



**Chapter VI**  
**INFRASTRUCTURE and UTILITIES PROFILE**

**I. ROADS**

Roads are essential to the development of the city, the community is completely dependent on them for the necessities of life. They provide ready access to community services including hospitals and schools. In addition, they provided access to and from the markets for produce.

As communication-links' improve, so does the potential of the community to move away from subsistence style of living to one where they are able to buy and sell products and participate in development projects. With a reliable road system, come public transport, which in turns reduces the isolation in the community and allows the movement of people and goods. They provide access for the community to education and health facilities.

**A. Road Network/Analysis**

Two national roads connect the City, the Puerto Princesa South Road, which is 56.869 kms. from the Junction 1(km 0.00) to adjoining municipality of Aborlan and the Puerto Princesa North road extended over a distance of 77.405 kms. from Junction 2 (km 2+740) to Roxas municipality.

The primary and secondary National Roads connecting the tertiary or urban and rural roads are the Puerto Princesa Wharf Road (Km. 1 + 612), Capitol Canigaran Road (Km. 0 + 000-Km 3+030), Malvar Road (Km. 1 + 447-Km. 3 + 771), Irawan – Tagbuross Road (Km. 11 + 344- Km. 17 + 976), Puerto Princesa North Road (Km 0 + 000-Km 83 + 430) and the Salvacion Junction-Bahile Road (Km 40 + 069-Km 45 + 343). National roads cover a total distance of 155.907 kms. while city roads cover 370.028 kms.

In 1996, there were only 371.060 kms. of city and barangay roads.. These increased to 606.534 kms. in 2005, demonstrating an average annual growth rate of 5.62 per cent.

In 2005, the projected population in the urban area was 166,180 while the total urban road length was about **502 km**. The City had 3.02 kms. per 1000 population. Therefore, with a national standard of 2.4 kms per 1000 population ratio (refer to Table VI.1) the city's road requirement is way above the standard.

**Table VI.1**  
**Projected Need for Road in Urban Areas**  
**City of Puerto Princesa**  
**1997-2010**

Year	Population	Length (km)	Length Per 1000 pop	Standard per 1000 pop	Need of Road per 1000 pop
1997	94,561	167.30	1.77	2.40	59.65
1998	125,769	191.94	1.53	2.40	109.90
1999	126,832	220.22	1.74	2.40	84.18
2000	121,748	252.65	2.08	2.40	39.54
2001	128,986	289.87	2.25	2.40	19.69
2002	136,994	332.57	2.43	2.40	(3.78)
2003	145,807	381.56	2.62	2.40	(31.62)
2004	155,505	437.76	2.82	2.40	(64.55)
2005	166,180	502.24	3.02	2.40	(103.41)
2006	177,940	576.22	3.24	2.40	(149.17)
2007	190,902	661.10	3.46	2.40	(202.93)
2008	205,203	758.48	3.70	2.40	(265.99)
2009	220,997	870.20	3.94	2.40	(339.81)
2010	238,457	998.38	4.19	2.40	(426.08)



There is an assumption of 14% annual increase road requirement until year 2010.

In 2005, the projected population of 47,162 in rural area against the total rural road length of about **104.26** km requires 8.93 km road to keep with the standard of 2.4 km per 1000 population. (Refer to Table VI.2.)

**Table VI.2**  
**Projected Need for Road in Rural Areas**  
**City of Puerto Princesa**  
**2001-2010**

Year	Population	Length (km)	Length Per 1000 pop	Standard per 1000 pop	Need of Road per 1000 pop
2001	41,398	60.17	1.45	2.40	39.18
2002	42,714	69.04	1.62	2.40	33.48
2003	44,111	79.21	1.80	2.40	26.66
2004	45,592	90.87	1.99	2.40	18.55
2005	47,162	104.26	2.21	2.40	8.93
2006	48,826	119.62	2.45	2.40	(2.44)
2007	50,589	137.24	2.71	2.40	(15.82)
2008	52,457	157.45	3.00	2.40	(31.56)
2009	54,436	180.65	3.32	2.40	(50.00)
2010	56,533	207.26	3.67	2.40	(71.57)

**a. Road Administrative Classification**

For ownership and administration grouping, Inventory of Roads shows 191.573 kms. or 23.98 % are national roads maintained by the DPWH while 607.213 kms. or 76.02% are city (urban and rural) roads maintained by the City Engineering Department.

**b. Road Surface**

Based on total roads constructed in the City of Puerto Princesa, there is a total of 20.992 kms. (3.46%) earth road, while 491.314 kms. (80.91%) is gravelled, 26.42 kms. (4.35%) asphalted and 68.487 kms. (11.28%) are concrete roads (see Annex table 6.1.2).

**c. Road Condition**

Roads and streets in the urban core are generally good (Paved roads substantially free of defects and requiring only routine maintenance. Unpaved roads needing only routine grading and spot repairs) and fair (Paved roads having significant defects and requiring resurfacing or strengthening. Unpaved roads needing reshaping or resurfacing (regravelling) and spot repair of drainage) except for a few that are rated poor (Paved roads with extensive defects and requiring immediate rehabilitation or reconstruction – Unpaved roads needing reconstruction and in major drainage works), (see Annex table 6.1.2.). Rough roads are serving motorists bound for northwestern rural barangays.

Concreting of National Road covering Barangay Salvacion to Langogan has been completed. The paving of approximately 32-Km Macarascas-Sabang Road commences first quarter of 2007.



**B. Problem areas/zones within the Urban Core and other Parts of the City**

**a. Traffic Location**

For almost seven years, from 1998, heavy traffic is normally experienced during rush hours at Rizal Avenue (from Burgos St. to Junction I), Lacao St. (from Manalo to Rizal Avenue), Valencia St. (From Rizal to Malvar), H. Mendoza (From Manalo-Malvar St.), Malvar St. (From Public Market area to Caltex Station) and National Highway (from Junction I to Libis Road).

In 2005, the City government implemented some measures to improve traffic condition such as:

- i. Installation of traffic lights at the intersections of Rizal Avenue-Fernandez Street (Junction 1), Rizal Avenue-Lacao Street, and National Highway-Malvar Street (Caltex Gas Station).
- ii. Widening of Rizal Avenue from Junction 1 to Roxas Street, National Highway (MP Road-Junction II) including the provision of common parking along Rizal Avenue.
- iii. The relocation of public terminal from the poblacion to the Integrated Bus and Jeepney Terminal in Barangay San Jose.
- iv. The implementation of 50:50 Tricycle Traffic Scheme (Tricycles are only allowed to ply the city streets on alternating days).

**b. Accident Prone Areas**

One accident-prone area is located at the inter-section of Rizal Avenue and Fernandez St. The streets crossing Rizal Avenue are not perpendicular to one another. In addition, the existing channelized and median Islands are too high. Other accident-prone areas are enumerated below:

- i. Inter-section of Lacao and Rizal Avenue
- ii. Junction II
- iii. Intersection at Socrates and South National Road

**c. Flooding**

Table VI.3 indicates specific location of flood prone areas in the city (urban and rural areas) and other relevant information.

**Table VI.3**  
**Flood Prone Areas in Puerto Princesa City**  
**2006**

Location	Frequency	Remarks (Height of floods, other relevant information.)
Bgy. San Miguel (Purok Masaya, Baltan Interior and Runway)	Occasional, during rainy days.	About 1 ft. Possibility of causing illness.
Bgy. Milagrosa (Interior of Diaz Apt.)		About 1-3 ft.- flooded feeder road.
Bgy. San Manue (a portion)		About 3 ft. – flooded backyards, feeder roads, stagnant drainage.
Bgy. Sicsican	During stormy weather.	About 1 ft. – flooded along riverside.
Bgy. Langogan (Pk. Bukang Liwayway, Centro- along riverside, Bagong Silang riverside, Pagkakaisa riverside and Macandring riverside)	Every 2 years	About 2-3 meters at lower portion.
Bgy. Binduyan ( - Sitio Talabigan Riverside)	Yearly	1.5 – 1 Meter at lower part.



**Table VI.3**  
**Flood Prone Areas in Puerto Princesa City**

Bgy. Banca-bancao (a portion)	Annually	About 1-3 ft. – problem to Residents using interior feeder road.
Bgy. San Pedro (De los Reyes Road, Abanico Coastal Road, Nadayao Road and Libis Road)	Annually	Prone to cause illness.
Bgy. Mandaragat (a portion)	Occasional, during rainy days.	About 1-2 ft. – stagnant Drainage.
Bgy. Buenavista (Purok Centro)	Yearly	About 3-4 ft.
Bgy. Salvacion (Purok Maligaya – centro and Purok Masagana)	Yearly	About 1.5-1 meter between Two (2) river banks
Bgy. Tanabag (Centro and riverside)	Every 2 years	About 1 meter
Bgy. San Rafael	Yearly	About 1-1.5 meters
Bgy. Maoyon (Purok Damayan, Purok Everlasting, Purok Maligaya)	Every 2 years	About 1-3 meters
Bgy. Bahile (Pier area)	Yearly	About 1-3 meters along the river bank.
Bgy. Tagabinit (Purok Maligaya and Purok Masagana)	Yearly	About 4 ft About 10 ft..
Bgy. Bacungan (Maranat I, Centro)	Yearly	About 1 meter
Bgy. Montible	Yearly	About 1 ½ meter
Bgy. Inagawan Sub-Colony along Maasin River	Yearly	About 2 ft.- affects all rive fields along the river.
Bgy. Inagawan	Yearly	About 2 ft. – affects rice fields.

Source: City Engineering Office, 2006, City of Puerto Princesa

**Table VI.4**  
**Traffic Flow**  
**City of Puerto Princesa**

LEVEL OF SERVICE	V/C RATIO	TRAFFIC FLOW CONDITION
A	0.0-0.20	Free flow
B	0.21-0.44	Stable Flow
C	0.45-0.69	Stable Flow
D	0.70-0.84	Unstable Flow
E	0.85-1.00	Unstable Flow
F	-1.00	Forced Flow

Source: Department of Public Works and Highways, City of Puerto Princesa

## II. BRIDGES

The city has a total of 23 local and 57 national bridges. Local bridges total length to 270.91 meters of which 13 are timber, while four (4) are bailey and the rest are concrete steel. National bridges have a total of 1,770.36 meters composed of 995.27 meters concrete, 664.84 meters steel, 9.25 meters bailey and 20.00 meters timber used.

## III. DRAINAGE AND SEWERAGE SYSTEM

### A. Drainage System

Both national and local government maintains the existing drainage system of the City. Side drains and cross drains were provided to catch runoff from road pavements along national and city roads. Drainage structures are out of reinforced concrete culverts (RCCP) of various sizes, open CHB canals, open riprap canals, open soil canals and open pre-cast canals. Natural drainage creek forms part of the drainage system in the urban area (see existing drainage map in Figure 6.3.1).



Most areas in the City of Puerto Princesa have open type of drainage. Only a few portion have RCCPs which, can be found along major thoroughfares. The rest of the areas have open concrete hollow blocks canal, open riprap canal, open pre-cast canal, and open earth canal.

The drainage system in the poblacion needs to be upgraded and expanded up to the growth point area of the city. The major thoroughfare particularly Rizal Avenue is flooded during rainy days due to clogged waterways. Gravitational flow of water also hampered due to the drainage system's poor design specifically in considering the topography of the area. Waterways in some areas particularly San Pedro and Banca-Banca have no exit channels to link with, causing stagnant water during rainy days. Likewise, the increasing construction of residential and commercial structures adversely affects the natural drainage lines. Some original waterways were blocked or impaired thus, aggravates the poor condition of the drainage system.

The City of Puerto Princesa, being a recipient of the Philippine Regional Municipal Development Project (PRMDP) prepared a Drainage Master Plan. The study covers two of the ten identified catchments(catchments 6& 7)

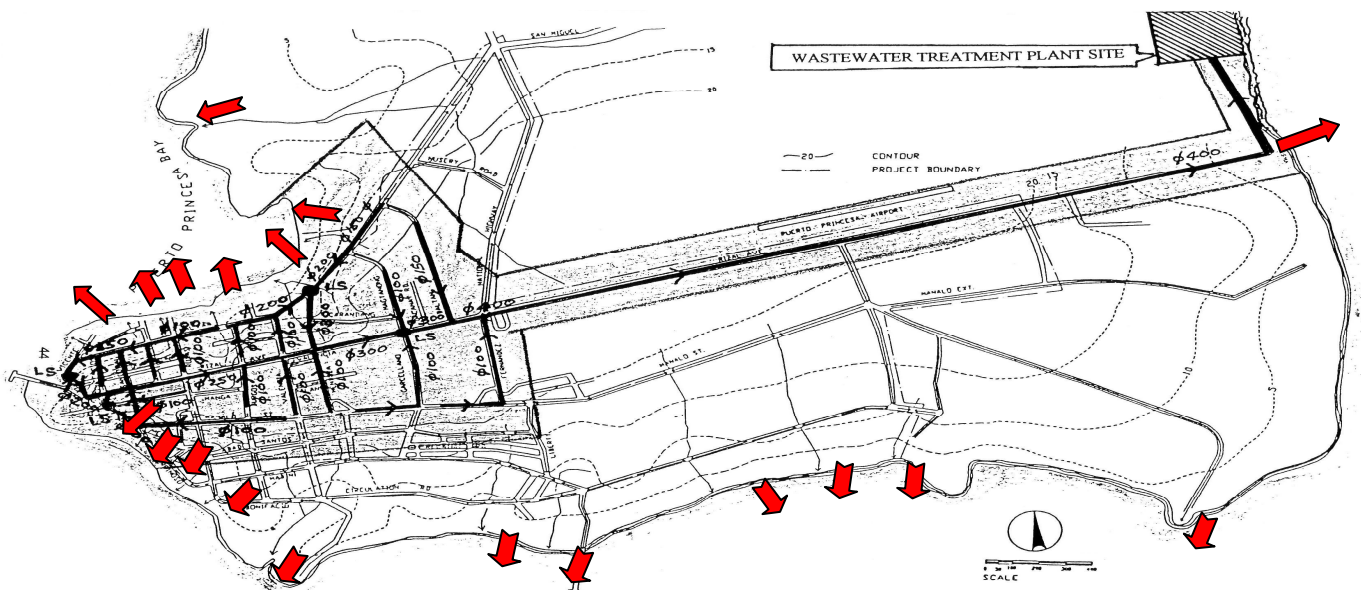
### B. Sewerage System

At present, there are no existing sewerage facilities provided for public use. Water waste is directly discharged into the ground or open canals. Obnoxious liquid waste is normally released into individual septic tanks through artificial pipes or channel.

A pre-feasibility study for sewerage was provided to advice the city in addressing its wastewater collection, treatment, and disposal issues, but due to financial requirements, it is not sufficient for the city to implement, the present condition on sewage treatment technology:

- a. Combined drainage and sewage system
- b. Only few establishments operate sewage treatment plants
- c. Puerto Princesa Bay receiving water body of 19 drainage outfalls (those in red colors).
- d. There is a plan for the a sewerage system along Rizal Avenue and will the waste water at the treatment plant to be constructed at Canigaran area (formerly Vietnamese Camp)

**Figure VI.1 Initial Sewerage Area**



INITIAL SEWERAGE SERVICE AREA (ISA)



C. To solve this problem, the city government initiated a project on Puerto Princesa Bay Renewal Project or reclamation of about 30-hectres, but as of 2005, a total of 11,632.50 square meters have been reclaimed based on the Environmental Compliance Certificate issued by the Department of Environment and Natural Resources (Refer to Appendix 8 - ECC-4B-011-PA-5020-2005).

The plan calls for construction of the following:

- a. Coastal road to serve as an alternate route to main thoroughfares of the city;
- b. Bay walk;
- c. Commercial center;
- d. Park and plaza; and
- e. Tenement housing.

Relocation sites were provided for the households affected by the project. The City Government has the following housing projects:

- a. Mangingisda Socialized Housing Project in Barangay Mangingisda;
- b. Sicsican Housing Project in Barangay Sicsican;
- c. Temporary Housing at the back of the City Coliseum in Barangay San Pedro,
- d. Tenement Housing in Barangay San Isidro; and
- e. Golden Valley Housing Project in Barangay Sicsicasn.

The proposed project has the following objectives and benefits:

- a. The proposed coastal road will ease up traffic congestion at the city proper by providing an alternative route in going in and out of the City.
- b. Medium-Rise Housing Project at the reclaimed area will provide a chance to more or less 3,000 families to own a more decent house and legalize the land tenure of the area they occupied. Provisions for parks and other recreational facilities and promenade lane within their reach will give the residents an opportunity to unwind and refresh and become more productive.
- c. Commercial and livelihood centers that will be generated will provide an additional space for investment and job opportunities for the residents to uplift their living conditions.

#### **IV. TRANSPORT UTILITIES**

##### **A. LAND TRANSPORTATION**

Motorized tricycles provide land transportation for short distance routes, while for long distance, jeepneys, multicabs, and buses are the common passenger and cargo vehicles. Fare varies depending on the distance and length of travel time consumed.

The DOTC-LTO, Puerto Princesa Office has registered 25,269 vehicles of all types. There is an increase of 16,769 or almost 200% as compared to the 1998 figures of 8,500 vehicles. Majority are utility vehicles (UV), motor tricycles (MTC) and motorcycles (MC).

A total of four thousand tricycles (but only 2,000 units ply the city streets every day in deference to Ordinance No. 231 or the 50:50 Tricycle Traffic Scheme) serve commuters within the poblacion and adjacent barangays while there are approximately 500 passenger jeepneys and 94 buses that ply their assigned routes between the city proper and adjoining barangays and municipalities.



**Table VI.5**  
**Inventory of Registered Number and Classification of Vehicles in**  
**City of Puerto Princesa, as of 2005**

TYPE OF VEHICLE	PRIVATE	HIRE	GOVERNMENT	TOTAL
UV (Utility Vehicle)	3,888	0	353	4,241
TC (Tricycle)	3,213	5,817	-	9,030
MTC (Motorcycle)	9,159		258	9,417
PUJ (Public Utility Jeep)		500	-	500
L (Light)	533	-	8	541
T (Truck)	1,029	0	67	1,096
M (Medium)	38	9	-	47
TB (Truck Bus)	13	94	13	120
PUB (Public Utility Bus)				0
Other Type of Vehicle	255	7	15	277
<b>TOTAL</b>	<b>18,128</b>	<b>6,427</b>	<b>714</b>	<b>25,269</b>

Source: DOTC-LTO, Puerto Princesa Office, 2005

From 2000 to 2005, the Philippine National Police (PNP) records revealed that, a total of 544 vehicular accidents, of which, 480 people were injured while 64 succumbed to death. The agency usually entertains two cases of road accidents everyday. The agency further claimed that, accidents of this kind occur more frequently during nighttime.

Table VI.6 presents statistical data on the number of vehicular accidents that happened sometime in 2000 to 2005. Take note that these records dose not include the unreported incidents.

**Table VI.6**  
**Number of Vehicular Accidents**  
**City of Puerto Princesa, 2000-2005**

YEAR	NIGH TIME	DAY TIME	INJURED	DIED
2000	60	30	80	10
2001	50	27	70	7
2002	60	42	90	12
2003	75	40	100	15
2004	60	10	60	10
2005	60	30	80	10
<b>Total</b>	<b>365</b>	<b>179</b>	<b>480</b>	<b>64</b>

Source: PNP, City of Puerto Princesa as of August 30, 2006

## **B. OTHER TRANSPORT UTILITIES**

There is an existing public terminal facility provided in the City. The government has implemented the bus and jeepney terminal at the allotted 0.8-hectare parcel of land adjacent to the new public market. The said project is accommodating about 1,700 of different types of vehicle from large buses to tricycles to transport more or less 1,666,305 passengers from different places in the city and some municipalities in the province.

## **C. AIRPORT AND AIR NAVIGATIONAL SERVICES**

### **a. Airport**

The airport is located at Barangay Banca-Bancao in close proximity to the commercial centers and surrounded by residential and commercial developments. It has a concrete runway of is 2.6 kilometers



long and 45 meters wide. This facility has a total area of 121.39 hectares considerably capable of handling big and wide-bodied jets for domestic and international flights.

The original airport was constructed in the early 1970's, inaugurated in 1975. Old facilities have been replaced by new structures. The control tower provided under a Japanese grant was made operational in 1983. In 1992, a new arrival facility and a fire station were constructed with fire access road (CVOR/DME/NDB and Outer Localizer were provided by USAID).

The airport and air navigation facilities in general are in good condition, but the existing taxiway urgently needs improvement, as it has been a problem of the PAL's A-320-200 and A330-300. PAL has long been requesting from ATO and the City Government to effect the widening of taxiway to at least 10 meters more.

At present, the Puerto Princesa Airport is utilized mainly for domestic operations. Jointly, used by civil and military aviation, the Antonio Bautista Air Base located at northside of the runway. Passenger aircrafts available daily are operated on three (3) domestic points (i.e. Manila, Cebu and Iloilo). Intermunicipality air transport was also utilizing the facility. In the near future, expansion and major improvements will take place to upgrade the facility to an international airport.

A study was conducted by the Department of Transportation and Communication (DOTC) to evaluate feasibility and viability of the proposed airport expansion in coordination with the SWEDAVIA Modernization and Development of the Philippine Civil Aviation System.

The proposed airport expansion will occupy about 20 hectares. Implementation is expected to commence in 2008. Clearings however will begin in 2007 according to the Department of Public Works and Highways.

### **Air Traffic**

Puerto Princesa City Airport is the primary air services gateway to the province.

PAL's A320-200 and A330-300 flies daily to and from Manila with a sitting capacity of 156 and 302 passengers respectively and carries approximately 20 tons load. PAL had an average of passengers or 70% of the total passenger capacity per flight as of September 2006. Peak months are November to January.

The Air Philippines Corporation also provides domestic flights. The Boeing 737-200 series is flying daily from the City to Manila vice versa. It has a capacity to carry 118 passengers and about 6-8 tons cargoes. It has an average of about 85 passengers and 5 tons of cargoes per flight.

The Cebu Pacific with its A-319 and A-320 airlines is likewise flying daily to and fro the City and Manila. It has a capacity to carry 130 passengers and about 15 tons cargoes. It has an average of about 85 passengers and 5 tons of cargoes per flight.

The Pacific Airways Commuter and a Charter Plane, privately owned and operated by the Pacific Airways Corporation (PAC) are available to provide local air transport service. The company has two (2) aircrafts, the C-206 and C-172, operated on local points such the municipalities of Cuyo, Busuanga, Culion, Sandoval and El Nido. Charter planes on the other hand fly between the city and any points in the province. Schedule of Local Flights depends upon availability of passengers - a minimum of 7 participants is required for a round trip flight using bigger aircraft while 4 participants for the smaller plane, refer to Table VI.7.





**Table VI.7**  
**Name, Number, Schedule and Destination of Airlines**  
**City of Puerto Princesa, As of August 2006**

Hours of Travel	Aircraft	Destination	Frequency of lights	Seating Capacity	Average Volume of Passenger /Flight
1 hour, 15 min.	PAL-A-320-200 and A-320-300	Mla-PPC PPC-Mla	Daily	156 302	110-156 210-302
1 hour	Air Phil.-Boeing 737-200	Mla-PPC PPC-Mla	Daily	118	96
	Air Phil.- Boeing 737-200	PPC-Cebu Cebu-PPC	MWF-Sat	118	76
1 hour	Cebu Pacific 319-320 airbus	Mla-PPC PPC-Mla	Daily	150	130
1 hour & 30 min.-2 hrs.	Pacific Airways Commuter-C-206		2:30 PM by schedule	6	5

Source: PAL, APC, PAC, City of Puerto Princesa (\*) fully booked

**b. Problems and Issues:**

The expansion of the existing airport is a great advantage to tourism, commerce and industry. Extending the runway by 600 meters would accommodate regional flights from Brunei, Malaysia, Hongkong, Singapore, Taipei, Japan, Indonesia, and Thailand.

The present site is far from ideal in terms of security as it is close to the major roads and prone to unauthorized persons especially with hostile intension. However, the national government is opposed to the proposal of the city government to relocate the facility outside of the urban center as the same would cost about Php6 Billion in land acquisition alone.

Other specific problems and issues related to the present location of the airport are enumerated below:

- i. The runway is blocked by the highly urbanized area to the west and by the sea to the east.
- ii. With the expansion of airport and so with the rise in flight frequencies, an increase in noise emissions will follow. This can cause problems on health, serious disturbance on sensitive infrastructure and facilities especially in schools and hospitals situated near the airport or inside the flight corridor.
- iii. There would be possible increase in traffic generation and car accidents.
- iv. Adverse impacts on the utilization of land along the Rizal Avenue and Manalo Extension can be assumed.

**D. MARINE TRANSPORTATION**

**a. Ports/Wharves**

There is one (1) national port in the City, five (5) barangay wharves and two (2) private ports. Three (3) barangay wharves are within the City proper - in Barangay Matahimik, Barangays. Bagong Sikat, and Sta. Lourdes. Other barangay wharves are located at rural barangays of Mangingisda, Bahile and Macarascas. Private ports are those utilized by Petron and San Miguel Corporation, also found within the poblacion.

The port of Puerto Princesa City is situated at the Western side of Puerto Princesa Strait. It is attached to land by 174.717 meters approach and connected to the City proper with the two-lane concreted road from Rizal Avenue and another two-lane concreted road from Malvar Street. It is a first class port with a



total Port Zone Delineation (PDZ) area of 479,615.03 square meters. It has 12 berths with 476.54 meters length and a load capacity of 500 psf. Figure 6.4.4.1 shows the plan of the existing and proposed expansion of the seaport.

The sea access is deep enough to accommodate even ocean-going vessels or allow 2 to 3 vessels side by side simultaneously to enter and leave the bay considering its estimated width of one (1) nautical mile. The bay is considered the best harbor in the country with its quiet waters protected from stormy waves, well-sheltered from prevailing bad weather condition.

The anchorage is narrow and long, located in the middle of Puerto Princesa Bay with an area of approximately 3 square miles at a depth ranging from 12 to 30 meters.

**b. Water Transportation/Facilities and Capacity**

The City's seaport is under the management of the Philippine Ports Authority (PPA). It is a reinforced concrete wharf on concrete piles for general and containerized cargo handling and accommodation of passengers. This facility handles major commodities such as construction materials, marine and agricultural products. It has two (2) warehouses, each has an area of 672.99 square meters. Both accommodate incoming and outgoing cargoes. It has a 360-square meter passenger terminal to shelter passengers and baggage. Port facilities in general are in good condition.

As of September 1998, the port of Puerto Princesa accommodates seven (7) major vessels, 18 regular motor launches and approximately 137 fishing boats. Four (4) shipping companies are operating in the City for domestic shipping.

The MV Superferry II and MV Sacred Heart are owned and managed by William Lines, Gothong Lines and Aboitiz Shipping (WG & A) Companies. Both vessels make two trips a week. The former transfers passengers and cargoes from Puerto to Manila and Dumaguete City, and vice versa, while the latter to Manila, Iligan City and vice versa.

The MV Sta. Ana and MV Don Julio owned and operated by Negros Navigation, Inc. sail weekly trips from Puerto Princesa City to Manila, Iloilo, Bacolod City and vice versa.

The two vessels of Milagrosa Shipping Corporation, the MV Milagrosa Tres and Cinco makes weekly trips both from Puerto Princesa to Iloilo City and vice versa.

Sulpicio Lines has one (1) cargo vessel, the Sulcon 8 that plies 2 to 3 trips a month between the City and Manila, refer to Table VI.8.



**Table VI.8**  
**Inventory of Regular Vessels Arriving/Departing**  
**City of Puerto Princesa**  
**2006**

SHIPPING COMPANY	NAME OF VESSEL	PASSENGER CAPACITY	CARGO CAPACITY (MT)	DESTINATION
W G & A Philippines	MV Superferry 1	1,824	1,824	Manila
NENACO	San Paolo	1,538	1,591	Manila
Milagrosa Shipping Co.	MV Milagrosa J-3	436	362.15	Iloilo
	MV Milagrosa J-5	231	81.24	Iloilo
Sulpicio Lines Co.	Sulcon VIII	-	638.00	Manila
Prince Valiant Navigation, Inc.	John Oliver	-	2,091.84	Manila

Source: *Shipping Companies, City of Puerto Princesa, 2006*

## **V. POWER AND ELECTRIFICATION**

### **A. Lighting Facilities**

In November 2005, about 88% or 36,000 of the total households use electricity. The remaining barangays are powered by generator sets.

### **B. Power Source**

The National Power Corporation (NPC), a government-owned and controlled corporation was previously providing electricity to the consumers of the City utilizing a power barge with a capacity of 14.4 MW. Early in 1997, an independent power producer established a power plant. Since then, the Paragua Power Company, Philippines (PPCP) was the sole producer of power supply in the City. At present, Delta P, another independent power producer took over the operations of the plant.

Delta P has four (4) electric powers with the capacity to generate 16 MW daily. It is beyond the City's maximum power requirement of 14 MW per day.

The NPC, subsidizes part of the power cost being distributed by the Palawan Electric Cooperative (PALECO).

PALECO was established on January 25, 1974 under the Rural Electrification Program (REP) of the National Electrification Administration (NEA). It is one of the electric cooperatives distributing electricity in the Province of Palawan, PALECO likewise tasked NEA to oversee the operation of the other electric cooperative, the Busuanga Island Electric Cooperative, Inc. (BISELCO).

PALECO serves 18 municipalities and one (1) city. Eleven (11) of said municipalities and the City of Puerto Princesa are in the mainland, and seven are island municipalities.

### **C. Service Areas**

Of the total 66 barangays comprising Puerto Princesa City, 58 are being served by PALECO while the rest remain unserved. Service areas include the City Proper with 35 barangays and twenty eight (23) rural barangays, such as Bgys. Babuyan, Bacungan, Bahile, Binduyan, Tanabag Concepcion, Inagawan, Inagawan-Sub, Iwahig, Kamuning, Langogan, Lucbuan, Luzviminda, Macarascas, Mangingisda, Manalo, Maoyon, Maruyugon, Montible, Salvacion, San Rafael, Sta. Cruz, Sta. Lucia. There are still 8 barangays unenergized. (Refer to Table VI.9.)



**Table VI.9**  
**Status of Barangay Electrification**  
**City of Puerto Princesa**  
**November 2005**

BARANGAYS	DATE ENERGIZED	HH CONNECTIONS			MEMBERSHIP	
		Potential Consumers	Actual Consumers	%	Actual Members	%
1 Poblacion	11-Jan-75	15,185	15,185	100%	14,168	93%
2 Bancao Bancao		1,749	1,664	95%	1,579	90%
3 San Miguel		3,869	3,869	100%	3,589	93%
4 San Manuel		993	820	83%	924	93%
5 San Pedro		4,142	4,142	100%	3,464	84%
6 San Jose		1,435	1,435	100%	1,283	89%
7 Tagburos		713	677	95%	689	97%
8 Sta. Lourdes		735	487	66%	481	65%
9 Bacungan	29-Jun-04	766	104	14%	115	15%
10 Sta Cruz		140	38	27%	41	29%
11 Salvacion		191	62	32%	65	34%
12 Manalo		338	59	17%	70	21%
13 Maruyugon		265	63	24%	69	26%
14 Lucbuan		248	29	12%	31	13%
15 Maoyon		189	72	38%	73	39%
16 Babuyan	24-Jun-05	351	72	21%	72	21%
17 San Rafael	25-Jun-05	307	34	11%	34	11%
18 Tanabag		88	10	11%	10	11%
19 Concepcion		204	55	27%	57	28%
20 Binduyan		159	60	38%	60	38%
21 Langogan		310	29	9%	30	10%
22 Bahile	17-Jun-05	382	90	24%	92	24%
23 Macarascas	6-Oct-05	260	85	33%	87	33%
24 Tiniguiban		1,814	1,814	100%	1,570	87%
25 Sta Monica		2,050	2,050	100%	1,719	84%
26 Sicsican		1,001	1,001	100%	941	94%
27 Irawan		718	674	94%	603	84%
28 Iwahig		152	150	99%	152	100%
29 Sta Lucia	27-Sep-99	16	3	19%	3	19%
30 Montible	29-Mar-99	17	17	100%	13	76%
31 Luzviminda	2-Jan-97	570	330	58%	302	53%
32 Mangingisda	24-Jan-99	579	325	56%	315	54%
33 Inagawan-Sub Colony		209	38	18%	41	20%
34 Inagawan	29-Nov-84	309	240	78%	315	102%
35 Kamuning		313	166	53%	161	51%
<b>TOTAL</b>		<b>40,767</b>	<b>35,949</b>	<b>88%</b>	<b>33,218</b>	<b>81%</b>

Source: PALECO, City of Puerto Princesa, 2006

In 2005, there were a total of 35,949 households' connections or 88% of the potential households. Compared to 1995 figure of 13,460, there was an increase of about 267%.



As of November 2005, PALECO's record showed 21,686 residential connections with an average consumption of 130 Kwh per month while there are 2,094 commercial connections at an average consumption of 882 Kwh per month. For consumption of other types (industrial, public building, streetlighting, etc.) refer to the Table VI.10

**Table VI.10**  
**No. of Connections by Type of Users and**  
**Unbundled Power Rate and Fix Rate**  
**2005**

Type of Connections	No. of Connections	Unbundled Power Rate and Fix Rate
Residential	21,686	P5.989 + P5.00
Commercial	2,094	P5.193 + P126.7984
Industrial	39	P5.91445 + 568.9825
Institutional	525	P6.0032 + 71.205
Total	24,344	

Source: PALECO, City of Puerto Princesa, November 2006

As of August, 2006, there is a total of 5,336 streetlights installed within the City proper and rural barangays.

**Table VI.11**  
**Inventory of Streetlights as of August 2006**  
**City of Puerto Princesa**

Functional Lamps		Quantity		Hours Open		Energy Consumed
		Functional	Not Functional			
a.	160w MI (24 hrs.)	51	0	6:00 AM	6:00 AM	6,071.04
b.	160w ML (12 hrs.)	1,023	309	6:00 PM	6:00 AM	60,888.96
c.	100w IL (24 hrs.)	5	0	6:00 PM	6:00 PM	372.00
d.	100w IL (12 hrs.)	514	79	6:00 PM	6:00 AM	19,128.80
e.	50w IL (24 hrs.)	0	0			
f.	50w IL (12 hrs.)	59	0	6:00 PM	6:00 AM	1,097.40
g.	40w FL (24 hrs.)	522	0	6:00 PM	6:00 PM	20,583.50
h.	40w FL (12 hrs.)	1,295	280	6:00 PM	6:00 AM	25,532.22
i.	20w FL (24 hrs.)	119	0	6:00 PM	6:00 PM	2,833.15
j.	20w FL (12 hrs.)	480	20	6:00 PM	6:00 AM	5,713.92
k.	250w ML (24 hrs.)	66	0	6:00 PM	6:00 PM	12,276.00
l.	250w ML (12 hrs.)	465	49	6:00 PM	6:00 AM	43,245.00
TOTAL		4,599	737			197,741.99

Source: PALECO, City of Puerto Princesa

#### **D. Power Rates**

In August 2006, the power rates for industrial, residential, public buildings and Streetlights is P5.9895 per kwh for residential while for commercial the rate is P5.9193. This increase was due to NPC's increase in Power Purchase Agreement (PPA) charge. The variation in power rates was due to foreign exchange rate, refer to Table VI.12.



**Table VI.12**  
**Average Cost of Electricity Per Kilowatt**  
**City of Puerto Princesa**  
**February 2006**

PARTICULARS	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	PUBLIC BUILDINGS FACILITIES	STREETLIGHTS
Generation Charge	4.0000	4.0000	4.0000	4.0000	4.0000
System Loss Charge	0.6654	0.6654	0.6654	0.6654	0.6654
Transmission System Charge	0.1481	0.1481	0.1481	0.1481	0.1481
Distribution System Charge	0.9500	0.7969	0.7712	0.8882	0.6071
Retail Customer Charge (Supply)/Month		34.0400	34.0400	34.0400	34.0400
Supply System Charge	0.4001				
Retail Customer Charge (Metering)/Month*	5.0000	95.6700	551.1500	37.5800	37.5800
Metering System Charge	0.3952				
Inter Class Cross Subsidy Charge	-0.3003	0.2505	0.2694	0.2912	0.5735
Missionary Electrification	0.0373	0.3730	0.3730	0.3730	0.3730
Environmental Share	0.0025	0.0025	0.0025	0.0025	0.0025
Lifeline Rate/(discount subsidy)	0.0638	0.0638	0.0638	0.0638	0.0638
Power Act Reduction	0-3				
Loan Condonation	-0.0731	-0.0452	-0.0432	-0.4980	-0.0374
Loan Condonation/month*		-2.9116	-16.2075	-1.2160	-0.2737
EFFECTIVE RATE	5-989	5.9193	5.9145	6.0467	6.0603
ADD: Fixed Rate	5.0000	126.7984	568.9825	70.4040	70.5163

Source: PALECO, City of Puerto Princesa

#### E. Potential Source of Power

The National Power Corporation (NPC) located along North National Road, Bgy. San. Pedro, this City, has a stand-by generator with a capacity of 5 megawatts. The company occupies approximately 2.5 hectares of land.

Another NPC power plant in Barangay Irawan has a stand-by generator of 15 MW.

The Delta P generator has four generating power of 4MW each.

#### F. Power Interruption/Fluctuation

There was a total of 239.97 hours power interruption during the previous year (2005). PALECO apparently noted that majority of outages were due to the commissioning of the Delta P as well as the unfavorable weather condition caused by typhoons. The NPC on the other hand claimed that there were no problems with their power operation and that interruptions were brought about by PALECO's wiring system.

#### G. Future Projects/Plans and Programs

Table VI.13 enumerates PALECO's development plans and programs starting 2007 up to year 2008.



**Table VI.13**  
**Projects, Plans and Programs**  
**City of Puerto Princesa**

Year	Barangay	Potential H-holds	Kilometer of Lines					Project Cost
			3-Phase	V-Phase	1-Phase	O. S.	U. B.	
2007	Napsan	283	25.000		0.600	1.200	12.000	13,274,000.00
	B-Bayan	97	9.000		0.500	1.000	2.000	4,955,122.24
	Simpocan	153	3.000		0.500	1.200	3.000	3,904,500.00
2008	Buenvista	119	6.000		0.750	1.500	2.500	3,585,000.00
	Tagabinet	187	7.000		1.000	1.000	3.000	4,065,000.00
	Cabayugan	90	10.000		0.500	1.500	3.000	5,485,000.00
	Marufinas	128	20.000		1.500	2.000	10.000	11,105,000.00
	New Panggangan	128	20.000		1.500	2.000	10.000	11,105,000.00

## VI. WATER SUPPLY

### A. Level I System

The level I System has point of sources such as shallow and deep wells, improved springs, rain collector, etc. This system generally utilized in rural areas where residential houses are thinly scattered.

In 2005, the City Government has provided 76 semi-artesian wells and 83 units of jetmatic pumps. Repairs, rehabilitation or replacement of these facilities carried out as the need arises.

### B. Level II System

Rivers and springs mainly feed the system. Under this system, communal faucets provided to supply the need of residents for water. It is applicable only to areas where houses are thickly clustered. As of 2005, the City Government has provided about 190 communal faucets. Nine hundred fifty (950) households in 19 barangays are served by this system, refer to Table VI.14.

**Table VI.14**  
**Inventory of Water Facilities for Level I & II System**  
**In the Urban and Rural Areas in the City**  
**2006**

Barangay (Location)	Level I (No. of units)		Level II (No. of System)
	SAW	JP	
A. Urban			
1. Bagong Pag-asa			
2. Bagong Sikat	6		
3. Bagong Silang			
4. Bancao Bancao	18	12	
5. Irawan		1	
6. Kalipay			
7. Liwanag			
8. Mabuhay			
9. Magkakaibigan			
10. Maligaya			



**Table VI.14**  
**Inventory of Water Facilities for Level I & II System**  
**In the Urban and Rural Areas in the City (2006)**

11.	Mandaragat			
12.	Manggahan			
13.	Maningning			
14.	Masigla			
15.	Masikap			
16.	Masipag			
17.	Matahimik			
18.	Matiyaga			
19.	Maunlad	5	1	
20.	Milagrosa	2		
21.	Model	3		
22.	Pagkakaisa		1	
23.	Princesa		1	
24.	San Jose	3	8	
25.	San Manuel		7	
26.	San Miguel	9	31	
27.	San Pedro	3	2	
28.	San Isidro			
29.	Sicsican	1	1	
30.	Sta. Lourdes	8	1	
31.	Sta. Monica			
32.	Tagburos	1	1	
33.	Tagumpay			
34.	Tanglaw			
35.	Tinguiban	10		
	Sub -Total	69	67	





B. Rural			
36. Babuyan			1
37. Bacungan	1	4	1
38. Bagong Bayan			1
39. Bahile			1
40. Binduyan			1
41. Buenavista			1
42. Cabayugan	1	1	1
43. Concepcion			1
44. Inagawan		1	1
45. Inagawan-Sub			
46. Iwahig	1	2	
47. Kamuning			
48. Langogan			1
49. Lucbuan			1
50. Luzviminda	3	1	
51. Macarascas		1	1
52. Mangingisda			
53. Manalo		1	1
54. Maoyon			
55. Marufinas			1
56. Maruyugon			1
57. Montible			
58. Napsan		3	1
59. New Panggangan			1
60. Salvacion			1
61. San Rafael			1
62. Simpocan			
63. Sta. Cruz			
64. Sta. Lucia	1		
65. Tagabinit		2	
66. Tanabag			
Sub Total	7	16	19
<b>Total</b>	<b>76</b>	<b>83</b>	<b>19</b>

Source: Puerto Princesa City Water District, 2006

About 6,339 households or 21% of the total households are served by the Level I and II while about 40% by Level III System. The rest is assumed to rely on undeveloped springs, rainwater collection, open dug wells, rivers, etc.

### C. The Waterworks System (Level III System)

As the first pre-requisite of development is a sound infrastructure, the improvement of water supply system considered one of the top priorities.

The most typical water supply service is the individual faucet for every household (Level III System)—this is the individual water supply service applicable to urban barangays. The system managed and operated by the Puerto Princesa City Water District (PPCWD).



The PPCWD, formerly NAWASA (National Waterworks and Sewerage Authority), was first established in August 1976 as a semi-government agency. Ownership and operation of the system turned over to the concessionaires. It embarked on a long-term development program designed to improve pipe (transmissions & distribution lines) and water service to residents.

On March 12, 1992, the PPCWD, through promulgation of the decision of the Supreme Court, declared a Government-owned and Controlled Corporation (GOCC). Development programs continued

**a. Service Connections**

The City's projected 2005 population is 213,343. As of July 2006, PPCWD had a total of 16,962 service connections or 40% of water service connection of which 10,040 were active, while 6,992 connections were found to be inactive. An average daily consumption of water per household is estimated at 8 cubic meters. There are 35 barangays in the city that are presently served by this system covering the urban center up to Barangay San Jose in the north and Barangay Inagawan-Sub in the south.

**b. Water Sources and its Capacity**

At present, approximately 71% of the bulk water supply is from springs and 29% is from surface water. The bulk supply however will soon become insufficient to meet projected demands. Additional groundwater pumping could accommodate additional demands, however, water quality concerns and saltwater intrusion impacts may likely occur. As such, the focus of bulk water supply is directed to surface water sources.

**i. Surface Water**

The local waterworks system relies on both ground and surface water sources. The major source of PPCWD is the Irawan River located 14 km. northwest from the Poblacion. This river is part of Flora and Fauna and watershed reservation comprising an area of 8,000 hectares.

Another source of PPCWD is the Bonton River located within the Iwahig Penal Colony reservation approximately 15.6 km. northwest of the Poblacion. This river used to be the main source of water supply in Puerto Princesa City. Water flows over a weir constructed in 1938 which was rehabilitated in 1984. It has a capacity to produce about 57 cu.m. of water per day.

The PPCWD has another surface water found from the spring located at Barangay Tinguiban near the Palawan State University about 5 km. north of the city proper. A pumping station collects spring water and discharges an average of 7.5 m<sup>3</sup> per day.

**ii. Ground Water Source**

The PPCWD has installed 12 deep well pumping stations. Three (3) have been abandoned, six (6) are operational while the other three are either on standby or under repair. Table VI.15 and Table VI.16 below described the pumping station and the status of operation.



**Table VI.15**  
**Pumping Station and Status of Operation**  
**City of Puerto Princesa**  
**2006**

PUMPING STATION	STATUS OF OPERATION
1. Dacanay	This station nominally discharges 4 liters per second to the main using a 5Hp electric motor. It is operated during peak demand periods with daily operation approximately six to eight hours. It is located at the PPCWD main office at elevation 14 meters and requires overall upgrading.
2. Rizal Pumping Station	This station is also located near the PPCWD office. It is installed at elevation 14 meters and incorporates a 5 Hp electric motors. The pump nominally discharges approximately 1 liter per second on a continuous basis. Discharge is to a 95 cubic meter overhead tower storage tank which feeds the main distribution pipeline during the early morning peak period
3. Manalo Pumping Station	This a well-maintained pumping station located within the city proper. Water pumped from a 65 m deep well and discharges continuously to the distribution system at a nominal rate of 3.6 liters per second. The pump is powered by 5Hp electric motor.
4. Sta. Monica Pumping Station 1	This well maintained pumping station is located within Barangay Sta. Monica which is also the site of two treated water storage tanks. It operates continuously and discharges directly to 150 m <sup>3</sup> and 650 m <sup>3</sup> above ground storage reservoirs. It is powered by a 15 Hp submersible electric motor discharging at a nominal continuous rate of 13 liters per second.
5. Sta. Monica Pumping Station 2	This station operates continuously on a 24-hour basis with a nominal discharge rate of 21 liters per second. It is properly maintained and in good operating condition.
6. Princeville Pumping Station	This is one of the larger pumping stations installed within the City. it is equipped with multiple submersible type pumps and is operated by a 30 Hp electric motor. Nominal continuous discharge is 24 liters per second. It is properly maintained and in good operating condition.
7. Steban	This is the largest pumping station and incorporates multiple submersible type pumps driven by a 60 Hp electric motor. The nominal continuous discharge is 30 liters per second. Operation is 24 hours per day.
8. Recaido	Abandoned
9. Wescom	Installed near the airport and has since then been transferred to the Philippine Air Force engineering facility. It is not longer supplies water to the PPCWD
10. Valencia	Not operational and needs major repairs
11. Children's Park	Not operational, requires major repairs
12. Airport	Abandoned

Source: Puerto Princesa City Water District, 2006



**Table VI.16**  
**Puerto Princesa Water District**  
**Capacity of Existing Pumping Facilities**  
**2005**

	PUMP NO/LOCATION	VOLUME/DAY (m <sup>3</sup> /day)	RATED CAPACITY (lps)	
			Lps	gpm
1	Pump Center 1	747.95	8.66	126.83
2	Pump Center 3, By. Irawan	807.29	9.34	136.89
3	Pump Center 4, By. Irawan	1,304.12	15.09	221.13
4	Infiltration Gallery 1	610.60	7.07	103.54
5	Infiltration Gallery 2	1,841.16	21.31	312.19
6	Infiltration Gallery 3	5,629.61	65.16	954.58
7	Infiltration Gallery 4	3,245.99	37.57	550.40
8	Macasaet-I PS	2,736.73	31.68	464.05
9	Macasaet II PS	524.44	6.07	88.93
10	NHA Ville PS	2,094.35	24.24	355.13
11	Sicsican PS	825.14	9.55	139.91
12	Princeville PS	1,792.89	20.75	304.01
13	Alvarez PS	427.88	4.95	72.55
14	San Jose PS	2,083.24	24.11	353.24
15	BOS II PS	1,477.96	17.11	250.61
16	Esteban PS	1,483.47	17.17	251.54
17	Kaakbayan PS	881.77	10.21	149.52
18	New Market PS	2,037.38	23.58	345.47
19	Office PS	162.70	1.88	27.59
20	Coliseum/KAAC PS	283.34	3.28	48.04
21	BOS I PS	110.00	1.27	18.65
22	Manalo PS	902.25	10.44	152.99
23	Bonton Dam	150.00	1.74	25.43
24	Inagawan	357.22	4.13	60.57
25	Valencia PS	Standby		
26	Baltan PS	Standby		
27	Children's Park PS	Standby		
28	PSU Spring	Standby		
	<b>Total</b>	<b>32,517.48</b>	<b>116.70</b>	<b>5,513.79</b>

Source: Puerto Princesa City Water District, 2006

**c. Water Quality**

The following table provides information regarding the physical and chemical analysis of water supplied by the local waterworks system in Puerto Princesa City, refer to Table VI.17.

**SOCIO ECONOMIC AND PHYSICAL PROFILE  
City of Puerto Princesa**



**TABLE VI. 17 Physical and Chemical Analysis of Water for July 2005**

No. of Sample	Source	Location		Type of Water	Color Alpha	S. Solid (mg/l)	Turbid (FTU)	pH (Units)	Cond. (mg/l)	Salinity (ppt)	TDS (mg/l)	PO4-3 (mg/l)	Preactive (mg/l)	P2O5 (mg/l)	Mn (mg/l)	Iron (mg/l)	SO4-2 (mg/l)	Nitrate	Flouride	Cr+6	Hardness (mg/l)		
																					CaCO3	Ca+2	Mg+2
1	P. Sta.	I.G	A. River	Raw water	31	3	6	9.4	278	0.1	138	0.44	0.16	0.05	0	0.1	1	0.4	*	*	171	68.4	25.03
2	P. Sta.		B. Line P. Sta	Treated water	58	1	9	9.2	284	0.1	136	0.09	0.03	0.07	0	0.1	0	0.4	*	*	153.9	61.56	22.53
3	P. Sta.	PC No. 4		Raw Water	Non Functional																		
4	P. Sta.	PC No. 3		Treated Water	2	0	1	8.5	365	0.2	169	0.1	0.04	0.08	0	0	1	0.4	*	*	171	68.4	25.03
5	P. Sta.	PC No. 1		Raw Water	20	0	3	8.8	305	0.1	142	0.09	0.03	0.07	0	0.1	0	0.3	*	*	153.9	61.56	22.53
6	P. Sta.	Bonton Dam		Raw water	8	0	1	10	287	0.1	138	0.3	0.1	0.22	0	0	1	0	*	0	171	68.4	25.03
7	P. Sta.	Rizal Ave.-Ofc		Raw water	1	0	0	8.7	903	0.5	453	0.48	0.12	0.28	0	0.1	36	4.2	0	0	324.9	130	47.57
8	P. Sta.	Sta. Monica		Treated water	3	0	1	9.1	441	0.2	210	0.3	0.1	0.22	0	0	10	1.3	0	0	205.2	82.08	30.04
9	P. Sta.	Princeville		Treated water	6	0	0	9.2	370	0.2	179	0.29	0.1	0.22	0	0	2	1.3	0	0	188.1	75.24	27.54
10	P. Sta.	NHA Ville		Treated water	4	0	0	9.1	555	0.3	260	0.15	0.05	0.11	0	0.1	2	1.3	0	0	256.5	102.6	37.55
11	P. Sta.	Esteban		Treated water	2	1	2	9.5	516	0.2	247	0.22	0.07	0.16	0	0	2	1.9	0.19	0	205.2	82.08	30.04
12	P. Sta.	Macasaet		Raw water	1	2	5	8.1	468	0.2	229	0.6	0.2	0.45	0	0.1	2	0.6	*	*	222.3	88.92	32.54
13	P. Sta.	Inagawan		Raw water	38	0	2	9.8	440	0.2	236	0.58	0.02	0.4	0	0.1	12	0.1	*	*	171	98.4	25.03
14	P. Sta.	Kaakbayan		Treated water	0	1	2	9.2	793	0.4	378	0.48	0.16	0.36	0	0	8	1	*	*	307.8	123.1	45.06
15	P. Sta.	Alvarez		Treated water	9	0	0	9.1	862	0.4	406	0.46	0.15	0.34	0	0.2	2	0	1.03	0	307.8	123.1	45.06
16	P. Sta.	Sicsican Well		Treated water	2	2	1	9.6	584	0.3	275	0.56	0.18	0.4	1	0.1	10	0.4	0	0	222.3	88.92	32.54
17	P. Sta.	OISCA		Treated water	2	1	2	9.1	414	0.2	195	0.2	0.07	0.15	0	0.3	7	6.1	*	*	188.1	75.24	27.54
18	P. Sta.	New Market Well		Treated water	0	0	1	9.1	722	0.3	345	0.4	0.13	0.3	0	0	0	1.7	*	*	307.8	123.1	45.06
19	P. Sta.	Manalo Well		Treated water	3	2	3	8.1	998	0.5	505	0.34	0.11	0.25	0	0.1	0.37	3.8	*	*	376.2	150.5	55.08
20	P. Sta.	Coliseum Well		Treated water	119	19	30	8	443	0.2	210	0.2	0.07	0.15	0	0.2	0	6.1	*	*	205.2	82.08	30.04



**D. Transmission and Distribution System**

Each of the supply sources are connected by various sizes of transmission and distribution pipelines.

The existing distribution facilities of PPCWD are generally located within the City proper and parts of the outlying barangays of Sta. Monica, Sicsican and Irawan. Pipes sizes ranges from 2-inch to 14-inch diameter with a total length of approximately 359 km. The distribution includes 12 fire hydrants, three blow-off valves and 56 gate valves and appurtenances. The distribution network, however, does not adequately serve all barangays within the service area, refer to Table VI.18.

**Table VI.18**  
**Existing Transmission Pipelines and Appurtenances**  
**Puerto Princesa City Water District, 2006**

Nominal Pipeline Sizes (Inches)	Pipe Material	Length (m)	Year Installed	Location
16	steel pipes	8,759	1982	Irawan Junction to PA Hosp
16	steel pipes	1,370	1982	PA Hosp to Poblacion
12	steel pipes	300	1982	Sta Monica Junction to ground reservoir
10	steel pipes	960	1982	Irawan pump center junction to ground reservoir
5	cast iron	1,660	1939	Gallery to Irawan junction
5	cast iron	1,010	1939	Infiltration gallery to Irawan crossing
4	cast iron	10,000	1939	Bonton River to Sta. Monica ground reservoir
8	synthetic	300	1982	Irawan crossing to Irawan pump
8	synthetic	70	1982	Junction pipes to ground reservoir
	<b>Total</b>	<b>24,429</b>		
Appurtenances	Size (inches)	Quantity (each)	Year Installed	System Location
Control gate valves	16	20		Irawan system
Air release valves	16	18		Irawan system
Air release valves	4	18		Bonton System
Blow off valves	16	8		Irawan system
Blow off valves	8	1		Irawan system
Blow off valves	4	1		Bonton System

Source: Puerto Princesa City Water District, 2006

**E. Future Development Program**

Expansion and rehabilitation of distribution mainlines to address the discrepancy in the demand and supply of water in the city, the PPCWD is planning to tap the surface water of upstream Irawan river at Campo Uno, Barangay Irawan. This is more sustainable compared with ground water source, which at present, supplies the bulk of water produced by the PPCWD.

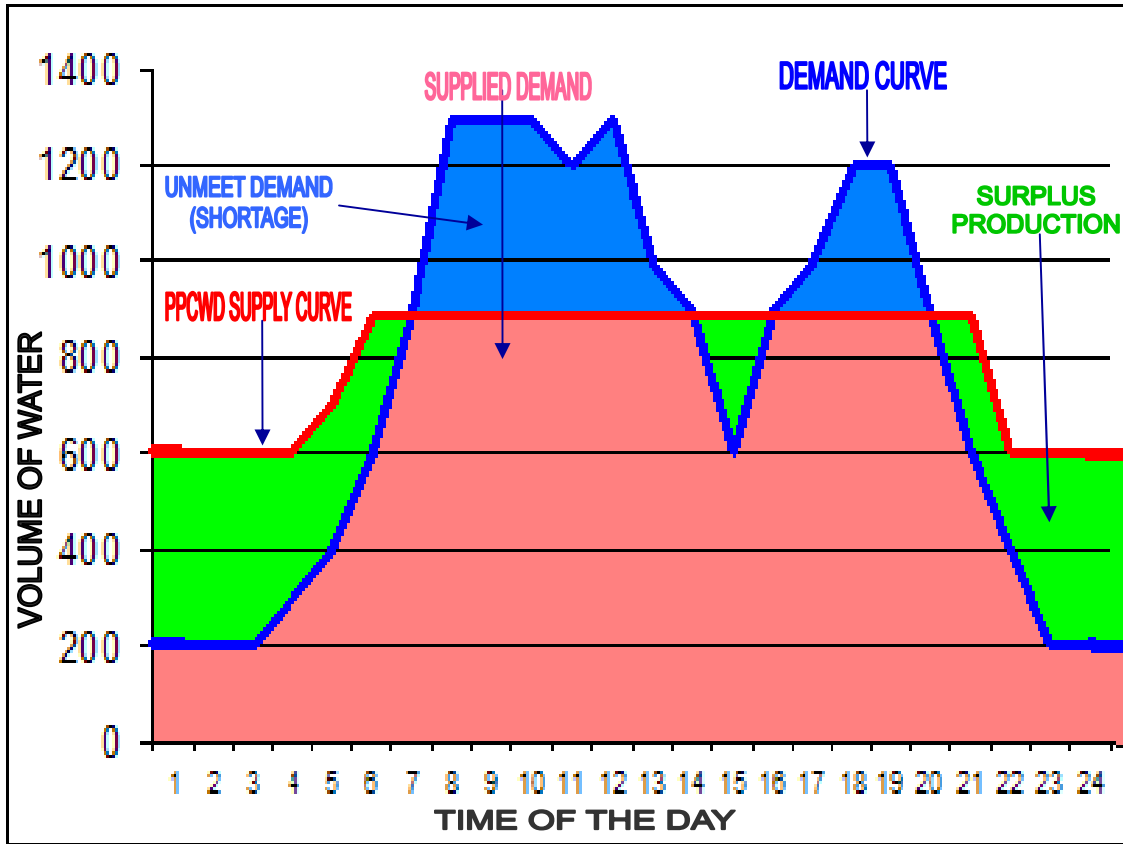


Figure VI.2 Daily Water Supply and Demand Curve

Figure VI.2 shows the daily supply and demand curve. From 1<sup>st</sup> to 7<sup>th</sup> and from 20<sup>th</sup> to 24<sup>th</sup> hour of the day, the district is able to meet the demand of consumers, while during peak hours between 8<sup>th</sup> to 14<sup>th</sup> hour and 19<sup>th</sup> hour, the demand is higher than the supplies of water.

**F. Water Treatment**

**a. Surface Water**

Water from the Irawan Well System (Irawan Well No. 1, 3, and 4) is treated by chlorine gas injection into the discharge of each well. The dosage amount is adjusted in accordance with the nominal average discharge and is estimated to be 3.0 ppm (maximum concentration) of the discharge.

Raw water at the Irawan River Infiltration Gallery is treated using a hypochlorite solution applied at the pump sump chamber using a drip type applicator. A package filter system has been installed to treat the water and is currently undergoing additional testing and commissioning as part of the new filter installation.

The Bonton River source water treatment is done at the weir collecting vault using a hypochlorite solution and a drip type applicator. Additional chlorine treatment is done for surface water at the Sta. Monica ground reservoir compound.

Residual chlorine concentration at the individual faucet reportedly range from 0.3ppm to 0.5 ppm.



**b. Deep Well Water**

Chlorine gas is injected in each production well with dosage proportional to its nominal discharge. Maximum concentration ranges from 2ppm to 5ppm. Different methods of chlorine application are used at the Manalo, Princeville, Esteban Subdivision, and Sta. Monica pumping stations. Some have chemical feeds while other use a dip type dosage applicator. The Valencia pumping station water production is not treated and is discharged into the system without treatment.

**G. Water Rates**

Table VI.19 shows the revised water rates (per cu. m.) of Puerto Princesa City as of July, 2006.

**Table VI.19**  
**Prevailing Water Rate**  
**City of Puerto Princesa**  
**2006**

Classification	Min. Rate from 1st 10 cu. m.	Succeeding Rate From 11-20 cu.m.	Succeeding Rate From 21-30 cu.m	Succeeding Rate From 31-40 cu.m	Succeeding Rate 41 cu. m. – over
	(P)	(P)	(P)		(P)
Residential	200	21.35	23.35	26.00	29.35
Commercial	400	42.7	46.7	52.00	58.70
Government	200	21.35	23.35	26.00	29.35

Source: Puerto Princesa City Water District, 2006

Table VI.20 shows the average monthly consumption of every domestic connection which is estimated at 20 cu. m. approximately amounting to P413.50. An estimate of 44 cu. m. or about P2,048 is incurred by every commercial user and about 190 cu. m. more or less P5,309.50 is consumed by government connections.

**Table VI.20**  
**Average Monthly Expenses for Water as of July 2006**  
**City of Puerto Princesa**

Type of Connection	Ave. Monthly Consumption (cu. m.)	Ave. Monthly Expense (Pesos)
Domestic	20	413.50
Commercial	65	1,845.00
Government	368	10,700.00

Source: Puerto Princesa City Water District, 2006

**H. Other Water Related Data**

**a. Current Demand**

The current PPCWD water demand was estimated based on population projections and meter readings. The per capita usage based on income level and the assumption that the current unconnected households will have the same characteristics as to the connected households.

**b. Domestic Demand**

Residential household water demand is generally dependent on number of occupants per household, number of outlets per household, house or dwelling area size, family income, nature of water supply, and water tariff.





The first four aspects (number of occupants per household, number of outlets per household, house or dwelling area size, family income) are socio-economic while the last two (nature of water supply, and water tariff) are the functions of the PPCWD.

The studies performed by PPCWD indicate three different demands. The available data indicate the PPCWD has an average estimated daily consumption of approximately 0.75 m<sup>3</sup> for an average household size of five (5), or about 15 liters per occupant per day. A macro assessment of these data suggests an average consumption of 125 liters per capita per day. A micro assessment taking into account the sanitation habits, general health condition, economic and living conditions of the served area resulted in an average demand of 93 liters per capita per day.

The LWUA criteria suggest a per capita consumption of 145 liters per capita per day, which takes into consideration the economic condition and the social development of a water district. The value is assumed to represent the average consumption of the middle-high income classification.

Regardless of the demand selected, it is also a function of income level. As such, it is assumed the demand varies in response to income classification. To account for this, Coefficient of Allotment were assigned for different income groups and used to better estimate future water demands. This coefficient and the representation of socio-economic factors are summarized in Table VI.21.

It is expected that by the time the project is implemented in the near term, a base domestic water demand value of 160 liters per day should be used in current estimates. This value would then be adjusted annually using the different Coefficient of Allotment. Starting in year 2010, these coefficients are assumed to increase annually in anticipation of the improvement in the standard of living.

**Table VI.21**  
**Puerto Princesa City Water District**  
**Domestic Water Demand Coefficients of Allotment**

Income Group Classification	Monthly Income (P)	Percentage of Population (%)	Coefficient of Allotment
Low	1,500.00 and below	35%	0.70
Middle	1,501.00 4,000.00	45%	0.85
Middle-High	4,001.00 6,000.00	15%	1.00
High	6,001.00 and above	5%	1.20

*Source: PPCWD Bulk Water Supply Project Technical Study, Dec. 2002, LWUA,*

Annual domestic water demand for the period 2006 to 2030 are summarized in Table VI.21. An initial overall coefficient of allotment of 0.838 was used for the period year 2006 to 2009 and increased annually at a uniform rate resulting in value if 1.00 in year 2030.

The projected population served with the service area assumed to increase annually from the current level of 64% to a maximum of 95% in year 2030.



**Table VI.22**  
**2006-2030 Water Demand**  
**City of Puerto Princesa**  
**Projected Domestic Water Demand**

Year	Projected population of 37 Barangays	Projected Percent of Population Served	Per Capita Consumption (m <sup>3</sup> /day)	Allotment Factor	Projected Daily Domestic Water Demand (m <sup>3</sup> /day)
2006	200,168		0.16	0.838	16,630
2007	218,403	64%	0.16	0.838	18,730
2008	228,231	66%	0.16	0.838	20,185
2009	238,502	68%	0.16	0.838	21,732
2010	249,234	70%	0.16	0.845	23,591
2011	260,450	72%	0.16	0.853	25,585
2012	272,170	74%	0.16	0.860	27,725
2013	284,418	76%	0.16	0.868	30,019
2014	297,217	78%	0.16	0.876	32,478
2015	310,591	80%	0.16	0.883	35,113
2016	324,568	82%	0.16	0.891	37,935
2017	339,174	84%	0.16	0.989	40,956
2018	354,436	86%	0.16	0.908	44,189
2019	370,386	88%	0.16	0.914	47,649
2020	387,053	90%	0.16	0.921	51,350
2021	404,471	92%	0.16	0.929	55,307
2022	422,672	94%	0.16	0.937	59,536
2023	441,692	95%	0.16	0.944	63,389
2024	461,568	95%	0.16	0.952	66,776
2025	482,339	95%	0.16	0.959	70,339
2026	504,044	95%	0.16	0.967	74,088
2027	526,726	95%	0.16	0.975	78,032
2028	550,429	95%	0.16	0.982	82,181
2029	575,198	95%	0.16	0.990	86,546
2030	601,082	95%	0.16	1.000	91,364

Source: PPCWD Bulk Water Supply Project Technical Study, Dec. 2002, LWUA,

**c. Industrial/Commercial Demand**

The industrial and commercial establishments within the service area are generally located within or near the urban centers and at times suffer from low water supply pressure. These connections are projected to increase in the next ten years assuming that additional water will be available at an acceptable pressure. The commercial/ industrial demand is estimated to be 1.4m<sup>3</sup>/day per 100 population for the years 2000 through 2007. This will likely increase in the intermediate and long term due to economic growth and development within the city. a uniform annual increase in the base rate demand of 2% was assumed for the years 2008 to 2030, refer to Table VI.23



**Table VI.23**  
**Projected Commercial/Industrial Water Demand**  
**Puerto Princesa City Water District**

Year	Projected population of 37 Barangays	Number of Connection Per 100 Population	Demand Per Connection (m <sup>3</sup> /day)	Projected Daily Domestic Water Demand (m <sup>3</sup> /day)
2006	200,168	2,002	1.40	2,802
2007	218,403	2,184	1.40	3,058
2008	228,231	2,282	1.43	3,259
2009	238,502	2,385	1.46	3,474
2010	249,234	2,492	1.49	3,703
2011	260,450	2,605	1.52	3,947
2012	272,170	2,722	1.55	4,207
2013	284,418	2,844	1.58	4,484
2014	297,217	2,972	1.61	4,780
2015	310,591	3,106	1.64	5,095
2016	324,568	3,246	71.67	5,430
2017	339,174	3,392	1.71	5,788
2018	354,436	3,544	1.74	6,170
2019	370,386	3,704	1.78	6,576
2020	387,053	3,871	1.81	7,010
2021	404,471	4,045	1.85	7,472
2022	422,672	4,227	1.88	7,964
2023	441,692	4,417	1.92	8,489
2024	461,568	4,616	1.96	9,048
2025	482,339	4,823	2.00	9,645
2026	504,044	5,040	2.04	10,280
2027	526,726	5,267	2.08	10,958
2028	550,429	5,504	2.12	11,680
2029	575,198	5,752	2.16	12,449
2030	601,082	6,011	2.21	13,270

Source: PPCWD Bulk Water Supply Project Technical Study, Dec. 2002, LWUA,

**d. Institutional Demand**

Institutional water consumers include schools, churches, government buildings, hospital and recreation centers. Based on the LWUA criteria, the number of institutional connections is determined by assuming one connection per 2000 population. PPCWD has projected the institutional demand to be 5m<sup>3</sup>/day/connection. This value was used for the near term through Year 2007. a uniform annual increase of 2% in the 5m<sup>3</sup>/day demand was assumed for the years 2008 through 2030. the projected number of institutional connections and estimated institutional water demand are shown in Table VI.24.



**Table VI.24**  
**Projected Institutional Water Demand**  
**City of Puerto Princesa**

Year	Projected population of 37 Barangays	Number of Connection Per 2000 Population	Demand Per Connection (m <sup>3</sup> /day)	Projected Daily Domestic Water Demand (m <sup>3</sup> /day)
2006	200,168	100	5.0	500
2007	218,403	109	5.0	546
2008	228,231	114	5.1	582
2009	238,502	119	5.2	620
2010	249,234	125	5.3	661
2011	260,450	130	5.4	705
2012	272,170	136	5.5	751
2013	284,418	142	5.6	801
2014	297,217	149	5.7	854
2015	310,591	155	5.9	910
2016	324,568	162	6.0	970
2017	339,174	170	6.1	1,034
2018	354,436	177	6.2	1,102
2019	370,386	185	6.3	1,174
2020	387,053	194	6.5	1,252
2021	404,471	202	6.6	1,334
2022	422,672	211	6.7	1,422
2023	441,692	221	6.9	1,516
2024	461,568	231	7.0	1,616
2025	482,339	241	7.1	1,722
2026	504,044	252	7.3	1,836
2027	526,726	263	7.4	1,957
2028	550,429	275	7.6	2,086
2029	575,198	288	7.7	2,223
2030	601,082	301	7.9	2,370

*Source: PPCWD Bulk Water Supply Project Technical Study, Dec. 2002, LWUA,*

**e. Deficiencies of the Local Waterworks System**

i. Rationing to some part of the system will occur, due to inefficient supply and low water pressure. The Barangays of Mandaragat, Matahimik, Seaside and Matiyaga, San Pedro, Old and New Buncag have supply cut off between the hours of 6:00 pm and 4:00 am, as a result of low pressure or low supply during summer. These are all located in Puerto Princesa City proper and represent 7,200 existing and potential connections.

ii. Over 43% of the population has no connection to the water supply and rely on local bores and wells. Only 57% of the population in the service area is connected to the system. The rest of the population relies on local wells.



iii. Water quality of the PPCWD supply bores within the City is a concern. Tests conducted for the 5 wells used by PPCWD to provide 17% of the water demand of the City showed readings within the tolerable level of the National Standards for Drinking Water (NSDW) levels.

iv. The present capacity of the ground water supply is operating beyond its assessed “safe” capacity. Operating beyond that “safe” limit increases the probability of surface effluents becoming part of the recharge supply to the bores.

v. Not all the water supplied from bores into the general water distributions system is disinfected by standard chlorinating equipment.

vi. The unreliability of the electrical power for pumping adds to the need for adequate reserve storage.

vii. The present level of unaccounted water is unacceptable for the operation of an economic water supply system. Water supply and usage as per records for 1990 to 2003 showed unaccounted water with an average between 21% and 27%. Tests carried out as part of the 1991 feasibility study indicated overall losses of 24%.

viii. Even during wet season, the supply has the tendency to drop due to turbidity of water being observed during heavy rainfall at Irawan River.

**VII. COMMUNICATION UTILITIES**

Information and communication technology have fundamentally changed the way the individuals communicate and access to information. They have also become tools of governance by providing new ways of reaching the people and delivering services.

**A. Telecommunications**

Presently, a government Bureau of Post and two private firms provide packaged mail services. Cables and telegrams can be sent through private telecommunications companies and the long distance telephone market is serviced by Piltel and PLDT, Smart, Globe, and Sun Cellular. There is one operating in the area providing cable TV, two (2) television stations (ABS-CBN/DYPR, GMA) and five (5) radio stations.

**Table VI.25**  
**Telegraph/Telegraphic Transfer Service Facilities**  
**City of Puerto Princesa**  
**2006**

Carrier	Telegraph	Telegraphic Transfer
	Number	Number
1. DOTC-Telecommunication Office	17	
2. Provincial Radio Communication System	24	12
3. Other services	Internet, Fax, Printing, Photocopying, encoding, and Scanning	

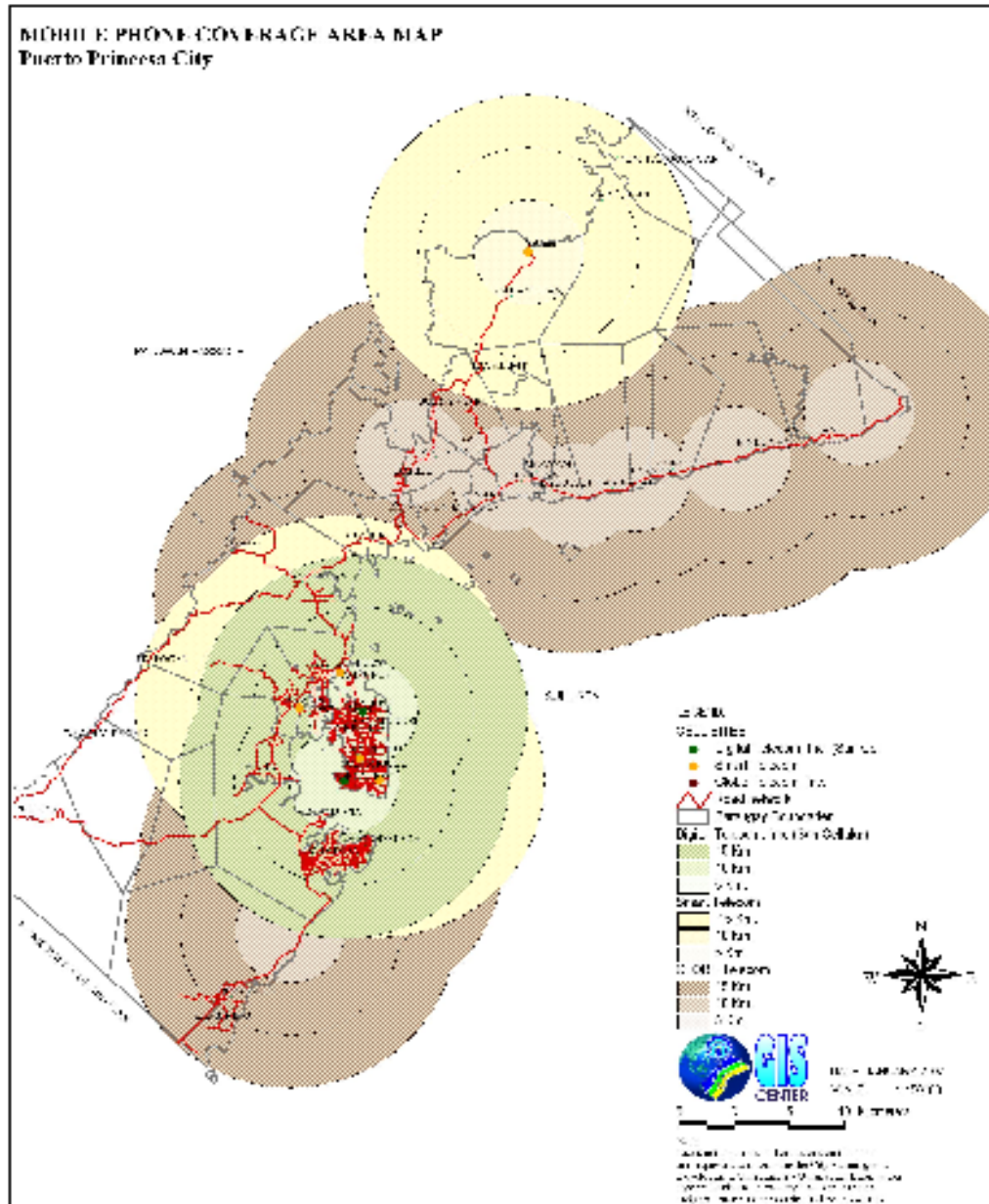
*Source: Telecommunication Office, City of Puerto Princesa August 2006*

**B. Telephone Service**

There are now three (3) telephone companies operating in the City, the Pilipino Telephone Corporation (PILTEL), Globe Telecom, and the Telecommunications Distribution Specialist Inc. (TDSI), which is a franchise holder of SMART Telecommunication, Inc.



Figure VI.3  
Mobile Phone Coverage Area  
City of Puerto Princesa



At present, the SMART Telecommunication, Inc., Century Business Center by Globe Telecom, and Sun Cellular were the latest to provide cellular telephone service. The system serves Poblacion barangays to Bgy. Langogan in the north, Marufinas in West Coast area and Bgy. Kamuning in the south.

Cell sites (smart and sun cellular only) in strategic places in the city were installed, and the latest more advance cellular mobile telephone system is adopted in the City. (Refer to Fig. VI.3.)



Tables VI.26 and 27 below show the inventory of existing telephone service in the City of Puerto Princesa

**Table VI.26**  
**Inventory of Telephone Service**  
**City of Puerto Princesa**  
**2006**

Franchise Holder (Name of Company)	Location of firm	Service Area	Type of System used	Facilities and Capacity	No. of Subscribers	
					Existing	Potential Subs. Pending Applications
Pilipino Telephone Corporation	# 42 Roxas St. Puerto Princesa City	Poblacion Bgy. North Up to Sta. Lourdes South up to Sicsican	Switboard	Landline Telephone (6,500 lines)	Residential 3,366	1,500
				Cellsite (Cellular) 7 km. Radius	Com'l. 1,222	
				Pay Phone booths	Gov't. 12	

**Table VI.27**  
**Inventory of Mobile Phone Service**  
**City of Puerto Princesa**  
**2006**

Service Provider	Services	Charges (P)
Smart	Gold Consumable Plan	800.00 – 3,500.00
	Free text	200.00 – 400.00
	Smart to Smart call	4.00 – 6.500 per minute
	Smart to non-Smart	4.50 – 7.00
	Text free after free SMS	0.50 – 1.00
Globe Telecom	MSF G Plan	5,000.00 – 10,000.00
	Free voice minutes	1,100.00 – 1,800.00
	Free SMS	650.00 – 1,200.00
	Globe to Globe Call	3.50 per minute
	Globe to non-Globe	4.50 per minute

**C. Postal Services**

At present, the City of Puerto Princesa has one postal service office. It undertakes daily postal operation such as acceptance and delivery of letters and parcels, packages collection, sorting and delivery, and money remittances. There are 17 workers including the postmaster performing the daily activities. Nine (9) of them were designated letter carriers. Efficiency rate of services is apparently low considering heavy workload with only a few manpower doing the job not to mention the inadequate number of postal facilities present as specified in Table VI.28 below:



**Table VI.28**  
**Postal Service Facilities**  
**City of Puerto Princesa**  
**2006**

Postal Facility	Number
1. Post Office	1
2. Mail Distribution Center	1
3. Money Transfer/Remittance	1
4. Stamping Machine	2
5. Postal extension	2
6. Mail Boxes	396
7. Mail Transport Vehicles:	
Van	2
Motorcycle	9

*Source: DOTC-Postal Service Office, City of Puerto Princesa August 2006*

The volume of transaction for five-year period is presented in Table VI.29:

**Table VI.29**  
**Volume of Postal Transaction for the Last Five Years**  
**City of Puerto Princesa**  
**2006**

Type of Services	Year 1 (2001)	Year 2 (2002)	Year 3 (2003)	Year 4 (2004)	Year 5 (2005)
Letters	437,445	441,864	450,882	464,827	489,292
Packages	715	706	751	796	820
Money Order	29,251	20,713	29,796	40,584	41,000

*Source: DOTC - Postal Services Office, City of Puerto Princesa, August 2006*

#### **D. Meteorological Services**

The local Philippine Atmospheric, Geophysical and Atmospheric Services Administration (PAGASA) is located within the ATO Compound near the runway with a floor area of 45.5 square meters.

Five (5) well-trained meteorological personnel managed the PAGASA office in Puerto Princesa City. There are sub-stations in the municipality of Cuyo and Coron, and one agro-meteorological station in Aborlan municipality. The weather forecasting stations in the province are linked with each other by single side-band radio transceivers.

The City's weather tracking facilities are available of two (2) types: the indoor and outdoor type which are utilized for surface and upper high atmosphere observation. (refer to Table VI.30.) Communication facilities used are:

- a. Single side-band radio transceiver
- b. Computer
- c. Telephone units.





**Table VI.30**  
**Inventory of Meteorological Facilities**  
**City of Puerto Princesa**  
**2006**

Type	Location	Area Coverage	Facilities
1. Indoor Weather Tracking System	PAGASA Building, Interior Rizal Avenue, Bgy. Banca-Bancao	Nationwide	<ol style="list-style-type: none"> <li>1. Barometer</li> <li>2. Barograph</li> <li>3. Rain Gauge recorder</li> <li>4. Anemograph</li> <li>5. Altimeter Setter</li> <li>6. Integrated Runway Meteorological Observation System Device (IRMO's)</li> <li>7. Perimeter</li> </ol>
2. Outdoor Weather Tracking System	PAGASA Compound		<ol style="list-style-type: none"> <li>1. Rain Gauge Receiver</li> <li>2. Thermograph</li> <li>3. Psychometer</li> <li>4. Maximum &amp; Minimum Thermometer</li> <li>5. Bimetallic Actinograph</li> <li>6. Campbell Stokes</li> <li>7. Wind Recorder/ Receiver</li> </ol>

Source: PAGASA Office, City of Puerto Princesa, August 2006

PAGASA station maintains communication links with all television and broadcast media in the City. The staff works daily in three (3) shift undertaking preparation and subsequent prompt issuance of weather forecasts to the public thru television and radio stations.

#### **E. Internet Services**

Internet services provide technical support and tutorial services to its clients extended by its trained staff who are ready to respond to any inquiries. The customer can surf the net, do researches, send and receive e-mails, play games or chat via broadband system. There were about 100 internet cafés in the city located in the central business district and school vicinity, which offers 8 to 12 hour services at an affordable price from P5 to P25 an hour.

#### **F. Television and Broadcast Media**

##### **a. Radio Station**

From year 1966 to 1990, DYPR owned and managed by the Palawan Broadcasting Corporation, was the lone radio station providing broadcast service in the City of Puerto Princesa.

In 1991, the Bureau of Broadcast Services established DWRM on the AM Band. The Manila Broadcasting Company followed in 1994 with the satellite broadcasting of its flagship station DZRH-AM in Manila, and established a local DYEZ-FM Station. In 1997, a 1kw DWMS-FM Station also went on the air along with DYEH, an AM Station of a Southern Luzon based network.

Early in 1998, GMA started with a low (30 watts) power TV Service through TVRO carrying Manila's Channel 7, rebroadcast locally in Channel 12. This was expanded to local radio broadcast service on AM and Fm band.



As of August 2006, there are five (5) radio stations existing in the City. All of which providing broadcast service in the whole province and some places outside the country except for GMA-AM/FM with only 5 kw capacity.

**b. Television Stations**

At present there are two (2) TV stations in the city relayed from Manila by satellite receiver like the DYPR-TV-7 and RGMA-12, while there is one (1) Cable TV stations operating, the Puerto Princesa RTTV.

RTTV occupies a 120 square meter office space and has a live telecast daily from 10:00AM to 12:00Noon.

Upgrading of its transmission is on-going to provide better local programming. The station serves almost all barangays in the city up to the municipality of Aborlan the south and to coastal areas of Roxas in the north.

DYPR-TV-7 is an affiliate station of ABS-CBN providing live telecast from Channel 2 Manila. The station operates from 9:00 am-12:00 midnight daily. It covers the urban center up to Langogan.

RGMA-Channel 12, on the other hand, hooked at GMA Channel 7 Manila, is also providing live telecast in the city proper to Barangay Kamuning (south) and Barangay Langogan (north).

**Table VI.31**  
**Type of Broadcast Media Available**  
**City of Puerto Princesa**  
**2006**

Facilities Available	Location	Area Occupied of the Facility (Approximately)	Area Coverage
<b>A. Broadcast Media</b>			
<b>1. RADIO</b>			
a. DWRM AM	National Road, Bgy. Sta. Monica	Bldg.-144 sq. Meter land area-5 has.	Whole of Palawan except on some part of the Brooke's Point, Rizal , southern tip of Palawan, El Nido. Strong signal in some areas in Malaysia, Zamboanga del Norte, fair to moderate and strong signal in Antique Province, Jolo, Sulu, and Tawi-Tawi
b. DYPR (AM and FM)	60 Mabini St. Bgy. Masipag	Bldg.-875 sq. m. Land-1.2 has.	Entire Palawan, Negros, Antique, Tawi-Tawi, & Malaysia. Puerto Princesa, Part of Narra, Aborlan & Roxas
c. DYEAM AM	Mitra Road, Bgy. Sta. Monica	Bldg.-80 Sq. m. Land-5 has	Province-wide, nearby provinces of Negros Island, Panay Island, Zamboanga del sur, Tawi-Tawi & Sulu, Sabah and some parts of Malaysia
e. DZRH AM	Jacana Road, Bgy. Banca Banca	Bldg.-36 sq. m. ( 1 ha.)	Province-wide, Brunei, Guam, and Malaysia
<b>f. GMA RADIO</b>			
f.1 DYHY FM f.2 DYSP AM	Solid road, Bgy. San Manuel	bldg. -120 sq. m. land- 5,000 sq. m	Province-wide and nearby places
<b>2. TELEVISION</b>			
a. GMA 12	Mitra road, Sta. Monica	Bldg. -35. Sq. m.	City proper to Sicsican City proper to Sta. Lourdes
b. ABS-CBN	Circon bldg. Valencia St.	Bldg. -40 sq. m.	Poblacion to Bgy. Salvacion (N)
<b>2.1 Cable TV</b>			
a. CATV	268 Manalo St. Bgy. Banca Banca	1,300 sq. m.	Poblacio up to Bgy. San Jose



**c. Print Media**

There are six (6) local newspapers published in the city which are circulated province-wide; These are: the “*Bandillo ng Palawan*”, Palawan Sun, Palawan Mirror, *Ang Paragua*, Frontier News and the Palawan Times. About 500-1,000 copies per issue are normally produced by said local publishing houses.

National newspapers (tabloids and broadsheets) and magazines are also available in the market. There are about 2,000 copies transported from Manila through the Philippine Airlines to Puerto Princesa City, usually at 11 a.m daily.

**Table VI.32**  
**Local Type of Print Media Available**  
**City of Puerto Princesa**  
**2006**

TYPE OF PRINT MEDIA	LOCATION	AREA COVERAGE	CIRCULATION		
			Number	Type	Frequency
a. Bandillo ng Palawan	Garcellano Complex Rizal Avenue, Bgy. Manggahan	Province-wide (Municipal outlets) There are subscribers abroad and other parts of the country.	500-1,000 issues	Tabloid	weekly
b. Palawan Sun	2 <sup>nd</sup> Flr. Lustre Bldg., Rizal Ave. PPC	Province-wide, there are subscribers of on-line edition	1,000	Tabloid	Weekly
c. Palawan Mirror	2 <sup>nd</sup> Flr. Admiral Hotel, Bgy. San Miguel, PPC	Province-wide and some parts of Region IV	1,000	Tabloid	Weekly
d. Palawan Times	325 Rizal Avenue	Province-wide	1,000	Tabloid	Bi-monthly

**Table VI.33**  
**Inventory of Newspapers/Magazine Outlets**  
**City of Puerto Princesa**  
**2006**

Outlets/Location	No. of outlets	No. of Carriers	No. of Delivery Service	No. of copies sold
1. Leonor's Merrimart, Valencia St. PPC.	1	-	-	120-150 daily
2. Bocobo's Newstand, Malvar St. , Bgy. Mandaragat		2	2 (tricycles)	68 - 75 daily
3. Choy's Tan Store, Quezon St. Bgy. Maligaya	1			100-120 daily