

CHAPTER 4.0

ENVIRONMENTAL MANAGEMENT PLAN

This sector deals with the sanitation and environmental management aspects of the City's air, water and land resources. This sector includes both solid and liquid waste management, drainage and sewerage systems, and descriptions of the dumpsites, and cemeteries. Environmentally critical areas are also included, with brief descriptions on blighted areas within the City.

4.1 INTRODUCTION

Tarlac City, being a newly created city and the premier urban center within the province, leads in the provision of primary or higher level services particularly for industrial, commercial, residential, institutional and recreational purposes.

In the context of both Provincial and Regional Development Plans, the City shall actively pursue the promotion and development of its industrial enterprises. The Luisita Industrial Park shall serve as the nucleus of industrial activity in the area. This Industrial development is expected to be complemented by tourism development. It shall therefore continue the maintenance of its existing parks, museums and other points of interests.

Given that natural resources and the existing environment may be exploited for economic purposes, it is necessary to properly manage the City's natural resources so that sustainable development can be achieved. Considering the negative implications brought about by industrial development, the City shall be constrained to enact the necessary policies to properly manage its natural resources so that their use can be sustained and adverse environmental and social impacts can be avoided.

Although Tarlac City remains as the focal point of urban activities in the province, it shall continue to optimize its agricultural potentials. This shall include the preservation and protection of its prime agricultural lands particularly on the eastern and northwestern parts of the locality. These areas shall continue to be devoted to crop production and for inland fishery.

Urban activities shall be regulated on the flooded and liquefaction-prone areas on the northern portion of the city. With its central business district located along the Tarlac River, the City shall aggressively undertake the protection of its riverbanks and waterways.

Environmental Management, thus, cannot be separated from development issues. This economic development and the maintenance and improvement of environmental quality must be pursued simultaneously. They should not run counter to each other, but should complement each other, both going in the same direction.

In the preparation of the CLUP, the following major issues were considered: a) weak monitoring and enforcement of environmental laws, b) contradicting/conflicting local and national policies on resource utilization, c) poor environmental management, d) growing pollution concerns and e) absence of comprehensive land use policy. On the other hand, it was also determined that City inhabitants have high environmental consciousness, however environmental education efforts should be pursued continuously taking into consideration that knowledge does not always mean action. Limiting factors to development, inhabitants who have no consideration to environmental concerns.

4.2 MAJOR GOAL

In support of the City's emerging role of becoming an "Industrial Center cum Tourism Hub" within the Region, the City will strive to protect its environment and promote the sustainable development of its land resources.

4.3 AIR

4.3.1 EXISTING SITUATION

Air pollution makes our environment unclean or impure. It is the presence of foreign matter (either gaseous or particulate or combination of both) in the surrounding atmosphere which is detrimental to the health and/or welfare of man.

The urban growth and the rapid urbanization of the City bring about some adverse impact upon the environment. Emissions from vehicles and pollutants from industries threaten the quality of the City's ecosystems.

However, the impact of vehicle emissions (particularly that of tricycles in the Poblacion area) is not readily regulated. The absence of a systematic air quality monitoring program restricts opportunities of defining baseline conditions for common air pollutants within the area which should be properly addressed, to manage said urban ecosystem.

It is therefore suggested that institutional strengthening measures in environmental monitoring activities be actively pursued to be able to come up with workable proposals.

4.3.2 GOAL

1. People of Tarlac City continuously enjoying a clean and healthy atmosphere.

4.3.3 OBJECTIVES

1. To reduce air pollution due to industrial and motor vehicle gas emissions in the atmosphere.
2. To create greenbelts/tree parks to reduce the presence of carbon dioxide and other poisonous gas.
3. To reduce the Greenhouse Gas emissions and help protect the Earth from Global warming.
4. To minimize odor from industries, garbage and refuse.

4.3.4 TARGETS

1. By 2010, 3,000 trees along the major roads planted.
2. By 2007, two greenbelts/tree parks established/created.
3. By 2010, adoption of a policy regulating the number of tricycles within the urban barangays and within specified routes only
4. By 2004, appropriate buffer zone for the City dumpsite established and functional.

4.3.5 STRATEGIES

1. Develop a comprehensive management program to control air pollution
2. Monitor air pollution load in the City for public awareness
3. Encourage cooperation and self-regulation among citizens and industries
4. Promote public information and education to encourage the involvement of the whole community in maintaining air quality
5. Adoption of measures to regulate gas emissions of motor vehicles and industrial plants
6. Promote and encourage the provision of urban space and green parks
7. Adopt sanitary landfill as waste disposal site/procedure
8. Enforce an Ordinance regulating the number of tricycles operating within the City
9. Encourage use of unleaded gasoline for two-stroke motorcycles
10. Establish buffer zone around the sanitary dumpsite

4.3.6 PLANS, PROJECTS AND PROGRAMS

1. Air quality improvement and management
2. Urban space and green parks establishment project
3. Solid Waste Management
4. Greenbelt area around the present dumpsite and later on, the sanitary landfill site and industrial area

4.3.7 LAND USE IMPLICATION

There is a need to determine roads right-of-way for tricycles to decongest the City's main streets, especially within the Poblacion area.

There is a need to identify major parks/greenbelts in the urbanizing areas and to preserve them for the purpose. Roadsides, riverbanks and similar areas can be designated as greenbelts.

4.4 WATER

4.4.1 WATER RESOURCES

4.4.1.1 EXISTING SITUATION

The City of Tarlac has various communal bodies of water. One of this is the Tarlac River which is more or less 16 miles long. It is a great source of gravel and sand. One of three other principal rivers traversing the Province of Tarlac is Bulsa (which has been renamed to Moriones) River, which is also found in Tarlac City. This river is subject to flashfloods at the height of the rainy season.

The other bodies of water are:

- ⇒ Armenia Dam – Brgy. Armenia, Tarlac City
- ⇒ Bangan Lupa River – Brgy. Tibagan, Tarlac City
- ⇒ Banaba Creek – Brgy. Banaba, Tarlac City
- ⇒ Culipat Creek – Brgy. Culipat, Tarlac City
- ⇒ Sinait Creek – Brgy. Sinait, Tarlac City
- ⇒ Soliman Creek – Brgy. Balanti, Tarlac City
- ⇒ Lucung Creek – Brgy. Sto. Niño, Tarlac City
- ⇒ Buenavista Creek – Brgy. Buenavista, Tarlac City
- ⇒ Masalasa Creek – Brgy. Binauganan, Tarlac City
- ⇒ Ungot Creek – Brgy. Ungot, Tarlac City
- ⇒ Amucao Creek – Brgy. Amucao, Tarlac City
- ⇒ Balingcanaway Creek – Brgy. Balingcanaway, Tarlac City
- ⇒ Sto. Niño Creek – Brgy. Sto. Niño, Tarlac City
- ⇒ Mapalad Creek – Brgy. Mapalad, Tarlac City

One of the two identified natural springs is located within the vicinity of Brgy. Dolores of Tarlac City.

The main source of water supply in the City is groundwater from wells and developing springs.

4.4.1.2. GOAL

1. Adequate quantity and quality of water resources available to meet domestic, agricultural and industrial requirements on sustainable basis.

4.4.1.3 OBJECTIVES

1. To protect and conserve all water resource areas and their ecosystems.
2. To regulate the establishment of ground water wells within urban barangays.

4.4.1.4 TARGETS

1. By 2010. the water source areas and their ecosystems would adequately be protected.
2. By 2004, an ordinance/national regulation regulating the establishment of ground water-wells is strictly enforced (P.D. 1067).

4.4.1.5 STRATEGIES

1. Educate the people residing near the vicinity (riparian communities) of these water resources proper housekeeping and environmental cleanliness to ensure water quality.
2. Enhance the quality and quantity of fresh water supply.
3. Implement water pollution control and monitor water quality regularly.
4. Explore and harness alternative sources of potable water.
5. Conduct information and education campaign.

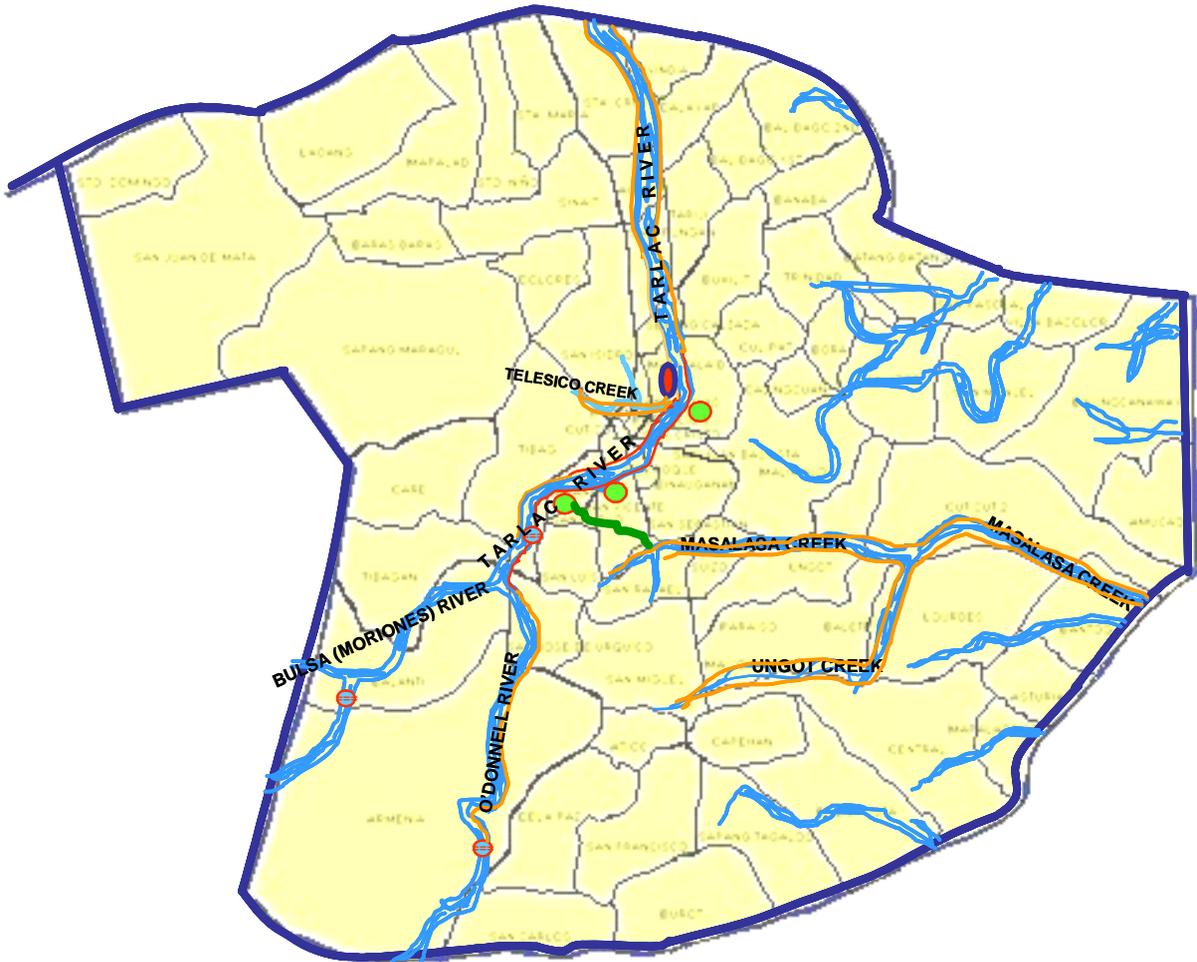
4.4.1.6 PLANS, PROJECTS AND PROGRAMS

1. Waste water treatment in densely populated areas project
2. Water Summit involving all barangay programs

**INFRASTRUCTURE PLAN MAP CY 2010
FLOOD CONTROL**



CITY OF TARLAC



LEGEND:

- | | | | |
|--|----------------------------|--|---|
| | MUNICIPAL BOUNDARY | | WATERWAYS |
| | BARANGAY BOUNDARY | | PROPOSED REHABILITATION OF BANKS/DIKES & CREEKS |
| | PROPOSED PUMPING STATION | | EXISTING CONCRETE REVETMENT |
| | EXISTING NIA DIVERSION DAM | | PROPOSED REVIVAL OF CREEK |
| | PROPOSED SLUICeway W/ GATE | | |



City Government of Tarlac
Office of the City Planning and Development
Map No. 32

COMPREHENSIVE LAND USE PLAN

4.5 LAND

4.5.1 LAND RESOURCES

4.5.1.1 EXISTING SITUATION

Land degradation is becoming one of the most serious problems confronting lands utilized for agriculture. This problem is a result of soil erosion due to deforestation, unscientific farming methods and infrastructure development, and which in turn have stripped away soil nutrients and caused siltation in low lying areas.

Environmentally-Constrained Lands are areas prone to natural hazards which give negative impact to man and the environment.

- **Areas subject to volcanic hazard**

The eruptions of Mt. Pinatubo have brought about heavy damage to human settlement in affected areas. These areas at present contain pyroclastic flow deposits covering agricultural lands and riverbeds.

- **Severely-flooded areas**

Flood prone areas are usually covered by water during heavy rains. Flooding is brought about by accumulated rainfall, run-off and river/creek outflow and the pyroclastic flow deposits on said waterways.

The flooding hazard map shows which part of Tarlac City with flooding problems (Flood Zoning).

Areas subject to volcanic hazards (lahar flow) and severely-flooded areas are found in the following (5) Sectors and should be constantly monitored.

To identify a few:

1. Sector I: Brgy. Mabini along Tarlac River, Cut-Cut I; Poblacion; Binauganan & San Sebastian.
 2. Sector II: Brgy. Salapungan; Aguso & Sta. Cruz along Tarlac River & McArthur Highway.
 3. Sector III: Brgys. San Rafael; San Miguel; San Francisco; Atioc & Dela Paz.
 4. Sector IV : Brgys Armenia; Balanti; San Luis; San Jose de Urquico; Carangian; Tibagan; Tibag; San Isidro; Sto. Niño; Sta. Maria and Sinait particularly Barangays along the Tarlac River, Balsa River and O'Donnell River
- **Network of protected Agricultural Areas (NPAA)/ Network of Areas for Agricultural Development (NAAD) Highly Restricted Agricultural Lands**

This is another category of protected land which includes certain types of agricultural lands. The main purpose of such protection is to keep and preserve the highly suitable lands for long-term food security of the province. The NPAA/NAAD highly restricted agricultural lands include: a) all irrigated and potentially irrigable lands, b) all alluvial plains that are suitable for agricultural production as determined by BSWM, c) all sustainable lands that are traditional sources of food, d) all croplands that support the existing economic viability of existing agricultural infrastructure and agri-based enterprise in the province.

At present, Administrative No. 20 protects only irrigated lands and potentially irrigable lands with firm funding commitment for irrigation.

Although all component municipalities of Tarlac have areas with irrigated lands, only those covered by the National Irrigation

TABLE No. 65
LIST OF CEMETERIES/MEMORIAL PARKS
CITY OF TARLAC

NAME	LOCATION	AREA (Hectare)	DISTANCE FROM RESIDENTIAL AREA	DISTANCE FROM WATER SOURCE
<i>PUBLIC CEMETERIES</i>				
San Pablo Civil Cemetery	San Pablo	2.1325		
Balingcanaway Civil Cemetery	Balingcanaway	1.1807	100 m.	water system is deepwell about 700 m. from the creek
San Juan de Mata Civil Cemetery	San Juan de Mata	5.0000	300 m.	
Chinese Cemetery	San Pablo	1.2357	boundary	300 m. from the creek
<i>PRIVATE CEMETERIES/MEMORIAL PARKS</i>				
Roman Catholic Cemetery	San Francisco	1.0000	100 m.	shallow well
San Vicente Cemetery	San Vicente	0.0863	boundary	200 m. from the main irrigation canal
Roman Catholic Cemetery	Matatalaib	1.0000	boundary	creek water flow almost boundary
Roman Catholic Cemetery	San Vicente	1.5631	25 m.	20 m. from the main irrigation canal
Tarlac (Eternal) Memorial Park	Binauganan	9.2112	boundary	500 m. from the creek
Espinosa Private Cemetery	Tibag	2.0000	boundary	500 m. more or less from the non- functional creek
Mt. Shiloh (former Heaven's Garden)	Aguso	4.7313	boundary of the cemetery	boundary line from the non-functional creek
Garden of the Ascencion	Tibag	6.9699	boundary	50 meters from the river
Mt. Zion Memorial Park	San Miguel	5.3093	5 meters	300 m. from the irrigation canal

Source: City Assessor's Office

Administration (NIA) can be delineated on the protection lands map because of the wider scope of the national irrigation systems.

- **Cemeteries/Memorial Parks**

The City of Tarlac has nine (9) cemeteries and five (5) memorial parks with a total land area of 41.420 hectares. Of these nine cemeteries, four cemeteries namely, San Pablo Civil Cemetery, Balingcanaway Civil Cemetery, Chinese Cemetery and San Juan de Mata Civil Cemetery are identified as public cemeteries. Existing private cemeteries/memorial parks are the following: Roman Catholic Cemeteries in San Vicente, San Francisco & Matatalaib, Tarlac (Eternal) Memorial Park, San Vicente Cemetery, Espinosa Private Cemetery, Garden of Ascension, Mt. Zion Memorial Park and Mt. Shiloh Memorial Park. Table No. 65 shows the location and area occupied by the different cemeteries/memorial parks.

The San Pablo Civil Cemetery and Roman Catholic Cemeteries in San Vicente, Matatalaib & San Francisco have shown signs of congestion and there is a need to allocate land for future cemeteries on the north, south, east and west portions of the City.

- **Blighted Areas**

Blighted areas refer to the area where structures are dilapidated, obsolete and unsanitary, tending to depreciate the value of the land and prevent normal development and the use of the area. It also pertains to persons or households living in danger areas such as esteros, garbage dumps, riverbanks, shorelines, waterways and in other places such as sidewalks, roads, parks and playgrounds, and government land earmarked for infrastructure programs.

Squatter families affected by various government projects are the following:

- 131 squatter families found living along the By-pass Road at Sitio Paninaan, Carangian, Tarlac City ; and
- 192 squatter families from Brgys. Cut-Cut I, San Roque, San Juan Bautista and Ligtasan who are affected by the proposed revival of Cut-cut Creek.

These families are for immediate relocation at a resettlement site located at Buno, Matatalaib.

Some 356 squatter families needing assistance located at 6 barangays within Tarlac City have been identified by the CPDC as of February 2001.

<u>Barangay</u>	<u>No. of Squatters</u>
Sto. Cristo	161
San Vicente	39
San Rafael	51
San Roque	7
Buno, Matatalaib	50
Ligtasan	<u>48</u>
Total	<u>356</u>

Tarlac City shall allocate land for socialized housing and avail of existing resettlement/slum improvement programs of the National Housing Authority. Target beneficiaries are the abovementioned families comprising the blighted areas.

4.5.1.2 GOAL

1. Land and soil resources properly managed and negative impacts of land use and development activity on landform integrity and soil quality adequately minimized.
2. Upgrade the living condition of families living in blighted areas through proper environmental management.

4.5.1.3 OBJECTIVES

1. To protect agricultural lands from inappropriate use of technology.
2. To protect prime agricultural lands from being converted to other uses.
3. To protect flood prone areas by installing/constructing flood preventive infrastructure (e.g. dams, dikes, pumping stations).
4. To identify sites for future public cemeteries.
5. To identify relocation/resettlement sites to accommodate families in danger areas and identified blighted areas.

4.5.1.4 TARGETS

1. By year 2006, agricultural lands protected from contaminants/depletion arising from continuous mono cropping, inorganic farming, and planting of soil depleters.
2. Training on appropriate technology on sustainable farming to be provided to farmers.
3. By year 2007, install the necessary flood-prevention measures (upgrade drainage systems, pumping stations, etc).
4. By year 2005, there will be no additional squatter families in Tarlac City.
5. By 2010, there will be no squatters along danger zones and environmentally critical areas. Riparian communities refer to built-up along river embankments, levees, and riverbed.

4.5.1.5 STRATEGIES

1. Adopt a land use policy that promotes the rational utilization and management of land by harmonizing its divergent uses for the attainment of food security, human settlements development, industrialization and maintenance of ecological balance specifically the Agriculture and Fisheries Modernization Act.

2. Adopt a community-centered and sustainable integrated area development approach in land management system.
3. Adopt appropriate protection and management measures for ecologically vulnerable land areas.
4. Conduct studies on flooding, its degree and magnitude, then come up with effective disaster prevention and long-term engineering solutions.
5. Conduct continuous monitoring and evaluation of flood-prone areas and soil erosion areas (Flood/Erosion Land Zoning).
6. Conduct massive information and education campaign.
7. Provide and develop suitable relocation sites for squatters.

4.5.1.6 PLANS, PROJECTS AND PROGRAMS

1. Rehabilitation of degraded areas affected by heavy *lahar* flow
2. Fortification of the Tarlac River Dike based on a long-term probable flood study.
3. Flood control program based on a long-term flood frequency analysis (Construction of drainage canals, declogging of drainage canals, construction of pumping stations, rehabilitation of creeks as an outfall of flood water and construction of box culverts at various barangays).
4. Soil Erosion control program.
5. Relocation of squatter families along danger zones and environmentally critical areas to designated resettlement sites

4.5.1.7 LAND USE IMPLICATION

Riverbanks and lands that are highly susceptible to erosion and floods should be properly delineated and protected from destructive activities of the river system.

Unstable and fragile landforms should be properly identified and development thereon strictly regulated.

Identified relocation sites should have the necessary road networks and amenities to sustain the good living condition of the relocated families.

4.5.2 WASTE MANAGEMENT

4.5.2.1 EXISTING SITUATION

Solid Waste Management

The present solid waste management practices include the garbage collection and open dumping of the waste at an existing dumpsite.

The City of Tarlac at present is leasing a dumping site located at Brgy. San Luis. Garbage is collected within the urban barangays especially in the commercial areas.

Households in the rural areas either burn their garbage in their backyards or throw them in the fields to rot and fertilize the soil.

At present, garbage collection is being contracted out to a private hauler because the city government does not have the needed equipment and facilities for its operation. The City utilizes fifteen (15) garbage trucks in the daily collection of garbage. Volume of garbage being collected daily is approximately 300 cubic meters. It is then dumped into the twelve (12) hectare open dumpsite which is more or less 3.8 kilometers away from the city proper.

The fifteen garbage trucks being utilized by the City service a total of only 53 barangays of the total 76. Daily collection of garbage is done in 15 barangays namely: Brgys. San Sebastian, Aguso, Dalayap, Salapungan, Maliwalo, San Juan de Bautista, Ligtasan, Mabini, Poblacion, San Nicolas, San Roque, Sto. Cristo, Matatalaib, Tibag and San Vicente. The rest of the barangays have a collection ranging from once to thrice a week.

Certain deficiencies of the existing solid waste management system are as follows:

1. Lease of the existing dumpsite will expire in a year, after more than 20 years of operation.
2. Operation of the existing dumpsite is insufficient due to lack of sanitary procedures and systems.
3. Recycling of solid waste is largely based on scavenging and no organized system exists. The solid waste segregation program has not taken off.

Site selection is underway for the proposed Sanitary Landfill Project at the following barangays: San Juan de Mata, Tibagan, Care and Armenia for environmental impact assessment. The landfill will be so designed to recover most methane gas to reduce greenhouse gas emission and recycle it to energy (power).

Drainage, Sanitation And Sewerage (Liquid Waste)

There is no sewerage system provided for public use. Most houses and establishments in the city have the usual septic tank provision for wastewater treatment.

The modes of refuse or human waste disposal for all barangays in Tarlac are flush and water-sealed, sanitary pit prim type. Toilet wastes are directed to septic tanks and effluent is usually discharged into an absorption pit and surplus flows find their way into the drainage system. Sewage water, kitchen, laundry, bathroom wastewater are discharged onto the drainage system. Wastewater is treated in septic tanks before it is discharged through the storm drains or by infiltration. There are no facilities at present for the regular dislodging of septic tanks; so it is not clear how many of the existing septic tanks are actually working.

Sewage in open, stagnant canals serve as breeding grounds for bacteria and insects that act as germ carriers. This is one of the causes of the prevalence of intestinal diseases.

Most of the drainage canals are heavily silted or clogged with solid wastes carried by storm water movement while clogging causes water to stagnate. This can cause health problems and flooding.

With the projected increase in population, additional toilet facilities must be provided to meet the growing needs of the populace.

GOALS

1. Maximize economic, social and cultural benefits through an orderly and controlled development of environmental resources.
2. Upgrade both sewerage and drainage systems in the urban area.
3. Improve and properly maintain garbage disposal system.
4. Develop and implement ecological waste management.

OBJECTIVES

1. To set up control measures to prevent pollution of waterways in areas with industrial establishments.
2. To upgrade/rehabilitate both sewerage and drainage systems.
3. To establish an appropriate sewerage system
4. To improve the garbage disposal system and reduce solid waste in the city.
5. To establish a regular and systematic solid waste collection system in each barangay.

TARGETS

1. To construct additional toilet facilities to meet the population needs within 2002-2010.
2. Continuous improvement and maintenance of existing drainage system within the next ten years.
3. By year 2010, a centralized wastewater treatment facility shall have been established. All wastewater shall at least have gone through primary treatment in septic tanks.
4. By year 2010, adequate sewerage system shall be operational in the CBD.
5. By year 2004, local solid waste management plans and programs shall be developed including the preparation of information education campaign materials on solid waste management and the methods/parameters for the measurement of waste reduction, collection and disposal.
6. By year 2008, a sanitary landfill shall have been fully operational.

STRATEGIES

1. Carry out proper monitoring and maintenance of drainage and sewerage systems.
2. Give priority to establishment of an appropriate sewerage system in the built-up area.
3. Construct a sanitary landfill and provide proper waste collection equipment with appropriate solid waste management technologies taking into consideration local capability, economic viability and environmental acceptability, among others, shall be identified and introduced.
4. Massive information campaign on the safe and environmental disposal of solid waste shall be pursued and the private sector

participation in solid waste management projects shall be encouraged.

5. A regular and systematic solid waste collection system in each barangay shall be established.
6. Laws/ordinances on the segregation of wastes at sources shall be enforced that includes punishment for those who dump human and wastes along the riverbed and embankments.

PLANS AND PROGRAMS

Garbage Disposal System

The program intends to address the operation and maintenance of a sanitary landfill, such as site identification and development, procurement and maintenance of collection and disposal equipment, integration of solid waste recycling system and the implementation of a garbage fee collection system.

Ecological Waste Management Plan

The plan implies the development and implementation of ecological waste management through the establishment of material recovery facility; establishment and management on solid waste management information data base, in coordination with the concerned agencies on solid waste generation and management techniques as well as the management, technical and operational approaches to resource recovery; preparation and distribution of information education campaign materials on solid waste management; development of model waste minimization and reduction auditing procedures for evaluating options; establishment of methods and parameters for measurement of waste reduction, collection and disposal; and facilitation of training and education in integrated ecological solid waste management through the technical and other capability-building assistance of NGAs & NGOs.

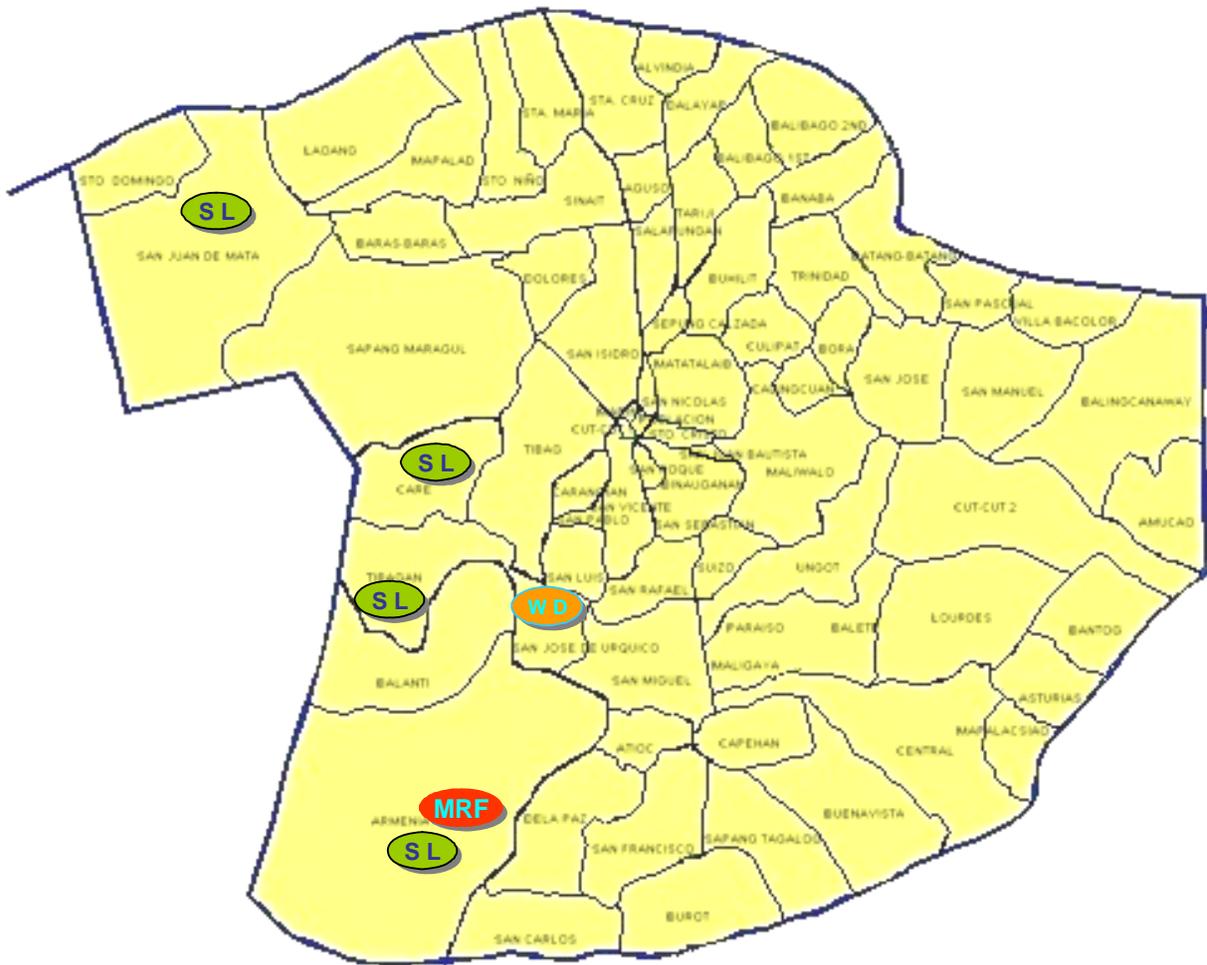
LAND USE IMPLICATION

Area for the solid waste disposal system should be identified, properly delineated and protected. Land for the proposed sanitary landfill project should take priority since the lease on the present dumpsite at Barangay San Luis will soon expire.

INFRASTRUCTURE PLAN MAP LIQUID & SOLID WASTE DISPOSAL



CITY OF TARLAC



LEGEND:

MUNICIPAL BOUNDARY

BARANGAY BOUNDARY

EXISTING WASTE DISPOSAL (DUMPSITE)

PROSPECTIVE SITE FOR SANITARY LANDFILL

PROSPECTIVE SITE FOR MATERIAL RECOVERY FACILITY



City Government of Tarlac
Office of the City Planning and Development
Map No. 34

COMPREHENSIVE LAND USE PLAN

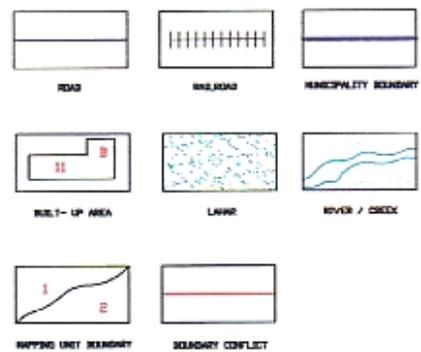
STRATEGIC AGRICULTURE AND FISHERIES DEVELOPMENT ZONE MAP



LEGEND

MAPPING SYMBOL	DESCRIPTION/SADZ AREAS	TOTAL AREA	
		(HA.)	(%)
1	Strategic crop sub-development zone	17,452	
2	Strategic livestock sub-development zone	7,144	
3	Strategic fishery sub-development zone	217	
4	Strategic integrated crop/livestock sub-development zone	0	
5	Strategic integrated crop/fishery sub-development zone	0	
6	Strategic integrated crop/livestock/fishery sub-development zone	0	
7	Strategic integrated fishery/livestock sub-development zone	0	
	Sub-Total	24,813	
DESCRIPTION/NON-SADZ AREAS			
8	Remaining NPAAD	0	
9	Agro-forestry zone	0	
10	Watershed/Forestry zone	0	
11	Build-up areas	8,859	
L/RW	Lahar/Riverwash	2,445	
	Note : Area distribution may not reflect the official area because of conflict in boundary and scale limitation.	Sub-Total	11,304
		Grand Total	36,117

CONVENTIONAL SIGNS



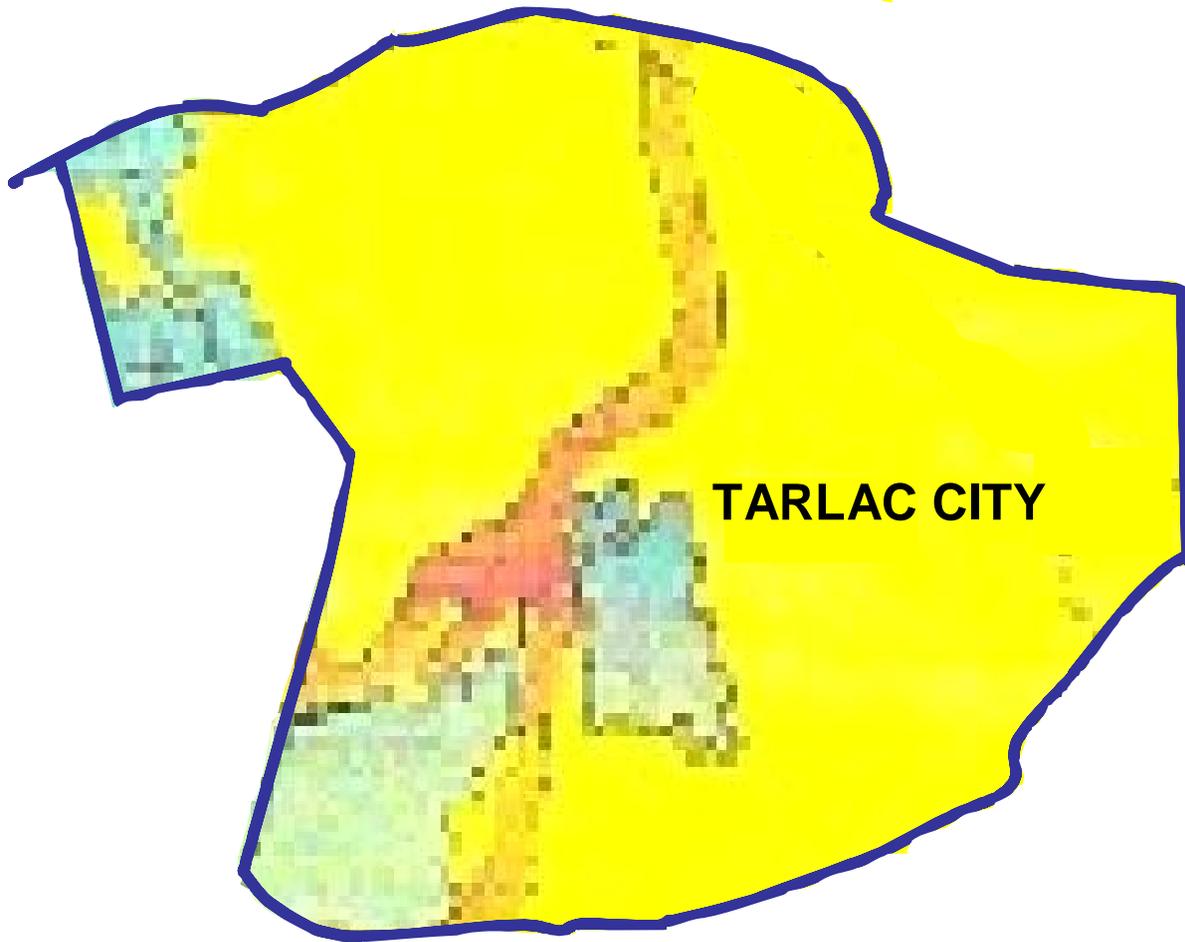
City Government of Tarlac
Office of the City Planning and Development
Map No. 35

COMPREHENSIVE LAND USE PLAN

LAND SUITABILITY MAP



CITY OF TARLAC



LEGEND:

— MUNICIPAL BOUNDARY

SUITABLE LAND USE:

■ RICELAND

■ PASTURE

NOT SUITABLE FOR ANY OF THE ABOVE LAND USE:

■ PYROCLASTIC LAHAR DEPOSITS



City Government of Tarlac
Office of the City Planning and Development
Map No. 36

COMPREHENSIVE LAND USE PLAN

LAND SUITABILITY MAP



CITY OF TARLAC



LEGEND:

-  MUNICIPAL BOUNDARY
-  SUSTAINABLE LAND USE
-  DEVELOPMENT OPPORTUNITY (UNDER USED)
-  NOT SUSTAINABLE (OVER USED)



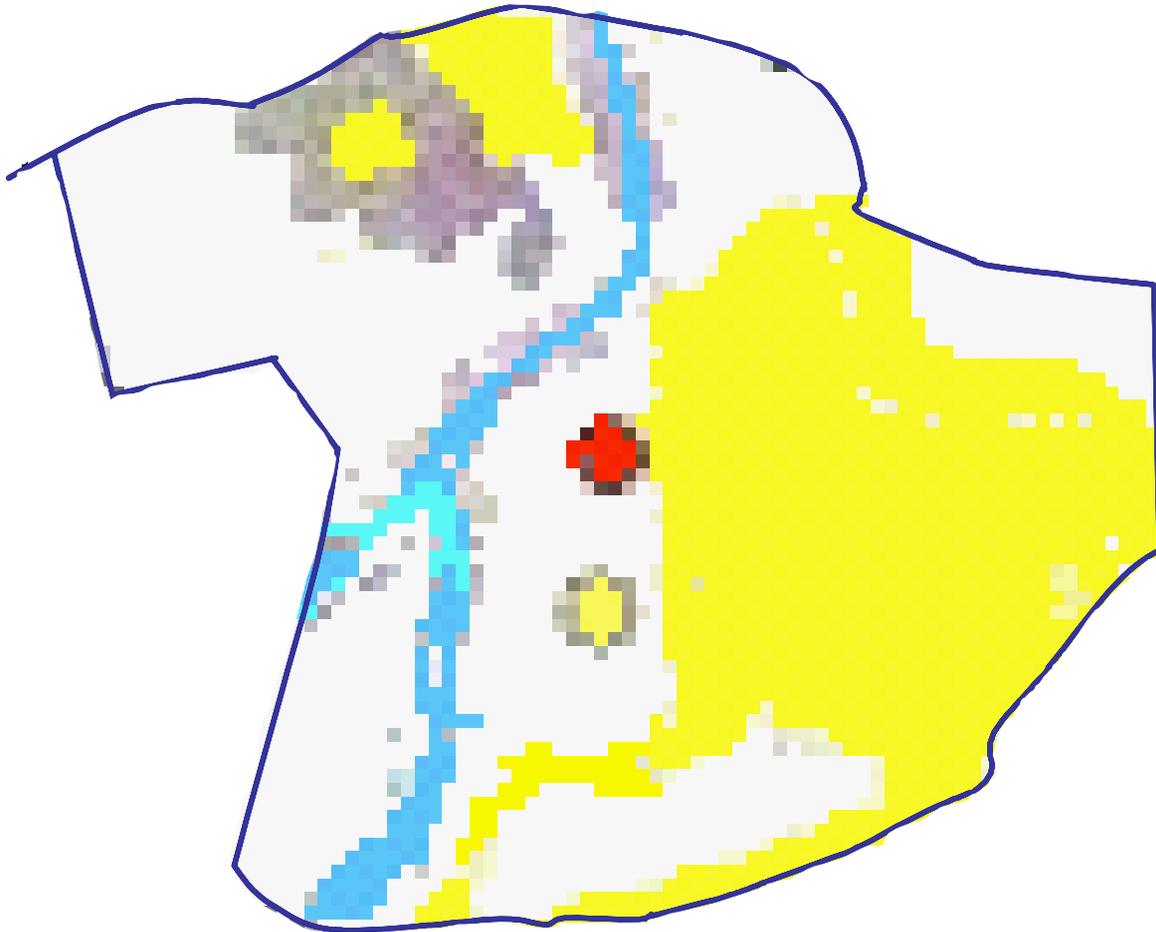
City Government of Tarlac
Office of the City Planning and Development
Map No. 37

COMPREHENSIVE LAND USE PLAN

PROTECTION LANDS MAP



CITY OF TARLAC



LEGEND:

-  MUNICIPAL BOUNDARY
- ENVIRONMENTALLY CONSTRAINED AREAS
(SUBJECT TO NATURAL HAZARDS)
 -  SEVERELY ERODED
 -  SEVERE FLOODING
 -  VOLCANIC HAZARDS
 -  LIQUEFACTION-PRONE AREAS (SPOT LOCATION)
 -  HIGHLY RESTRICTED AGRICULTURAL AREAS (SPOT LOCATION)



City Government of Tarlac
Office of the City Planning and Development
Map No. 38

COMPREHENSIVE LAND USE PLAN