there is an increasing desire of the people to try other means of transportation, the City needs to construct a lane intended for this trend for convenience, economics, as well as the safe mobility of people. This could also lessen the slow movement of motor vehicles brought about by the presence of slow moving bicycles and motorcycles along the main road pavement/areas.

4. *Creation of Quick Report/Response and Repair Teams*

Through these teams, the City could easily determine and act on the unconditioned roads and damaged bridges that need immediate and fast repair, fallen trees and other obstacles that hamper traffic flow, vehicles involved in accidents and overflowing rivers, especially during rainy seasons. These teams could be organized with the existing personnel of the Office of the City Engineer, Disaster Management Office, and Home Emergency Response Office. This undertaking could also motivate the private sector's involvement.

5. East Circumferential Road Project

This project that includes the construction of new roads in the eastern part of the City is being envisioned to be the completion of the City's circumferential road.

6. Barangay Bridges Construction Project

This involves upgrading and rehabilitation of barangay bridges in the City. This will include Balibago-Duquit Bridge and Bagong Silang-Sitio Mali Bridge.

7. Barangay Road Improvement Project

Barangay Roads need to be upgraded or improved periodically due to their deteriorating level of service. The Project will comprise of the following barangay priorities:

- Concreting of Maura, Cavite & Francisco Streets (Balibago)
- Barangay Road Improvement in Cutcut, Sto. Cristo and Sta. Trinidad (Miranda Extension, Kalayaan Street)
- Concreting of Barangay Road, Sitio Manga (Pulungbulu)
- Concreting of T. Claudio, Peralta, Sta. Juliana, P. Nuqui, B. Aquino Streets (Salapungan)
- Concreting of a portion of San Jose Street (Sto. Domingo)

### **7.8.3 Traffic Management and Improvement Program**

1. Passage of City Traffic Code

This Code will depend on the outcome of the Joint Traffic Engineering and Management Study (TEAMS) of the PNP-TEG-PTRO and the CEO for some vital roads and intersections.

2. Vertical Parking and Terminal Development Project

One of the common scenes in the City roads is the use of the road as the PUVs "loading terminals". This scene becomes a habit to all PUV drivers due to lack of designated City PUV terminals (standby area) particularly public utility jeepneys (PUJs). The sides of San Nicolas Public Market along Miranda and Rizal Streets; and Luna and Aguinaldo Streets are being proposed for the terminal location.

This can be implemented in coordination with different public transport associations. The City can determine the possible sites suitable for standby terminals.

3. Development of PUV Loading and Unloading Bays Project

Loading and unloading by public utility vehicles (PUVs), both intra- and inter-city routes, not only create major concerns on traffic but to passengers' safety as well. The provision of a designated loading and unloading bays in key areas is one of the alternatives that must be considered in traffic improvement. Provision of waiting shed must be included to this solution.

4. *Sidewalk and Road Encroachment Clearing Project*

This also involves proper study on the long-standing concern of irregular grade of pavement along major sidewalks in the City proper, particularly the streets of Miranda, Rizal, Jesus, Plaridel and Sto. Rosario. The present situation makes it risky to residents due to uneven elevations and grades.

In addition, issuance of a regulation is necessary for an effective implementation of this sidewalk improvement. This also includes covering of the left and right sides of critical creeks and canals like the Lazatin Creek.

5. *Street Lighting Project*

This project is not only for visuals but for the protection of the populace. Proposal includes installation of sodium lamps in street lighting because of its apparent economic and environmental benefits.

6. *Construction of Skywalks or Pedestrian Overpass Project*

Increasing flow of traffic is unavoidable, so for the safety of pedestrians as well as for purposes of lessening traffic congestion, construction of skywalks in strategic locations is inevitable.

7. *Joint Traffic Engineering and Management Study (TEAMS) of PNP-TEG-PTRO and the CEO for some vital roads and intersections*

Traffic congestions are being observed in front of Robinsons Mall, Jenra Mall, Angeles University Foundation (AUF) and intersections

along MacArthur such as A. Gueco, 1<sup>st</sup> St. and at the at Bayanihan Park's roundabout area. A proper and focused study should be conducted more particularly on the aforementioned intersections. Possible inclusions in the study are proposals like (i) imposition of fees on roadside parking; (ii) prohibition through legislation of funeral marchers during peak hours; and, (iii) regulation of the operation of tricycles, pedicabs, calesas and the like.

8. *Proper Orientation and Training of Traffic Enforcers*

Traffic enforcers involved in traffic management especially those newly-hired must be given proper and adequate training on traffic enforcement and management. Sometimes the visibility and number of traffic enforcers are not assurance in the solution of traffic-related concerns. The Balibago area, particularly the intersection of MacArthur and A. Gueco, and in front of Robinson's Mall, experiences a day-long slow vehicle movement. This traffic personnel training and orientation must be institutionalized.

9. *Urban Renewal Project*

Angeles City is burdened with complex socio-economic and human settlement problems such as increasing population, unemployment, environmental pollution, among many others. These concerns resulted to urban blights wherein part of the City falls into disrepair with abandoned buildings, high local unemployment, and crowded uninviting City scenery.

In this regard, particular areas have to undergo urban transformation that includes redevelopment of discarded private properties to make it valuable.

#### **7.8.4 Abacan River Monitoring, Rehabilitation and Development Program**

1. Abacan River Comprehensive Development Project

Major components of the project include the following:

- a. Road and Bridges Construction;
- b. Linear Park Development;
- c. Establishment and Reclamation of Riverbank; and,
- d. River Protection through the proposed Massive Propagation of Bamboos Project.

#### **7.8.5 Service Utilities Improvement Program**

1. Sapangbato Renewable (Wind) Power Project

This project aims to develop a renewable power source for the City.

2. Metro Clark Bulk Water System

This project aims to develop an alternative water source.

3. Reactivation/Establishment of an Emergency Network

The PHOENIX BASE system was an effective emergency network system in the past. In this regard, the reactivation or establishment of a new emergency network is being recommended.

4. Regulation on the Erection of Electric Posts and Installation of Electrical Lines

The location of electric posts is not properly regulated, thus becomes eye sore to the public. The uncontrolled installation of wirings (electrical, telephone lines of three companies operating in the City) creates an inconvenient view because of the spaghetti-type hanging wirings.

5. Abacan Bulk Water Impounding Project

This project aims to develop an alternative surface source of water for domestic and industrial water uses.