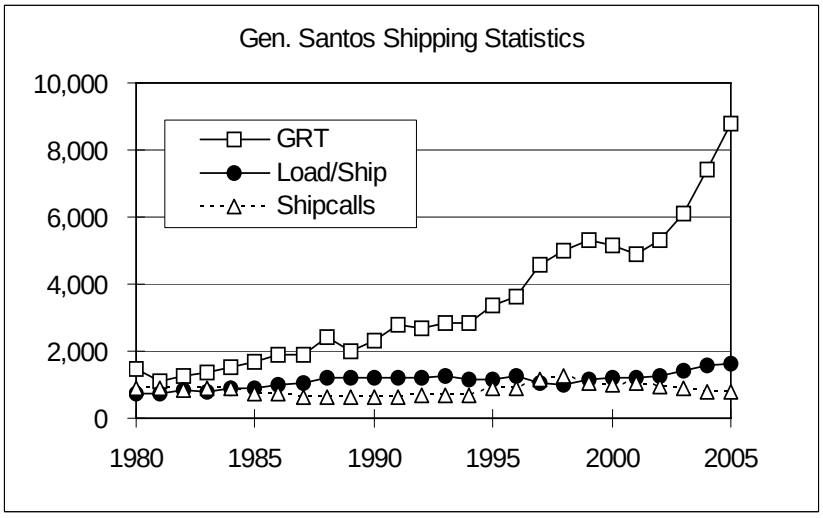
# 6. Identification of the Candidate RRTS Routes

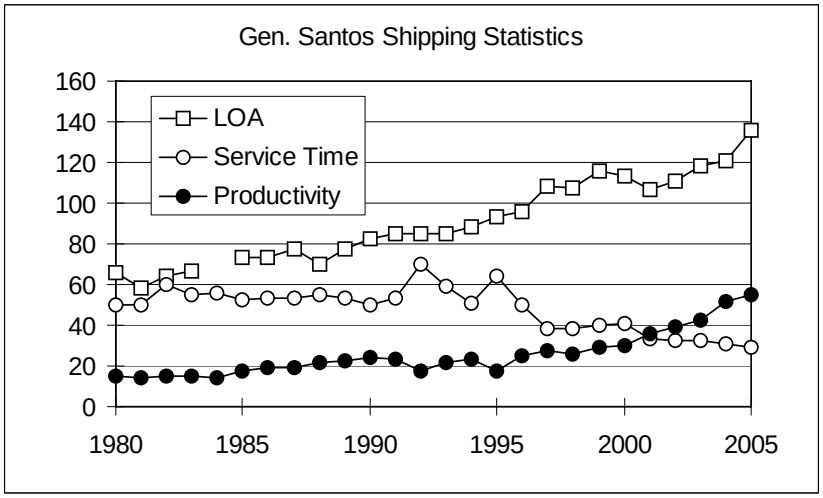
## 6.1 Objective of RRTS Development

The concept of the nautical highway aims to reduce the transport cost between Mindanao and Luzon and to promote shipping service by establishing an alternative shipping service in addition to traditional shipping service. However, it is generally recognized that, the longer the travel distance, the more advantageous it is to use ships rather than trucks. For long distance shipping, larger ships are being increasingly employed throughout the world to take advantage of the scale of merit. The improvement of the cargo handling productivity is well exhibited at General Santos Port where the long-distance RoRo ferries are the principal carriers of the domestic cargoes. Playing the principal roles domestic cargoes. Figure 6-1 shows the annual variation of the average ship size (GRT), total number of ship calls and cargo volumes loaded and unloaded per ship, while Figure 6-2 shows the average LOA, service time per ship and cargo handling productivity (number of containers handled per hour).




Source: ITDP, 2006, Vol. III Part III

**Figure 6-1 Average GRT, Load per ship and annual number of ship calls**



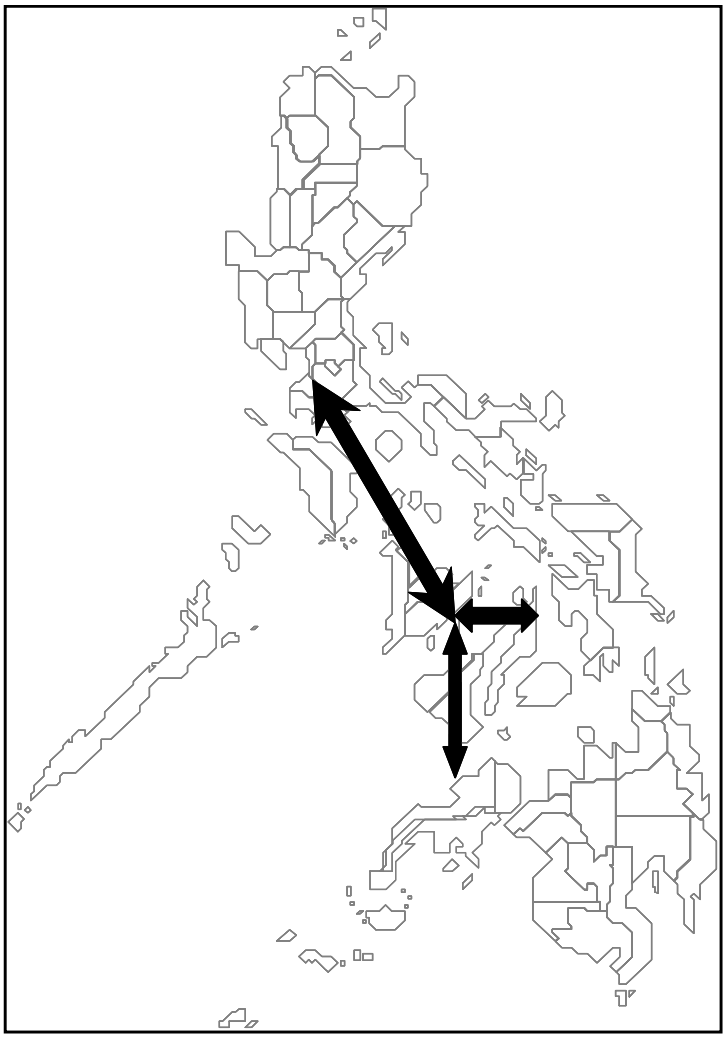

Source: ITDP, 2006, Vol. III Part III

**Figure 6-2 Average LOA, Service Time and cargo handling productivity**

It is observed in Figure 6-1 that, while the ship size has been doubled over the past ten years, ship calls have been declining. The container handling productivity at the wharf has been tripled during the same period. The major domestic shipping lines have also been deploying full container carriers to speed up and reduce the cost of the handling at the port. It was proposed in the Port master plan that major domestic ports should equip cranes to promote the containerization of domestic shipping.

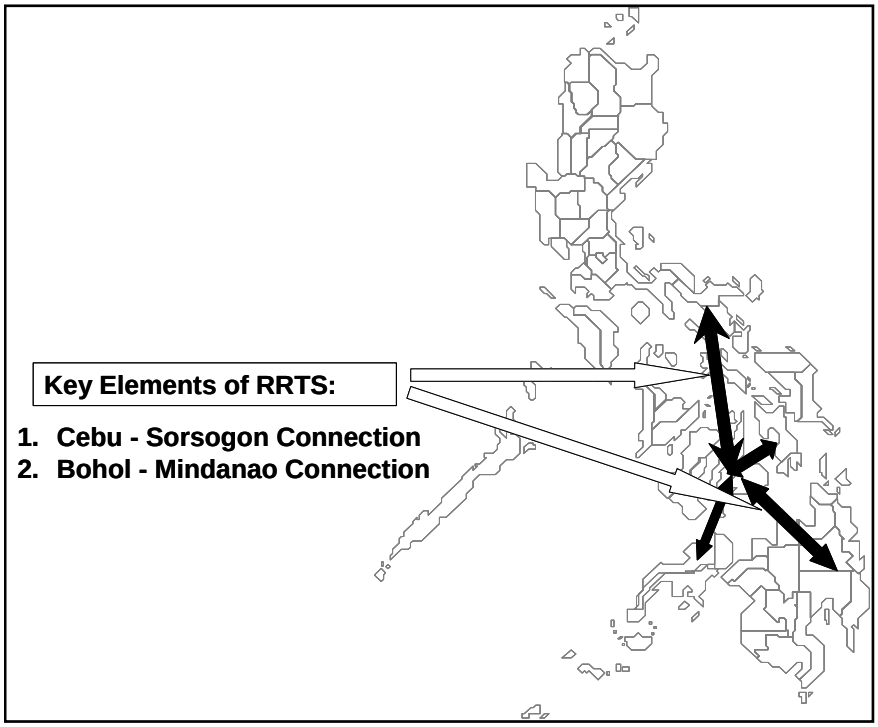
The original idea of the establishment of RoRo ferry service network was to reduce the transportation between Mindanao and Luzon by establishing an alternative route to the long-distance shipping route. However, it seems to be realistic that, even though Nautical Highways between Mindanao and Luzon are completed, a large portion of cargoes will be transported by long-distance shipping. In fact, along the newly opened Strong Republic Nautical Highways (the Western RORO Trunk Route), only a few passenger and vehicles are traveling over the full length of the route. It also seems to be realistic to assume that the RRTS can promote and improve the transportation within a region. In other words, RRTS would be beneficial for the transportation within two RoRo ferry links, taking into account the survey result at the ports on the Strong Nautical Highway.

With the Western Nautical Highway, Iloilo economic zone has better access to adjacent economic zones such as NCR, Mindanao and other parts of Visayas (See Figure 6-3), while the Cebu economic zone, although a major origin and destination of passengers and cargoes, still needs better access to adjacent economic zones in Bicol, Mindanao and Leyte regions (See Figure 6-4).



Source: Study Team

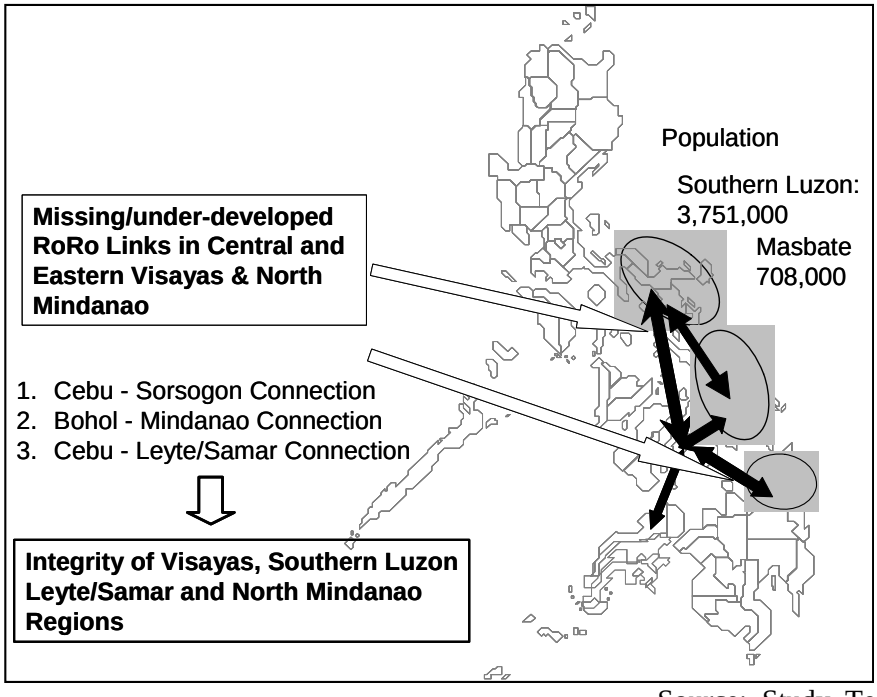
**Figure 6-3 RoRo Accesses of Iloilo Economic Zone to Other Economic Zones**




Source: Study Team

**Figure 6-4 RoRo Accesses of Cebu Economic Zone to Other Economic zones**

Between Cebu, Masbate, Bicol (Southern Luzon) and Leyte/Samar Island and Northeast Mindanao, neither long-distance nor short-distance ferry service is being developed. Taking into consideration the roles and functions of Cebu as the gateway to the whole Visayas Region, which was identified in the Port Master Plan Study, RRTS connections between these islands are vital elements for the integration of the economy of Visayas and for the promotion of Bicol and Leyte/Samar regions (See Figure 6-5).




Source: Study Team

**Figure 6-5 Missing RoRo Links in Central and Eastern Visayas**

## 6.2 Economic Benefit Generated by the Development of RoRo Routes

It is worthwhile to discuss what happened after the RoRo service started at the Roxas (Mindoro) – Caticlan (Panay) link.

Mindoro Island is well known as the granary for the National Capital Region. However, with the missing link between Mindoro and Panay Islands, the market of agricultural products in Mindoro Island was limited to only NCR and the Southern Tagalong Region. Likewise, inter-island shipping was the sole route for Panay Island to transport goods to and from NCR. Once the RoRo link between the two islands started operation, Mindoro Island was provided an access to a new market in Panay Island and Negros Island via another existing RoRo link between Iloilo and Bacolod. The consumers in Panay Island also obtained a shorter access to purchase agricultural products in Mindoro Island. In addition to the expansion of the market, Mindoro Island has been providing transport corridor between Luzon and Panay Island. The corridor is not only used by cargo trucks but also by passengers who are traveling in either passenger cars or long-distance buses. The interview survey at Roxas Port in Mindoro Island showed that 55% of the passengers and 70% of vehicles are traveling between Luzon and Panay.

The same impact would occur if Bicol Region is interconnected to Central Visayas Region via RoRo links. At present, the principal mode of transportation of commodities to and from Bicol is Road Mode. The NSO statistics shows that, in 2002, the total volumes transported between Bicol and NCR by water transport mode account for only 10,000 tons, while that transported by Road mode was 4.4 million tons. As observed in Table 6-1, the largest trade counterpart of Bicol Region is the National Capital Region (NCR). Sixty-five percent (65%) of the total inbound commodities were brought from NCR, while 58% of the outbound commodities were transported to NCR. The second largest counterpart for the inbound commodity was Region IV-A (CARABARZON), while Region IV-B (Marinduque and Romblon which are island provinces) was the second largest trade counterpart for outbound commodities: It seems that the commodities bound for these regions were brought from Bicol by Road mode to Lucena City then transported by water mode to these islands from Dalahican Port. Though Bicol Region is interconnected with Samar and Leyte Islands by RoRo ferry link via Pan-Philippine Highway, the volume transported between these Regions by Road was quite small.

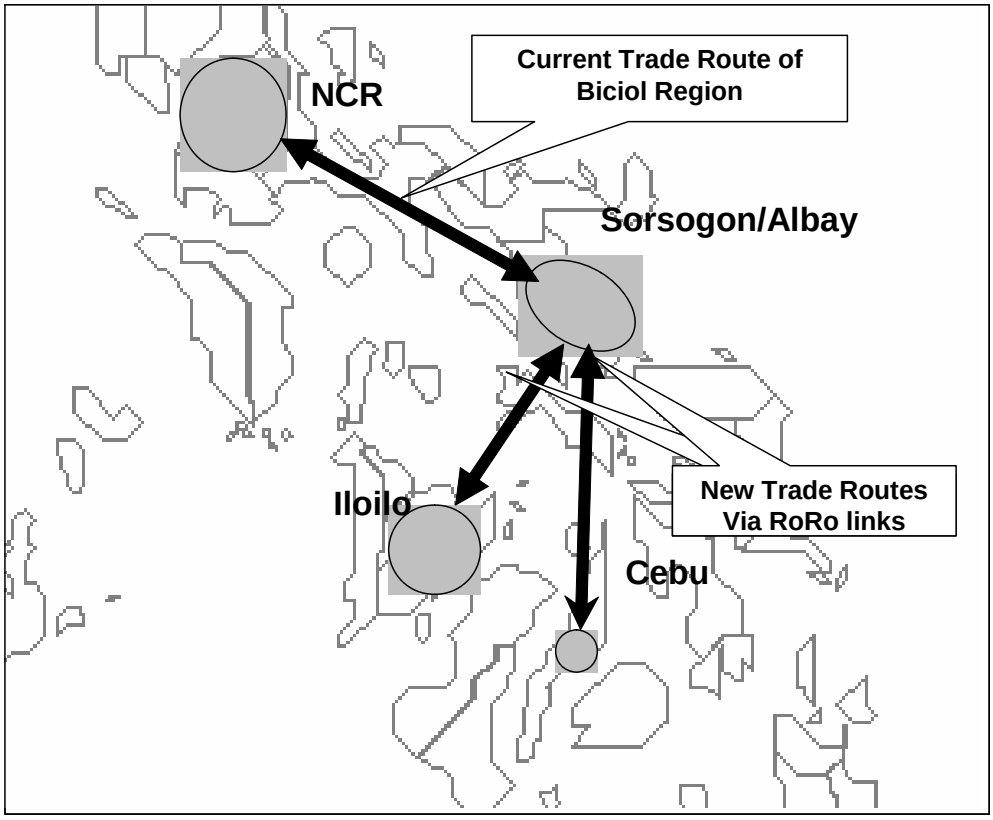
The Philippine highway between Bicol Region and NCR is a two-lane highway except for a portion near NCR, which is the Southern Luzon Express Way. The travel time between NCR to Legaspi, Provincial Capital) along the highway, is more than 10 hours. Due to the traffic congestion passing through towns and municipalities along the highway, the travel time tends to become longer. If Bicol Region has faster and more convenient access to Central Visayas Region via RoRo links, the latter would be a new trade partner of the former. Such impact of the RoRo links is schematically exhibited in Figure 6-6.

**Table 6-1 Trade Counterpart of Bicol Region**

unit: 1,000t

| Zone | Region | To Bicol | | From Bicol | |
|---|---|---|---|---|---|
| 1 | C.A.R. | 125 | 2.8% | 59 | 2.2% |
| 4 | Region III | 412 | 9.3% | 225 | 8.3% |
| 5 | Region IV-A | 668 | 15.1% | 130 | 4.8% |
| 6 | Region IV-B | 203 | 4.6% | 582 | 21.6% |
| 9 | N.C.R. | 2,868 | 64.8% | 1,560 | 57.9% |
| 15 | Region VII-B (Cebu) | 46 | 1.0% | | |
| 17 | Region VIII-A (Samar) | 87 | 2.0% | | |
| 18 | Region VIII-B (Leyte) | 15 | 0.3% | | |
| 20 | Region X (N. Mindanao) | | | 138 | 5.1% |
| | Total | 4,424 | 100.0% | 2,694 | 100.0% |

Source: Inter-regional Passenger & Commodity Survey 2004




Source: Study Team

**Figure 6-6 Impact of RoRo Links between Bicol and Central Visayas Regions**

The commodities transported between Bicol Region (excluding Masbate) by road mode and NCR are shown in Table 6-2: Table 6-3 shows the code of commodity classification. The principal commodities moved between NCR and Bicol are manufactured goods, which are drugs, footwear, furniture, textiles, appliances, rubber products, printed matter, others (Commodity Code C7) and manufactured food stuff (Code C6). The total volume of C6 and C7 commodities transported from NCR to Bicol was 2.2 million tons, while that transported from Bicol to NCR was 1.18 million tons. It is also observed that, in addition to the manufactured goods, substantial volume of cereals (Code C5) was transported from NCR to Bicol.

**Table 6-2 Cargo Flow between NCR – Bicol (Except Masbate)**

unit: 1,000t

| Code | To Bicol | To NCR | Total |
|---|---|---|---|
| C1 | 0 | 0 | 0 |
| C2 | 78 | 188 | 266 |
| C3 | 0 | 21 | 21 |
| C4 | 71 | 0 | 71 |
| C5 | 277 | 0 | 277 |
| C6 | 269 | 273 | 542 |
| C7 | 1,935 | 908 | 2,843 |
| C8 | 0 | 0 | 0 |
| C9 | 0 | 0 | 0 |
| C10 | 64 | 23 | 87 |
| C11 | 166 | 47 | 213 |
| C12 | 8 | 100 | 108 |
| Total | 2,868 | 1,560 | 4,428 |

Source: Inter-regional Freight and Passenger Flow Survey, DOTC 2004

**Table 6-3 Classification of Commodities**

| Code | Commodity |
|---|---|
| C1 | Unprocessed Cereals (wheat, palay, maize, others) |
| C2 | Agricultural Food Stuffs (live animals, meat, seafood, fruit, vegetables, eggs, milk, others) |
| C3 | Agricultural Cash Crops (tobacco, cotton, copra, sugar cane, food stuffs, others) |
| C4 | Processed Cash Crops (copra, vegetable, sugar, molasses, others) |
| C5 | Cereal Product (milled rice, milled wheat, wheat flour, rice flour, others) |
| C6 | Manufactured Food Stuffs (canned fruit, fish and meat, groceries, tobacco products, beer, others) |
| C7 | Other Manufactured Goods (drugs, footwear, furniture, textiles, appliances, rubber products, printed matter, others) |
| C8 | Forestry Products (logs, bamboo, charcoal, others) |
| C9 | Mining Products (iron ore, copper ore, charcoal ore, pyrite, others) |
| C10 | Mineral Oil Products (gasoline, diesel oil, fuels, gas, others) |
| C11 | Construction Materials (cement, concrete, steel, wood product, asphalt, clay, stone and sand, others) |
| C12 | Producers Goods (fertilizer, paper, machinery, chemicals, others) |

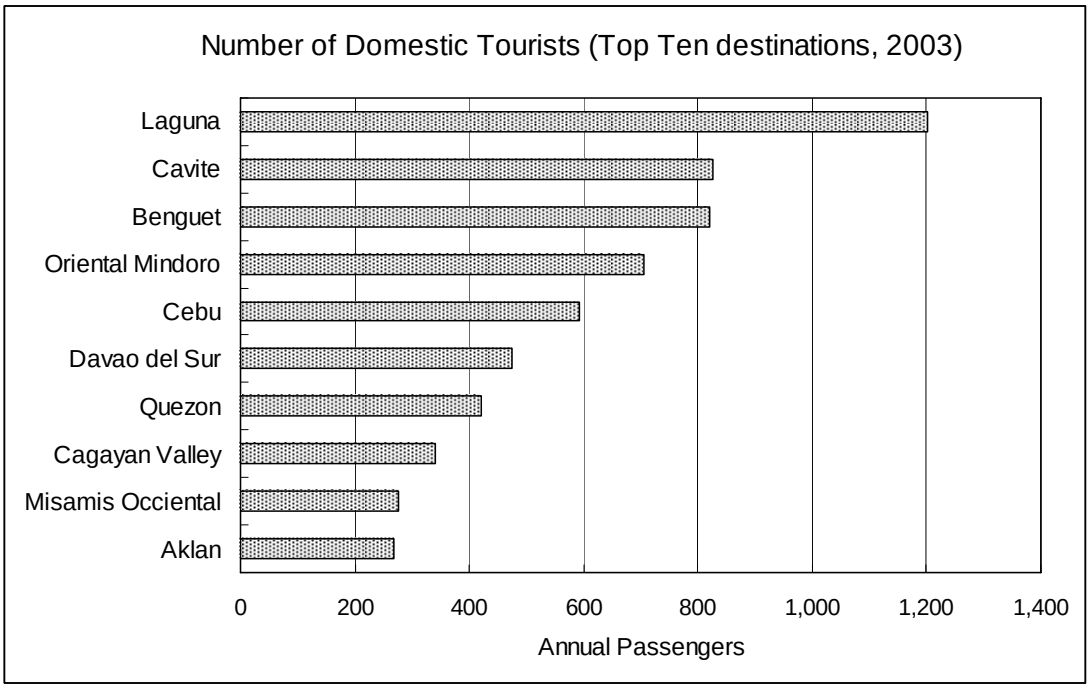
Source: Inter-regional Freight and Passenger Flow Survey, DOTC 2004

Visayas regions, especially Cebu City can be an alternative source to supply Manufactured goods and food stuff, which are principal commodities transported between Bicol and NCR. Cereals, especially rice, can be supplied from Panay and Negros, which are rich in rice production.

With respect to the passengers, Cebu is one of the major tourist destinations. Figure 6-7 shows the top ten tourist destinations for domestic tourists. Cebu province is visited by 600,000 domestic tourists, which is the second largest next to Oriental Mindoro among the tourist destinations outside Luzon Island. Thus, it is expected that, if the new RoRo route between Bicol and Cebu via Masbate provides better service than existing routes such as long-distance shipping and other RoRo routes, many tourists will be traveling along the new RoRo route either by passenger cars or long-distance buses.

The new RoRo transport links would give a great impact on the cargo and passenger flow between the regions and provide accesses to new markets which could not have been reached without these links. However, in order to attain full economic benefits from the RoRo route development, it is vital to make the RoRo routes competitive with the existing transport routes especially in terms of travel time.

The economic benefits of the RoRo service development shall be fully discussed Route by Route in a later stage of the study on the basis of the traffic forecast.




Source: NSCB Web Site

**Figure 6-7 Number of Domestic Tourist at Top 10 Destinations**

## 6.3 Identification of Candidate RRTS Routes for Evaluation

As discussed above, the principal goal of the development of RRTS for Mobility Enhancement in the region is to develop inter-modal transport routes between the islands especially in Eastern Visayas, Bicol and Northern Mindanao Regions (See Figure 6-8), i.e., the development of the following RRTS Routes:

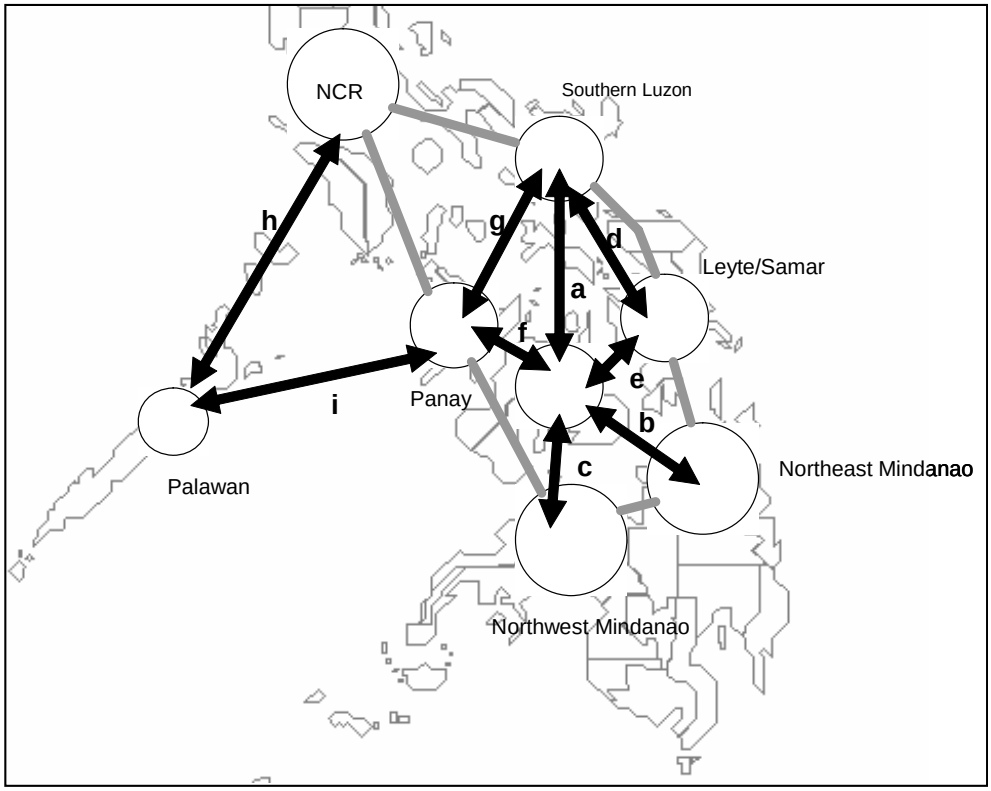
a) Cebu Is.– Masbate - Southern Luzon provinces
b) Cebu Is. – Bohol – Northeast Mindanao regions
c) Cebu. Is. – Negros. Is. – Northwest Mindanao provinces.
d) Southern Luzon Provinces – Masbate – Leyte/Samar provinces
e) Cebu Is. – Bohol Is. – Leyte/Samar Is.
f) Cebu Is. - Negros Is. – Panay Is.
g) Panay Is. – Masbate – Southern Luzon provinces

In the light of the RRTS corridors presented in the MTPDP, the Central Corridor aims to realize the connections a), b) and c), while Eastern Corridor extension aims at the realization of connection d).

The RRTS routes proposed by DOTC (See Figure 2-8) other than the North-South Corridors, i.e., Route 1 through Route 5, aim to realize the connections e),f) and g) together with the connections

h) Palawan – Luzon and
i) Palawan – Visayas.

These connections from a) to i) are schematically shown in Figure 6-8




Source: Study Team

**Figure 6-8 Regional connections to be improved**

The RRTS will be most effective service for the inter-regional transportation with one or two RoRo links rather than long-distance transport via island hopping. However, they are grouped into the following seven routes, since the RoRo links denoted by a) through h) shall be forming nautical highway network as a whole. The nautical highways should be interconnected to each other for the most effective use. The full stretches of the nautical highways, i.e. both ends of each nautical highway and the junctions to other nautical highways, can be defined as follows:

**1. Eastern Corridor (Pan-Philippine Highway) and** extension

- This is the existing Pan-Philippine highways from Manila up to Mindanao (Manila - Matnog-Allen/Dapdap - Tacloban City - Liloan - Lipata - Surigao City - Highway network in Mindanao).

- The route also include an extension from Tacloban City to Masbate (Tacloban City - a port in Masbate)

**2. Western Corridor (SRNH)**

- This is also the existing nautical highway extending from Batangas to Mindanao (Batangas- Calapan - Roxas - Caticlan - Iloilo - Bacolod - Dumaguete - Dapitan - Mindanao North Coastal Highway)

**3. Central Corredor (Central Corridor-MTPDP)**

-This route covers the connections a), b), c) and extends from Legaspi City, which is the junction with the existing Pan-Philippine Highway Route (Eastern Corridor) to Surigao City, which is another junction with Pan-Philippine Highway in North east Mindanao via Masbate, Cebu, Bohol and Camiguin Islands:

-This route has an extension that extends from Cebu City to Dumaguete City, which is the junction with the Western Corridor (the Strong Nautical Highway).

**4. Negros - Southern Leyte Lateral Route**

- This route covers the connections e) and f). Since several RoRo links are currently operational between Panay, Negros, Cebu and Bohol Islands, two possible routes are identified. One possible route is from Bacolod City, which is the junction woth the Western Corredor, Southern Leyte vis Cebu and Bohol.

**5. Panay -Leyte Lateral Route**

- The other possible route passes through the northern part of Panay, Negros and Cebu Island and then leads to Northern part of Leyte and merges to the Pan Philippine Highway at Tacloban City. The latter route is called “Ease-west complementary Route 2”, hereafter.

**6. Panay - Masbate Lateral Route**

-This rout is the connection g) and stretches from Culasi (Roxas, Capis) , which is the diversion point at the existing Western Corridor, to Masbate City where the Central Corredor leads to Legaspi City where the rout merges to the Pan-Philippine Highway via Masbate Island

**7. Batangas - Palawan Route**

-The route is the connection h). This route was identified in the Port Master Plan and the original route proposed by DOTC is the direct connection between TayTay (Palawan) and Manila with a stopover at Coron, Busuanga Is. Since the length of the original RoRo link is quite long, an alternative RoRo route from TayTay to Batangas City, which is the Junction with Western Trunk Route, via Mindoro Is. was identified. The entire stretch of the alternative route id from Puerto Princes (Palawan) to Batangas City via, TayTay, Coron, Mindoro Is.

**8. Panay - Palawan Route**

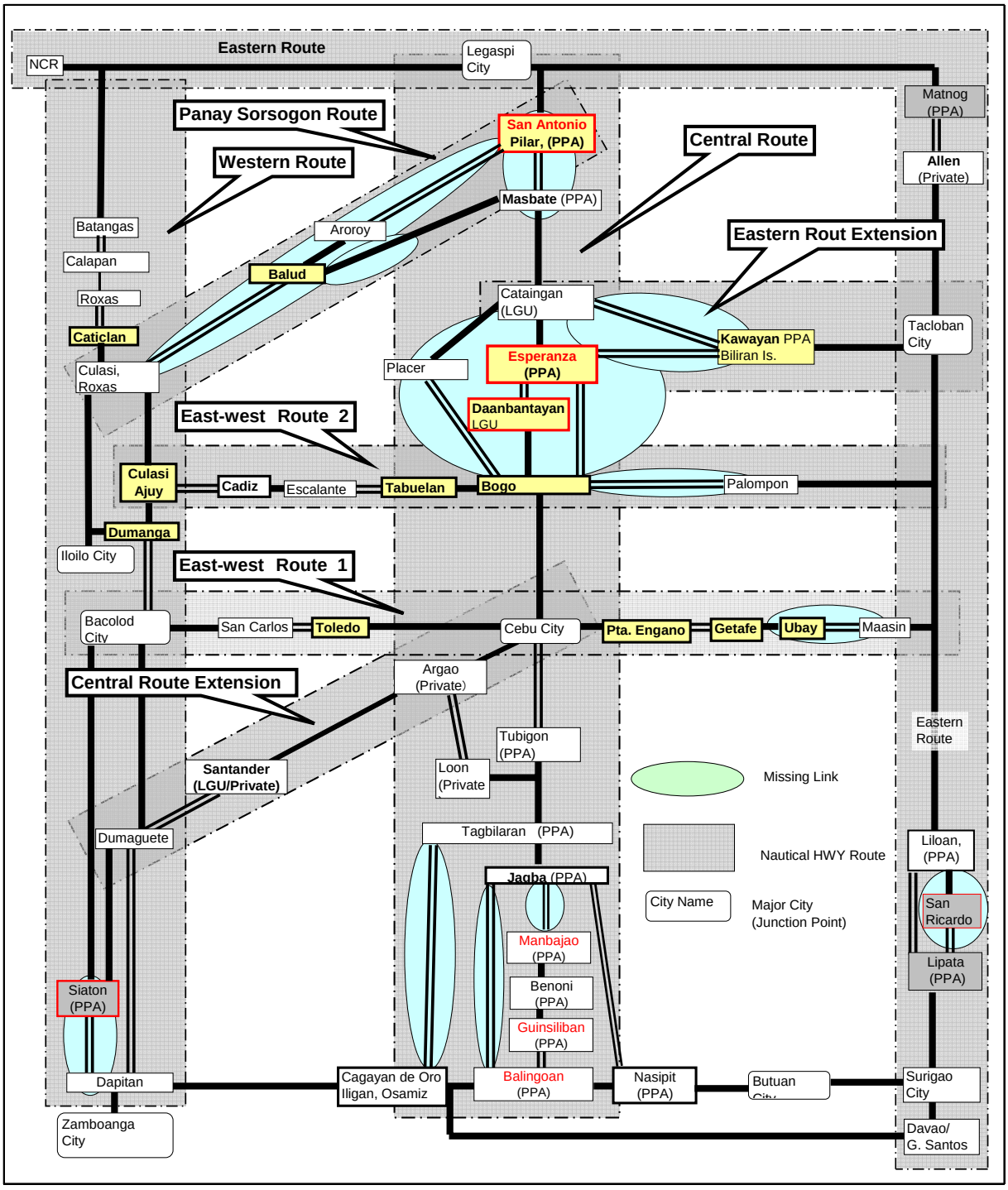
-This route is the connection i). The route starts from TayTay Port, which is the junction with Palawan Luzon Complementary Route and, after a stopover at Cuyo Island, reached Panay Island then ended at Iloilo City, which is the junction with Western Corridor and Ease-west complementary Route 1.

These seven routes are conceptual routes, and, therefore, specific locations of RoRo ports have not yet been determined. Specific location of the RoRo port shall be chosen in Chapter 7. Thus, all the possible alternative RoRo ports have been identified for each of above mentioned conceptual Routes.

Figure 6-9 and Figure 6-10 show the RRTS routes and all the candidate ports for RoRo terminals. Through the preliminary assessment based on the information collected so far and discussions with agencies, ports were chosen for the field reconnaissance surveys by the Study Team and local consultants. The ports shown in yellow boxes denote those that were assessed to have potential as RoRo terminal ports. Route by Route exhibit is shown in Appendix I-6-3-1. The seven candidate routes as well as the two Inter-modal Trunk Routes are plotted on the Map (see Figure 6-11)

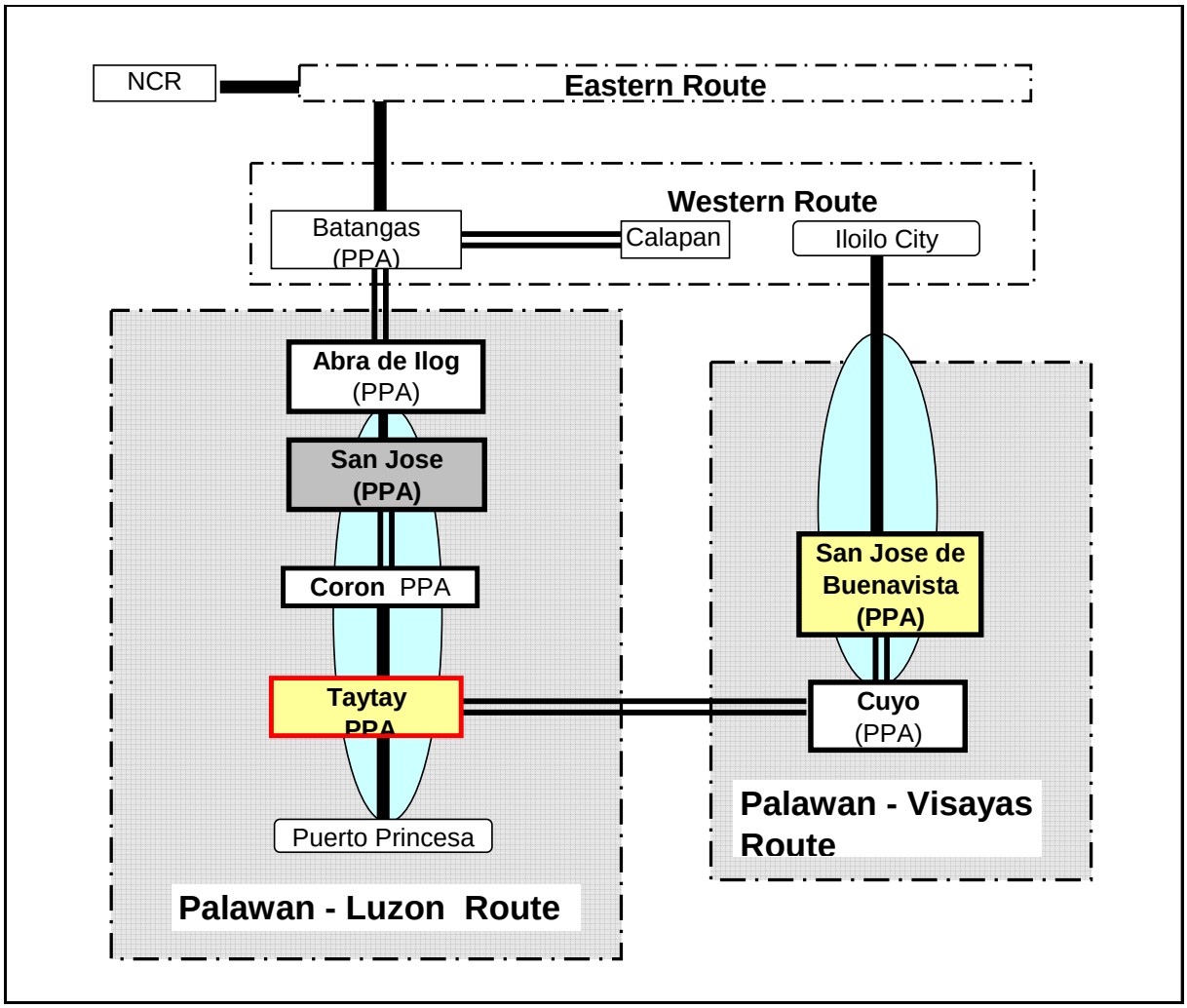
As explained above, the RRTS routes presented herein have been identified mainly based on the proposed routes in the Port Master Plan, MTPDP and DOTC. For the purpose of identifying other potential RRTS routes, those links and RoRo ports that have been proposed by MARINA (Missionary Routes), DBP (Sustainable Logistic Development Project) and the ports given development priority in SONA (June 2006) are examined in the light of the roles of the RoRo links categorized in the Port Master Plan. The results of the link by link examination are shown in Appendix I-6-3-1. As indicated in the Appendix, majority of MARINA Missionary links and DBP RoRo links fall into the category of remote island links. Some other links are already included in the seven RRTS Trunk and Complementary Routes. Those links assessed to be alternative links identified in the seven

Routes were taken into consideration as the alternative RoRo Ports. Figure 6-9 and Figure 6-10 include such alternative RoRo ports for further evaluation. The specifications of all the RoRo ports including alternative ports are listed in Table 6-4 and Table 6-5.




Source: Study Team

**Figure 6-9 National Nautical Highway Routes (1)**




**8. Palawan - Luzon Complementary Route**

**9. Palawan - Visayas Complementary Route**

Port Name — RoRo Terminal along the Route

**Port Name** — Candidate RoRo Terminal for F/S

**Port Name PPA** — Pre-feasibility Study Completed by PPA

**Port Name** — SONA Port

New Port

RoRo Link of the Route

Highway Link along the Route

Missing Link

**Figure 6-10 National Nautical Highway Routes (2)**

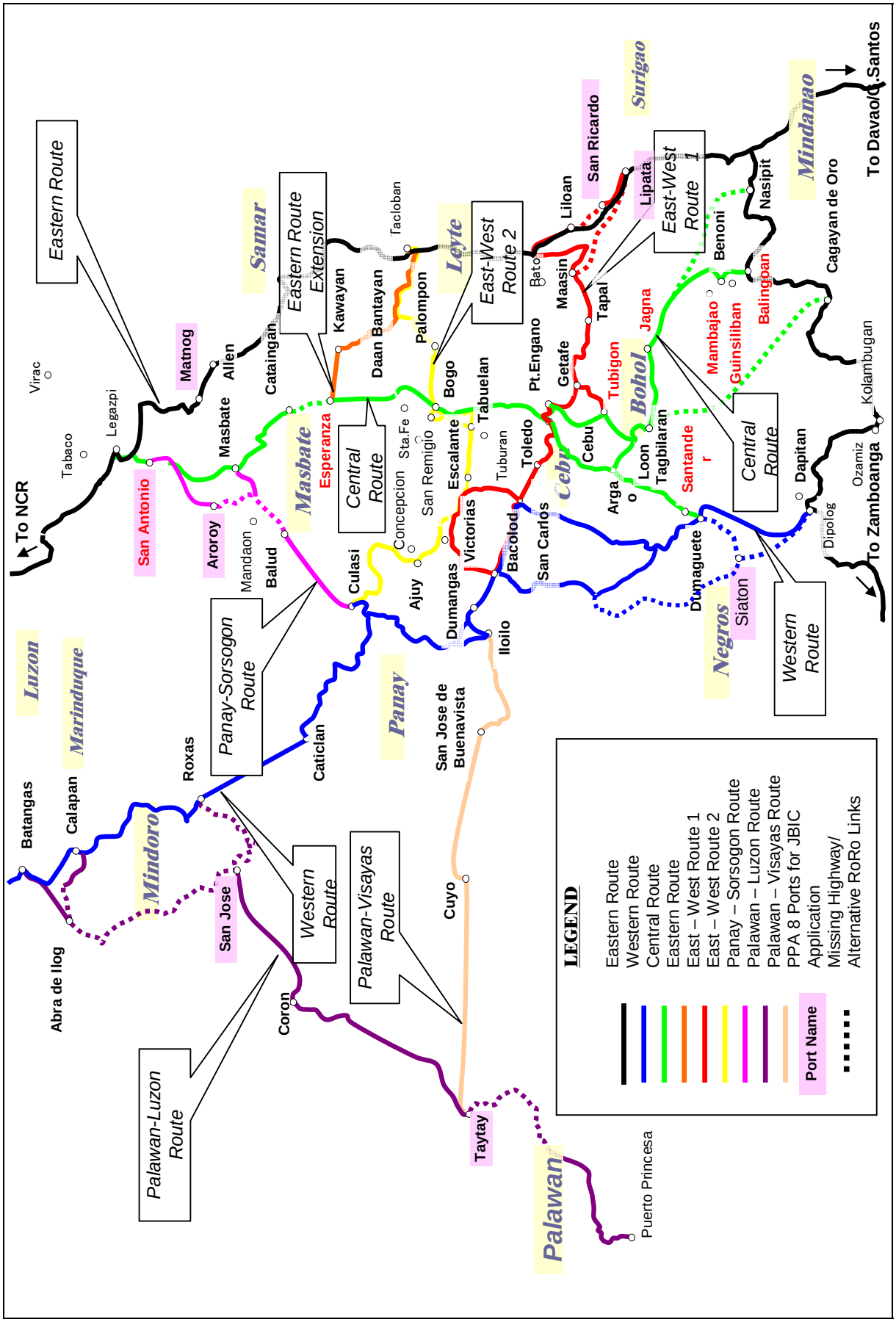



**Figure 6-11 Candidate Nautical Highway Routes**

**Table 6-4 List of Candidates of the RoRo Ports Along Nautical Highway Routes (1)**

| No | RRTS Route | Port[1] | | Administration | Connection | Port | Domestic Cargo '05 | Vehicle t. 2005 | Vehicle Share % | RoRo Serv. | Proposal | Freq. | Ramp | FS Candi.[5] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Easter Route** | *Junction with Pan-Philippinr Highwat to Manila*[4] | | | | | | | | | | | | |
| | | **Matnog** | Sorsogon | PPA | Allen/San Isidro | | 1,772,017 | 1,772,017 | **100%** | RoRo Opeartional | | 16/day | 4 | |
| | | **Allen/Dapdap** | Northern Samar | Private | Matnog | | 1,650,778 | 1,650,778 | **100%** | RoRo Opeartional | | 16/day | 5 | |
| | | **Liloan** | Southern Leyte | PPA | Lipata | | 404,895 | 404,335 | **100%** | RoRo Opeartional | | 4/day | 1 | |
| | | **San Ricardo** | Southern Leyte | PPA | Lipata | New | | | | None | | | | |
| | | **Lipata** | Surigao del Norte | PPA | Liloan/San Ricardo | | 405,032 | 366,110 | **90%** | RoRo Opeartional | | 4/day | 3 | |
| | | Junction with Mindanao Highway, Pan-Philippine Highway4 | | | | | | | | | | | | |
| 2 | Eastern Route Extension | *Cataingan*[4] : | *Junction with Central Route* | | | | | | | | | | | Δ |
| | | *Esperanza* | Masbate | (PPA) | Kawayan | New | | NA. | | None | | | | |
| | | **Kawayan** | Biliran | PPA | Esperanza/Cataingan | New | | NA. | | None | | | | ● |
| | | (Naval[3]) | Biliran | LGU | Espedranza/Cataingan | | 59,657 | 0 | 0.0% | None | | | | |
| | | *Tacloban City*[4] : | Junction with Eastern Route (Pan Philippine Highway | | | | | | | | | | | |
| 3 | Central Trunk Rt | *(Legaspi City*[4]*:* | Junction with Eastern Route, Pan-Philippine Highway) | | | | | | | | | | | |
| | | **San Antonio**[2,3] | Pilar, Sorsogon | PPA | | **New** | | NA | | None | Fund requested | - | | |
| | | **Masbate** | Masbate | PPA | Cebu | | 282,048 | 52,434 | 18.6% | RoRo Opeartional | | 3/wk | 3 | Δ |
| | | **Esperanza**[3] | Masbate | (PPA) | Daanbantayan/Bogo | **New** | | NA | | None | SONA | | None | ● |
| | | **Daanbantayan** | Cebu | LGU | Esperanza | **New** | | NA | | None | | | None | ● |
| | | **Cebu** | Cebu | CPA | Tubigon | | | | | RoRo Opeartional | | | Capable | Δ |
| | | **Tubigon**[3] | Bohol | PPA | Cebu | | 181,459 | 105,860 | **58%** | RoRo Opeartional | SONA | 7/day | 2 | |
| | | (Tagbilaran) | Bohol | PPA | Cebu | | 677,857 | 22,305 | 3.3% | RoRo Opeartional | | 3/day | 2 | |
| | | **Jagna**[3] | Bohol | PPA | Cebu | | 80,151 | 5,769 | 7.2% | RoRo Opeartional | SONA | 4/wk | 1 | ● |
| | | **(Mambajao**[3]**)** | Camiguin | PPA | Cebu | | | | | None | SONA | | 1 | ● |
| | | (Benoni) | Camiguin | PPA | Balingoan | | 15,248 | 12,341 | **81%** | RoRo Opeartional | | | 2 | ● |
| | | **(Guinsiliban**[3]**)** | Camiguin | PPA | Balingoan | | 12,324 | 10,425 | **85%** | RoRo Opeartional | SONA | 6/day | 1 | ● |
| | | **Balingoan** | Agusan del norte | PPA | Benoni/Guinsiliban | | 27,919 | 22,754 | **82%** | RoRo Opeartional | | 6/day | 2 | ● |
| | | *Mindanao HWY*[4] | | | | | | | | | | | | |
| | Alternative | (Cagayan de Oro) | Misamis Or. | PPA | Cebu/Tagbilaragn | | 2,972,814 | 19,061 | 0.6% | RoRo Opeartional | | 1/day | Capable | |
| | | (Nasipit) | Agusan del norte | PPA | Cebu via Jagna | | 1,274,981 | 55,849 | 4.4% | RoRo Opeartional | | 4/wk | Capable | |
| | Central Trunk Rt Extension | *Cebu City*[4] : | *Junction with Central Route* | | | | | | | | | | | |
| | | Santander[3] | Cebu | | | | | | | | | | | |
| | | (Samboan) | Cebu | LGU/CPA? | Dumaguete | | | | | None | | - | | Δ |
| | | **Mainit** | Cebu | Private | Sibulan | | 189,000 | 189,000 | **100%** | RoRo Opeartional | | 2/day | 2 | |
| | | **Matiao** | Cebu | Private | Tampi | | 920,000 | 920,000 | **100%** | RoRo Opeartional | | 12/day | 2 | |
| | | Dumaguete | Negros Or. | PPA | | | | | | | | | | |
| | | **(Sibulan)** | Negros Or. | Private | Mainit | | | | | RoRo Opeartional | | 2/day | Capable | |
| | | **(Tampi)** | Negros Or. | Private | Matiao | | | | | RoRo Opeartional | | 12/day | Capable | |
| | | *Dapitan/Dipolog*[4] : | *Junction with Western Route* | | | | | | | | | | | |
| 4 | Western Trunk Rt | *PanPhilippine HWY* | *Junction with EasternRoute to Manila*[4] | | | | | | | | | | | |
| | | **Batangas** | Batangas | PPA | Calapan | | 766,190 | 651,850 | **85.1%** | RoRo Opeartional | | 28/day | 8 | |
| | | **Calapan** | Mindoro | PPA | Batangas | | 690,791 | 651,707 | **94.3%** | RoRo Opeartional | | 28/day | 7 | |
| | | **Roxas** | Mindoro | PPA | Caticlaqn | Improve. | 174,276 | 163,061 | **93.6%** | RoRo Opeartional | | 4/day | 1 | |
| | | **Caticlan** | Antique | LGU | Roxas | **New** | | | | RoRo Opeartional | | 4/day | 1 | ● |
| | | **Dumangas** | Iloilo | PPA | Bacolod | | 352,356 | 133,500 | 37.9% | RoRo Opeartional | | 2/day | 1 | ● |
| | | **Bacolod** | Negros Occ. | Private | Iliolio/Dumangas | | 1,870,666 | 265,135 | 14.2% | RoRo Opeartional | | 6/day | 4 | |
| | | **Dumaguete** | Negros Or. | PPA | Dapitan | | 531,447 | 29,377 | 5.5% | RoRo Opeartional | | 4/day | 2 | |
| | | **Siaton**[2] | Negros Or. | PPA | N.A. | | | | | None | Fund requested | - | None | |
| | | **Dapitan/Dipolog** | Misamis Occ. | PPA/Private | Dumaguete | | 263,286 | 7,343 | 2.8% | RoRo Opeartional | | 4/day | 1 | |
| | | *Dapitan City*[4] | Junction with Mindanao Highways | | | | | | | | | | | |

Source: Study Team

## Table 6-5 List of Candidates of the RoRo Ports Along Nautical Highway Routes (2)

| No. | RRTS Route | Port[1] | | Administrated | Connection | Port | | | | RoRo Serv. | Proposal | Freq. | Ramp | FS Candi.[5] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | East-west Rt -1 | *(Bacolod City[4] :* | *Junction with Western Route* | | | | | | | | | | | |
| | | **San Carlos** | Negros Occ. | PPA | Toledo | | 144,488 | 114,285 | **79.1%** | RoRo Opeartional | | 8/day | 3 | ● |
| | | **Toledo** | Cebu | CPA | San Carlos | | 133,257 | 133,257 | | RoRo Opeartional | | 8/day | 1 | ● |
| | | **Pt. Engano** | Cebu | CPA | Getafe | | | | | RoRo Opeartional | | 3/day | 1 | ● |
| | | **Getafe** | Bohol | PPA | Pt. Engano | | 9,450 | 0 | 0.0% | RoRo Opeartional | | 3/day | 1 | ● |
| | | **(Ubay[3])** | Bohol | PPA | Maasin/Bato | | 40,610 | 206 | 0.5% | RoRo Opeartional | SONA | 1/day | 2 | △ |
| | | Tapal | Bohol | PPA | | | 50,344 | 110 | 0.2% | None | | | 2 | ● |
| | | **Maasin[3]** | Southern Leyte | PPA | Ubay | | 85,890 | 4,200 | 4.9% | | SONA | | 1 | ● |
| | | *(Lipata[2] ) :* | Junction with Eastern Route, Pan-Philippine Highway[4] | | | | | | | | Fund requested | | 3 | |
| 6 | East-west Rt - 2 | *(Roxas City [4])* | *Junction with Western Route)* | | | | | | | | | | | |
| | | **Culasi, Ajuy** | Iloilo | Private/CPA | Victorias | | 30,688 | 1,515 | 4.9% | None | | | | ● |
| | | **Victorias** | Negros Occ. | LGU | | | 10,054 | 0 | 0.0% | None | | | | ● |
| | | **Escalante** | Negros Occ. | LGU | Tabuelan | | 111,808 | 111,808 | **100.0%** | RoRo Opeartional | | 3/day | 2 | |
| | | **Tabuelan** | Cebu | Private/CPA | Escalante | | 417,600 | 417,600 | **100.0%** | RoRo Opeartional | | 3/day | 1 | ● |
| | | **Bogo** | Cebu | CPA/LGU | Palompon | | | | | None | | | | ● |
| | | **Palompon** | Leyte | PPA | Bogo | | 58,972 | 82 | 0.1% | None | | | 1 | |
| | | *(Tacloban)[4]* | *Junction with Eastern Route* | | | | | | | | | | | |
| 7 | Panay - Sorsogon Route | *Roxas City[4]* | *Junction with Western Route* | | | | | | | | | | | |
| | | **Culasi, Roxas** | Capis | PPA | Balud | | 178,958 | 2,817 | 1.6% | None | | | 1 | ● |
| | | **Balud** | Masbate | LGU | Culasi, Roxas | | | | | None | | | | ● |
| | | **Aroroy[2,3]** | Masbate | PPA | San Antonio | | | | | None | SONA,Fund Reqtd. | | 1 | |
| | | **San Antonio** | Sorogon | PPA | Aroroy | | | | | | | | | |
| | | *(Legaspi City)[4]* | Junction with Eastern Route | | | | | | | | | | | |
| 8 | Palawan Luzon Rt | *(Batangas)[4]* | *Junction with Western Route* | | | | | | | | | | | |
| | | **Abla de Ilog** | Mindoro | PPA | Batangas | | 351,559 | 351,559 | **100.0%** | RoRo Opeartional | | 4/day | 2 | |
| | | **San Jose[2]** | Mindoro | PPA | Batangas | Improve. | 258,625 | 86,068 | 33.3% | None | Fund requested | - | 1 | |
| | | **Coron** | Palawan | PPA | San Jose | | 45,097 | 681 | 1.5% | ? | | - | Capable | |
| | | **Taytay[2]** | Palwan | PPA | Coron | **New** | | | | None | Fund requested | - | None | |
| | | *(Puerto Princesa)[4]* | | | | | | | | | | | | |
| 9 | Palawan Visayas Rt | *(Iloilo City)[4]* | *Junction with Western Route* | | | | | | | | | | | |
| | | **San Jose de Buenavista** | Aklan | PPA | Cuyo/Taytay | Improve. | 55,547 | 2,683 | 4.8% | None | | - | 1 | ● |
| | | **Cuyo** | Palawan | PPA | S Jose Buenavista/Taytay | | 40,188 | 531 | 1.3% | None | | - | Capable | |
| | | *(Taytay[4]* | *Junction with Palawan Luzon Route* | | | | | | | | | | | |
| | | *Lucena* | | | | | 10,859 | 3,979 | 36.6% | | | | | |
| | | *Total* | | | | | 17,609,186 | 8,742,392 | 49.6% | | | | | |

Legend

1 RoRo Terminals along the RRTS Trunk and Complementary Routes
2 PPA 8 ports under evaluation of NEDA for Funding
3 SONA ports
4 Junction to other Nautical HighwaysRRTS Routes.
5 ● : Those ports that the Study Team assessed the Feasibility Study is nedcessary, △ : F/S may be needed
(Port Name) Alternative RoRo Terminals

Source: Study Team

# 7. Selection of RoRo Ports for the Feasibility Studies

## 7.1 Existing situation of the Candidate Routes and RoRo Ports

### 7.1.1 Candidate Routes

Field reconnaissance surveys have been conducted jointly by the study Team and the Counter Part study Team as well as the local consultants. The surveys were carried out along the candidate routes identified in Chapter 6. The results of the surveys were summarized in Appendix I-7-1-1 route by route and port by port.

The highways connecting RoRo ports were also surveyed to identify those sections that need improvements. In general, the highways along the candidate routes are fairly well developed except in Masbate Island, a part of the highway in Palawan Island and eastern coast al highway in Mindoro Island. More specifically, the following sections need improvements:

-Central Route;

Almost all the highway links in Masbate Island, except Masbate City – Cataingan – Placer.

-Panay-Sorsogon Route;

Balud – Aroroy section in Masbate Island

-Palawan – Luzon Route;

Roxas – TayTay in Palawan and San Jose – Abra de Ilog- Calapan in Mindoro Island

-Palawan Visayas Route;

San Jose de Buenavista – Iloilo in Panay Island

### 7.1.2 RoRo Ports

Surveys for RoRo ports along the candidate routes were carried out by the Study Team in terms of natural conditions, existing infrastructures and potential for development. The result of surveys is summarized in the Table 7-1 - Inventory of RoRo Ports - Summary. The detailed inventory with photos is attached in the Appendix I-5-3-1. The Study Team also carried out topographic/hydrographic surveys for 10 candidates RoRo ports as listed hereunder. The maps are attached in the Appendix I-5-3-2. Be noted that additional surveys as well as soil investigations will be conducted to fulfill the 15 candidate ports.

-Dumangas (Iloilo, Panay Isd.)

-Culasi / Ajuy (Iloilo, Panay Isd.)

-Caticlan / Tabon (Aklan, Panay Isd.)

-San Jose de Buenavista (Antique, Panay Isd.)

-Toledo (Cebu, Cebu Isd.)

-Tabuelan (Cebu, Cebu Isd.)

-Bogo (Cebu, Cebu Isd.)

-Ubay (Bohol, Bohol Isd.)

-Tapal (Bohol, Bohol Isd.)

-Getafe (Bohol, Bohol Isd.)

## Table 7-1 Inventory of RoRo Ports - Summary

| RRTS Route | Port | Admin by | Link with | SONA 2006 | RoRo Service | Existing Infrastructure | | | | Fund Rqst (NEDA Evalu) | F/S Candidate |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Natural Condition | Depth | Ramp | Remarks | | |
| Eastern Trunk | **Matnog** | PPA | Allen/San Isidro | | Operational | Behind Isd. | -5m~ | 3 (2) | Addt'l pier/ramp by expansion of existing. | Imprv | |
| | **San Ricardo** | PPA | Lipata | | None | Waves, Current | Deep | | Alternative to Liloan at a new site. | New | |
| | **Lipata** | PPA | San Ricardo/Liloan | | Operational | Waves | -5m~ | 2 (1) | Addt'l pier/ramp by expansion of existing. | Imprv | |
| Eastern Ext | **Kawayan** | PPA | Esperanza/ Cataingan | | None | Behind Isd. | Shallow | | New pier/ramp by extension of causeway. PPA project. | | X |
| Central Trunk | **San Antonio** | PPA | Masbate | x | None | Beach, Open sea | Shallow | | Alternative to Pilar (shallow) at a new site. | New | X |
| | **Masbate** | PPA | San Antonio | | Operational | Well sheltered | -9m~ | 3 | Good infrastructure except terminal building | | |
| | **Cataingan** | LGU | Kawayan/ Daanbantayan | | None | Well sheltered | -4m~ | None | Existing feeder port. No RoRo function. | | |
| | **Esperanza** | PPA | Kawayan/ Daanbantayan | x | None | Open to SW | Reef | | Causeway, pier/ramp at a new site (with breakwater). | | X |
| | **Daanbantayan** | CPA | Esperanza | | None | Open to NE | Reef | | Causeway, pier/ramp at a new site (with breakwater). | | X |
| | **Cebu** | CPA | Tubigon | | Operational | Well sheltered | Capable | Capable | | | |
| | **Tubigon** | PPA | Cebu | x | Operational | Sheltered | -5m~ | 2 | Good infrastructure except terminal building | | |
| | **Jagna** | PPA | Mambajao | x | Operational | Sheltered | -3m~ | 1 | Expasion project underway by PPA. | | |
| | **Mambajao** | PPA | Jagna/Balingoan | x | None | Open to North | NA | 1 | Poor/damaged facilities. | | |
| | **Benoni** | PPA | Balingoan | | Operational | Sheltered | NA | 2 | RoRo functioning with minimum facilities. | | |
| | **Guinsiliban** | PPA | Balingoan | x | Operational | Open to South | NA | | Poor/damaged facilities. | | |
| | **Balingoan** | PPA | Benoni/Guinsiliban | | Operational | Well sheltered | -3m~ | | Minimum RoRo function. Poor backup area. | | |
| Central Ext | **Santander** | CPA/Prv | Dumaguete | x | Operational | | | | Private facilities: Samboan, Mainit, Matiao | | |
| Western Trunk | **Caticlan/Tabon** | LGU->PPA | Roxas | | Operational at existing port | Sheltered beach (New site) | NA | | Alternative to existing port prone to waves at a new site. | | X |
| | **Dumangas** | PPA | Bacolod | | Operational | Current, Siltation | -1~-2m | 1 | Widereclaimed backup area. Shallow due to siltation. | | X |
| | **Siaton** | PPA | Dipolog/Dapitan | | None | Sheltered beach | Capable | | Alternative to existing port at a new site. | New | |
| East-West -1 | **San Carlos** | PPA | Toledo | | Operational | Well sheltered | Capable | 3 | Good infrastructure except terminal building | | |
| | **Toledo** | CPA | San Carlos | | Operational | Open to West | -3m~ | 1 | Incovenient ramp layout. Poor backup area. | | X |
| | **Pt. Engano** | CPA | Getafe | | Operational | Open to East | Reef | 1 | Beside Hilton htl. Narrow access. Minimum facilities. | | X |
| | **Getafe** | PPA | Pt. Engano | | Operational | Well sheltered | -3m~ | 1 | Minimum RoRo function. Poor backup area. | | X |
| | **Ubay** | PPA | Maasin | x | Operational | Well sheltered | -2m~ | 2 | Shallow. Minimum RoRo function. Poor backup area. | | X |
| | **Tapal** | PPA | Maasin | | None | Well sheltered, Current | -4m~ | 1 | Being utilized for cargoes. Poor backup are. | | |
| | **Maasin** | PPA | Ubay/Tapal | x | Operational | Sheltered | -5m~ | 1 | Good infrastructure. | | |
| East-West -2 | **Culasi/Ajuy** | LGU | Victorias/Cadiz | | None | Well sheltered | -3m~ | None | Existing feeder port. No RoRo function at present. | | X |
| | **Victorias** | LGU | Culasi/Ajuy | | None | Mangrove | Shallow | None | Quite few potential for development due to tech'l/envir'l conditions. | | |
| | **Cadiz** | LGU | Culasi/Ajuy | | None | Open to North | NA | None | Alternative to Victorias. New causeway, pier/ramp under construction. (Altrv Manapla) | | |
| | **Escalante** | PPA/Prv | Tabuelan | | Operational | Well sheltered | -3m~ | 2 | Operated by 2 private ramps. 1ramp underway by PPA. | | |
| | **Tabuelan** | LGU/Prv | Escalante | | Operational | Well sheltered | NA | 2 | Poort infrastructure for RoRo. Poor backup area. | | X |
| | **Bogo** | LGU | Palompon | | None | Well sheltered | -7m~ | 2 | Poor RoRo function with no backup area. | | X |
| | **Palompon** | PPA | Bogo | | None | Well sheltered | Capable | 1 | Good infrastructure under-untilized. | | |
| Panay-Sorsogon | **Arroy** | PPA | San Antonio | x | None | Open to NE | Reef | | Alternative to existing feeder port to a new site. Exisiting is shallow, no RoRo function. | New | |
| | **Balud** | LGU | Culasi/Roxas | | None | Open to West | Reef | | New construction based on existing causeway (w/breawater). | | X |
| Pawalan-Luzon | **San Jose** | PPA | Coron | | None | Well sheltered | -3m~ | 2 | Alternative to existing port at a new site. | New | |
| | **Taytay** | PPA | Coron | | None | Well sheltered | NA | | Totally new port. | New | X |
| Palawan-Visayas | **San Jose de Buenavista** | PPA | Cuyo | | None | SW waves | -3m~ | 1 | Potential facilities but under-utilized. (Extension of breakwater rq'd) | | |

### 7.1.3 Preliminary assessment of financial feasibility of RoRo Ferry Service

The vital element of RRTS development is to ensure the sustainable operation of the RoRo ferries with appropriate frequency of service. In order to ensure such RoRo ferry operation, the traffic must be large enough for the operators of RoRo ferries and RoRo terminals. Though the financial feasibility shall be examined in detail in later stage, it is worthwhile to review the current status of the existing RoRo ferry services.

Short-distance RoRo ferries are plying in various links throughout the country. Table 7-2 shows the cargo and passenger traffic recorded at the RoRo ports in Cebu and Mindoro Islands, while Table 7-3 shows the .RoRo ferry operation characteristics.

**Table 7-2 Current status of RoRo Ferry Service (Source: CPA and PPA)**

| RoRo Link | | | | 2005 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Between | | | | Cargo | | | | Passenger | | |
| Port | | Port | | In | Out | Total | Truck Unit | In | Out | Total |
| Argao | Cebu | Loon | Bohol | 64,800 | 65,000 | 129,800 | 5,700 | 14,400 | 14,700 | 29,100 |
| Mainit | Cebu (Santander) | Sibulan | Negros Or | 94,000 | 95,000 | 189,000 | 5,060 | 11,500 | 11,680 | 23,180 |
| Bato(Samboan) | Cebu (Santander) | Tampi | Negros Or | 450,000 | 470,000 | 920,000 | 9,070 | 118,000 | 120,000 | 238,000 |
| Liloan (Fast Craft) | Cebu (Santander) | Sibulan | Negros Or | | | | | 63,000 | 75,600 | 138,600 |
| Talisay | Cebu (Santander) | Amlan | Negros Or | | | | | 71,280 | 79,200 | 150,480 |
| Liloan(Pumpboat) | Cebu (Santander) | Sibulan | Negros Or | | | | | 237,600 | 277,200 | 514,800 |
| Dumanjug | Cebu | Guinhulngan | Negros Or | 9,102 | 6,735 | 15,837 | | 135,021 | 132,280 | 267,301 |
| Tabuelan | Cebu | Escalante | Negros Occ | 194,400 | 223,200 | 417,600 | 13,140 | 75,600 | 59,000 | 134,600 |
| Toledo | Cebu | San Carlos | Negros Occ | 70,662 | 62,595 | 133,257 | | 292,338 | 233,235 | 525,573 |
| Calapan | Mindoro Or. | Batangas | | 328,824 | 322,888 | 651,712 | 155,000 | 663,028 | 642,353 | 1,305,381 |
| Roxas * | Mindoro Or. | Caticlan | | 98,088 | 117,724 | 215,812 | 13,000 | 421,478 | 374,448 | 795,926 |

* 2006 Jan. Jun.

**Table 7-3 RoRo Ferry Operation Characteristics (Source: CPA and PPA)**

| Port | Shipping Service | | | | | | | Distance Nautical milesMilea | Travel Time | |
|---|---|---|---|---|---|---|---|---|---|---|
| | RoRo | | | | | Fast Craft | | | | |
| | Freq./Day | Fleet | Size(GRT) | Pax Capa | Speed(Kt) | Freq./day | Pax Capa. | | RoRo | Fast Craft |
| Argao | 2-3 | 1 | 242 | 112 | 7 | N.A. | N.A. | 16 | 2 | N.A. |
| Mainit | 4 | 2 | 235 | 100 | 6 | N.A. | N.A. | | 1 | N.A. |
| Bato(Samboan) | 13 | 5 | 120-273 | 100-180 | 6-7 | N.A. | N.A. | 4 | | N.A. |
| Liloan | N.A. | N.A. | N.A. | N.A. | N.A. | 7 | 73 | 4 | | 1 |
| Talisay | N.A. | N.A. | N.A. | N.A. | N.A. | 11 | 70 | 4 | | 1 |
| Liloan | N.A. | N.A. | N.A. | N.A. | N.A. | 22 | 50 | 4 | | 0 |
| Dumanjug | 2 | 1 | 88 | 85 | 8 | 7 | 236-318 | 11 | | 2 |
| Tabuelan | 6 | 3 | 200-240 | 150-200 | 8.5-9.5 | | | 18 | 2 | |
| Toledo | 3 | 1 | 490 | 587 | 11 | 10 | 70-84 | 15 | 2 | 1 |
| Calapan | 37 | 13 | 280-2,900 | 226-785 | | 7 | 332 | | 2 | 1 |
| Roxas | 6 | 3 | 450-1200 | 200-500 | | N.A. | N.A. | | 4 | N.A. |

Based on Table 7-2 and Table 7-3, average cargo volumes and number of passengers per service are calculated (see Table 7-4). The average of cargo volume and passenger are 117 tons and 87 passengers, respectively.

**Table 7-4 Per Ship Cargo and Passenger Traffic (Source: Study Team)**

| Port | Cargo Vol. (ton) | Passenger | Frequency per day | Per ship Cargo | Per ship Pax |
|---|---|---|---|---|---|
| Argao | 129,800 | 29,100 | 3 | 120 | 27 |
| Mainit | 189,000 | 23,180 | 4 | 131 | 16 |
| Bato | 920,000 | 238,000 | 13 | 197 | 51 |
| Liloan (Fast Craft) | | 138,600 | | | 55 |
| Talisay | | 150,480 | | | 38 |
| Liloan(Pumpboat) | | 514,800 | | | 65 |
| Dumanjug | 15,837 | 267,301 | 2 | 22 | 83 |
| Tabuelan | 417,600 | 134,600 | 6 | 193 | 62 |
| Toledo | 133,257 | 525,573 | 3 | 123 | 104 |
| Calapan | 651,712 | 1,305,381 | 37 | 49 | 82 |
| Roxas * | 215,812 | 795,926 | 6 | 100 | 368 |
| * 2006 Jan. Jun. | | | **Average** | **117** | **87** |

It is matter of course, the service frequency is determined by various parameters such as traffic volume, capacity, fare and the business policy of the ship operators. As observed in Table 7-3, the size of RoRo ships employed in these links varies 100 to 3,000 GRT, and the minimum load per ship should consequently vary by link. In fact it is seen in Figure 7-1 and Figure 7-2 that, at Liloan (Fast Craft and Pump Boat) and Talisay Ports where only passenger ships smaller sizes are serving, the passenger load per trip is much less than average. Since the RoRo ferries carry both cargos and passengers, at those links where the passenger traffic is small, the cargo volumes are much larger than average: Tabuelan, Bato, Mainit, and Argao Ports.

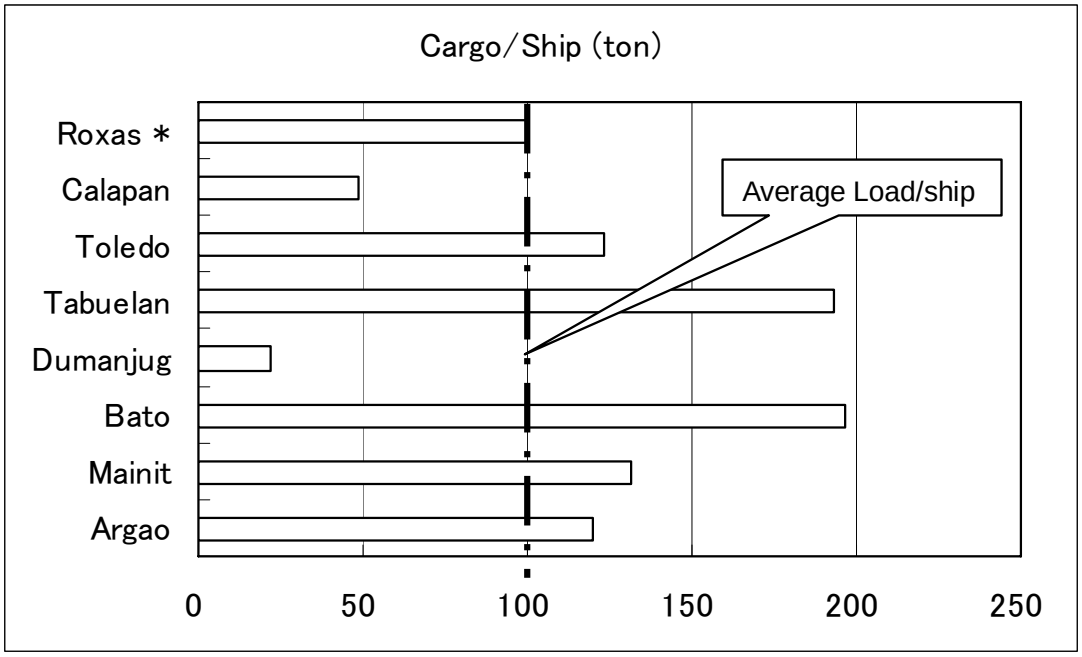



**Figure 7-1 Cargo load per round trip in existing RoRo Ferry Links (Source: Study Team)**

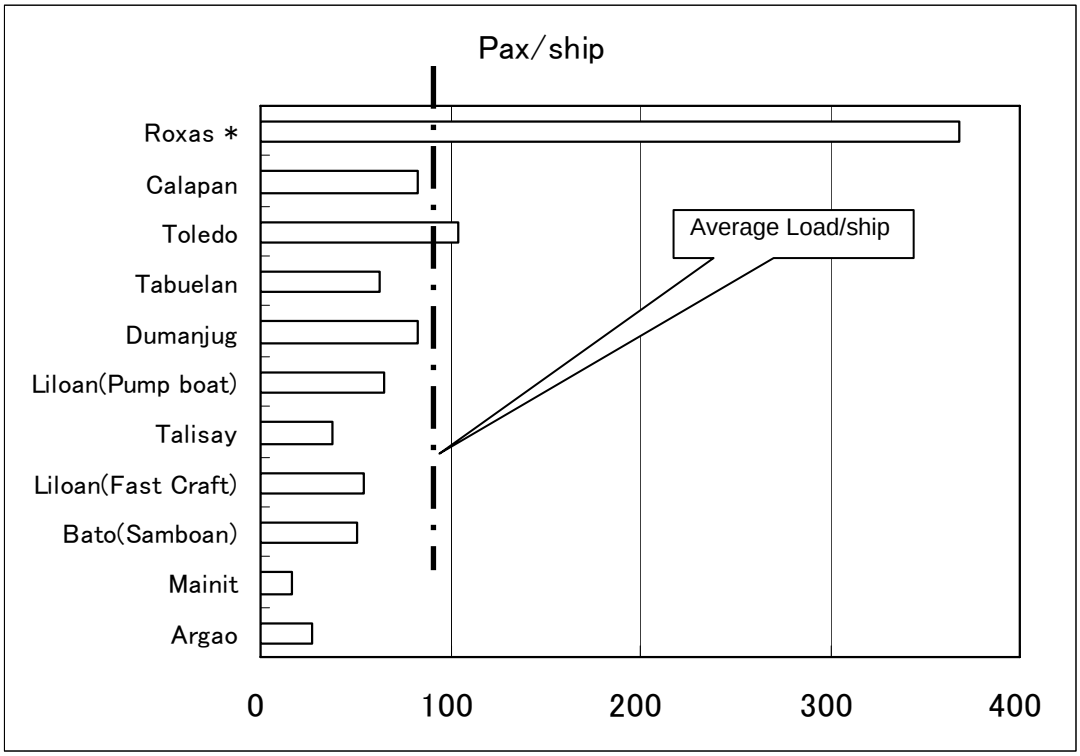


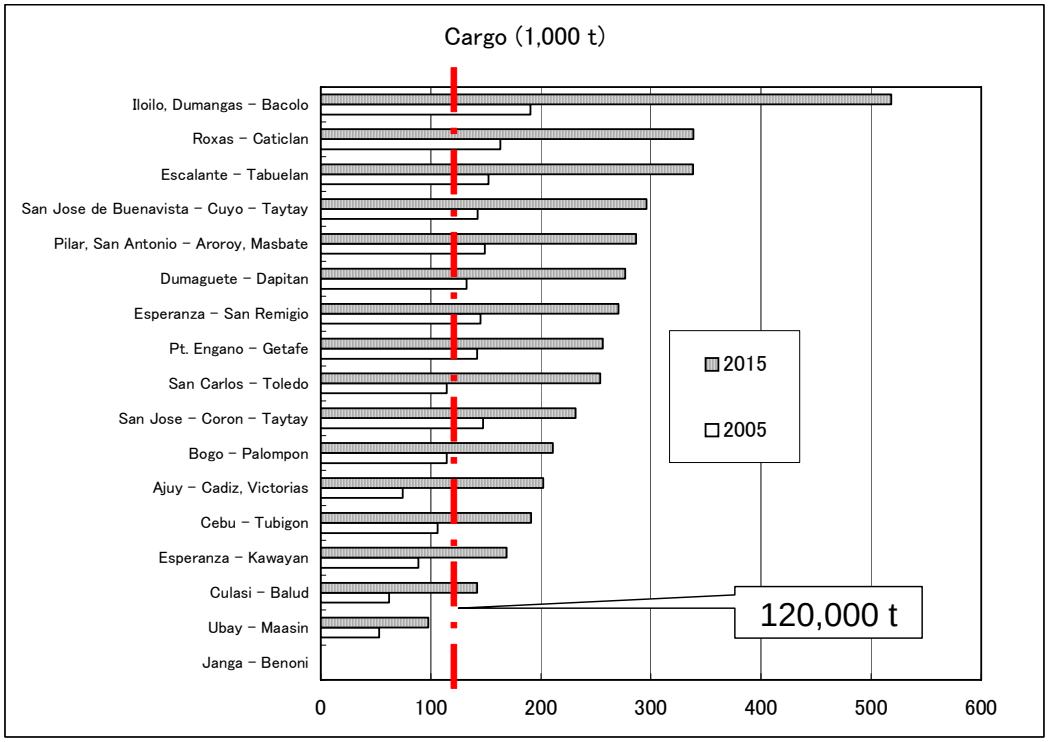

**Figure 7-2 Passenger Load per Round Trip in Existing Ferry Links (Source: Study Team)**

For the purpose of getting an idea of the minimum traffic volume that makes RoRo ferry operation financially feasible, the minimum cargo and passenger traffic volumes are roughly estimated based on the average load per ship obtained above: this assumes that the ferry operators could have stopped operation if the service is not profitable and, therefore, that the operation along the existing links should be above break even point.

It is assumed that the RoRo ferry service along RRTS links should be minimum four round trips a day with average loads of 100 tons of cargo and 80 passengers per round trip based on the average load calculated above. The minimum cargo passenger traffic volumes per year are estimated to be 144,000 tons and 115,000 passengers respectively. These minimum volumes of both cargo and passenger load should be fulfilled together. At the links where the passenger traffic is lower than the minimum load, the cargo load should be more than the minimum volume.

In order to assess the feasibility of the RoRo ferry service, the traffic volumes of the ports along the candidate RRTS routes have been compared with the criteria of the minimum load of 144,000 tons and 115,000 passengers. Figure 7-3 shows the potential cargo traffic (total of inbound and outbound cargos) estimated at the RoRo links along the RoRo routes in 2005 and 2015. In the figure, the level of 120,000 tons is shown in a chain line. Figure 7-4 is drawn for the potential passenger traffic in the same manner and the chain line shows the level of 150,000 passengers. It is observed in these figures that, in many RoRo links, the cargo and passenger traffic volumes in 2015 are large than the minimum traffic volumes to make daily RoRo ferry service financially viable: The minimum traffic levels of 120,000 tons and 150,000 passengers have been estimated on the basis of the assumption that a RoRo ship having GRT makes four round trips per day by 500 GRT ship.

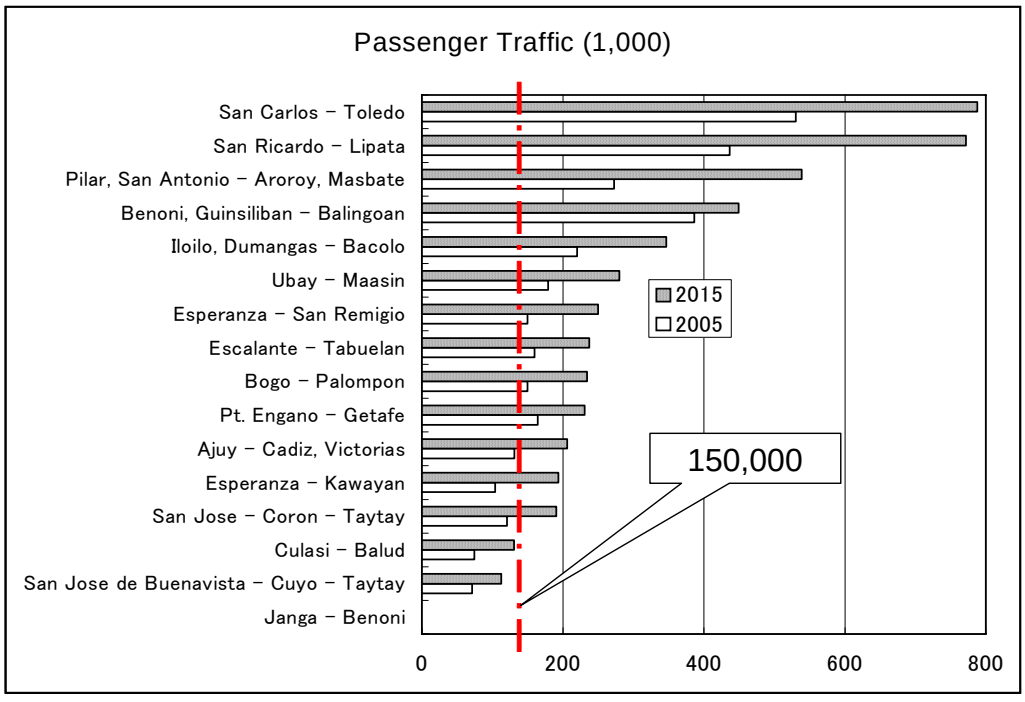
For longer distance RoRo links where the travel time is longer than three hours, two or more ship should be deployed to ensure the service frequency of four round trips per day. In addition, for the RoRo links crossing open sea, larger ships should be employed to secure the safety and regularity of service. Thus, the financial viability shall be further examined more precisely in later stage of the study.




Source: Study Team

**Figure 7-3 Cargo Traffic Forecast along RoRo Links**

Figure 7-4 is drawn for the passenger traffic (total of disembarked and embarked passengers) in the same manner: the chain line in the figure indicates the level of 115,000 passengers.




Source: Study Team

**Figure 7-4 Passenger traffic forecast along RoRo links**

As seen in existing short-distance shipping service, many RoRo links are competing with the passenger fast craft. Though, the cargo and passenger are expected to grow in the coming years and, when RoRo ferry service starts, additional traffic may be generated anew, yet some measures should be done for the generation of traffic.

One of the possible ways is to formulate RRTS routes to concentrate the traffic flow. Masbate –Sorsogon link is the key RRTS link to realize the Central Trunk Route, the Eastern Trunk Route and Panay – Sorsogon Complementary Route. The study shall be discussing the feasibility of RRTS candidate routes not only Route by Route but also as a whole net work. Figure 7-5 shows how the traffic will be increased with the RRTS connection with adjacent islands. Without the three RRTS Trunk Routs, the link serves as the RoRo link to remote island, i.e. Masbate Island (a in Figure 7-5), while, with the RRTS Routes, the link serves for both local traffic generated in Masbate Island and through traffic generated at adjacent island (b in Figure 7-5).

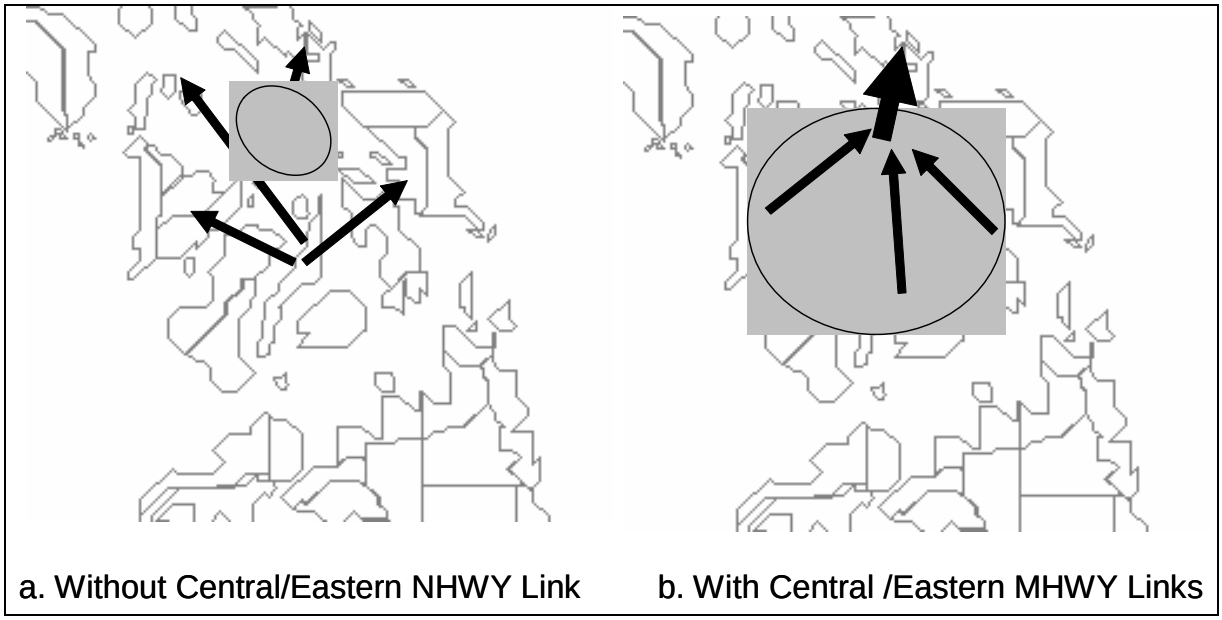



**Figure 7-5 Strategic Formation of RRTS Routes (Source: Study Team)**

Another possible measure to promote RoRo ferry service would be to make the travel time of the ferry as short as possible. The outstanding advantage of RoRo ferry service is the quick delivery of goods without the spoilage and pilferage. On the other hand, it requires additional cost for the shipping of trucks as well as goods and the cost of trucks that are idle during the voyage (See Figure 7-6).

Thus, for the maximum use of the advantage of the RoRo ferry service, a RoRo link is better as short as possible and the truck should be fully utilized after the arrival to other side of the RoRo link. As shown in Figure 7-7, with a short-distance RoRo ferry service, a truck will be able to deliver goods in a large service area within a day or two. This type of delivery, which is often called logistic service, can be possible only with RoRo ferries. The more widely Supermarket, Convenience shop (Seven-eleven), Food/Restaurant chains spread over the country, the further the demand of RoRo service is expected to increase.

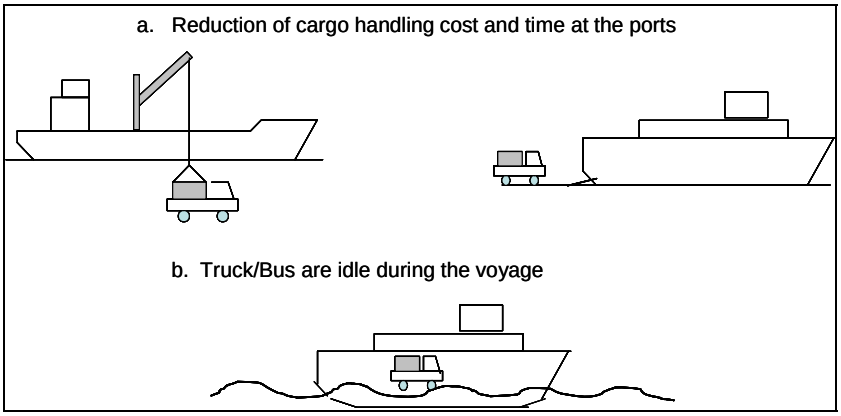



**Figure 7-6 Advantage and Disadvantage of RoRo Ferry Service (Source: Study Team)**

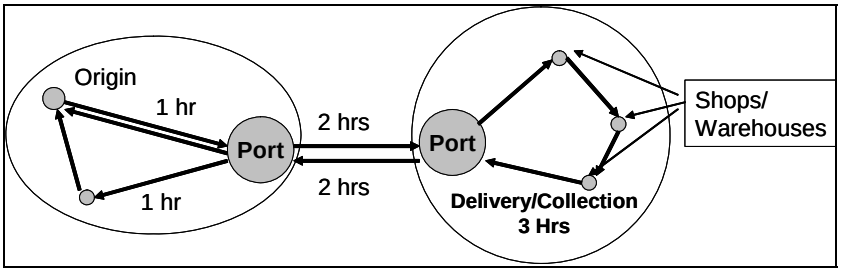
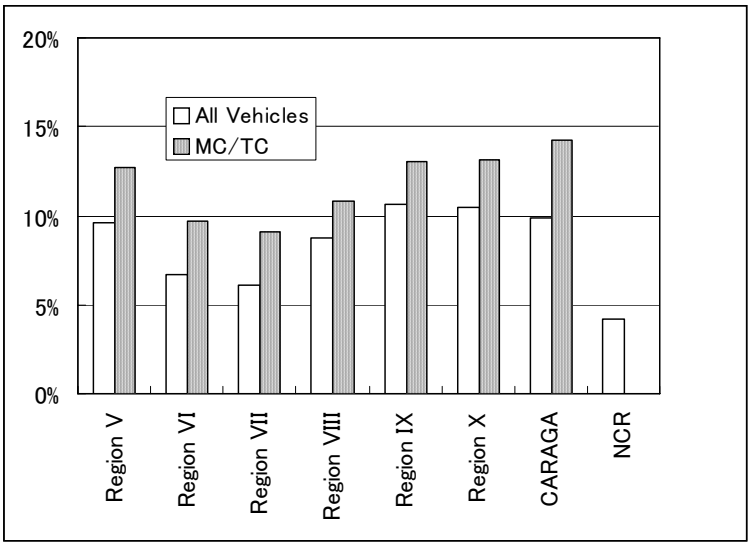



**Figure 7-7 Typical Delivery Service by a Truck with RoRo Ferry Service (Source: Study Team)**

In addition to the trucks and buses, which are the principal users of RoRo Ferries, passenger cars are also clients. The motor vehicle registration records show that the annual increase rate over the past five years in Region V (Bicol region including Masbate), Region VI, VII, VIII (Visayas Regions), Region IX, X, and Caraga are higher than that of in NCR. As seen in Figure 7-8, the increase rates of motorcycles and tricycles in these regions are remarkable (9 to 14%). Thus, it is said the potential clients of the RoRo ferries interconnecting these regions is growing. The full analysis of financial analysis as well as economic analysis shall be carried out in later stage of the study.




(Source: Study Team)

**Figure 7-8 Average Increase Rate of Number of Registered Motor Vehicles Feasibility Evaluation of Candidate RRTS Routes**

### 7.1.4 RoRo transport system development Policy

In Chapter 2, historical studies on RoRo transport system development were reviewed. In early 1990's, the study of the development of RoRo transport system started from link by link development and thus, efforts were made on identifying the potential RoRo links. Over the period of 1990's, many secondhand RoRo ships were procured from Japan, and they were deployed in the RoRo ferry links identified in the previous study.

To promote the RoRo ferry service further, DOTC took steps to update the RoRo transport system development plan. In the course of the preparation of medium term development plan, the development policy of RoRo transport system had been refined from link by link development to the development of inter-modal transport corridors that consists of highway and RoRo ferry links such as Bohol Ferry development and Trans Visayas RoRo ferries. The concept of Nautical Highway was also elaborated for the purpose of establishing alternative transport routes between Mindanao and Luzon via. Visayas.

The Port Master Plan Study reviewed and integrated the port development plans and formulated a strategic development plan for the whole port system in the Philippines, including International Gateways, Domestic Maritime Corridors that comprises of long-distance shipping and the network of major ports, and RoRo Ports. The study further classified RoRo port into four categories: Inter-modal Trunk Routes, lateral RoRo routes interconnecting the trunk routes for mobility enhancement within and between regions, RoRo ports for remote islands, and RoRo port for Social Reform support. The role of Domestic Maritime Corridors and Inter-modal Trunk Route is to provide transport corridor between Mindanao and Luzon via Visayas.

### 7.1.5 Current Status of Shipping Routes and Missing Links

The Maritime Corridor (long-distance domestic shipping routes) and the Inter-modal Trunk Routes (Pan-Philippine Highway and Strong Republic Nautical Highway) serve mainly for the transportation between Mindanao/Visayas Island and NCR. Short-distance RoRo ferry links are currently operational in various links in Visayas regions, especially between Cebu Island and adjacent islands. These short-distance RoRo ferry links serve as complementary routes between Maritime Corridors and Intermodal Trunk Routes, but yet there are still missing links.

RoRo ferry links and service frequencies between Region V /VIII (Cebu, Negros Panay, and Bohol) and Region V/VII (Bicol including Masbate, Samar, Leyte) or Region X/CARAGA are much fewer than those within Region VI/VII/IX. The Central and Eastern Trunk Routes have been proposed to establish intermodal transport routes along these missing links.

Thus, the study team has chosen the Central Trunk Route and Eastern Trunk Route extension as candidate RRTS routes as well as Region V – Region VI route, which is another missing link. With the aim of improving the RoRo ferry service between Region VI/VII and Region VIII, two east-west routes have been chosen in the light of the existing ferry routes. In addition, Palawan –Visayas/Luzon Routes have been also chosen as proposed in the Port Master Plan.

Summing up these routes, a total of seven conceptual RRTS Routes have been identified:

Central Trunk Route, Eastern Trunk Route Extension, East-West Route 1, East-west Route 2, Panay –Sorsogon Route, Palawan Luzon Route, and Palawan Visayas Route.

These RRTS routes would promote cargo and passenger flow between Cebu and under-developed regions.

In the light of the field reconnaissance survey, potential RoRo ports along the seven routes have been identified. Since the feasibility study for the port development for the RoRo route

Zamboanga –Sulu archipelago has been completed, above seven routes cover all the areas that want the establishment of regular RoRo ferry service. The candidate RRTS routes and the alternative RoRo ports are presented in Chapter 6 (or see Appendix I-6-3-1). The alternative RoRo ports have been chosen in the light of the geographical location of populated areas and highway condition and the connection to ports, distance of the RoRo ferry links.

### 7.1.6 Preliminary Assessment of the RRTS Candidate Routes

The feasibility of the seven candidate RRTS have been briefly assessed from the viewpoints of national economy and financial soundness of the RoRo ship operators. The results of the preliminary assessment indicate that RoRo ferry service along the candidate routes have potential to shorten the travel time of short-distance trips within two RoRo links. Thus, the development of the routes is beneficial especially for Region V through VIII and Palawan.

In most of the short-distance RoRo Links, the shipping lines seem to operate RoRo ships with marginal benefit. To ensure the sustainable ferry operation, generation of through traffic is vital as well as promotion of local traffic. To this end, the RRTS route should be developed as a network rather than link by link development.

## 7.2 Selection of RoRo Terminals for the Feasibility Study

The feasibility of the development of RoRo route should be examined from the following viewpoints:

-Is each RoRo link that composes the entire route financially viable for the RoRo ship operation?

-Is the project of the RoRo route will bring substantial benefit to the national economy?

The first viewpoint is vital to ensure the sustainability of RoRo ship operation because the ship operation is done by private shipping lines and no private firms will continue their business if the operation is not profitable. So far, the nine conceptual RoRo routes including two existing ones have been identified as the national nautical highways that would enhance the inter-regional mobility of cargo and passengers. The cargo and passenger traffic forecast has exhibited the potential traffic volumes moving along the identified RoRo routes are big enough to make the RoRo ship operation financially viable, provided that the RoRo links are competitive enough against the existing transport routes, especially in terms of travel time and service frequencies.

Since the current study aims at the development of national economy through the inter-regional mobility enhancement, the project should be beneficial for the national economy as well as regional economy. Therefore, all the efforts should be made to maximize the cost performance of the project.

Thus, the selection of the RoRo ports has been carried out by the following steps:

(1) Selection of RoRo links connecting existing ports with due consideration of the existing situation of the ports and connecting highways.

(2) Examination of the competitiveness of the links selected above: key elements of the examination was the distance of RoRo links travel time of the RoRo ships.

(3) Identification of the alternative port at new locations to make the RoRo route more competitive to the existing transport routes.

### 7.2.1 Alternative RoRo Ports along the identified Routes

Based on the information obtained by the site reconnaissance survey of the existing ports and highways, the existing situation is summarized as shown in Table 7-5. While many ports already have RoRo ramps, some ports need deep draft berthing facilities. The existing conditions of the connecting highways are shown in Appendix I-7-2-1.

**Table 7-5 Existing Situation of RoRo Ports (Source: Study Team)**

| RRTS Route | Port | Admin by | Link with | SONA | Fund Rqst by PPA | RoRo Service | Existing Infrastructure | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Natural Condition | Depth | Ramp | Remarks |
| Eastern Trunk | Matnog | PPA Concs | Allen/San Isidro | | Imprv | Operational | Behind Isd. | -5m~ | 3 (2) | Addt'l pier/ramp by expansion of existing. |
| | San Ricardo | PPA | Lipata | | New | None | Waves, Current | Deep | | Alternative to Liloan at a new site. |
| | Lipata | PPA Concs | San Ricardo/Liloan | | Imprv | Operational | Waves | -5m~ | 2 (1) | Addt'l pier/ramp by expansion of existing. |
| Eastern Ext | Kawayan | LGU | Esperanza/ Cataingan | | | None | Behind Isd. | Shallow | | New pier/ramp by extension of causeway. PPA project. |
| Central Trunk | San Antonio | PPA | Masbate | x | New | None | Beach, Open sea | Shallow | | Alternative to Pilar (shallow) at a new site. |
| | Masbate | PPA | San Antonio | | | Operational | Well sheltered | -9m~ | 3 | Good infrastructure except terminal building. |
| | Cataingan | LGU | Kawayan/ Daanbantayan | | | None | Well sheltered | -4m~ | None | Existing feeder port. No RoRo function. |
| | Esperanza | LGU | Kawayan/ Daanbantayan | x | | None | Open to SW | Reef | | Causeway, pier/ramp at a new site (with breakwater). |
| | Daanbantayan | LGU | Esperanza | | | None | Open to NE | Reef | | Causeway, pier/ramp at a new site (with breakwater). |
| | Cebu | CPA | Tubigon | | | Operational | Well sheltered | Capable | Capable | |
| | Tubigon | PPA | Cebu | x | | Operational | Sheltered | -5m~ | 2 | Good infrastructure except terminal building. |
| | Jagna | PPA | Mambajao | x | | Operational | Sheltered | -3m~ | 1 | Expasion project underway by PPA. |
| | Mambajao | PPA | Jagna/Balingoan | x | | None | Open to North | NA | 1 | Poor/damaged facilities. |
| | Benoni | PPA | Balingoan | | | Operational | Sheltered | NA | 2 | RoRo functioning with minimum facilities. |
| | Guinsiliban | PPA | Balingoan | x | | Operational | Open to South | NA | | Poor/damaged facilities. |
| | Balingoan | PPA | Benoni/Guinsiliban | | | Operational | Well sheltered | -3m~ | | Minimum RoRo function. Poor backup area. |
| Central Ext | Santander | CPA | Dumangas | x | | Operational | | | | Private facilities: Samboan, Mainit, Matiao |
| Western Trunk | Caticlan/Tabon | PPA | Roxas | | | Operational at existing port | Sheltered beach (New site) | NA | | Alternative to existing port prone to waves at a new site. |
| | Dumangas | PPA Concs | Bacolod | | | Operational | Current, Siltation | -1~-2m | 1 | Widereclaimed backup area. Shallow due to |
| | Siaton | PPA | Dipolog/Dapitan | | New | None | Sheltered beach | Capable | | Alternative to existing port at a new site. |
| East-West -1 | San Carlos | PPA | Toledo | | | Operational | Well sheltered | Capable | 3 | Good infrastructure except terminal building. |
| | Toledo | CPA | San Carlos | | | Operational | Open to West | -3m~ | 1 | Incovenient ramp layout. Poor backup area. |
| | Pt. Engano | CPA | Getafe | | | Operational | Open to East | Reef | 1 | Beside Hilton htl. Narrow access. Minimum facilities. |
| | Getafe | PPA | Pt. Engano | | | Operational | Well sheltered | -3m~ | 1 | Minimum RoRo function. Poor backup area. |
| | Ubay | PPA | Maasin | x | | Operational | Well sheltered | -2m~ | 2 | Shallow. Minimum RoRo function. Poor backup area. |
| | Tapal | PPA | Maasin | | | None | Well sheltered, Current | -4m~ | 1 | Being utilized for cargoes. Poor backup are. |
| | Maasin | PPA | Ubay/Tapal | x | | Operational | Sheltered | -5m~ | 1 | Good infrastructure. |
| East-West -2 | Culasi/Ajuy | LGU | Victorias/Cadiz | | | None | Well sheltered | -3m~ | None | Existing feeder port. No RoRo function at present. |
| | Victorias | LGU | Culasi/Ajuy | | | None | Mangrove | Shallow | None | Quite few potential for development due to tech'l/envir'l conditions. |
| | Cadiz | LGU | Culasi/Ajuy | | | None | Open to North | NA | None | Alternative to Victorias. New causeway, pier/ramp under construction. (Altrv |
| | Escalante | PPA/Prv | Tabuelan | | | Operational | Well sheltered | -3m~ | 2 | Operated by 2 private ramps. 1ramp underway by |
| | Tabuelan | LGU | Escalante | | | Operational | Well sheltered | NA | 2 | Poort infrastructure for RoRo. Poor backup area. |
| | Bogo | LGU | Palompon | | | None | Well sheltered | -7m~ | 2 | Poor RoRo function with no backup area. |
| | Palompon | PPA | Bogo | | | None | Well sheltered | Capable | 1 | Good infrastructure under-untilized. |
| Panay-Sorsogon | Aroroy | PPA | San Antonio | x | New | None | Open to NE | Reef | | Alternative to existing feeder port to a new site. Exisiting is shallow, no |
| | Balud | LGU | Culasi/Roxas | | | None | Open to West | Reef | | New construction based on existing causeway (w/breawater). |
| Pawalan-Luzon | San Jose | PPA | Coron | | New | None | Well sheltered | -3m~ | 2 | Alternative to existing port at a new site. |
| | Taytay | PPA | Coron | | New | None | Well sheltered | NA | | Totally new port. |
| Palawan-Visayas | San Jose de Buenavista | PPA | Cuyo | | | None | SW waves | -3m~ | 1 | Potential facilities but under-utilized. (Extension of breakwater rq'd) |

### 7.2.2 Selection of RoRo Ports

Alternative RoRo links along the nautical highways are summarizes in Table 7-6. Detail links are shown in Figure 7-9 for some links: Panay - Negros, Negros – Cebu, Cebu – Bohol and Cebu – Masbate- Sorsogon.

**Table 7-6 Alternative RoRo Links (Source: Study Team)**

| RoRo Link | | | RoRo connection | Port area |
|---|---|---|---|---|
| ***Panay - Negros*** | | | | |
| Iloilo | = | Bacolod | | Iloilo Port is congested |
| **Iloilo** | **- Dumangas =** | **Bacolod** | Short RoRo link | Dumangas Port has areas Space for Expansion |
| Iloilo | = Guimaras = | Pulpandan | Two links | |
| Concepcion | = | Cadiz | Link is the longest | Access Road passes through populated area |
| Culasi, Ajuy | = | Victorias | Shortest Link | Victorias has environmental problem |
| Culasi, Ajuy | = | Manapla | Second shortest | Manapla is well sheltered |
| **Culasi, Ajuy** | = | **Cadiz** | Cadiz port is under construction | Cadiz port is exposed open sea |
| ***Negros - Cebu*** | | | | |
| Cadiz | = Bantayan Is = | San Remigio | Two links | |
| Escalante | = | Tuburan | | Longer Highway Connection than Tabuelan |
| **Escalante** | **=** | **Tabuelan** | | Substantial traffic exist, Tabuelan is shallow |
| **San Carlos** | **=** | **Toledo** | | Substantial traffic exist |
| Guihlngan | = | Dumanjug | | Rather Local traffic |
| ***Dumaguete - Santander*** | | | | |
| Tampi (Dumaguete) | = | Bato (Santander) | | Substantial traffic exist |
| Sibulan (Dumaguete) | = | Mainit (Santander) | | Substantial traffic exist |
| **Negros - Mindanao** | | | | |
| Dumaguete | **=** | Dapitan | | No substantial difference between the two |
| Dumaguete | **=** | Dipolog | | |
| Siaton | **=** | Dapitan | Shorter RoRo link | |
| ***Cebu - Leyte*** | | | | |
| **Bogo** | **=** | **Palompon** | Shortest | Good port facility in Palompon |
| Danao | **=** | Isabel | | |
| Cebu | **=** | Ormoc | Longest Link | Largest traffic, Fast Craft link |
| ***Cebu - Bohol*** | | | | |
| Cebu | **=** | Tubigon | | Busiest link for Both Cargo and pax |
| Pta. Engano | **=** | Getafe | Shortest for traffic to Leyte | |
| Cebu | **=** | Talibon | Longer link than Getafe | |
| Cebu | **=** | Tagbilaran | Longest link | Fast Craft link |
| Argao | **=** | Loon | Shortest to Tagbilaran | |
| ***Cebu - Masbate*** | | | | |
| Bogo | **=** | Cataingan | Longest link | Too long link for efficient RoRo service |
| Bogo | **=** | Placer | Second longest link | These three links are practically nodifference |
| Bogo | **=** | Cawayan | | |
| San Remigio | **=** | Cawayan | | |
| Daan Bantayan | **=** | Cawayan | Third shortest link | These three links are practically nodifference |
| Daan Bantayan | **=** | Placer | | |
| Bogo | **=** | Esperanza | Secand shortest link | Need Highway construction from Cataingan |
| **Daan Bantayan** | **=** | **Esperanza** | Shortest, Esperanza also serve for Biliran link | Need Highway construction from Cataingan |
| ***Panay-Masbate*** | | | | |
| Culasi | **=** | Balud | Shortest | Need Highway construction from Cataingan |
| Culasi | **=** | Mandaon | Longer | |
| ***Masbate - Leyte (Biliran)*** | | | | |
| Cataingan | **=** | Naval | | Existing port facilities need reconstruction |
| Cataingan | **=** | Kawayan | | Closer to Mripipi (SONA, Port) |
| Esperanza | **=** | Kawayan | Shortest | Esperanza is connection to both Cebu & Biliran |
| ***Masbate- Sorsogon*** | | | | |
| **Masbate** | **=** | **San Antonio (Pilar)** | Soon to operate | Traffic is expected larger than Aroroy link<br>More convenient for the traffic from Cebu |
| Aroroy | **=** | San Antonio | Shortest | Need Highway construction. |
| Masbate | **=** | Bulan | Used to be RoRo operational | Longer highway to Legaspi |
| ***Bohol - Leyte*** | | | | |
| Ubay | **=** | Bato | Existing | |
| Ubay | **=** | Batybay | | |
| **Ubay** | **=** | **Maasin** | | Better existing facility |
| Tapal | **=** | Maasin | | |
| Ubay | **=** | Badre Burgos | Longer RoRo link | |
| ***Bohol-Mindanao*** | | | | |
| Jagna | **=** Camiguin = | Balingoan | Two RoRo links | |
| Jagna | **=** | Balingoan | | Travel time may be shorter than other links |
| Jagna | **=** | Nasipit | Existing RoRo link | |
| Jagna | **=** | Cagayan de Oro | | |
| Tagbilaran | **=** | Cagayan de Oro | | |
| Tagbilaran | **=** Siquijor = | Oroquieta | Two RoRo links | |

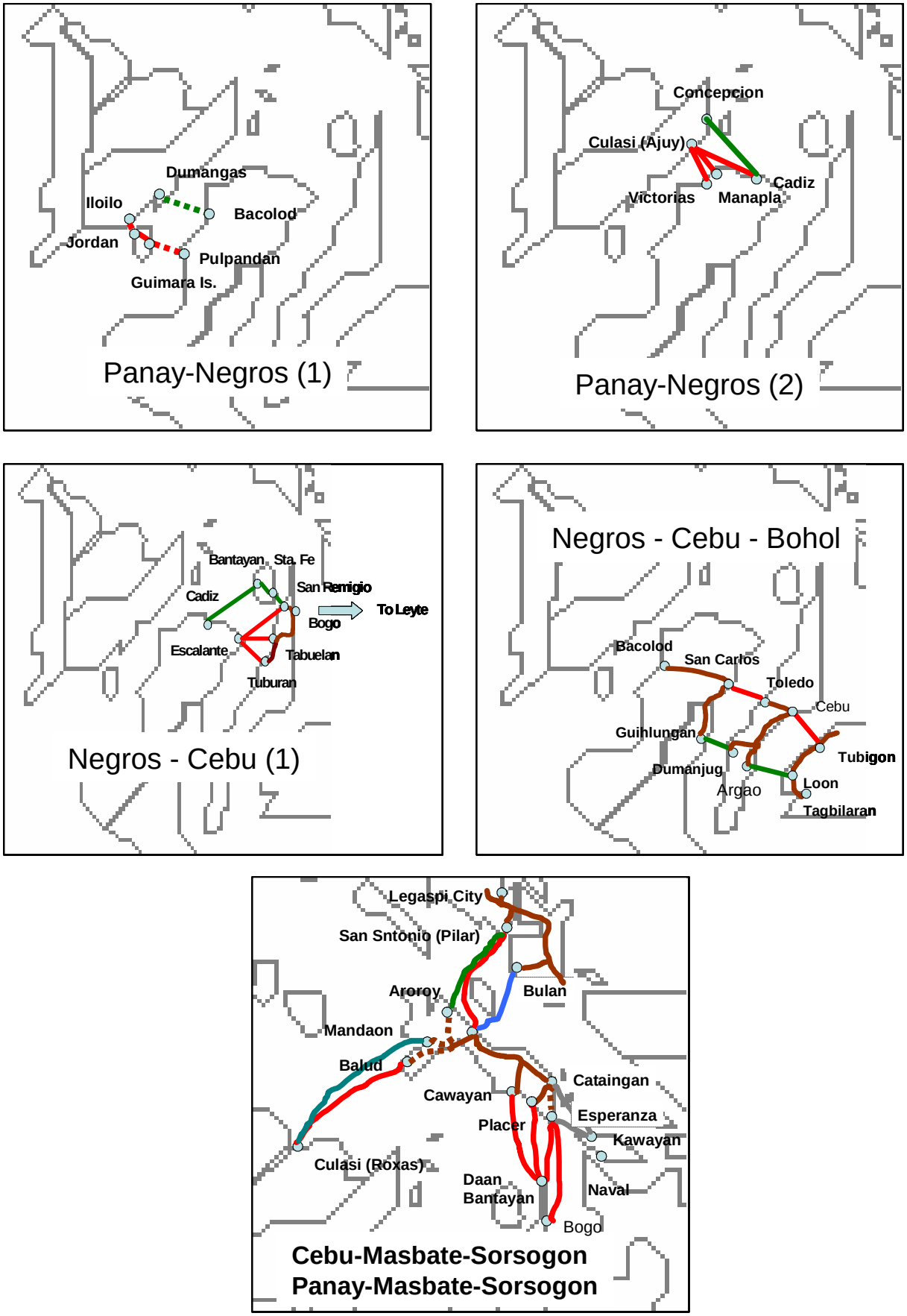



**Figure 7-9 Alternative RoRo Links (Source: Study Team)**

**1) Panay – Negros link**

There are two links currently operational along Western Nautical Highway: Iloilo-Bacolod, Dumangas – Bacolod. Though Dumangas Port is located about 30 km to the north of Iloilo City, the port has space for development and the distance to BREDCO Port (Bacolod City) is about 20 km shorter than Iloilo – Bacolod Link. The RoRo terminal at Iloilo City is located at the river bank where many passenger fast crafts are docking. In addition, the access road to the terminal is also used by the vehicle traffic within the city. For the purpose of de congestion in urban area, Dumangas Port is assessed to be better site for the development.

There has been anther plan to develop Iloilo - Guimaras Island – Pulpandan link (see Figure 7-9 Panay – Negros (1)). The link consists of two links and the travel time between Iloilo and Pulpandan would be longer than the existing RoRo links. It should also be noted that the link need the construction of a new port in the eastern side of Guimaras Island to establish a link to Pulpandan.

For East-west Route 1, there are four possible links (see Figure 7-9 Panay-Negros (2)).: Concepcion- Cadiz, Ajuy (Culasi) – Victorias , Ajuy – Manapla and Ajuy – Cadiz. Concepcion – Cadiz link is longer than other three links, the roadside of five-km-long access road to Concepcion Port is fairly populated and the widening seems to be difficult.

Ajuy (Culasi) port is located just beside of the coastal Highway and, even though the existing port there is no RoRo facilities, the port is well sheltered. Thus, Ajuy Port is recommended for the RoRo terminal of the link.

The counterpart ports of Ajuy Port are Victorias, Manapula and Cadiz. There is pump boat service between Victorias and Ajuy, but Victorias Port is not recommendable for environmental reasons. Manapla may be the second choice, but the port is closer to Cadiz Port where new port construction is on-going. Therefore, the study team has chosen Cadiz Port as the counterpart port of Ajuy though distance of the link is a little long.

**2) Negros – Cebu Link**

For East-West Route 1, there are four possible links: Cadis – Bantayan Island – San Remigio, Escalante – San Remigio, Escalante – Tabuelan and Escalante – Tuburan (see Figure 7-9 Negros-Cebu (1)).

Cadiz – Bantayan Island – San Remigio link serves for the Bantayan Island rather Inter regional transport. The link is composed of two RoRo links and it is a disadvantage to other links. Among the three links from Escalante Port that has been already well developed as a RoRo port, Escalate - Tabuelan link has quite a volume of traffic. It is also advantageous for Tabuelan Port to Tuburan Port to have shorter access to Bogo where another RoRo link leads to Palompon, Leyte, though the port has practically no RoRo facilities and need a new port development.

The existing San Carlos - Toledo link is has been established as the principal RoRo link between Negros and Cebu Island due to the improvement of highways across the islands. It is expected that the link will keep serving as the principal link between the two islands. The existing Guihulngan – Dumanjug seems to serve rater for local traffic between southern par of Negros and Cebu Islands (see Figure 7-9 Negros – Cebu –Bohol).

There are two RoRo links between the Dumaguete area and Santander (Southern tip of Cebu Island) area: Tampi (Dumaguete) – Bato (Santander) and Sibulan (Dumaguete) – Mainit (Santander) These two links are already established and constituting the Central Route Extension that links Cebu with Western Mindanao via southern part of Negros. The RoRo ports of the two links have been developed and operated by private firms. With a large traffic volume along these links, it is most likely that these private operators continue to operate the port over the coming decade.

**3) Negros – Western Mindanao**

This link is a part of existing Western Nautical Highway. There are three possible links: Dumaguete – Dapitan, Dumaguete – Dipolog, Siaton – Dapitan/Dipolog. Among these three, Dumaguete – Dapitan is currently operational.

**4) Cebu – Leyte Link**

There are three possible links: Bogo – Palompon, Danao- Isabel and Cebu Ormoc. The last two RoRo links are operational. Bogo- Palompon Link has been proposed to establish more convenient transport route than the latter two. In addition, the link would provide more convenient way for the traffic between Northern part of Negros to Leyte via East-west Route 2.

**5) Cebu – Bohol**

There are fine links between Cebu and Bohol islands: Cebu – Tubigon, Punta Engano – Getafe, Cebu Cebu – Talibon, Cebu – Tagbilaran, Argao – Loon.

These five links are currently operational. Of these five links, Cebu – Tubigon is the busiest. Punta Engano – Getafe and Argao – Loon is the shortest RoRo links. Along the former link, RoRo service is currently only one round trip a day. However, the link will attract more traffic when the on-going improvement of the coastal highway in Bohol completes. Punta Engano – Getafe link will also provide the most convenient transport route for the traffic from Cebu to southern part of Leyte Island. Argao Port has been developed and operated by a private firm for the purpose of transporting its own cargoes. And it seems to handle local cargoes rather than inter regional traffic.

Since among these RoRo ports, Punta Engano and Getafe Ports need improvement, while all other ports have been already improved to the extent for continuing RoRo terminal operation.

**6) Cebu – Masbate Link**

There are eight possible RoRo links between Cebu and Masbate Islands as shown in Table 7-6.

**i) Bogo- Cataingan Link**

Bogo and Cataingan Ports are existing ports having good highway accesses. However, the distance between the two ports is about 120 km that requires more than five hours trip for the RoRo ferries. Thus, this link cannot be competitive link to the existing transport routes such as Cebu-Masbate – Pilar (Sorsogon) ferry or Cebu- Ormoc- Pan-Philippine Highway - Sorsogon.

**ii) Bogo-Placer/Cawayan**

Pilar and Cawayan Port in Masbate are alternative Ports to Cataingan Ports. The provincial highways leading to these two ports are good enough. However, the distance from Bogo to Placer and Cawayan are 100 km and 110 km, respectively. If the speed of RoRo ferry is assumed to be 12 knots, the travel time would be almost five hours. Thus these two links are not competitive to the existing routes (see the figure at the bottom of Figure 7-9, Cebu-Sorsogon/ Panay Masbate Sorsogon).

**iii) San Remigio - Cawayan**

San Remigio Port is an alternative Port to Bogo for RoRo ferry going to Cawayan, Masbate. The route is a litter shorter than Bogo – Cawayan. However, the difference is very nominal and the drive between Bogo and San Remigio adds additional travel time.

**iv) Daan Bantayan – Placer/Cawayan**

A new port construction is planned at the north most tip of Cebu Province by the Local Government. The port, when it is operational, will shorten the ferry travel time to 3.5 to 4 hours (see the figure at the bottom of Figure 7-9, Cebu-Sorsogon/ Panay Masbate Sorsogon).

The Highway leading to Daan Bantayan Port has already been improved. Thus, the study team assesses Daan Bantayan Port is more advantageous than Bogo and San Remigio Ports for the RoRo link between Cebu and Masbate.

**v) Esperanza – Daan Bantayan**

There has been a project proposal to construct a new port at Esperanza, the southeast most of Masbate Island. The port will provide the shortest sea link between Masbate and Cebu Island. The ferry travel time will be 2.5 hours. This shortest sea link will make it possible a RoRo ship makes as many as four round trips a day. However, the provincial highway between Cataingan and Esperanza, need full development over a stretch of about 35 km, but bridges along the provincial road have been already completed.

At both ends of this link need new construction of RoRo ports and there is a missing highway link links. However, the study team strongly recommend that the feasibility study be conducted on these two new ports, because Cebu – Masbate link is the key element for promoting and enhancing the inter-regional mobility by giving a great impact on transport system especially on logistic service and, in turn, on of the of the socioeconomic activity

**7) Panay – Masbate link**

There are two alternative links between Masbate –Panay route: Culasi (Roxas) – Balud and Culasi (Roxas) – Mandaon (see the figure at the bottom of Figure 7-9, Panay Masbate Sorsogon). Both ports in Masbate need full developments of RoRo port facilities and the highways connection these ports to Masbate City, the provincial capital. The length of sea routes between Culasi and Balud is about 70 km, while that between Culasi and Mandaon is more than 90 km. The travel time of Culasi-Balud link would be about 3 hours that make a RoRo ship possible to make four round trips a day, while the travel time of Culasi – Mandaon link would be longer than 4 hours and only three round trips are possible per day.

Therefore, the study team has assessed that Balud Port is advantageous to Mandaon Port, though the length of highway to be improved is longer for Balud Port (40 km) than for Mandaon Port (30 km).

**8) Masbate Leyte (Biliran) Link**

There are three links between Biliran and Masbate: Cataingan (Masbate) – Naval (Biliran), Cataingan (Masbate) – Kawayan (Biliran) and Esperanza (Masbate) – Kawayan.

Naval has been the principal port in Billiran Island. It has all the basic port facilities including access road. PPA is also developing Kawayan port, which is alittle closer to Esperanza Port in Masbate, as the local connection between Billiran and Maripipi. Since the difference in the distance to Espearanza from Naval and from Kawayan is nominal, the study team recommends to choose Naval Port for the feasibility study.

For Masbate side, Esperanza Port has quite advantageous to Cataingan Port, for the length of the link: Cataingan – Naval is 50 km, while Esperanza – Naval is 30 km. The construction of Esperanza Port will bring great benefit to the transportation not only along Cebu – Masbate – Sorsogon Route, but also the traffic between Leyte – Masbate Link.

**9) Masbate Sorsogon Link**

Between Masbate Island and Sorsogon, there are three links have been proposed: Masbate City Port– San Antonio (Pilar, Sorsogon), Aroroy (Masbate) – San Antonio (Pilar, Sorsogon) and Masbate City Port – Bulan (Sorsogon).

**10) Bohol Leyte Link**

Bohol side, there are two ports, i.e., Ubay and Tapal Ports, while there are four ports at Leyte side: Baybay, Bato, Maasin and Padre Burgos. Currently RoRo ship is operational between Ubay and Bato, which .is a private port. Maasin port has been a stop over port for inter-island shipping along Cebu – Surigao via Southern Leyte. PPA has recently further developed the port to accommodate RoRo ships, however the port still need improvement in sheltering RoRo berth from seasonal monsoon. Thus, Bato and Maasin port are complementing each other depending on the sea states.

Tapal Port (Bohol) is located about four (4) km to the east of municipality of Ubay and it is connected to the coastal highway by a provincial road that wants improvement over the length of 2.5 km. Both Tapal and Ubay port have RoRo facilities. For the proximity to the center of the municipality, the ferry operator prefers to dock at Ubay Port than Tapal Port, though the sea link is shorter for the former.

Currently the traffic between Ubay and Leyte is not big. However, when the RoRo service between Punta Engano (Cebu) and Getafe (Bohol) is improved, the role of this link will be more appreciated.

Padre Burgos port has been proposed to provide RoRo link across the bay and it would serve for local traffic rather than inter regional traffic between Bohol and Leyte, since the distance from Ubay is larger than to other ports.

**11) Bohol - Mindanao Link**

Between Bohol and north Mindanao, there are several alternative links:

(1) Jagna (Bohol) – Manbajao/Guinisiliban (Camiguin Is.) – Balingoan (Agusan sel Norte, Mondanao)

(2) Jagna – Balingoan

(3) Jagna – Nasipit (Existing inter-island shipping service route)

(4) Jagna – Cagayan de Oro (Misamis Oriental, Mindanao)

(5) Tagbilaran (Bohol) – Cagayan de Oro, and

(6) Tagbilaran – Siquijor Island – Oroquieta (Misamis Occidental, Mindanao).

All the ports mentioned above have RoRo facilities and the Highway connections are good enough. However, so far no daily RoRo ferry services have been provided. At present, only Link (3), Jagna – Nasipit, is operational as a stop over of inter-island shipping plying between Cebu and Nasipit. The service frequency is three times a week.

One of the reasons why these RoRo links have not fully developed might be the travel time. The link (1) and (6) consist of two RoRo links and have disadvantage to other direct links because the travel time would be longer due to the change of RoRo ship that generally requires waiting time. Thus, the links (2) through (5) are likely to serve for the through traffic between Cebu and Mindanao.

Link (2), Jagna - Balingoan link, is the shortest sea link. The advantage of this link shall be examined, though both Jagna and Balingoan have already developed as RoRo Ports.

Summing up the discussion on the examination of alternative ports, the Study Team has chosen the RoRo ports along the nine nautical highways as shown in Table 7-7. Among the RoRo ports listed in Table 7-7, 15 ports have been selected for the Feasibility Studies. In the selection the following criteria were employed:

-Category 1: RoRo port on missing links

-Category 2: RoRo ports that need large scale investment such as deepening, siltation countermeasure, reclamation, wharves/mooring piers) and no development plans have been prepared.

-Category 3: RoRo ports that need miner improvements such as RoRo ramps, passenger terminals or development plan have already been prepared.

The result of the priority of the selection is indicated in the right end column of Table 7-7. The nine nautical highways composed of the RoRo ports listed in Table 7-7 are exhibited in Figure 7-10. The 15 candidate RoRo ports for the feasibility study are indicated shown in the figure with pink background.

**Table 7-7 List of the RoRo Terminals along the nautical Highways**

| No. | RRTS Route | Port[1] | | Administration | Connection | Port | RoRo Serv. | Proposal | Freq. | Ramp | FS Priority[4] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Easter Route** | Matnog[2] | Sorsogon | PPA | Allen/San Isidro | | RoRo Opeartional | PPA Pre-F/S | 18/day | 3 | |
| | | San Ricardo[2] | Southern Leyte | PPA | Lipata | New | None | PPA Pre-F/S | | None | |
| | | Lipata[2] | Surigao del Norte | PPA | Liloan/San Ricardo | | RoRo Opeartional | PPA Pre-F/S | | 2 | |
| 2 | Eastern Rt. Ext. | **Kawayan** | Biliran | PPA | Esperanza/Cataingan | New | None | | | None | 1 |
| 3 | Central Trunk Rt | **San Antonio**[3] | Pilar, Sorsogon | PPA | Masbate | **New** | None | PPA Pre-F/S | | None | 1 |
| | | Masbate | Masbate | PPA | San Antonio | | 3/wk to Cebu | | | 2 | |
| | | **Esperanza**[3] | Masbate | (PPA) | Daanbantayan/Bogo | **New** | None | SONA | | None | 1 |
| | | **Daanbantayan** | Cebu | LGU | Esperanza | **New** | None | | | None | 1 |
| | | Cebu | Cebu | CPA | Tubigon | | RoRo Opeartional | | 7/day | | |
| | | Tubigon | Bohol | PPA | Cebu | | RoRo Opeartional | | 7/day | 2 | |
| | | Jagna | Bohol | PPA | Balingoan | | From Nasipit | | 3/wk | 1 | |
| | | Balingoan | Agusan del Norte | PPA | Jagna | | To Guinsiliban | | 3/day | 2 | |
| 4 | Western Trunk Rt | Batangas | Batangas | PPA | Calapan | | RoRo Opeartional | | 22/day | 8 | |
| | | Calapan | Mindoro Or. | PPA | Batangas | | RoRo Opeartional | | 22/day | 7 | |
| | | Roxas | Mindoro Or. | PPA | Caticlan | | RoRo Opeartional | | 6/day | 1 | |
| 4 | Western Trunk Rt | **Caticlan** | Antique | LGU/PPA[5] | Roxas | **New** | RoRo Opeartional | | 4/day | 1 | 2 |
| | | **Dumangas** | Iloilo | PPA | Bacolod | | RoRo Opeartional | | 2/day | 1 | 2 |
| | | Siaton[2] | Negros Or. | PPA | N.A. | New | None | PPA Pre-F/S | - | None | |
| 5 | East-west Rt -1 | San Carlos | Negros Occ. | PPA | Toledo | | RoRo Opeartional | | 8/day | 3 | |
| | | **Toledo** | Cebu | CPA | San Carlos | | RoRo Opeartional | | 8/day | 1 | 2 |
| | | **Pt. Engano** | Cebu | CPA | Getafe | | RoRo Opeartional | | 3/day | 1 | 2 |
| | | **Getafe** | Bohol | PPA | Pt. Engano | | RoRo Opeartional | | 3/day | 1 | 2 |
| | | **Ubay** | Bohol | PPA | | | None | | | 2 | 2 |
| | | Maasin[3] | Southern Leyte | PPA | Ubay | | | SONA | | 1 | |
| 6 | East-west Rt - 2 | **Culasi, Ajuy** | Iloilo | LGU/Private | Cadis/Manapla | | None | | | None | 2 |
| | | Cadiz | Negros Occ. | LGU | Ajuy | | None | | | On-going | |
| | | Escalante | Negros Occ. | LGU | Tabuelan | | RoRo Opeartional | | 3/day | 2 | |
| | | **Tabuelan** | Cebu | Private/CPA | Escalante | | RoRo Opeartional | | 3/day | 1 | 2 |
| | | **Bogo** | Cebu | CPA/LGU | Palompon | | Stop service | | | 2 | 2 |
| | | Palompon | Leyte | PPA | Bogo | | Stop service | | | 1 | |
| 7 | Panay - Sorsogon | **Balud** | Masbate | LGU | Culasi, Roxas | | None | | | none | 1 |
| | Route | Culasi Roxas | Capiz | PPA | San Antonio | | None | | | 1 | |
| 8 | Palawan Luzon | San Jose[2] | Mindoro | PPA | Coron/Taytay | | None | PPA Pre-F/S | | 1 | |
| | | Coron | | | | | None | | | 1 | |
| | Rt | **Taytay**[2] | Palwan | PPA | Coron | **New** | None | PPA Pre-F/S | | None | 1 |
| 9 | Palawan Visayas | San Jose de | Aklan | PPA | Cuyo/Taytay | | None | | | 1 | |
| | Rt | Buenavista | | | | | | | | | |
| | | Cuyo | | | Taytay/ S Jose de Buenavista | | 2/wk to Iloilo/P.Princesa | | | 1 | |

Legend
1 RoRo Terminals along Nautical Highways (RRTS Trunk and Lateral Routes)
2 PPA 8 ports under evaluation of NEDA for Funding
3 SONA ports
4 X :Priority 1 and 2. Those ports that the Study Team assessed the Feasibility Study is necessary,
5 MOA for the trtansfer from LGU to PPA is under negotiation

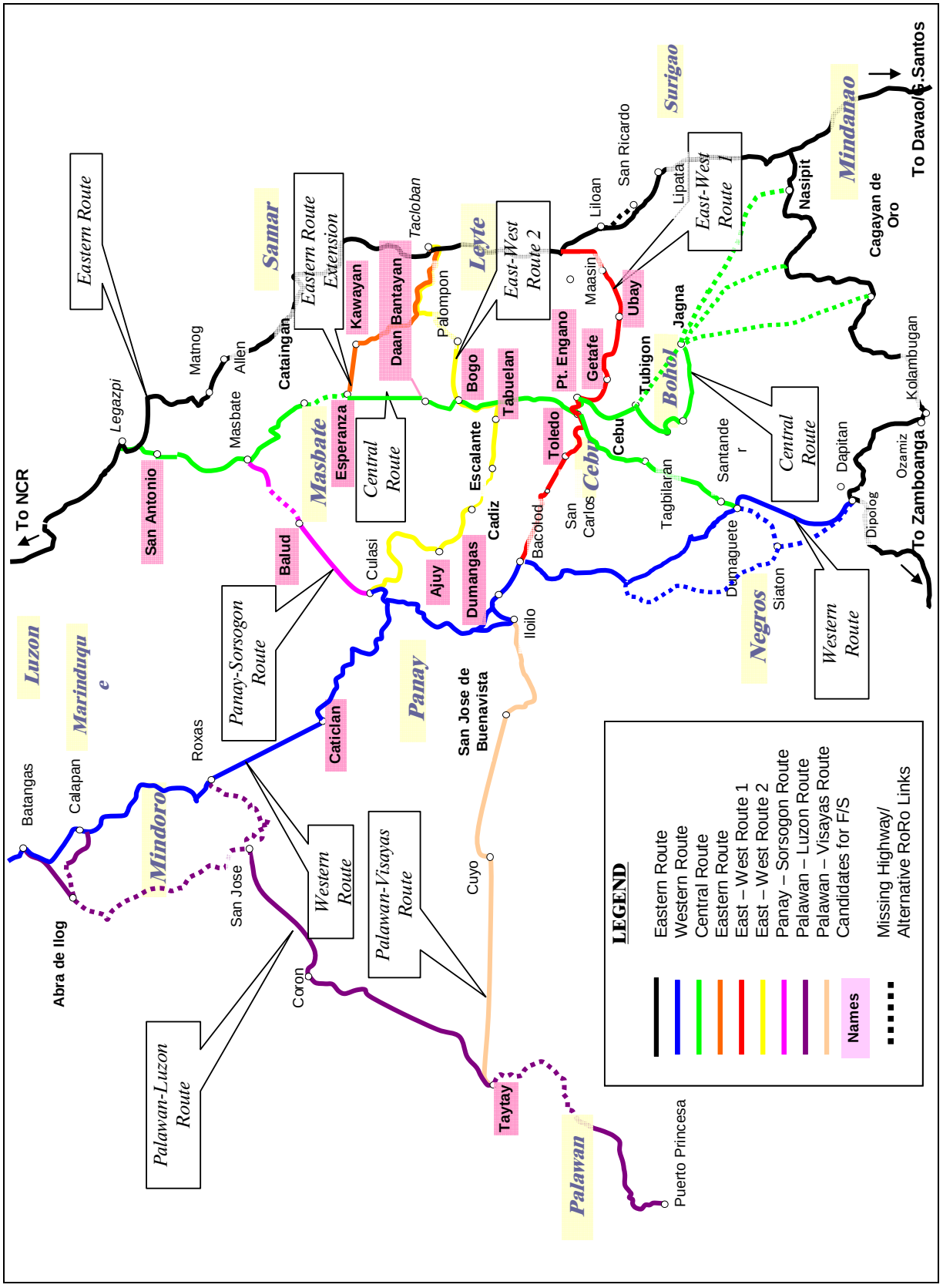



**Figure 7-10 Proposed RRTS Routes**

# 8. Traffic Forecast of the Identified RoRo Route

## 8.1 Present Situation of the Traffic along the Proposed Nautical Highway Routes

Prior to the traffic forecast, the present situation of traffic has been reviewed for the proposed RoRo links along the SRNH system. For those RoRo links that are not yet operational, the potential traffic volumes in terms of transport equipment have been estimated for the year 2005.

### 8.1.1 Eastern SRNH

#### 1) Matnog - Allen/Dapdap

RORO service between Matnog and Allen/Dapdap is provided 16 times per day on average. Annual transport equipment cargo volume of Matnog port in 2005 was 1,772,017 tons and that of Allen/Dapdap port was 1,468,000/182,778 tons. The volume of Matnog port is adopted as the present cargo traffic volume between Matnog and Allen/Dapdap. 1,594,887 passengers used Matnog port and 1,321,670/259,645 passengers used Allen/Dapdap port. Almost all of the passengers of those ports moved between Matnog and Allen/Dapdap. The volume of Matnog port is adopted as the present passenger traffic volume between Matnog and Allen/Dapdap. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-1.

**Table 8-1 Present RORO Cargo Volume and Passenger Volume (Matnog – Allen / Dapdap)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 1,772,017 | 1,594,887 |

#### 2) Liloan, San Ricardo - Lipata

RORO service between Liloan and Lipata is provided 5 times per day while no fast craft service is provided. Transport equipment cargo volume of Liloan port in 2005 is 404,335 and that of Lipata port is 366,110. Almost all of the transport equipment cargo is transported between Liloan and Lipata. Accordingly, the average volume of both ports is adopted as the present cargo traffic volume between them. 438,249 passengers used Liloan port and 435,499 passengers used Lipata port. Almost all of the passengers of both ports moved between these ports. Accordingly, the average volume of both ports is adopted as the present cargo traffic volume between them. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-2.

**Table 8-2 Present RORO Cargo Volume and Passenger Volume (Liloan, San Ricardo - Lipata)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 366,110 | 435,499 |

#### 3) Esperanza – Naval (Eastern Route Extension)

There is no RORO service between Esperanza and Naval, nor is fast craft service provided. Even though it is as a part of the Pan Philippine highway, the condition of the national road of Samar Island is bad and long distance bus companies passing there must bear extra expenses. After operation of this route and Pilar, San Antonio - Masbate route starts, some of the traffic between Luzon and Leyte Island or eastern part of Mindanao Island will use this route if road conditions in Samar are not improved. Judging from the route distances both by sea and land, 5 % of cargo passing Matnog port will divert to this route. Annual cargo volume is estimated at 88,600 ton.

After a new RoRo route service starts, passenger cars that have no relation with cargo movement will use the route. Considering the share of vehicle composition by lane meter type in

existing RoRo links shown in Table 8-31, the share of type 2 vehicles is estimated at 10 %, cargo volume of type 2 vehicles is estimated at 8,860 tons. Total cargo volume of this route is 97,500 tons.

According to interviews with shipping passengers, 65% of the passengers' origin/destination is Eastern Visayas. The potential passenger volume of this route is 24,570 persons. In the same way as the cargo estimate, 5 % of passengers using Matnog port, 79,744 persons, will divert to this route if the road conditions of Samar Island are not improved. Estimated result is shown in Table 8-3.

**Table 8-3 Present Potential RORO Cargo Volume and Passenger Volume (Esperanza - Naval)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 97,500 | 104,300 |

### 8.1.2 Western SRNH

#### 1) Batangas- Calapan

RORO service between Batangas and Calapan is provided 28 times per day while fast craft service is provided 7 times per day. Annual transport equipment cargo volume of Batangas port in 2005 is 651,850 tons and that of Calapan port is 651,707 tons. Almost all of the transport equipment cargo is transported between Batangas and Calapan. Accordingly, the average volume of both ports is adopted as the present cargo traffic volume between Batangas and Calapan. 2,844,565 passengers used Batangas port and 2,246,171 passengers used Calapan port. Almost all of the passengers of Calapan port moved between Batangas and Calapan. According to interviews with shipping crews, half of the passengers used fast craft. Accordingly, the remaining half is assumed to use RORO service. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-4.

**Table 8-4 Present RORO Cargo Volume and Passenger Volume (Batangas – Calapan)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 651,779 | 1,123,086 |

#### 2) Roxas - Caticlan

RORO service between Roxas and Caticlan is provided 4 times per day while no fast craft service is provided. Annual transport equipment cargo volume of Roxas port in 2005 was 163,061 tons while there is no statistical cargo data for Caticlan port. Almost all of the transport equipment cargo is transported between Roxas and Caticlan. Accordingly, the cargo volume of Roxas port is adopted as the present cargo traffic volume between Roxas and Caticlan. 652,769 passengers used Roxas port while no statistical passenger data is available for Caticlan port. Almost all of the passengers of Roxas port moved between Roxas and Caticlan. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-5.

**Table 8-5 Present RORO Cargo Volume and Passenger Volume (Roxas – Caticlan)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 163,061 | 652,769 |

#### 3) Iloilo, Dumangas - Bacolod

RORO service between Iloilo and Bacolod is provided 2 times per day while fast craft service is provided 8 times per day. RORO service between Dumangas and Bacolod is provided 4 times per day while no fast craft service is provided. Annual transport equipment cargo volume of Iloilo port in 2005 was 56,942 tons, that of Dumangas port was 133,500 tons and that of Bacolod port

259,512 tons. Almost all of the transport equipment cargo from/to Iloilo and Dumangas is transported to/ from Bacolod. Accordingly, the sum of both ports is adopted as the present cargo traffic volume between Iloilo, Dumangas and Bacolod. 2,321,746 passengers used Iloilo port, 135,320 passengers used Dumangas port and 1,854,266 passengers used Bacolod port. Almost all of the passengers of Dumangas port moved between Dumangas and Bacolod. According to interviews with shipping crews, the passenger load factor of RORO ships between Iloilo and Bacolod is 50%. Accordingly, the annual number of passengers transported by RORO ships between Iloilo and Bacolod is assumed to be 85,000. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-6.

**Table 8-6 Present RORO Cargo Volume and Passenger Volume (Iloilo, Dumangas - Bacolod)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 190,442 | 220,320 |

#### 4) Dumaguete, Siaton- Dapitan

RORO service between Dumaguete and Dapitan is provided 4 times per day while no fast craft service is provided. Dumaguete port has other RORO service with Siquijor or Santander, and Cebu. Dapitan also has other RORO service with Cebu. Annual transport equipment cargo volume of Dumaguete port in 2005 is 29,377 tons and that of Dapitan port is 7,343 tons. Some cargo conveyed by RORO ship is handled by forklifts at both ports. Such cargo is counted as break bulk cargo statistically. Annual volume of break bulk cargo at Dapitan port is 132,296 tons. RORO route between Cebu and Dapitan is by way of Dumaguete port. Therefore almost all of the break bulk cargo handled at Dapitan port is transported between Dumaguete and Dapitan. Accordingly, total volume of break bulk cargo is adopted as the present cargo traffic volume between Dumaguete and Dapitan. 1,052,180 passengers used Dumaguete port and 519,308 passengers used Dapitan port. In the same manner as the cargo, almost all of the passengers of Dapitan port are adopted as RORO passengers between Dumaguete and Dapitan. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-7.

**Table 8-7 Present RORO Cargo Volume and Passenger Volume (Dumaguete, Siaton - Dapitan)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 132,296 | 519,308 |

### 8.1.3 Central SRNH

#### 1) Pilar, San Antonio – Aroroy, Masbate

There are no RORO services between Pilar, San Antonio and Aroroy, Masbate, while fast craft service is provided 8 times per day between Pilar and Masbate. Because of their proximity, Aroroy port is in a competitive situation with Masbate port. According to the interview with a shipping line, the route distance between Pilar and Aroroy is 33 NM. On the other hand, it is 35 NM between Pilar and Masbate. The difference is only 2 NM. According to the field survey interview in Masbate Island, most of passenger and cargo traffic's origin or destination in Masbate Island is Masbate City. Considering the route distance between Aroroy and Masbate, no shipping lines seem to choose Aroroy port as their RoRo terminal on this route.

In 'The Study on Domestic Shipping Development Plan in the Republic of Philippines' (DSDP), carried out by JICA, 2005, potential RORO cargo volume is estimated on the basis of pump boat owner's interview or other field surveys. According to this, 80,500 tons cargo is adopted as the present break bulk cargo volume on this route. In Albay, Sorsogon region, many consumer goods are transported from Manila. Due to the geographical proximity of Cebu to Pilar and its vicinity, after operation of this route and Esperanza- Daanbantayan route starts, some part of the cargo shall be transported from Cebu. According to 'The Inter-Regional Passenger and Freight Flow Surveys in the

Republic of the Philippines', JICA, 2004, 2,370,730 tons of light Industrial cargo were transported from Manila to Bicol (excluded Masbate) in 2002. In this study, 4% of this total or 103,831 tons of break bulk cargo is assumed to move from Cebu to Bicol using this new route. Considering the competition with existing shipping service, 25% of that break bulk cargo is adopted potential cargo for RoRo service. Using the conversion formula shown in Table 8-38, it is estimated that 153,178 ton's of transport equipment is needed to convey the above mentioned break bulk cargo.

After operation of this route and Esperanza - Daanbantayan route starts, Cebu – Masbate – Albay – Manila route will be shorter and faster than Cebu – Tacloban – Pan Philippine highway route. Some of new long distance bus services between Manila and Cebu will use this route. Judging from the current bus service frequency between Manila and Visayas Region, the frequency of the bus service is estimated as two round trips per day. In the same way, another new bus service between Panay and Sorsogon will also be started and the frequency is estimated as one round trip per day. Annual cargo volume of the new bus service is estimated 17,520 ton.

After a new RoRo route service starts, passenger cars that have no relation with cargo movement will use the route. Considering the share of vehicle composition by lane meter type in existing RoRo links shown in Table 8-31, the share of type 2 vehicles is estimated at 10 %, cargo volume of type 2 vehicles is estimated at 14,701 tons. Total cargo volume of this route is 161,700 tons.

500,478 passengers used Masbate port while there is no passenger data for Pilar port. Similarly, DSDP estimated the number of annual passengers moving between Pilar, San Antonio and Masbate at 273,000. Number of passengers using new bus service mentioned above is estimated as 40 persons per bus and 87,600 persons per year. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-8.

**Table 8-8 Present Potential RORO Cargo Volume and Passenger Volume (Pilar, San Antonio – Masbate)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 161,700 | 360,600 |

**2) Esperanza – Daanbantayan**

There are no RORO services between Esperanza and Daanbantayan / San Remigio, nor is fast craft service provided. RORO service between Masbate and Cebu is provided 3 times per week. There is daily cargo – passenger service between Cataingan and Cebu. In DSDP, potential RORO cargo volume is estimated on the basis of pump boat owner's interview or other field survey. According to this, 84,000 tons cargo is adopted as the present cargo traffic volume. Same as Pilar – Masbate route, 25,958 tons of break bulk cargo is assumed to be transported from Cebu to Bicol using this new route. Using the conversion formula shown in Table 8-38, it is estimated that 109,834 ton's of transport equipment is needed to convey the above mentioned break bulk cargo.

After operation of this route and Pilar, San Antonio - Masbate route starts, Cebu – Masbate – Albay – Manila route will be shorter and faster than Cebu – Tacloban – Pan Philippine highway route. Some of new long distance bus service between Manila and Cebu will use this route. Judging from the current bus service frequency between Manila and Visayas Region, the frequency of the bus service is estimated at two round trips per day. Annual cargo volume of the new bus service is estimated 11,680 ton.

After a new RoRo route service starts, passenger cars that have no relation with cargo movement will use the route. Considering the share of vehicle composition by lane meter type in existing RoRo links shown in Table 8-31, the share of type 2 vehicles is estimated at 10 %, cargo volume of type 2 vehicles is estimated at 14,354 tons. Total cargo volume of this route is 157,900 tons.

500,748 passengers used Masbate port in 2005. According to interviews, 28% of their origin/destination is Cebu. 75,600 passengers used Cataingan port in 2005 and 42% of their destination is Cebu. Number of passengers for Placer is 60,000. Annual number of passengers for Kawayan in 2005 is 65000. At Placer and Kawayan port, most passengers' origin/destination is Cebu. Number of passengers using the new bus service mentioned above is estimated 40 persons per bus and 87,600 persons per year. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-9.

**Table 8-9 Present Potential RORO Cargo Volume and Passenger Volume (Esperanza – Daanbantayan)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 157,900 | 206,600 |

**3) Cebu - Tubigon**

RORO service between Cebu and Tubigon is provided 17 times per day while fast craft service is provided more than 2 times per day. Other RORO service between Mandaue and Clarin is provided 11 times per week. Transport equipment cargo volume of Tubigon port in 2005 is 105,860. Almost all of the transport equipment cargo is transported between Cebu and Tubigon. 1,444,945 passengers used Tubigon port. Almost all of the passengers of Tubigon port moved between Cebu and Tubigon. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-10.

**Table 8-10 Present RORO Cargo Volume and Passenger Volume (Cebu - Tubigon)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 105,860 | 1,444,945 |

**4) Jagna –Benoni, Mambajao, Balingoan**

No RORO service is provided between Jagna and Benoni, nor is fast craft service provided. RORO service between Cebu and Mambajao, Camiguin is provided once a week. RORO service between Jagna and Nasipit, Agusan Del Norte is provided 4 times per week. Cargo and passengers of Camiguin come from Balingoan and to a lesser extent from Bohol. Therefore it is difficult for shipping lines to get enough passengers and cargo to maintain the Camiguin - Bohol RORO route. RORO service between Cebu and Cagayan de Oro is provided everyday. According to the IRPFFS, 1,216,313 tons of cargo was transported between Cebu and Northern Mindanao, Davao, Soccsksargen in 2002. Most of this cargo (537,403 tons), however, was mineral oil products and forestry products. Other types of commodities accounted for only 668,212 tons, of which ten per cent is considered to be potential RORO cargo. 28,948 tons of cargo was also transported between Bohol and above three Mindanao zones. By subtracting oil products and forestry products from the total cargo, 27,910 tons of cargo is estimated as potential RORO cargo related with Bohol. Converting this potential cargo volume to transport equipment cargo volume and adding 10% of increment caused by new passenger vehicles flow, 214,405 tons cargo is estimated as potential RORO cargo in this route.

According to the IRPFFS, 1,037 thousand people moved between Cebu and Northern Mindanao, Davao, Soccsksargen, and 151 thousand people moved between Bohol and those three zones in 2002. Ten per cent of them can be converted to RORO users. Estimated RORO cargo and passenger volumes in 2005 are shown (shown in Table 8-11).

Travel time between Cebu and Cagayan de Oro by using existing direct RORO service is ten hours and the fare is 760 pesos. New RORO service between Jagna and Balingoan should provide better service than the existing service. Road improvement between Tubigon and Jagna seems to be necessary.

**Table 8-11 Present RORO Cargo Volume and Passenger Volume (Jagna - Balingoan)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 214,415 | 118,800 |

**5) Benoni, Guinsiliban - Balingoan**

RORO service between Benoni, Guinsiliban and Balingoan is provided 6 times per day while no fast craft service is provided. Transport equipment cargo volume of Benoni port in 2005 is 12,331 tons, that of Guinsiliban port in 2005 is 10,425 tons and that of Balingoan port is 22,754 tons. Almost all of the transport equipment cargo is transported between Benoni, Guinsiliban and Balingoan. Accordingly, the average volume of both ports is adopted as the present cargo traffic volume between them. 295,584 passengers used Benoni port, 91,243 passengers used Guinsiliban port and 387,479 passengers used Balingoan port. Almost all of the passengers of those ports moved between these three ports. Accordingly the average volume of these three ports is adopted as the present passenger traffic volume between them due to the same reason. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-12.

**Table 8-12 Present RORO Cargo Volume and Passenger Volume (Benoni, Guinsiliban - Balingoan)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 22,756 | 386,287 |

### 8.1.4 Negros Southern Leyte SRNH

**1) San Carlos - Toledo**

RORO service between San Carlos and Toledo is provided 8 times per day while fast craft service is provided 10 times per day. However, this service frequency is taken from the official schedule; the actual operation is different. According to TMO San Carlos, RORO service between San Carlos and Toledo is provided 3 times per day while no fast craft service was provided in September 2006. Transport equipment cargo volume of San Carlos port in 2005 was 114,285 tons while 133,217 tons of cargo was handled at Toledo port. Almost all of the transport equipment cargo is transported between San Carlos and Toledo. Accordingly, the cargo volume of San Carlos port is adopted as the present cargo traffic volume between San Carlos and Toledo. 535,131 passengers used San Carlos port and 525,570 passengers used Toledo port. Almost all of the passengers of both ports moved between San Carlos and Toledo. The half of average number of passenger is adopted as the present passenger traffic volume between San Carlos and Toledo. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-13.

**Table 8-13 Present RORO Cargo Volume and Passenger Volume (San Carlos - Toledo)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 114,285 | 265,266 |

**2) Pt. Engano - Jetafe**

RORO service between Mactan Island and Jetafe is provided 1 time per day while pump boat service is provided 5 times per day. Daily RORO service between Cebu city and Talibon is also provided. Statistical cargo volume data of transport equipment in this route has not been obtained. Ship size and frequency serving in this route is the same as those of San Carlos – Toledo. Cargo volume of that route is adopted as the cargo volume of this route. In 2005, 164,427 passengers passed through Talibon port, while there is no passenger traffic data for Jetafe port. Cargo volume data in 2005 did not seem to be enough to satisfy daily RORO operation. Some more works is needed for

estimation (shown in Table 8-14).

**Table 8-14 Present RORO Cargo Volume and Passenger Volume (Pt. Engano - Getafe)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 114,285 | 164,427 |

**3) Ubay - Maasin**

RORO service between Ubay and Bato is provided 2 times per day while no fast craft service is provided. According to the IRPFFS, 1,968,703 tons of cargo was transported between Bohol and Leyte in 2002. Most of this cargo (1,658,233 tons), however, was mineral oil products. Other types of commodities accounted for only 310,470 tons, of which half is considered to be potential RORO cargo. 275,851 passengers used Ubay port. According to the transport capacity, half of the passengers were assumed to head to Southern Leyte. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-15.

**Table 8-15 Present RORO Cargo Volume and Passenger Volume (Ubay - Maasin)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 155,235 | 137,925 |

### 8.1.5 Panay - Leyte SRNH

**1) Culasi (Ajuy) – Cadiz, Victorias**

There is no RORO service between Ajuy and Victorias, while passenger / cargo craft service is provided 3 times per day. There are no statistical data for these ports. According to the IRPFFS, 394,747 tons of cargo was transported between Panay and Negros in 2002. Half of this cargo (198,553 tons), however, was sugar and mineral oil products and was not suitable for RORO transport. Other types of commodities accounted for 195,680 tons. Considering that the hinterland of Ajuy port contains 17 % of Panay Island's population, 17 % of 195,680 tons of cargo is considered to be potential RORO cargo. Using the conversion formula shown in Table 8-38, it is estimated that 67,548 ton's of transport equipment is needed to convey the above mentioned break bulk cargo. After a new RORO route service starts, passenger cars that have no relation with cargo movement will use the route. Considering the share of vehicle composition by lane meter type in existing RORO links shown in Table 8-31, the share of type 2 vehicles is estimated at 10 %, cargo volume of type 2 vehicles is estimated at 6,755 tons. Total cargo volume of this route is estimated at 74,300 tons. Passenger capacity of the boats is about 120. According to interviews with shipping crews, the passenger load factor is assumed at 50%. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-16.

**Table 8-16 Present RORO Cargo Volume and Passenger Volume (Ajuy – Cadiz, Victorias)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 74,300 | 131,400 |

**2) Escalante - Tabuelan**

RORO service between Escalante and Tabuelan is provided 3 times per day while no fast craft service is provided. Transport equipment cargo volume of Escalante port in 2005 was 304,667 tons while there is no data for Tabuelan port. Half of the transport equipment cargo is transported between these ports. 159,860 passengers used Escalante port while there is no data for Tabuelan port. Almost all of the passengers of both port moved between them. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-17.

**Table 8-17 Present RORO Cargo Volume and Passenger Volume (Escalante - Tabuelan)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 152,336 | 159,860 |

**3) Bogo - Palompon**

There are many liner services between Cebu and Leyte. RORO service between Cebu and Ormoc is provided 3 times per day while fast craft service is provided 3 times per day. RORO service between Danao and Isabel is provided 4 times per day and 10 times per week service is provided between Cebu and Palompon. Transport equipment cargo volume of Danao port in 2005 is 111,058 tons. Break bulk cargo of Palompon port is 33,311 tons and that of Ormoc port is 197,732 tons. In this study, the potential cargo volume of Bogo – Palompon route is estimated as the sum of those two links, Danao – Isabel and Cebu – Palompon. 116,993 passengers used Palompon port and 32,864 passengers used Danao port. 975,571 passengers used Ormoc port. As in the cargo volume estimation, the potential passenger volume of Bogo – Palompon route is estimated as the sum of those two links, Danao – Isabel and Cebu – Palompon. Estimated RORO cargo and passenger volumes in 2005 are shown in Table 8-18.

**Table 8-18 Present RORO Cargo Volume and Passenger Volume (Bogo - Palompon)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 114,369 | 149,857 |

### 8.1.6 Panay - Masbate SRNH

**1) Culasi - Balud**

There are no RORO services between Culasi and Balud, nor is fast craft service provided. Only pump boat service between Culasi, Estancia and Balud, Mandaon is provided 20 times per week. Fruits and vegetables are coming from Panay Island and dried fish and livestock are loaded at Balud port. In 'The Study on Domestic Shipping Development Plan in the Republic of Philippines' (DSDP), carried out by JICA, 2005, potential RORO cargo volume is estimated on the basis of pump boat owner's interview or other field survey. According to this, 17,940 tons cargo is adopted as the present break bulk cargo volume on this route. Using the conversion formula shown in Table 8-38, it is estimated that 50,232 ton's of transport equipment is needed to convey the above mentioned break bulk cargo. After operation of this route and Pilar, San Antonio - Masbate route starts, new bus service between Panay and Sorsogon will be started and the frequency is estimated at one round trip per day. Annual cargo volume of the new bus service is estimated at 5,840 tons. At the same time, passenger cars that have no relation with cargo movement will use the route. Considering the share of vehicle composition by lane meter type in existing RoRo links shown in Table 8-31, the share of type 2 vehicles is estimated at 10 %, cargo volume of type 2 vehicles is estimated at 5,607 tons. Total cargo volume of this route is 62,000 tons.

According to the interview survey, DSDP estimated the number of annual passengers moving between Culasi and Balud at 45,500. Number of passengers using new bus service mentioned above is estimated as 40 persons per bus and 29,200 persons per year. Estimated RORO cargo and passenger volumes in 2005 are (shown in Table 8-19).

**Table 8-19 Present RORO Cargo Volume and Passenger Volume (Culasi - Balud)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 62,000 | 74,700 |

### 8.1.7 Batangas - Palawan SRNH

#### 1) San Jose - Coron - TayTay

Total cargo throughput at four Palawan ports, Puerto Princesa, Brooke's Point, Coral Bay NCR and El Nido ports was 818,362 tons in 2005. The population share of the northern part of Palawan Island to the whole island is 27.5%. Considering the population share, potential cargo throughput share at TayTay port is assumed to be 25%. Half of the cargo handled at TayTay port is assumed to be transported through Palawan – Luzon Route and the other half is assumed to be transported through Palawan – Visayas Route. 102,295 tons of cargo is estimated as potential RORO cargo at TayTay port. 45,097 tons of cargo was handled at Coron port in 2005. The total of both ports is estimated as the potential cargo volume of this route. In the same way, number of passengers on this route is estimated, yielding a potential RORO passengers volume of 23,341 persons at TayTay port. 97,702 passengers passed through Coron port in 2005. The potential passenger volume of this route is estimated as 121,044 passengers (shown in Table 8-20).

**Table 8-20 Present RORO Cargo Volume and Passenger Volume (San Jose - Coron - TayTay)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 147,392 | 121,044 |

### 8.1.8 Palawan - Iloilo SRNH

#### 1) San Jose de Buenavista – Cuyo - Taytay

Total cargo throughput at four Palawan ports, Puerto Princesa, Brooke's Point, Coral Bay NCR and El Nido ports was 818,362 tons in 2005. The population share of the northern part of Palawan Island to the whole island is 27.5%. Considering this population share, potential cargo throughput share at TayTay port is assumed to be 25%. Half of the cargo handled at TayTay port is assumed to be transported through Palawan – Visayas Route and the other half is assumed to be transported through Palawan – Luzon Route. 102,295 tons of cargo is estimated as potential RORO cargo at TayTay port. 40,188 tons of cargo was handled at Cuyo port in 2005. The total of both ports is estimated as the potential cargo volume of this route. In the same way, number of passengers on this route is estimated, yielding a potential RORO passenger volume of 23,341 persons at TayTay port. 48,107 passengers passed through Cuyo port in 2005. The potential passenger volume of this route is estimated as 71,448 passengers (shown in Table 8-21).

**Table 8-21 Present RORO Cargo Volume and Passenger Volume (San Jose de Buenavista – Cuyo - TayTay)**

| Cargo (tons) | Passenger (persons) |
|---|---|
| 142,483 | 71,448 |

### 8.1.9 Summary of Present Traffic

Present RORO cargo volume and RORO passenger volume by routes are shown in Table 8-22 and Table 8-23.

**Table 8-22 Summary of RORO Cargo Volume in 2005**

| Route | Link | Cargo 2005 (tons) |
|---|---|---|
| Eastern Trunk Route | Matnog- Allen | 1,772,017 |
| Eastern Trunk Route | Liloan, San Ricardo- Lipata | 366,110 |
| Eastern Route Extension | San Andres - Masbate | 21,840 |
| Eastern Route Extension | Esperanza - Kawayan | 97,500 |
| Central Trunk Route | Pilar, San Antonio – Masbate | 161,700 |
| Central Trunk Route | Esperanza – Daanbantayan | 157,900 |
| Central Trunk Route | Cebu - Tubigon | 105,860 |
| Central Trunk Route | Janga - Balingoan | 214,415 |
| Central Trunk Route | Benoni, Guinsiliban - Balingoan | 22,756 |
| Western Trunk Route | Batangas – Calapan | 651,779 |
| Western Trunk Route | Roxas – Caticlan | 163,061 |
| Western Trunk Route | Iloilo, Dumangas - Bacolod | 190,442 |
| Western Trunk Route | Dumaguete, Siaton - Dapitan | 132,296 |
| East – West 1 | San Carlos - Toledo | 114,285 |
| East – West 1 | Pt. Engano - Getafe | 114,285 |
| East – West 1 | Ubay - Maasin | 155,235 |
| East – West 1 | San Ricardo - Lipata | 366,110 |
| East – West 2 | Ajuy – Cadiz, Victorias | 74,300 |
| East – West 2 | Escalante - Tabuelan | 152,336 |
| East – West 2 | Bogo - Palompon | 114,400 |
| Panay - Sorsogon | Culasi - Balud | 62,000 |
| Palawan - Luzon | San Jose - Coron - Taytay | 147,400 |
| Palawan - Visayas | San Jose de Buenavista – Cuyo - Taytay | 142,500 |

**Table 8-23 Summary of RORO Passenger Volume in 2005**

| Route | Link | Passenger 2005 (persons) |
|---|---|---|
| Eastern Trunk Route | Matnog- Allen | 1,594,887 |
| Eastern Trunk Route | Liloan, San Ricardo- Lipata | 435,499 |
| Eastern Route Extension | San Andres - Masbate | 85,127 |
| Eastern Route Extension | Esperanza - Kawayan | 104,300 |
| Central Trunk Route | Pilar, San Antonio – Masbate | 360,600 |
| Central Trunk Route | Esperanza – Daanbantayan | 206,600 |
| Central Trunk Route | Cebu - Tubigon | 1,444,945 |
| Central Trunk Route | Janga - Balingoan | 118,800 |
| Central Trunk Route | Benoni, Guinsiliban - Balingoan | 386,287 |
| Western Trunk Route | Batangas – Calapan | 1,123,086 |
| Western Trunk Route | Roxas – Caticlan | 652,769 |
| Western Trunk Route | Iloilo, Dumangas - Bacolod | 220,320 |
| Western Trunk Route | Dumaguete, Siaton - Dapitan | 519,308 |
| East – West 1 | San Carlos - Toledo | 265,266 |
| East – West 1 | Pt. Engano - Getafe | 164,427 |
| East – West 1 | Ubay - Maasin | 137,925 |
| East – West 1 | San Ricardo - Lipata | 435,499 |
| East – West 2 | Ajuy – Cadiz, Victorias | 131,400 |
| East – West 2 | Escalante - Tabuelan | 159,860 |
| East – West 2 | Bogo - Palompon | 149,857 |
| Panay - Sorsogon | Culasi - Balud | 74,700 |
| Palawan - Luzon | San Jose - Coron - Taytay | 121,000 |
| Palawan - Visayas | San Jose de Buenavista – Cuyo - Taytay | 71,500 |

## 8.2 Socioeconomic Framework in 2015

### 8.2.1 Gross Regional Domestic Product (GRDP)

The National Port Master Plan Study (2004) estimated the GRDP up to 2004 as shown in Table 8-24 and forecasted the maritime traffic up to the year 2024 with the use of the regression between traffic and GRDP growth rates.

The current study also assume that the regional economic growth rates forecasted in the Port Master Plan remain true, and utilized the RoRo cargo forecast and the passenger forecast presented in the Port Master Plan.

**Table 8-24 GRDP Projection**

| Region | | Gross Regional Domestic Product (million pesos at 1985 constant prices) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1980 | | 2001 | | 2009 | | 2024 | |
| | | GRDP | Share | GRDP | Share | Projection | Share | Projection | Share |
| Philippines | | 609,768 | 100% | 89,259 | 100% | 1,406,826 | 100% | 2,722,605 | 100% |
| NCR | National Capital Region | 183,444 | 30.1% | 305,204 | 30.9% | 435,177 | 30.9% | 850,514 | 3.1% |
| CAR | Cordillera Administrative | | | 24,229 | 2.4% | 39,348 | 2.8% | 87,042 | 3.2% |
| 1 | Ilocos Region | 24,403 | 4.0% | 29,963 | 3.0% | 43,686 | 3.1% | 86,122 | 3.2% |
| 2 | Cagavan Valle | 17,356 | 2.8% | 22,615 | 2.3% | 31,827 | 2.3% | 64,039 | 2.4% |
| 3 | Central Luzon | 52,831 | 8.7% | 89,525 | 9.0% | 125,500 | 8.9% | 234,492 | 8.6% |
| 4 | Southern Tagalo | 86,998 | 14.3% | 150,585 | 15.2% | 221,150 | 15.7% | 431,915 | 15.9% |
| 5 | Bicol Region | 18,240 | 3.0% | 27,629 | 2.8% | 35,824 | 2.5% | 62,395 | 2.4% |
| 6 | Western Visayas | 45,615 | 7.5% | 69,557 | 7.0% | 95,468 | 6.8% | 177,898 | 6.5% |
| 7 | Central Visayas | 37,562 | 6.2% | 70,347 | 7.1% | 100,542 | 7.1% | 201,295 | 7.4% |
| 8 | Eastern Visayas | 15.155 | 2.5% | 22,633 | 2.3% | 29,063 | 2.1% | 50,336 | 1. 8% |
| 9 | Western Mindanao | 19,407 | 3.2% | 26,651 | 2.7% | 35,158 | 2.5% | 61,821 | 2.3% |
| 10 | Northern Mindanao | 37,059 | 6.1% | 38,829 | 3.9% | 56,270 | 4.0% | 112,227 | 4.1% |
| 11 | Southern Mindanao | 48559 | 8.0% | 62102 | 6.3% | 89588 | 6.4% | 175630 | 6.5% |
| 12 | Central Mindanao | 23,139 | 3.8% | 25,906 | 2.6% | 34,702 | 2.5% | 62,319 | 2.3% |
| ARMM | Autonomous Region in Muslim Mindanao | | | 9,294 | 0.9% | 13,106 | 0.9% | 24,524 | 0.9% |
| 13 | CARAGA | | | 14190 | 1.4% | 20,418 | 1.5% | 40,038 | 1.5% |
| **Grater Region** | | | | | | | | | |
| Luzon (NCR,CAR,1-5) | | 383,272 | 62.9% | 649,750 | 65.7% | 932,511 | 66.3% | 1,816,518 | 66.70% |
| V isavas (6-8) | | 98,332 | 16.1% | 162,537 | 16 4% | 225,073 | 16.0% | 4,295,291 | 15.80% |
| Mindanao (9-13, ARMM) | | 128,164 | 21.0% | 176,972 | 17.9% | 249,241 | 17.7% | 476,558 | 17.50% |
| **Population (1,000)** | | | | | | | | | |
| Philippine National | | 48,098 | | 77,926 | | 90,270 | | 110,252 | |
| Luzon (NCR, CAR, Reg. 1-5) | | 26,081 | | 43,393 | | 50,143 | | 61,218 | |
| V isayas (6-8) | | 11,112 | | 15,916 | | 18,240 | | 21,850 | |
| Mindanao (9-13. ARMM) | | 10,905 | | 18,617 | | 21,904 | | 27,184 | |
| **GDP Per Capita (Pesos)** | | | | | | | | | |
| Philippine National | | 12,678 | | 12,695 | | 15,585 | | 24,694 | |
| Luzon (NCR, CAR, Reg. 1-5) | | 14,695 | | 14,974 | | 18,597 | | 29,673 | |
| V isayas (6-8) | | 8,849 | | 10,212 | | 12,340 | | 19,658 | |
| Mindanao (9-13, ARMM) | | 11,753 | | 9,506 | | 11,379 | | 17,531 | |

Data Source: National Port Master Plan, 2003

### 8.2.2 Growth Ratio

Future RORO cargo volume and short distance passenger volume is estimated in the Port Master Plan 2004, and those target years are set in 2009 and 2024. According to the current socio–economic situation analysis in Chapter 3, the predicted socio–economic condition can be employed without further adjustment, because, over the past three years, no drastic change occurred that could change the socioeconomic framework employed in the Master Plan Study. Therefore, the same cargo and passenger growth ratio by region in the master plan is also adopted as future growth ratio of cargo and passenger in this study.

The master Plan Study estimated the domestic RoRo cargo and passenger volumes in 2009 and 2024 on the basis of the port statistics up to the year 2001. Based on the cargo and passenger

volumes given in the years 2001, 2009 and 2024, the average growth rates of RoRo cargo and passengers have been computed over the periods of 2002 through 2009 and 2009 through 2024. The average growth rates over the period from 2005 through 2015 have been calculated by employing the 2001-2009 growth rates to the period from 2005 to 2009 and 2009-2004 growth rates to the period from 2009 through 2015 (see Table 8-25). The average growth rates of RoRo cargos and passengers by region are shown in Table 8-26 and Table 8-27, respectively.

**Table 8-25 Relation of the Growth Ratio between This Study and Master Plan 2004**

| Forecast Period | Growth Rate employed |
|---|---|
| from 2005 to 2009 | growth rate over the period from 2001 to2009 presented in the Master plan |
| from 2009 to 2015 | growth ratio over the period from 2009 to 2024 Presented in the Port Master Plan |

**Table 8-26 Future RoRo Cargo Growth Rate by Region**

| Region | | Cargo Volume Growth Ratio in Master Plan 2001 | 2009 | 2024 | This Study **2015/2005** |
|---|---|---|---|---|---|
| NCR+4A | NCR+3+4A | 925,297 | 1,439,028 | 3,034,281 | **5.33%** |
| 4B | Southern Tagalog | 392,555 | 643,932 | 1,072,947 | **4.62%** |
| 5 | Bicol | 1,682,610 | 3,021,768 | 7,480,270 | **6.77%** |
| 6 | Western Visayas | 360,138 | 1,842,410 | 2,923,269 | **10.53%** |
| 7 | Central Visayas | 989,491 | 2,006,208 | 3,622,975 | **6.08%** |
| 8 | Eastern Visayas | 1,818,609 | 3,161,891 | 7,699,935 | **6.53%** |
| 9 | Western Mindanao | 14,710 | 42,448 | 102,660 | **9.23%** |
| 10 | Northern Mindanao | 1,368,944 | 2,535,870 | 4,256,435 | **5.29%** |
| 11 | Southern Mindanao | 80,494 | 205,728 | 874,381 | **11.05%** |
| 12 | Central Mindanao | 1,220,342 | 2,347,924 | 3,698,957 | **5.22%** |
| 13 | Caraga | 339,696 | 758,033 | 983,639 | **5.19%** |
| ARMM | ARMM | 96,204 | 214,681 | 200,053 | **3.80%** |
| | Total | 9,289,090 | 18,219,921 | 35,949,802 | **6.28%** |

**Table 8-27 Future Passenger Volume Growth Ratio by Region**

| Region | | Short Distance Sea Passenger Volume Growth Ratio in Master Plan 2001 | 2009 | 2024 | This Study **2015/ 2005** |
|---|---|---|---|---|---|
| NCR+4A | NCR+3+4A | 3,968,126 | 6,021,226 | 12,057,757 | **4.98%** |
| 4B | Southern Tagalog | 2,122,977 | 3,124,358 | 5,996,324 | **4.64%** |
| 5 | Bicol | 2,742,515 | 5,189,259 | 12,807,037 | **7.04%** |
| 6 | Western Visayas | 4,890,230 | 7,398,350 | 13,676,488 | **4.63%** |
| 7 | Central Visayas | 16,360,906 | 21,422,742 | 35,703,036 | **3.45%** |
| 8 | Eastern Visayas | 3,783,133 | 6,231,742 | 13,353,773 | **5.70%** |
| 9 | Western Mindanao | 5,068,594 | 7,704,628 | 17,623,691 | **5.55%** |
| 10 | Northern Mindanao | 4,648,268 | 5,059,284 | 6,641,322 | **1.52%** |
| 11 | Southern Mindanao | 355,378 | 1,230,043 | 5,081,549 | **12.62%** |
| 12 | Central Mindanao | 2,621,431 | 3,638,717 | 6,825,001 | **4.24%** |
| 13 | Caraga | 1,621,304 | 2,851,735 | 6,051,963 | **6.01%** |
| ARMM | ARMM | 603,142 | 3,379,413 | 7,521,676 | **12.54%** |
| Total | | 48,786,004 | 73,251,497 | 143,339,617 | **4.83%** |

## 8.3 Future Demand by Route

### 8.3.1 Traffic forecast

The traffic volume of each link foreseen in 2015 has been computed with the assumption that the traffic volume will grow at the rate estimated over the period from 2005 through 2015.

RORO cargo volume and number of passengers projected in 2015 are summarized in Table 8-28 and Table 8-29. These figures have been calculated on the basis of present cargo and passenger movement. Due to the improvement of traffic condition or other reasons, future RORO traffic volume could easily change. In such a case, that influence should be reflected in this traffic demand forecast.

**Table 8-28 Future RORO Cargo Volume in 2015**

| Route | Link | Cargo 2005 (tons) | Region 1 | Region 2 | Average Growth Ratio | Cargo 2015 (tons) |
|---|---|---|---|---|---|---|
| Eastern Trunk Route | Matnog- Allen | 1,772,017 | 5 | 8 | 6.65% | 3,373,467 |
| Eastern Trunk Route | Liloan, San Ricardo- Lipata | 366,110 | 8 | 13 | 5.86% | 647,039 |
| Eastern Route Extension | San Andres - Masbate | 21,840 | 5 | 5 | 6.77% | 42,048 |
| Eastern Route Extension | Esperanza - Kawayan | 97,500 | 5 | 8 | 6.65% | 185,615 |
| Central Trunk Route | Pilar, San Antonio – Masbate | 161,700 | 5 | 5 | 6.77% | 311,317 |
| Central Trunk Route | Esperanza – Daanbantayan | 157,900 | 5 | 7 | 6.43% | 294,319 |
| Central Trunk Route | Cebu - Tubigon | 105,860 | 7 | 7 | 6.08% | 191,015 |
| Central Trunk Route | Janga - Balingoan | 214,415 | 7 | 10 | 5.69% | 372,725 |
| Central Trunk Route | Benoni, Guinsiliban - Balingoan | 22,756 | 10 | 10 | 5.29% | 38,104 |
| Western Trunk Route | Batangas – Calapan | 651,779 | 4.1 | 4.2 | 4.98% | 1,059,154 |
| Western Trunk Route | Roxas – Caticlan | 163,061 | 4.2 | 6 | 7.58% | 338,426 |
| Western Trunk Route | Iloilo, Dumangas - Bacolod | 190,442 | 6 | 6 | 10.53% | 518,280 |
| Western Trunk Route | Dumaguete, Siaton - Dapitan | 132,296 | 7 | 9 | 7.66% | 276,623 |
| East – West 1 | San Carlos - Toledo | 114,285 | 6 | 7 | 8.31% | 253,790 |
| East – West 1 | Pt. Engano - Getafe | 114,285 | 7 | 7 | 6.08% | 206,217 |
| East – West 1 | Ubay - Maasin | 155,235 | 7 | 8 | 6.31% | 286,106 |
| East – West 1 | San Ricardo - Lipata | 366,110 | 8 | 13 | 5.86% | 647,039 |
| East – West 2 | Ajuy – Cadiz, Victorias | 74,300 | 6 | 6 | 10.53% | 202,204 |
| East – West 2 | Escalante - Tabuelan | 152,336 | 6 | 7 | 8.31% | 338,289 |
| East – West 2 | Bogo - Palompon | 114,400 | 7 | 8 | 6.31% | 210,845 |
| Panay - Sorsogon | Culasi - Balud | 62,000 | 6 | 5 | 8.65% | 142,131 |
| Palawan - Luzon | San Jose - Coron - Taytay | 147,400 | 4.2 | 4.2 | 4.62% | 231,550 |
| Palawan - Visayas | San Jose de Buenavista - Cuyo - Taytay | 142,500 | 6 | 4.2 | 7.58% | 295,752 |

**Table 8-29 Future RORO Passenger Numbers in 2015**

| Route | Link | Passenger 2005 (persons) | Region 1 | Region 2 | Average Growth Ratio | Passenger 2015 (persons) |
|---|---|---|---|---|---|---|
| Eastern Trunk Route | Matnog- Allen | 1,594,887 | 5 | 8 | 6.37% | 2,957,478 |
| Eastern Trunk Route | Liloan, San Ricardo- Lipata | 435,499 | 8 | 13 | 5.86% | 769,309 |
| Eastern Route Extension | San Andres - Masbate | 85,127 | 5 | 5 | 7.04% | 168,085 |
| Eastern Route Extension | Esperanza - Kawayan | 104,300 | 5 | 8 | 6.37% | 193,409 |
| Central Trunk Route | Pilar, San Antonio – Masbate | 360,600 | 5 | 5 | 7.04% | 712,011 |
| Central Trunk Route | Esperanza – Daanbantayan | 206,600 | 5 | 7 | 5.25% | 344,465 |
| Central Trunk Route | Cebu - Tubigon | 1,444,945 | 7 | 7 | 3.45% | 2,028,412 |
| Central Trunk Route | Janga - Balingoan | 118,800 | 7 | 10 | 2.49% | 151,852 |
| Central Trunk Route | Benoni, Guinsiliban - Balingoan | 386,287 | 10 | 10 | 1.52% | 449,186 |
| Western Trunk Route | Batangas – Calapan | 1,123,086 | 4.1 | 4.2 | 4.81% | 1,796,554 |
| Western Trunk Route | Roxas – Caticlan | 652,769 | 4.2 | 6 | 4.64% | 1,026,903 |
| Western Trunk Route | Iloilo, Dumangas - Bacolod | 220,320 | 6 | 6 | 4.63% | 346,431 |
| Western Trunk Route | Dumaguete, Siaton - Dapitan | 519,308 | 7 | 9 | 4.50% | 806,469 |
| East – West 1 | San Carlos - Toledo | 265,266 | 6 | 7 | 4.04% | 394,171 |
| East – West 1 | Pt. Engano - Getafe | 164,427 | 7 | 7 | 3.45% | 230,822 |
| East – West 1 | Ubay - Maasin | 137,925 | 7 | 8 | 4.58% | 215,736 |
| East – West 1 | San Ricardo - Lipata | 435,499 | 8 | 13 | 5.86% | 769,309 |
| East – West 2 | Ajuy – Cadiz, Victorias | 131,400 | 6 | 6 | 4.63% | 206,613 |
| East – West 2 | Escalante - Tabuelan | 159,860 | 6 | 7 | 4.04% | 237,544 |
| East – West 2 | Bogo - Palompon | 149,857 | 7 | 8 | 4.58% | 234,399 |
| Panay - Sorsogon | Culasi - Balud | 74,700 | 6 | 5 | 5.84% | 131,708 |
| Palawan - Luzon | San Jose - Coron - Taytay | 121,000 | 4.2 | 4.2 | 4.64% | 190,442 |
| Palawan - Visayas | San Jose de Buenavista – Cuyo - Taytay | 71,500 | 6 | 4.2 | 4.64% | 112,480 |

### 8.3.2 Estimation of the Composition of vehicles type

The number of vehicles by lane meter in existing routes is shown in Table 8-30. The share of this is shown in Table 8-31. Share of vehicle types are different by links. Type 2 vehicles are dominant in Roxas- Caticlan, San Carlos- Toledo. Type 3 vehicles are dominant in Batangas- Calapan Type 4 vehicles are dominant in Matnog- Allen, Liloan- Lipata, Escalante- Tuburan links. Relation is not found between the share of vehicles and the region links, nor is there a relation between the share of vehicles and the transported cargo volume. Type 1 vehicles represent a very low share on all routes. Shares of type 2, 3, 4 are one third each. For the estimation of traffic volume by links, if there is no link data of vehicle composition, total vehicle composition share data shown in Table 8-31 is applied for estimation.

**Table 8-30 Number of Vehicles by Lane Meter Type, by Route**

| RoRo Link | Type 1 | type 2 | type 3 | type 4 | total | Remarks |
|---|---|---|---|---|---|---|
| Batangas - Calapan | 6,426 | 92,014 | 106,216 | 48,919 | 253,575 | Calapan, 2005 |
| Roxas - Caticlan | 868 | 20,576 | 3,628 | 19,415 | 44,487 | Roxas, 2005 |
| Matnog - Allen | 798 | 12,485 | 10,876 | 37,265 | 61,424 | Matnog, Jan.- Jun. 2006 |
| Liloan - Lipata | 1,309 | 8,116 | 2,932 | 12,189 | 24,546 | Lipata, Jan.- Sep. 2006 |
| Escalante - Tuburan | 290 | 2,544 | 4,356 | 10,878 | 18,068 | Escalante, Jan.- Aug. 2006 |
| San Carlos - Toledo | 498 | 4,253 | 307 | 2,457 | 7,515 | San Carlos, Jan.- Sep. 2006, outbound only |
| Total | 10,189 | 139,988 | 128,315 | 131,123 | 409,615 | |

**Table 8-31 Share of Vehicle Number by SRNH Route**

| RoRo Link | type 1 | type 2 | type 3 | type 4 | total |
|---|---|---|---|---|---|
| Batangas - Calapan | 2.5% | 36.3% | 41.9% | 19.3% | 100.0% |
| Roxas - Caticlan | 2.0% | 46.3% | 8.2% | 43.6% | 100.0% |
| Matnog - Allen | 1.3% | 20.3% | 17.7% | 60.7% | 100.0% |
| Liloan - Lipata | 5.3% | 33.1% | 11.9% | 49.7% | 100.0% |
| Escalante - Tuburan | 1.6% | 14.1% | 24.1% | 60.2% | 100.0% |
| San Carlos - Toledo | 6.6% | 56.6% | 4.1% | 32.7% | 100.0% |
| Total | 2.5% | 34.2% | 31.3% | 32.0% | 100.0% |

### 8.3.3 Estimation of the Vehicles Weight as Transport Equipment by Type

RORO cargo is counted as transport equipment in port cargo statistics. On the other hand, port usage fee of vehicles is collected by its lane meter type. So it is necessary for the financial analysis to convert transport equipment cargo volume to the number of vehicle by each lane meter type. Though weights of vehicles are different even in the same car types, average car weight of each lane meter type is assumed and future car numbers are calculated. Examples of cars and those weights by lane meter type are shown in Table 8-32.

**Table 8-32 Car Types by Lane-Meter and Weight**

| TYPE | Car Types | Weight (tons) |
|---|---|---|
| TYPE 1 | Tricycles, Motorbikes | 0.2 |
| TYPE 2 | Passenger cars | 1.0 |
| TYPE 3 | Jeepnies (for Passenger or Cargo) | 2.0 |
| TYPE 4 | Buses, Trucks | 7.0 |

For the Batangas – Calapan link and Roxas – Caticlan link, statistical data on the number of vehicles and cargo volume of transport equipment are available. Estimated results of the weight of transport equipment using the number of vehicles in Table 8-30 and average vehicle weight shown in Table 8-32 are shown in Table 8-33. Estimated results are close to the actual number.

**Table 8-33 Weight of Transport Equipment**

| Link | | Total Weight of Transport Equipment (tons) |
|---|---|---|
| Batangas - Calapan | Estimated | 648,164 |
| | Actual | 651,707 |
| Roxas - Caticlan | Estimated | 163,911 |
| | Actual | 163,061 |

Estimated weight of transport equipment by vehicles type is shown in Table 8-34. This estimation is done by using the number of vehicles by types shown in Table 8-30 and average weight of vehicles by vehicles types shown in Table 8-32.

**Table 8-34 Weight of Transport Equipment by Car Type**

| Link | type 1 | type 2 | type 3 | type 4 | total |
|---|---|---|---|---|---|
| Batangas- Calapan | 1,285 | 92,014 | 212,432 | 342,433 | 648,164 |
| Roxas- Caticlan | 174 | 20,576 | 7,256 | 135,905 | 163,911 |
| Matnog- Allen | 160 | 12,485 | 21,752 | 260,855 | 295,252 |
| Liloan- Lipata | 262 | 8,116 | 5,864 | 85,323 | 99,565 |
| Escalante- Tuburan | 58 | 2,544 | 8,712 | 76,146 | 87,460 |
| San Carlos- Toledo | 100 | 4,253 | 614 | 17,199 | 22,166 |
| Total | 2,038 | 139,988 | 256,630 | 917,861 | 1,316,517 |

Expected increment of each type's vehicle weight against unit increment of total vehicle weight's by links is calculated by dividing amount of vehicle weight by link, by lane as shown in Table 8-34, by total vehicle weight of the link. Expected increment of vehicle number by type, by link against unit increment of total vehicle weight's by links is calculated by dividing the expected increment of each type's vehicle weight by average vehicle weight shown in Table 8-32. Estimated result is shown in Table 8-35.

**Table 8-35 Expected Number of Vehicles per Unit Ton Increment by Type, by Link**

| Link | type 1 | type 2 | type 3 | type 4 | total |
|---|---|---|---|---|---|
| Batangas - Calapan | 0.0099 | 0.1420 | 0.1639 | 0.0755 | 0.3912 |
| Roxas - Caticlan | 0.0053 | 0.1255 | 0.0221 | 0.1184 | 0.2714 |
| Matnog - Allen | 0.0027 | 0.0423 | 0.0368 | 0.1262 | 0.2080 |
| Liloan - Lipata | 0.0131 | 0.0815 | 0.0294 | 0.1224 | 0.2465 |
| Escalante - Tuburan | 0.0033 | 0.0291 | 0.0498 | 0.1244 | 0.2066 |
| San Carlos - Toledo | 0.0225 | 0.1919 | 0.0139 | 0.1108 | 0.3390 |
| Total | 0.0077 | 0.1063 | 0.0975 | 0.0996 | 0.3111 |

Future number of vehicles by type, by link is calculated by multiplying estimated weight of transport equipment by route and the figure shown in Table 8-35. Estimated result of the number of vehicles by types in Batangas- Calapan, Roxas- Caticlan is shown in Table 8-36. Estimation is very close to the actual number.

**Table 8-36 Estimated Vehicle Number and Actual Number by Type and Route**

| Route | | Number of Vehicles | | | | |
|---|---|---|---|---|---|---|
| | Type | type 1 | type 2 | type 3 | type 4 | Total |
| | Ton/ Unit | 0.2 | 1.0 | 2.0 | 7.0 | |
| Batangas - Calapan | Estimated | 6,461 | 92,517 | 106,797 | 49,186 | 254,961 |
| | Actual | 6,426 | 92,014 | 106,216 | 48,919 | 253,575 |
| Roxas - Caticlan | Estimated | 864 | 20,469 | 3,609 | 19,314 | 44,256 |
| | Actual | 868 | 20,576 | 3,628 | 19,415 | 44,487 |

### 8.3.4 Conversion of Vehicle weight to Break Bulk weight

Statistically, transported cargo weight is measured by the weight of transport equipment that is used for transporting break bulk cargo in RORO ship. Therefore, a conversion formula from break bulk weight to transport equipment weight is needed.

Weight of RORO cargo volume is shown as follows.

Weight of RORO cargo volume

＝Weight of Transport Equipment

＝Weight of unit vehicle * Number of Vehicles

＝Weight of unit vehicle * Weight of break bulk Cargo / Average Weight of break bulk cargo per vehicle (1)

Average Weight of break bulk cargo per vehicle is described,

Average Weight of break bulk cargo per vehicle

= Capacity of carrying cargo * Efficiency of cargo transport (2)

Putting formula (2) into formula (1)

Weight of RORO cargo volume

＝Weight of unit vehicle * Weight of break bulk Cargo / Average Weight of break bulk cargo per vehicle

＝Weight of unit vehicle / Capacity of carrying cargo / Efficiency of cargo transport * Weight of break bulk Cargo (3)

Weight of unit vehicle/Capacity of carrying cargo ratio is shown in Table 8-37. The figure is under 0.9 for medium size truck and 2 for small truck. Accordingly average weight of unit vehicle/capacity of carrying cargo ratio is adopted as 1.4. (4)

**Table 8-37 Weight of Unit Vehicle / Capacity of Carrying Cargo Ratio**

| | Medium Truck (HINO Ranger) | Small truck (SUZUKI Carry) |
|---|---|---|
| Weight of unit vehicle: A(ton) | 3.8 | 0.7 |
| Capacity of carrying cargo: B(ton) | 4.4 | 0.35 |
| A/B | 0.86 | 2.0 |

According to the Ministry of Land, Infrastructure and Transport of Japan, efficiency of cargo transport by truck is about 50% By applying this figure and (4) to formula (3) the following formula is gained.

Weight of RORO cargo volume

=1.4 / 0.5 * Weight of break bulk Cargo

=2.8 * Weight of break bulk Cargo

Therefore, Weight of RORO cargo volume is calculated by multiplying the weight of break bulk Cargo 2.8 times.

### 8.3.5 Forecast of Type 1 or 2 Vehicles in New RORO Links

Cargo estimation flow of new RORO link is as follows. At first, the study team estimates volume of break bulk commodities that will be transported by RORO ship after operation commences. Second, we calculate the weight of transport equipment from weight of carried break bulk cargo using the transport equipment weight/carried cargo weight ratio. In this method, however, weight of transport equipment used for passenger transportation, such as passenger cars and motorcycles, cannot be estimated. This traffic is newly generated by people who travel to visit their relatives or to visit tourist spots using their passenger car. Therefore there is no direct relation with break bulk cargo. In

this section, only the estimation method of cargo weight of type 1 or 2 vehicles from weight of break bulk cargo is describe.

Using the assumption that weight composition by vehicle type is the same which is shown in Table 8-34, expected weight of vehicles by type per unit tons increment is calculated and shown in Table 8-38. Total increment of type 3 and 4 is 0.8921. That of type 1 and 2 is 0.1078 which is 12% of total weight of type 3 and 4. Therefore, weight of transport equipment type 1 and 2 is estimated by 10 % of the weight of transport equipment type 3 and 4.

**Table 8-38 Expected Weight of Vehicles by Type per Unit Ton Increment**

| | type 1 | type 2 | type 3 | type 4 | Total |
|---|---|---|---|---|---|
| Expected Number of Increased Vehicles per Unit Weight Increment | 0.0015 | 0.1063 | 0.1949 | 0.6972 | 1.0000 |

# 9. Present Situation of Management and Operation of RoRo Terminals

## 9.1 General

This chapter describes all aspects relating to the efficiency of the port. “Efficiency” is directly related not only port charge / port procedure / port operation but also safety and security.

For improving the efficiency of sea transportation in the Philippines and supporting regional socio-economic development, it is important not only to develop adequate port facilities but also to utilize port facilities efficiently. To improve the cargo handling efficiency for effective port facilities' utilization, it is necessary to solve various problems brought by not only port users but also terminal operators and port authorities.

### 9.1.1 Present Situation

#### 1) Philippine Ports Authority (PPA)

The Philippine Ports Authority was originally created by virtue of Presidential Decree (PD) No. 505 on July 1974. PPA then, was limited to the exercise of broad supervisory and regulatory powers because of the need for the agency to assume responsibility for the smooth running of ports districts in the country. Presidential Decree No. 857, otherwise known as the revised charter of the PPA was issued on December 23, 1975. This broaden the powers and functions of PPA into an agency responsible for integrating, planning, developing, operating and maintaining all national ports as well as regulating and controlling all private ports.

#### 2) Cebu Ports Authority (CPA)

The Cebu Ports Authority was created by Republic Act No. 7621, revolved from PPA in 1992 as part of the government policy of decentralization. The territorial jurisdiction of the authority includes all seas, lakes, rivers and all other navigable inland waterways within Cebu Province, including Cebu City and all highly urbanized cities which may be created thereafter.

Both PPA and CPA are mandated to exercise national/central port planning responsibility and promote national/regional economic growth through the development of plans and programs geared towards the delivery of efficient port facilities and services that will benefit even the marginalized sector of society and ensure the smooth, safe and economical movement of goods and passengers as means of promoting trade.

PPA and CPA are placed under the administrative supervision of the Department of Transportation and Communications (DOTC) for program and policy coordination. Both are likewise tasked to develop and rehabilitate ports included in their respective port system. The development of feeder ports are likewise included in their objectives to facilitate the efficient movement of cargoes and passengers from the major ports to the smaller towns and cities in the countryside. This will support the intermodal transport system in the Philippines.

### 9.1.2 Port Administration and Related Organizations

#### 1) PPA Management and Organization

PPA has five (5) district offices in the archipelago, two (2) in Luzon, one (1) in the Visayas and two (2) in Mindanao. The functions of the district offices are to supervise and manage the operations of the Port Management Offices (PMO) in their jurisdiction while the PMOs, supervise and manage terminal ports in their area of responsibility. Figure 9-1 and Figure 9-2show the typical

organizational chart of PPA Port District Office and Port Management Office.

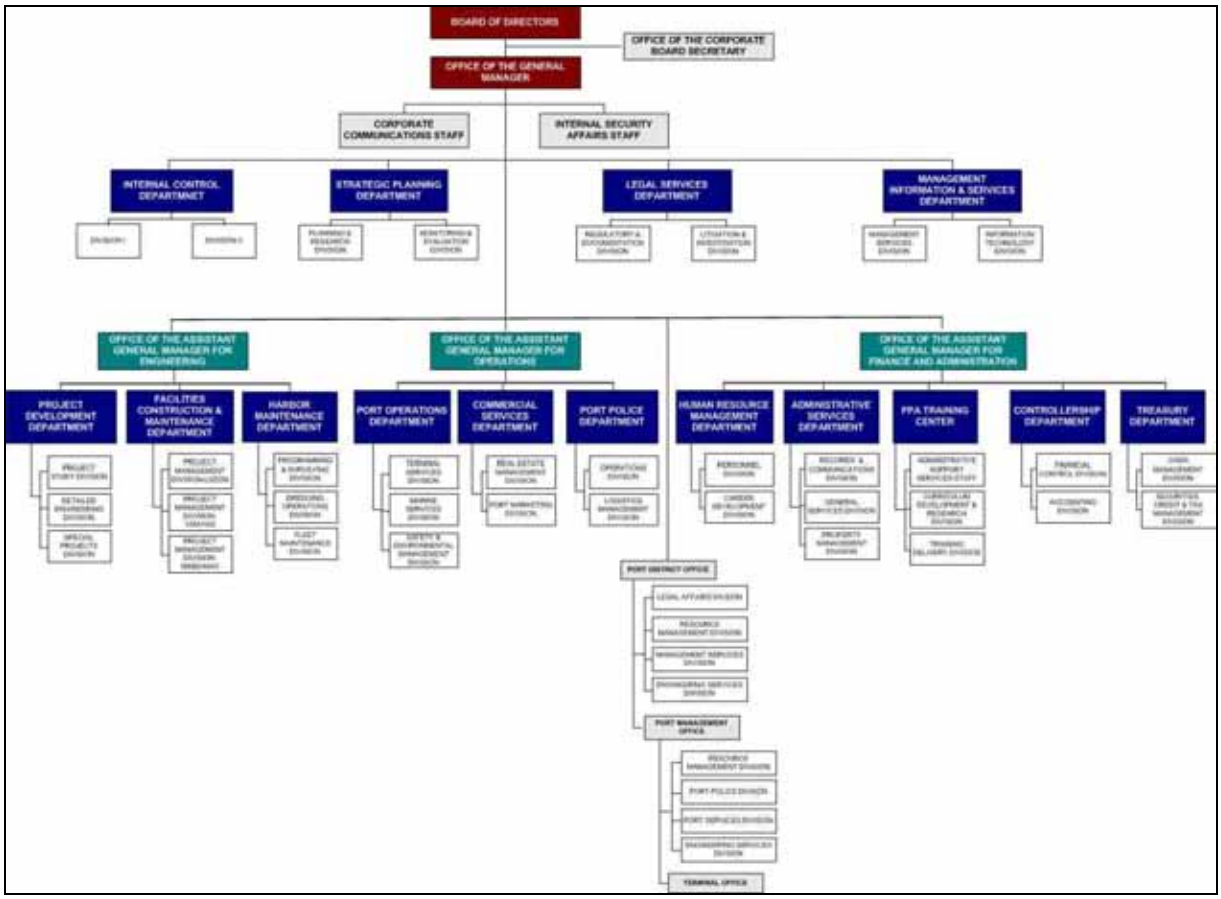



**Figure 9-1 Organization Chart of PPA (Source: PPA)**

**i) Port District Offices (PDOs)**

The duties and functions of the PDO are as follows:

-Supervises the operation of ports and ensures the implementation of all operating and management policies, systems and procedures as well as performance standards.

-Directs and controls the activities to ensure safe and efficient management and operation of ports within the district.

-Provides legal services and handles the recruitment of port personnel within the port district.

-Develops a port facilities and equipment maintenance program and undertakes the implementation of the same.

-Enhances usage of port facilities and services.

-Ensures the proper implementation of rules and regulations in the development and operation of private ports under PDO jurisdiction.

-Establishes and maintains harmonious relationship with relevant government agencies and private sectors under PDO jurisdiction.

-Performs related functions.

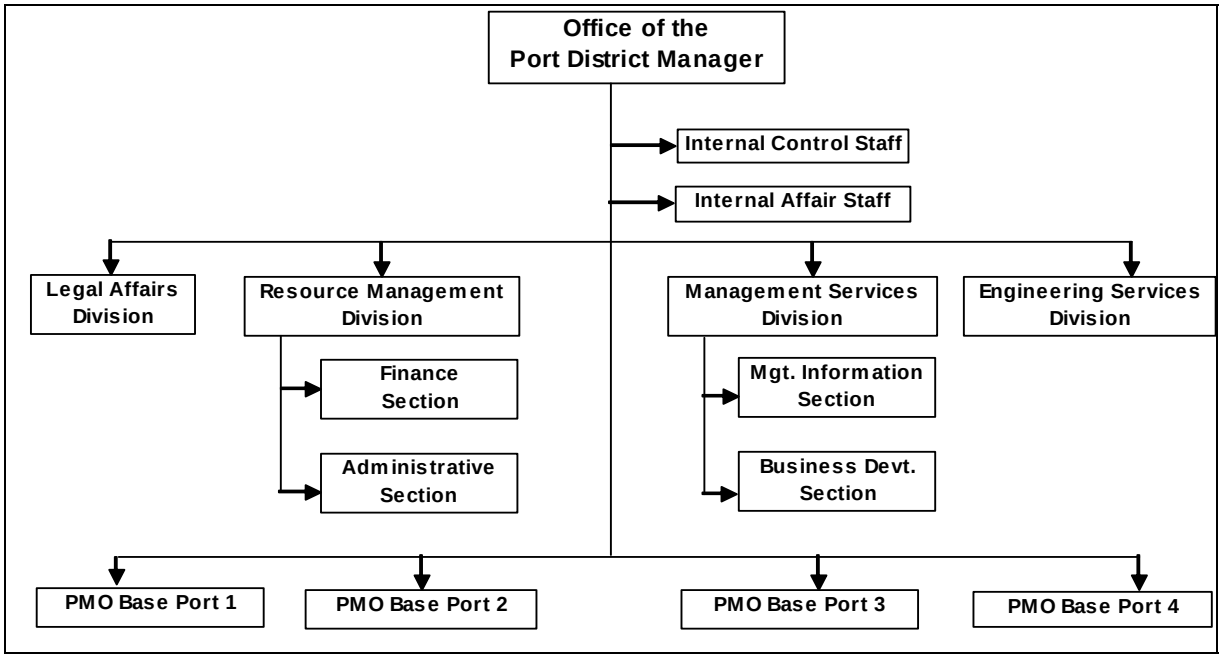



**Figure 9-2 Typical Organizational Chart of Port District Office (Source: PPA)**

**ii) Port Management Offices (PMOs)**

The duties and functions of the PMOs are as follows:

-Supervises the day-to-day operations of the port.

-Implements all PPA policies, systems and procedures and ensures the compliance thereto.

-Provides safety and security of people, cargoes and facilities.

-Ensures that all fees, dues and charges due to the PPA are duly billed and collected and accounted for.

-Collects and submits statistical data.

-Implements repair and maintenance works.

-Performs other related functions.

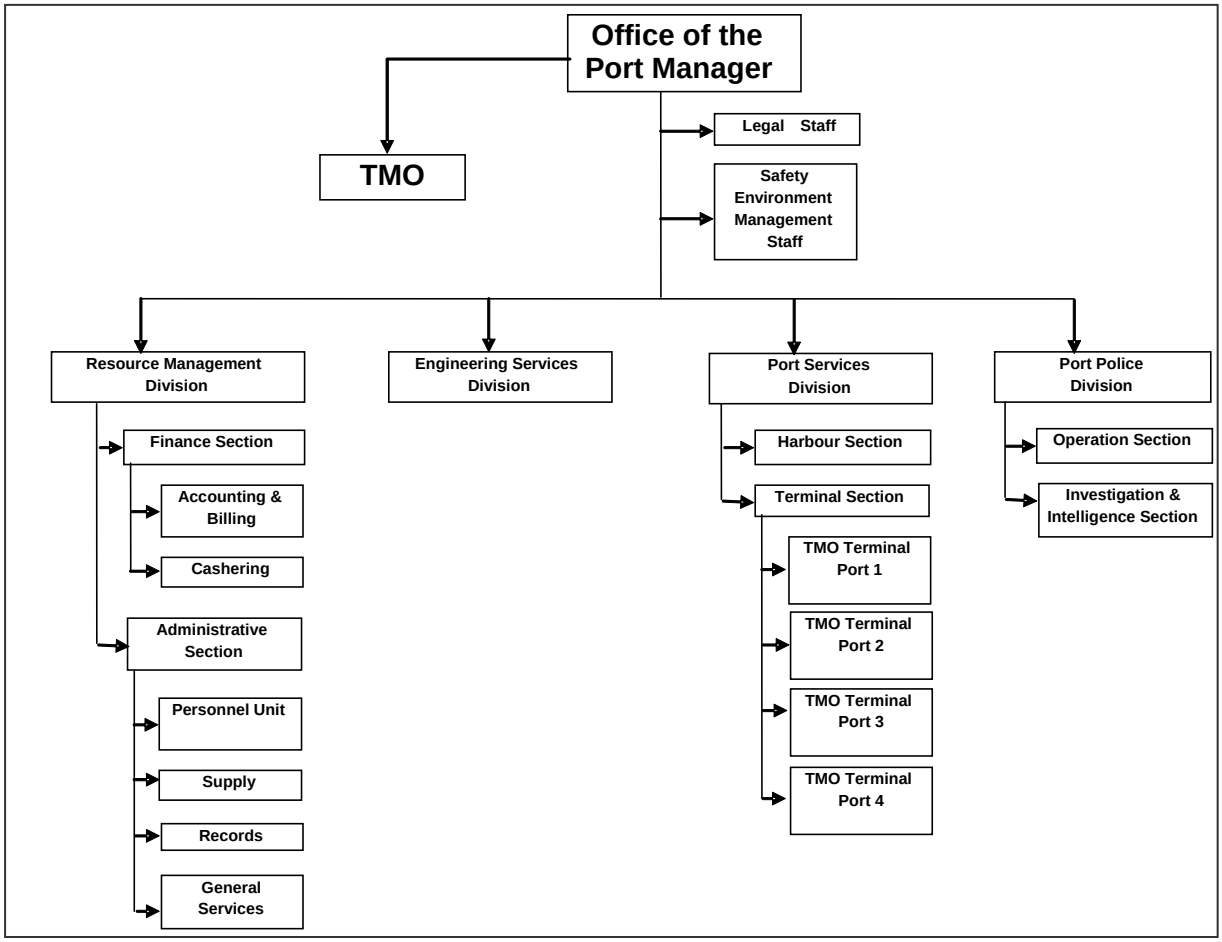



**Figure 9-3 Typical Organizational Chart of Port Management Office (Source: PMO Calapan)**

### iii) Terminal Management Offices (TMOs)

The TMOs have more or less the same functions and duties like the PMO. However, it is confined to that designated terminal port under the PPA Ports System as well as identifies only the terminal port needs for repair and maintenance for the PMO to consider. Figure 9-4 shows the organizational structure of a terminal management office.

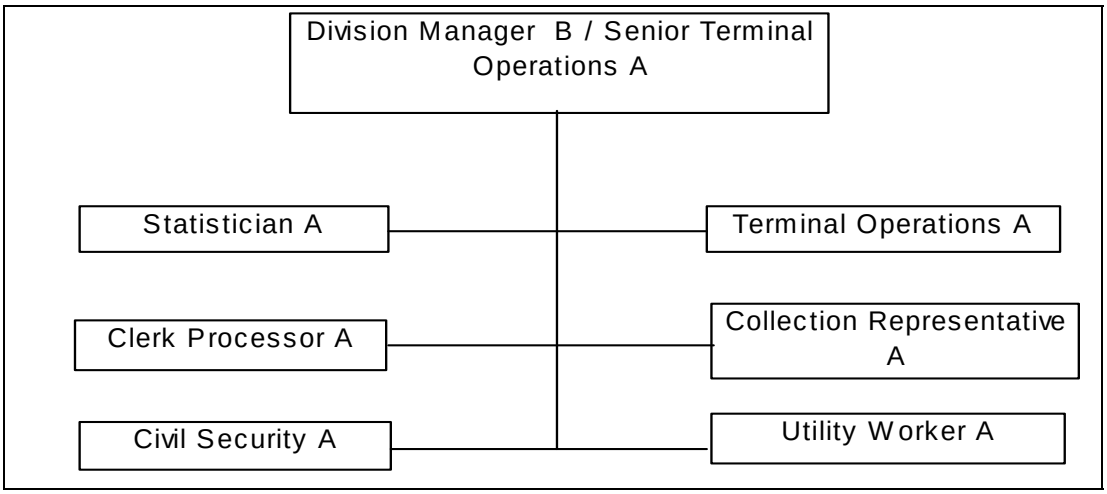



**Figure 9-4 Typical Organizational Chart of Terminal Management Office**

#### 2) CPA Management and Organization

The Cebu Ports Authority has a similar port organizational structure with PPA in the delivery of front line services or administration, management, operation and development of ports under its port system.

#### 3) Local Government Units (LGUs)

The development of LGU ports, feeder ports and fishing ports was undertaken by the Department of Public Works and Highways (DPWH) from the 1970s up to 1989. In 1990, the National Economic and Development Authority (NEDA) assumed responsibility.

### 9.1.3 Definition of Roll-on /Roll Off (RoRo)

#### 1) Executive Order (E.O.) 170

Executive Order 170 promotes private sector participation and investment in the development and operation of the Road Roll-on/Roll-off Terminals System. The policy of the Government of the Philippines is to reduce the cost of inter-island transportation through the establishment of an efficient and cost effective RRTS as a vital component of the Government's agri-fisheries modernization and food security programs the objectives of which are to raise the income of farmers and fishermen. This will also serve to enhance tourism, transportation and commerce throughout the archipelago.

The Philippine Ports Authority (PPA), Cebu Ports Authority (CPA) and the Maritime Industry Authority are the proper Government agencies mandated to reduce transport cost and improve the quality and efficiency of transport from the countryside to the urban markets whereas the Department of the Environmental and Natural Resources (DENR) is responsible for the issuance of Environmental Compliance Certificates (ECC) and the Development Bank of the Philippines (DBP) will take charge of the Sustainable Logistics Development Program (SLDP).

#### 1. Definition of Terms

The definition of RoRo operations shall refer to the method of loading and discharging of self-powered vehicles, such as cars, trucks and other self driven vehicles between vessel and a shore via ramp.

A RoRo Terminal System refers to the network of terminals all over the country, separated by a distance of not more than fifty (50) nautical miles and linked by RoRo vessels.

#### 2. Integration of the RRTS with the National Highway System

To the extent permitted by Philippine Law, the RRTS shall be considered as part of the National Highways. Accordingly, vehicles that can be moved by their power and passing through such links shall be burdened by transport procedures and costs, unless otherwise provided by law. A Certificate of Public Convenience shall however be required for the operation of RoRo vessels in accordance with law.

#### 3. RRTS Toll

The RRTS Toll shall consist of the following:

-A terminal fee levied by the RoRo terminal operator on vehicles and passengers for the use of the terminals;

-A passage fee levied by the RoRo vessels operator on self-powered vehicles based on

lane-meter;

-A passage fee levied by the RoRo vessel operator on passengers; and

-A berthing fee levied by the RoRo terminal operator on the RoRo vessel for mooring or berthing at the RoRo terminal.

**4. RRTS Documentary Requirements**

To the extent permitted by law, MARINA, PPA, CPA and other concerned Government agencies shall ensure that the RRTS shall be covered by reduced and simplified documentary requirements. No clearance shall be required of motor vehicles using the RRTS. Provided however, that the owners or operators of RoRo vessels shall comply with the reporting requirements under Section 11 of the Anti-Carnapping Acts of 1972 (Republic Act. No. 6539).

**5. Private Commercial Terminals**

The PPA and the CPA shall ensure that RoRo terminals established and constructed through private investments shall be operated as private commercial terminals. The PPA and CPA shall likewise take concrete steps to private state-owned RoRo terminals to attract investments in the RRTS.

**6. Environment and Business-Related Requirements of the RRTS**

Where all the legal requirements have been complied with, relative to the construction and operation of RRTS facilities, the Department of Environment and Natural Resources shall issue Environmental Compliance Certificates within a period of forty five (45) days there from. Local government units are strongly encouraged to issue the necessary permits for the operation of RRTS facilities within three (3) days from date of application. Likewise, the PPA, CPA and MARINA shall issue the permits necessary for the construction and/or operation of RRTS facilities within thirty (30) days from the date of application.

**7. Private Sector Financing for RRTS**

The Development Bank of the Philippines shall make available long-term loan/financing to eligible projects and qualified barrowers under its Sustainable Logistics Development Program.

**2) Executive Order (E.O.) 170-A**

Executive Order 170-A is an amended version of E.O 170 which expands the coverage of RoRo Terminal System. From the distance of fifty (50) nautical miles the amendment expands the coverage of the RRTS to include long-haul RoRo vessels so as to further support the agri-fisheries modernization and food security programs of the Government and to reduce the cost of inter-island transportation.

The RRTS toll shall be applicable to all self-powered vehicles loaded and discharged on their own wheels by their owners or drivers between vessels and shore via a ramp and all vessels to the extent that they are actually engaged in RoRo operations.

**3) Executive Order (E.O.) 170-B**

Executive Order 170-B encouraged further expansion of the country's Road RoRo Terminal System (RRTS) and reduction of transport cost through the increase in the number of RoRo capable ports and conversion of more private non-commercial ports operations to private commercial port operations.

**1. Development of More RoRo Capable Ports**

The port authorities such as the PPA, CPA, Regional Ports Management Authority (RPMA) and other independent port authorities to continue the development of more RoRo capable ports in strategic areas of the country to widen the coverage of the nautical highway program.

**2. Transport Cost Reduction**

The port authorities and MARINA will ensure that the spirit and intent of EO 170 series of 2003, as amended, to lower the cost of transport is reflected in the RRTS charges, and that the reduction of cargo handling cost is passed on to the users in the form of lower freight rates. In no case shall the existing cargo handling charges be retained in any form or manner, such as, change in the nomenclature of the fee/charge, provided that cargo conforms with the prescribed operating norms for RoRo where there is no participation and responsibility over the cargo attached to the cargo handler and/or terminal operator as contemplated in EO 170, as amended.

**3. Uniform RRTS Rates**

All ports authorities shall ensure that the said RRTS charges are applied uniformly to RoRo cargoes in their respective ports catering to RoRo operations.

**4. Encouraging Conversion to Private Commercial Ports**

All port authorities will allow and encourage the conversion of private non-commercial ports into private commercial ports under RRTS network. Proximity to and direct competition with a public port shall not be a valid cause for non-approval of any private port conversion.

**5. DOTC as Lead Agency**

The Department of Transportation and Communications (DOTC) shall coordinate the activities of the aforementioned agencies, monitor their compliance with the directives under this EO and related issuances, seek the cooperation of the private sector and regularly report to the Office of the President progress of the Government's program to realize the ultimate goal of bringing down transport costs.

### 9.1.4 Port Characteristics by Management Type

#### 1) PPA Port System

PPA directly manages 114 ports, which consist of 21 "base ports" and 93 "terminal ports" as of February 2005. Ports directly managed by PPA (i.e. planned, invested, maintained, etc.) are called "PPA port system". It should be noted that, according to PPA officials, PPA port system does not mean the ports under PPA's jurisdiction but indicates the priority of the investment of PPA. PPA has collected port statistical data not only on ports under its port system but also LGU ports as well as private ports.

The PPA sets and collects its own revenues, and does not receive funding from the national government, and is required by fiat to declare 50% of its net income as dividends to the government. Its ports handle domestic and foreign cargo (containerized and bulk) and passengers; and some of its ports have been modified to cater to RoRo operations.

The private sector can develop its own port after getting clearance from the port authority as well as the Bureau of Lands. The private port developer will have a limited period contract with the port authority on the development/operation of a private port. Normally, the period is 25 years, after which the port will be transferred to the port authority.

There are two kinds of private ports: private non-commercial ports and private commercial ports. While the former is utilized solely by the owner of the port, the latter is utilized openly to the public. In other words, the cargo handled at the private commercial port is not limited to the usage of the private owner of the port.

**2) Independent Port Authorities**

CPA was established in 1992. Its territorial jurisdiction (CPA) includes all seas, lakes, rivers and all other navigable inland waterways within the Province of Cebu, including the City of Cebu and all highly urbanized cities which may hereafter be created therein.

CPA serves to integrate and coordinate the planning, development, construction and operation of ports and port facilities within its territorial jurisdiction, consistent with the needs and requirements of the region. It enhances the flow of international and domestic commerce passing through or utilizing the regional ports. It promotes regional development by providing support service to sustain the growth of export and other priority industry in the region.

**3) Other Ports**

LGUs are responsible for the management/operations of small scale public ports, which are not directly managed by PPA or CPA. The developments of these ports are funded by LGUs or the central government through DOTC. The DOTC shall utilize not only local fund but also foreign loan for that purpose. While LGUs is the responsible body for the implementation of port construction as well as management/operation of the port in case of locally–funded project, DOTC is responsible for the construction of the development project in the case of foreign-assisted project. After the completion of a foreign-assisted project, the constructed port shall be turned over to the LGU, which will manage/operate the port.

**4) RRTS Ports**

The Road-RORO Terminal System (RRTS) is still unclear. In terms of infrastructure, the SRNH under the PPA umbrella is more extensive (i.e., current RoRo operation is being operated under the PPA Ports System).

DOTC is designated as the lead government agency to oversee the successful implementation of the RRTS.

What distinguishes the RRTS from the PPA Ports System are the following:

-No cargo handling charges since the cargo is “rolling,”

-No wharfage dues (Specified under EO No.170),

-Toll fee consisting of 4 unbundled cost items,

-Simplified documentary requirements, and

-Waiver of port authorities’ share in revenues, with PPA and MARINA receiving a fixed annual administrative supervision fee.

The following (Table 9-1) is the schedule of government share in port tariffs categorize by type of port.

**Table 9-1 Government Share of Various Port Tariffs (Source: JICA Study on DSDP (2005))**

| Kinds of Tariff | Kinds of ports | PPA (114 ports) | LGU | Private |
|---|---|---|---|---|
| Cargo handling charge | Domestic | Minimum 10% of revenue of the cargo handling operator | | 0% (*1) |
| | Foreign | Minimum 20% of revenue of the cargo handling operator | | 0% (*1) |
| Port Dues (Port entry fee) | Domestic | 0% | 0% | 0% |
| | Foreign | 100% | 0% | 0% |
| Dockage | Domestic | 100% | 0% | 50% |
| | Foreign | 100% | 0% | 50% |
| Wharfage | Domestic | 100% | 0% | 50% |
| | Foreign | 100% | 0% | 50% |

Note: *1 The private port will pay to the government as follows.
- Private non-commercial port: 10,000 pesos p.a.
- Private commercial port: 20,000 pesos p.a.

## 9.2 Port Charges

Port charges include charges on vessels, cargoes, storage etc. Charges on vessels are based on the gross registered tonnage, while charges on cargoes are based on metric tons whether it is a break bulk or containerized cargoes. Government owned - ports offer a free day storage period. Beyond the free-day storage period the government-owned ports will charge cargoes on a daily basis based on metric tons.

The income generated from port charges will be used by the port authority for improvement, maintenance and development of new ports.

### 9.2.1 Present Situation

At present port charges are collected by PPA, CPA, RPMA, LGUs and other private commercial ports in the country. The port charges classified by PPA are as follows:

**i) Charges on Vessels**

(1) Port Dues – the amount assessed against the vessel engaged in foreign trade based on its total GRT or part thereof, including those engaged in barter trade for each entrance into and departure from a port of entry in the Philippines.

(2) Dockage (at berth) – the amount assessed against a vessel engaged in international or foreign trade, including those engaged in barter trade, for mooring or berthing at a pier, wharf, bulkhead, river or channel marginal wharf at any national port in the Philippines; or for mooring or making fast to a vessel so berthed;

(3) Dockage (at anchorage) – amount assessed against a vessel engaged in international or foreign trade, including those in barter trade, that do not berth but drop anchor at either a government or privately owned port whether operated exclusively or commercially.

(4) Usage – the amount assessed against a vessel engaged in domestic trade for berthing, for making fast to a vessel so berthed or for mooring at an anchorage area.

Existing operational procedures generally require shipping companies or its representative to apply for berthing allocation from the Port Management Office (PMO) or from the

Terminal Management Office (TMO) concerned before the arrival of the vessel. Berthing of vessels shall be allowed on a first come, first serve basis.

**ii) Charges on Cargoes**

(1) Wharfage – a charge on all cargoes, whether containerized or not, coming in/out or transshipped through a port on the basis of the total metric or revenue tonnage whichever is applicable.

(2) Storage – the amount assessed on the article, baggage and containers for the storage in the port premises, cargo shed and warehouse of the government beyond the free storage period;

For domestic port tariff PPA Memorandum Circular No. 17 - 2006 asserts the resumption of the previously approved increase in port charges (usage and wharfage fee) and presented in Table 9-2. However, foreign vessel charges is still remain the same meaning no increase had been made since April 3, 1995 up to present. Table 9-3 presents the PPA port tariff for foreign vessels.

**Table 9-2 PPA Port Tariff (Domestic)**

| **A. Domestic Port Charge** | **Previous Rate (₱)** | **Rates (₱)** | | |
|---|---|---|---|---|
| | | **Jan. 1, 2007** | **Jan 1, 2008** | **Jan. 1, 2009** |
| A. Domestic Dockage Fee (Usage Fee) at a government port | | | | |
| - 6 to 100 GRT per calendar day or fraction thereof | 51.00 | 61.00 | 72.00 | 82.00 |
| - Over 100 GRT per GRT or fraction thereof | 0.50 | 0.60 | 0.70 | 0.80 |
| A1. Domestic vessels calling at officially registered private ports shall be charged at one-half (1/2) of the Domestic Dockage Fee at a government port | | | | |
| A2. Registered bay and river trade vessels shall also be charged one-half (1/2) of the required Domestic Dockage Fee but in no case less than or more than the following charges for a calendar day or fraction thereof: | | | | |
| | **Previous Rate** | **Jan. 1, 2007** | **Jan 1, 2008** | **Jan. 1, 2009** |
| Not less than (₱) | 51.00 | 61.00 | 72.00 | 82.00 |
| Not more than (₱) | 255.00 | 308.00 | 360.00 | 413.00 |
| A3. Lay-up Fee for domestic vessels shall be one-half (1/2) of the applicable Domestic Dockage Fee. | | | | |
| **B. Domestic Wharfage Fee** | **Previous Rate (₱)** | **Rates (Php)** | | |
| | | **Jan. 1, 2007** | **Jan 1, 2008** | **Jan. 1, 2009** |
| B1. Non-Containerized Cargoes | | | | |
| - Cargoes in sacks/bags/bulk/uncrated/live animals/steel products/logs and lumber/heavy lift | | | | |
| Per Metric Ton | 5.00 | 6.00 | 7.00 | 9.00 |
| - Others | | | | |
| Per Revenue | 4.00 | 5.00 | 6.00 | 7.00 |
| - Minimum Charge | 8.00 | 10.00 | 12.00 | 15.00 |
| B2. Containerized Cargoes | | | | |
| 10’ box or shorter | 34.00 | 43.00 | 52.00 | 63.00 |
| 20’ box | 69.00 | 86.00 | 105.00 | 126.00 |
| 35’ box | 86.00 | 107.00 | 131.00 | 157.00 |
| 40’ box | 104.00 | 129.00 | 157.00 | 189.00 |
| 45’ box | 121.00 | 151.00 | 184.00 | 221.00 |
| B3. Domestic cargoes, whether containerized or not, that are loaded/discharged at anchor without using any government wharf or at officially registered private ports shall be charged one-half (1/2) of the usual Domestic Wharfage Fee. | | | | |

## Table 9-3 PPA Port Tariff (Foreign)

| **A. Foreign Vessel Charge** | **Unit/Comment** | **Rates (USD)** | | |
|---|---|---|---|---|
| | | **Until Apr 2, 1994** | **Since Apr 3, 1994** | **Since Apr 3, 1995** |
| A1. Port Dues | Port entry fee | 0.062/GRT | 0.074/GRT | 0.081/GRT |
| A2. Dockage Fee at berth | | | | |
| - Government Port | Per day | 0.030/GRT | 0.036/GRT | 0.039/GRT |
| - Private Port | Per day | 0.021/GRT | 0.018/GRT | 0.020/GRT |
| A3. Anchorage Fee | Per day | 0.021/GRT | 0.018/GRT | 0.020/GRT |

| **B. Wharfage for Foreign Cargoes** | **Unit/Comment** | **Rates (Php)** | | | **Remarks** |
|---|---|---|---|---|---|
| | | **Until Apr 2, 1994** | **Since Apr 3, 1994** | **Since Apr 3, 1995** | |
| ***B1. Non-Containerized*** | | | | | |
| - Imported Cargoes in sacks/bags/bulk/uncrated / live animals/steel products/logs and lumber/heavy lift | Per metric ton | 28.20 | 33.85 | 36.65 | |
| - Others | Per revenue ton | 23.50 | 28.20 | 30.55 | |
| - Exported Cargoes in sacks/bags/bulk/uncrated /live animals/steel products/logs and lumber/heavy lift | Per metric ton | 14.10 | 16.90 | 18.35 | |
| - Others | Per revenue ton | 11.75 | 14.10 | 15.25 | |
| - Transhipment Cargoes in sacks/bags/bulk/uncrated /live animals/steel products/logs and lumber/heavy lift | Per metric ton | USD0.641 | USD0.769 | USD0.833 | Minimum charge shall be USD10.00 |
| - Others | Per revenue ton | USD0.534 | USD0.641 | USD0.694 | -do- |

| **Type of Charge** | **Unit/Comment** | **Imported (PhP)** | **Exported (PhP)** |
|---|---|---|---|
| FCL/LCL singles | | | |
| 20 ft | Per box | 519.35 | 259.70 |
| 35 ft. | Per box | 656.85 | 329.95 |
| 40 ft. | Per box | 779.05 | 391.05 |
| 45 ft | Per box | 916.50 | 458.25 |

**iii) Charges on Storage**

Charge on storage differs by cargo transportation modes.

**Table 9-4 Charges on Storage (PPA)**

| Type of Charge | Unit | Rates | Remarks |
|---|---|---|---|
| Non-Containerized Cargoes | | | |
| Domestic Cargoes | per revenue ton per day/fraction | P 5.65 | 2 days after arrival (If in case no loaded on their scheduled vessel, free storage period will be 2 days after vessel's departure.) |
| Containerized Cargoes | | | |
| 10 ft | per box | P 63.45 | |
| 20 ft | | P180.50 | |
| 35 ft | | P314.90 | |
| 40 ft | | P360.95 | |

### 9.2.2 Charge of RoRo

Based on the E.O. 170, RoRo charges are as follows:

-A terminal fee levied by the RoRo terminal operator on vehicles and passengers for the use of the terminals.

-A passage fee levied by the RoRo vessel operator on self-powered vehicles based on lane-meter;

-A passage fee levied by the RoRo vessel operator on passengers; and

-A berthing fee levied by the RoRo terminal operator on the RoRo vessel for mooring or berthing at the RoRo terminal.

Table 9-5 presents the RoRo terminal fee for vehicles while vessel berthing /dockage fee is the same as the PPA port domestic tariff illustrated in Table 9-2 above. Passengers Terminal Fee varies from port to port since passenger terminal buildings are managed by private operators. Normally a minimal fee is collected from passengers for the use of the passenger terminal building.

**Table 9-5 RoRo Terminal Fee for Vehicles**

| Vehicle Type | Lane Meter | Denomination (Php) | Color |
|---|---|---|---|
| Type 1 | 1 - 3 | 56.00 | Blue |
| Type 2 | >3 - 5 | 112.00 | Yellow |
| Type 3 | >5 - 7 | 224.00 | Pink |
| Type 4 | >7- Up | 448.00 | Green |

The denominations stated in the above table are inclusive of twelve percent (12%) Value Added Tax (VAT).

**Table 9-6 Schedule of One Time RO-RO Charges**

| VEHICLE TYPE | Lane Meter | PPA | | | | ARRASTRE (Vat Inclusive) | GRAND TOTAL |
|---|---|---|---|---|---|---|---|
| | | | WHARFAGE | ARRASTRE SHARE | TOTAL | | |
| TYPE 1 | 1 – 3 | | | | | | |
| Motorcycle | | Income | 6.6 | 4.33 | 10.93 | 39.07 | 50 |
| Tricycle | | 12%Vat | 0.79 | 0.52 | 1.31 | 4.69 | 6 |
| Scooter | | Total | 7.39 | 4.85 | 12.24 | 43.76 | 56 |
| TYPE 2 | >3 – 5 | | | | | | |
| Car, Mini Van, SUV, | | Income | 18.6 | 8.14 | 26.74 | 73.26 | 100 |
| AUV, Owner Jeep | | 12%Vat | 2.23 | 0.98 | 3.21 | 8.79 | 12 |
| PUJ(up to 16 pax) | | Total | 20.83 | 9.12 | 29.95 | 82.05 | 112 |
| TYPE 3 | >5 – 7 | | | | | | |
| Light Delivery Van | | Income | 64.34 | 13.56 | 77.9 | 122.1 | 200 |
| Pick-Up Truck | | 12%Vat | 7.72 | 1.63 | 9.35 | 14.65 | 24 |
| PUJ(more 16 pax) | | Total | 72.06 | 15.19 | 87.25 | 136.75 | 224 |
| TYPE 4 | >7 – Up | | | | | | |
| Stake Truck | | Income | 117.82 | 28.22 | 146.04 | 253.96 | 400 |
| Heavy Delivery Truck | | | | | | | |
| Passenger/Tourist Bus | | 12%Vat | 14.14 | 3.39 | 17.52 | 30.48 | 48 |
| Prime Mover/Tractor Head | | | | | | | |
| (with or without trailer/chassis) | | Total | 131.96 | 31.61 | 163.56 | 284.44 | 448 |

Source: JICA STUDY TEAM based on the survey and interview from PPA

### 9.2.3 Comparison of Port Tariff

Comparison of PPA port tariffs with the port of Tokyo and Nagoya (Japan) is made in the following section.

Comparison of each tariff item is difficult because the unit, way of computing, commodity price and value of money are different in each country. However, examination of the tariff in specific conditions is conducted below (Tariffs of Japanese Ports are converted into Philippine pesos). A 1,000 GRT domestic RORO vessel with 5-hour berthing term is used for the calculation. Usage in Japanese ports is classified by berthing hour while tariff in the Philippines is calculation on a daily basis. Based on the port tariff of each port shown in Table 9-7 and Table 9-8. Usage fees in the Philippines are less than Japanese ports.

**Table 9-7 Comparison of Philippines and Japanese Port Tariffs**

| Type of Charge | Unit | Philippine Latest (Php) | Tokyo, Japan (Php/GRT*) | Nagoya, Japan (Php/GRT*) |
|---|---|---|---|---|
| Usage Fee at Gov | | | | |
| <6GRT | | | | |
| 6GRT to 100GRT | Per day | 61.00 | | |
| >100GRT | Per GRT Per Day | 0.60 | | |
| | Less than 1 hour | | 1.48 | |
| | Less than 2 hour | | 2.92 | |
| | 2 to 12 hour | | 4.02 | 4.22 |
| | 12 to 24 hour | | 6.70 | 7.14 |

* Apr 2007 (1 JPY = 0.40 PHP = 0.0084 USD)

**Table 9-8 General Observation of Port Procedures (5 hours)**

| Port Name | Usage |
|---|---|
| **Philippines:** | **PHP 0.60 x 1 day x 1,000 GRT = PHP 600** |
| Tokyo: | PHP 4.02 x 1,000GRT = PHP 4,020 |
| Nagoya: | PHP 4.22 x 1,000GRT = PHP 4,220 |

### 9.2.4 Proposal of Port Tariff

In setting a strategic port tariff, it is important to consider not only the economic activities in the hinterland but also how best to control the cargo handling operations in the port. Compared with the tariffs of major foreign ports, port tariff in the Philippines for domestic vessels is extremely low. For that reason, some domestic vessels occupy a berth/anchorage for an excessive length of time to carry out repairs or perform maintenance. In a "first come - first serve" policy, vessels should move out after completing loading / unloading operations so that other vessels may utilize the berth.

#### 1) Shortening unit of the port tariff (from daily basis to hourly basis)

Unit of the tariff should be changed from daily basis to hourly basis, especially dockage at berth/anchorage and usage fee. The reduced berthing cost will give shipping companies an incentive to leave the berth in the minimum time.

#### 2) Necessity of appropriate port tariffs

In the domestic tariff comparison with foreign ports, domestic port tariff in the Philippines, especially usage fee, is set extremely low, therefore minor ports which handle only domestic cargoes cannot be financially independent. It often happens that a port authority/public port development body cannot repair/maintain its own port facilities immediately. Therefore, these ports cannot attract any private investors.

Appropriate tariff setting (increasing domestic port tariffs) should be implemented so that those ports can be financially independent, at least to the extent that they could maintain their facilities and possibly attract private operators.

## 9.3 Port Procedures in Collecting Fees

Port procedures in collecting fees in using RRTS is very essential to all users (i.e., passengers, vehicle owners/drivers, shipping lines) to guide and encourage them to use the system. Better and orderly management of RRTS will have a positive socio-economic impact and boost tourism in the countryside.

### 9.3.1 Present Situation

The Study Team visited some of the major RoRo terminals in the country to find out the present situation of RoRo operations. During the visit, the Study Team observed some port procedures on how port operators implemented the RRTS. Table 9-9 presents the general observations of the port procedures for RRTS users while flow charts of procedures are presented in Figure 9-5 to Figure 9-7.

**Table 9-9 General Observation of Port Procedures**

| Users | Procedures | Specific Port Locations | Agencies Concerned | Fees Collected |
|---|---|---|---|---|
| **Passengers** | At the Port of Embarkation, RoRo passengers will enter at the passengers entrance for baggage inspection | Entrance Gate | PPA | N.A. |
| | Passenger will secure vessel ticket from the shipping lines | Shipping Lines Ticketing Booth | Shipping Line | Based on Distance |
| | RoRo passengers shall pay Terminal Fee upon proceeding to the waiting area for boarding | Passenger's Waiting Area | PPA | Minimal Fee |
| **Truckers/Vehicle Owners** | At the Port of Loading, RoRo vehicles enter at the entrance gate | Entrance Gate | PPA | N.A. |
| | The Security Guard writes the vehicle type and plate number on a form slip which will be given to the PPA Collecting Officer. | Entrance Gate | PPA | N.A. |
| | PPA Collecting Officer will collect the amount due and will issue Receipt and Gate Pass. | Port Operators' Office | PPA | Fee based on vehicle type |
| | The vehicle will proceed to the parking or queuing area for loading. | RoRo Vehicles queuing area | PPA | N.A. |
| | Vehicle Driver will pay vessel freight to the Shipping Line | Shipping Lines Ticketing Booth | Shipping Line | Fee based on vehicle type and distance travelled |
| **Shipping Lines** | Shipping Lines shall secure berthing allocation application form from the port operator/PPA before docking | Port Operators' Office | PPA | N.A. |
| | Upon getting approval Shipping Lines will pay the dockage fee to the PPA/port operator based on vessel's GRT | Port Operators' Office | PPA | Fee based on vessel GRT |
| | PPA/port operator will designate ramp number where the vessel dock at the port | Port Operators' Office | PPA | N.A. |
| | Upon departure shipping lines shall pay mooring/unmooring fee | Port Operators' Office | PPA | Fee based on Vessel GRT |

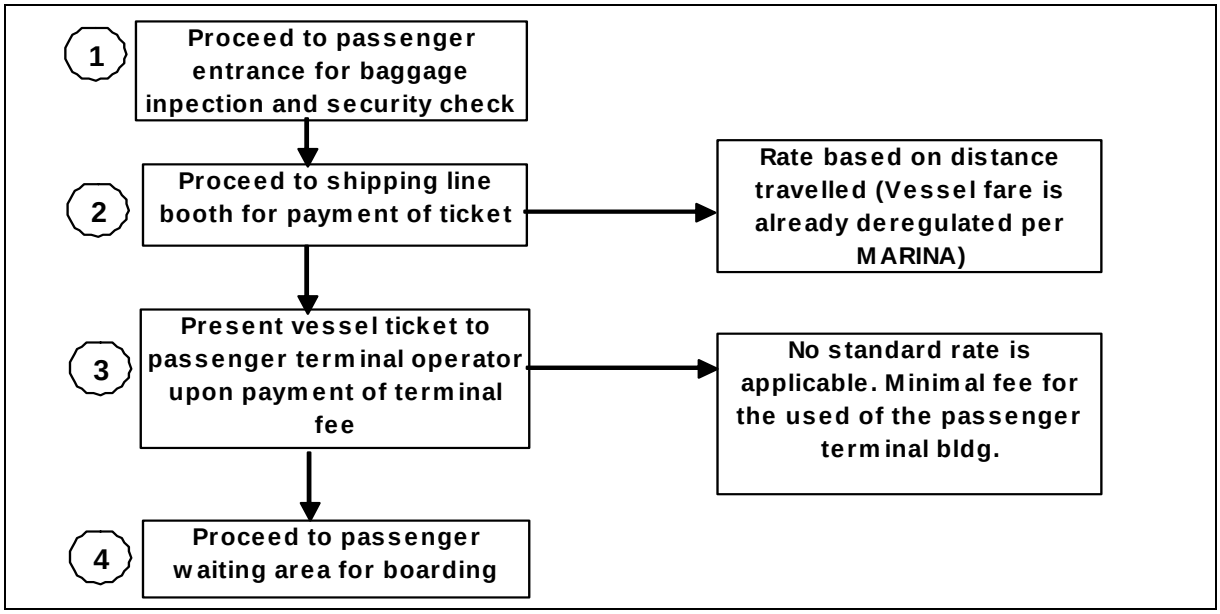
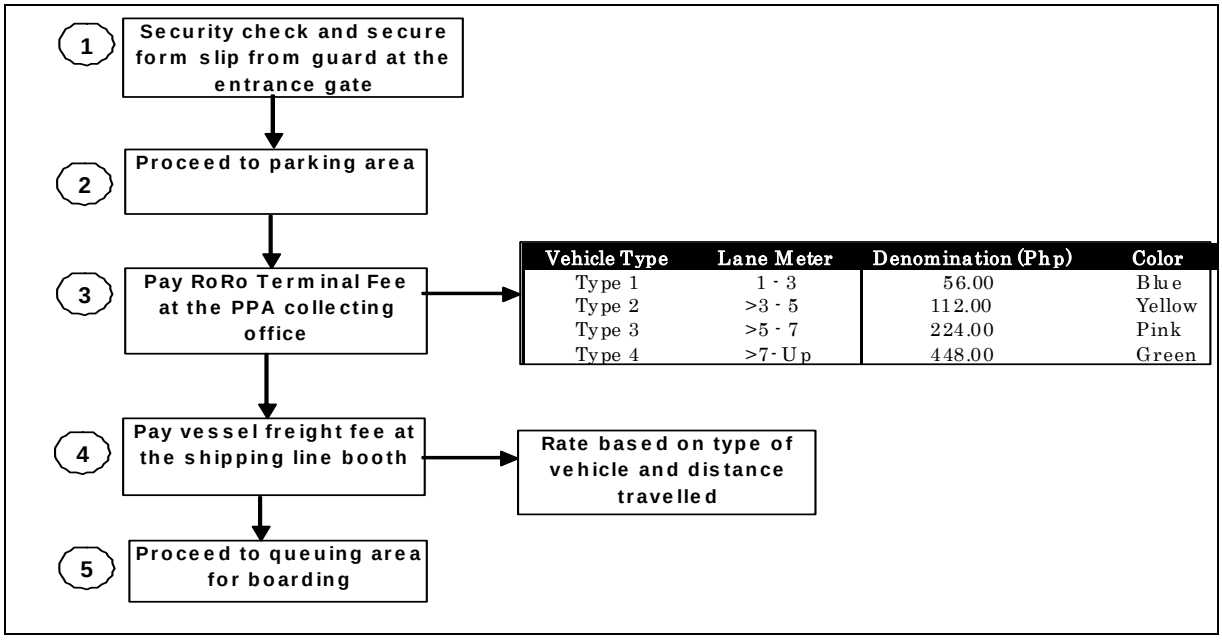



**Figure 9-5 Steps/Procedures for RoRo Passengers upon Entering the Passenger Terminal**




| Vehicle Type | Lane Meter | Denomination (Php) | Color |
|---|---|---|---|
| Type 1 | 1 - 3 | 56.00 | Blue |
| Type 2 | >3 - 5 | 112.00 | Yellow |
| Type 3 | >5 - 7 | 224.00 | Pink |
| Type 4 | >7- Up | 448.00 | Green |

**Figure 9-6 Steps/Procedures for RoRo Vehicle Owners/Drivers upon Entering the Port Terminal**

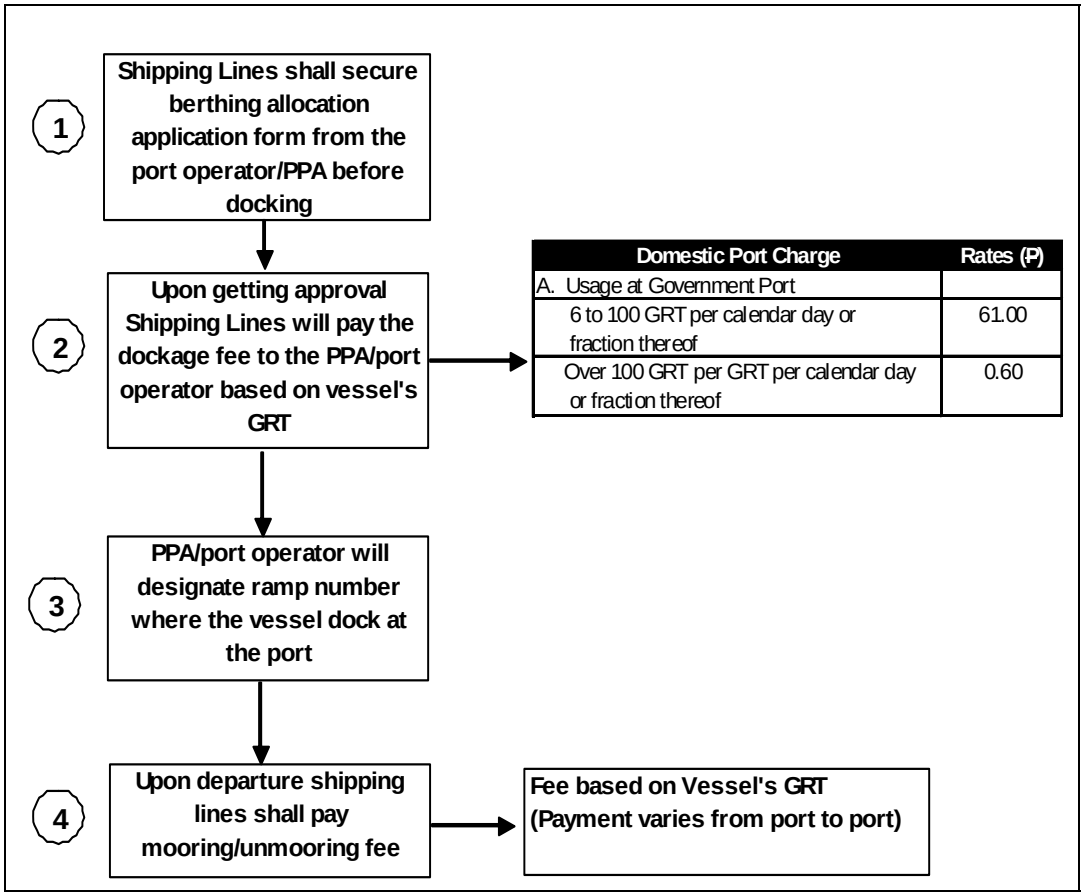


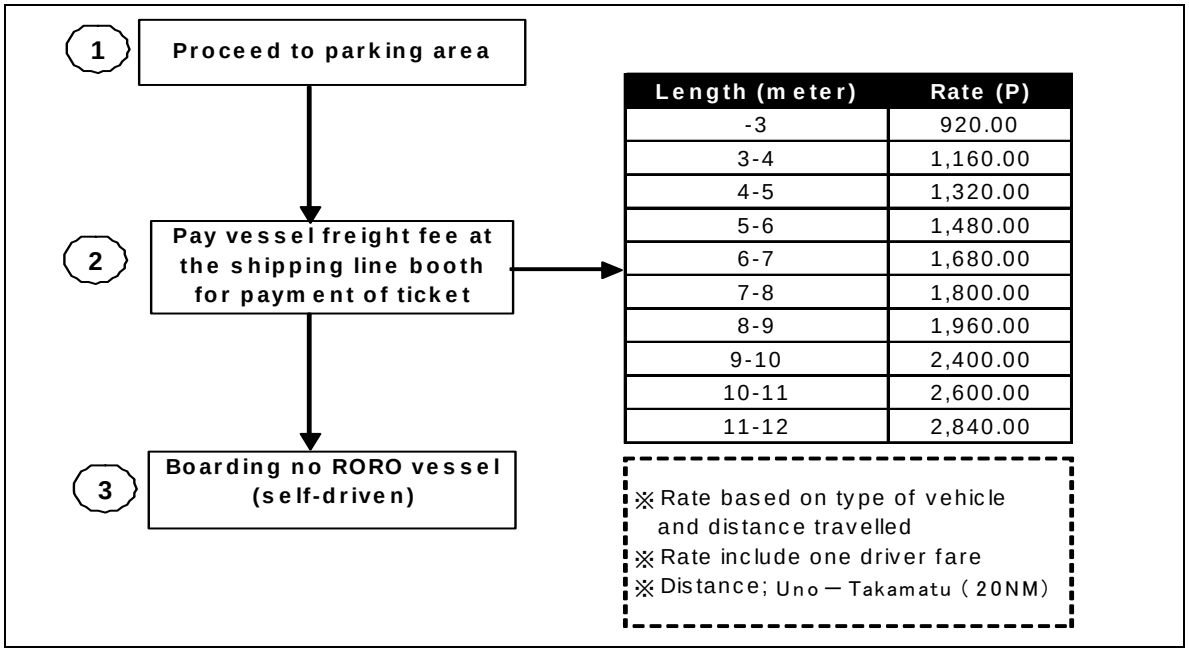

**Figure 9-7 Steps/Procedures for RoRo Vessels upon Berthing**

### 9.3.2 Comparison of Port Procedure in Collecting Fees

Comparison of port procedures with the port of Uno (Japan) is made in the following section.

It is difficult to compare each item because the unit, way of computing, commodity price and value of money are different in each country. However, examination of tariff comparison in specific conditions is conducted in the following section (Tariffs of Japanese Ports are converted into Philippine pesos).

In the case of a domestic RORO vessel, port procedure for a vehicle is as follows.




| Length (meter) | Rate (P) |
|---|---|
| -3 | 920.00 |
| 3-4 | 1,160.00 |
| 4-5 | 1,320.00 |
| 5-6 | 1,480.00 |
| 6-7 | 1,680.00 |
| 7-8 | 1,800.00 |
| 8-9 | 1,960.00 |
| 9-10 | 2,400.00 |
| 10-11 | 2,600.00 |
| 11-12 | 2,840.00 |

**Figure 9-8 Steps/Procedures for RoRo Vehicle Owners/Drivers upon Entering system on the Port of Uno (Japan)**

In Japan, payment for RORO vehicles is made only once. A driver pays passenger fare and terminal fee to the vessel line. The vessel line will pay the terminal fee in a lump sum to the port management body.

### 9.3.3 Proposal on Port Procedure

Similar to the Japanese RORO port system, the fee collection procedure should be changed from a two payment system to a one payment only system. This would simplify procedures for port users.

## 9.4 Port Operations

The provision and operation of port services such as cargo handling, pilotage, tug assistance, mooring/unmooring and even the management of passenger terminals are always undertaken by the private contractors licensed by PPA. The selection of private contractors is done through a public bidding. This is the commitment of PPA to private sector's involvement. Through privatization of basic services it can maintain the daily operations and even improve the services they provided to stay longer in the chosen business. This will also attract more investors to participate basic port services and even encourage private sector to develop ports.

### 9.4.1 Present Situation

At present PPA has subcontracted the cargo handling, stevedoring, mooring/unmooring and operations of the passenger terminal building to the private sector. The term used by PPA on these services is called the Cargo Handling Operator. The Cargo Handling Operator will perform all services based on the contract stipulated therein. For a new Cargo Handling Operator the PPA will have a two-year provisionary agreement in which it observes the performance of the new operator. In case PPA is not satisfied with the service performance of the existing operator they can take-over the services.

### 9.4.2 Cargo Handling Operator Contract System

Based on Administrative Order No.1 – 2001 of PPA, they prepared a guideline for the issuance of probationary and long-term contracts for expired and expiring cargo handling contracts. The rationale is to enhance and provide a "heal and build" policy between stakeholders of the economy and the government. To help achieve this goal PPA will support existing cargo handling operators with serious plans and commitments to invest and improve the quality of services in the ports.

The objectives of this guidelines are: to encourage existing cargo handling operators willing and prepared to invest in providing quality services in the ports; to grant two-year probationary contracts to existing qualified holders of expired contract and those expiring within the next two-years, subject to prescribed requirements and PPA approval; and to ensure that only qualified and efficient cargo handling operators may be issued long term contract of not more than ten (10) years after a 2-year probationary contract. The term of such contracts shall depend on the port traffic, equipment requirements and investment commitment for the port.

#### 1) Requirements for the Issuance of Contract

A probationary one-time contract for two years may be issued to existing cargo handling operators subject to compliance to all the following:

-Productivity commitment acceptable to the authority and affected port users.

-Requirement on no outstanding accounts with the authority at the time of award of contract.

-Compliance to existing and pertinent labor laws, social security rules or CBAs, against minimum wages and other benefits.

-Availability of port labor trust funds for the retirement and separation of concerned port workers.

-Submission of a Business Plan covering the projected long term contract including the 2-year probationary period as provided in long term contract (b).

-Favorable endorsement of concerned port users and clients of their association/organization.

-Protection, maintenance, cleanliness and orderliness of the port and its facilities.

-Development program for its workers and employees.

After a probationary contract, a long-term contract of not more than ten (10) years, may be issued depending on the operational, financial and development needs of the port and the investment made by the operator subject to the following requirements.

- Cargo Handling Performance – this requires at least "Very Satisfactory" for the 2-year probationary periods, measured and established through:

  -Performance audit with at least "Very Satisfactory" rating for the 2-year period; and

  -Evaluation of the operator's monthly performance using the "Cargo Handling Compliance Report" by the PMO concerned.

- Business Plan – a business strategy employed by the cargo handling operator to effectively provide, manage, operate and market the services aimed to ensure fast turn around of vessels, attain service satisfaction of concerned users and entice port clientele to patronize the port. The plan shall include the following:

-Traffic Projection and Analysis – based on actual statistics on vessel, cargo and passenger traffic to determine appropriate requirements of the port for the duration of the long-term contract;

-Cargo Handling Equipment – the equipment requirement sufficient to handle the cargoes and passengers of the port;

-Productivity Commitment – the productivity commitment to efficiently handle the cargoes and passengers of the port;

-Capital Structure – investment or capitalization requirements sufficient to attain its objective as stated in the business plan;

-Safety and Security Program – a yearly commitment of action plans and projects to ensure safety and security of the port, cargoes and its facilities;

-Marketing Strategy – a set of activities that will show how the services will be marketed, to include among others, a description of marketing mix to provide the desired service to port users (product); make such services conveniently available (place); offer a positive image of the company (promotion); and make the service affordable and reflect the value of the services rendered (price);

-Manual of Systems and Procedures – prepared systems and procedures manual for port operations and finance transactions, and other activities of the cargo handling operator with its clients and port users; and

-People Development – a program for the improvement of the workers' and employees' welfare to include, among others, training, financial amelioration, etc.

· Outstanding Accounts with PPA – the operator shall have no outstanding obligations with the Authority at the time of the award of the long-term contract.

· Port Labor Trust Fund – amount deposited in authorized bank/s sufficient to be used for the retirement and separation benefits of individual port workers employment term, or a program for the same trust fund secured thru an accredited service provider.
Endorsement by Stakeholders – a favorable endorsement from concerned stakeholders to grant the long-term contract, which may be done thru public hearing. Additionally, written reports from affected cargo owners/shippers or their association may also be submitted to the Evaluation Committee.

· Protection, maintenance, cleanliness and orderliness of the port and its facilities.

**2) Mechanics of Implementation**

· Issuance of Probationary Contract

-Cargo handling operators with expired or expiring contracts may be issued probationary contracts, subject to terms and conditions set forth by PPA together with the requirements of port users or their association;

-The cargo handling operator shall submit the corresponding application for a probationary contract to the PMO concerned for its initial evaluation and documentation before submitting the same to the Evaluation Committee for appropriate action. The application submitted shall include a commitment from the applicant, as required in this order;

-Similarly, the applicant shall commit and comply with the requirements provided in previous section hereof and the same shall be stipulated in the 2-year probationary contract;

-As a requirement for the evaluation and documentation of the application by the PMOs shall conduct a public hearing with the concerned port users;

-The initial evaluation and documentation of the application by the PMOs shall be submitted to the Evaluation Committee for review, evaluation and endorsement to Management for approval;

-During the contract term, the PMOs shall monitor and evaluate every quarter the performance of the operator's compliance to prescribed requirements, terms and conditions. The evaluation shall be based on the rating system indicating numerical points for the committed requirement for compliance or a qualitative description of the performance of the operator;

-The PMO quarterly monitoring reports shall be submitted to the Evaluation Committee at least ten (10) days after the PMO evaluation; and

-A cargo handling operator, with existing probationary contract and very satisfactory compliance of the prescribed requirements, may be issued a long-term contract even prior to the expiration of the probationary contract. Issuance of the same shall be subject to review and endorsement of the Evaluation Committee and approval by Management of PPA Board.

· Issuance of Long-Term Contract

-At least five (5) months prior to the expiry of the probationary contract, the evaluation Committee shall evaluate the performance of the cargo handling contractor;

-If the cargo handling operator fails to comply with the contract conditions and the requirement for the port users' endorsement, the probationary contract shall be cancelled. The authority shall take over the cargo handling services and conduct a public hearing bidding consistent with the existing regulations;

-If the operator successfully meets the requirements of the contract and garners at least "Very Satisfactory" performance rating during the 2-year contract term, such operator may be issued a long-term contract, subject to the requirements provided in long-term contract, together with additional terms and conditions the authority may require, depending on factors obtaining in the port concerned.

-The Evaluation Committee may endorse and recommend the grant of long-term contracts of qualified operators to Management, or to the PPA Board, if the contract is beyond five (5) years;

-The PMO shall monitor and evaluate the operators' performance on a semi-annual basis. In addition, the Port District Office (PDO) shall conduct regular performance audits annually. But at the end of the year, the cargo handling operator shall submit a yearly performance report to the PMO and the Evaluation Committee as added basis for the evaluation;

-The evaluation Committee shall immediately inform the operator of any adverse findings giving it thirty (30) days within which to rectify them, otherwise, the contract shall be revoked or terminated. In such case, the Authority shall take over the cargo handling services and a public bidding shall be conducted to select a new operator.

-During the validity of the long-term contract, the authority shall exercise its visitatorial powers to determine compliance by the operator of its contractual commitments and obligations to ensure continuous provision of efficient service. Failure by the contractor to comply with any of his contractual commitments and PPA rules and regulations shall cause the cancellation of his contract. In this event, PPA shall notify the concerned contractor of such failure and consequently take over the management and operation.

**3) Commitment**

- The provision of cargo handling services in the ports is a primary function and responsibility of PPA and no cargo handling operator shall claim any vested right to provide and operate such services.
- The applicant-operator shall therefore submit, together with the application for a probationary contract, a sworn statement stating, among others that it shall not undertake any action against PPA to prevent the conduct of a public bidding, negotiation, and/or award of the contract to other qualified parties.
- The cargo handling operator who fails to qualify for a long-term contract shall abide the foregoing commitment. Such commitment shall, however, be without prejudice to the right of the disqualified operator to question its disqualification by exhausting administrative remedies.

## 9.5 Security Measures for Port Facilities

In the Philippines which is composed of thousands of islands the main transportation system that connects from island to island is through water transport. Seaports are the main hubs that transport passengers and cargoes to other islands. Given the large volume of traffic, one of the important factors in port operation is port security. Security measures are essential in places where commercial activities are carried out such as at seaports, airports, bus terminals, railway stations, etc.

### 9.5.1 Present Situation

During the Study Team's visit in some of the major RoRo ports in the country, it was observed that the security system in most ports is not as sophisticated as other countries although most of the base ports and some of the terminal ports of the PPA are equipped with x-ray machines and walk-thru detector. A purely visual inspection, on the other hand, is performed in the case of cargo and rolling cargo.

At Local Government Units (LGU) and privately run RoRo terminals the security measures consist of manual checking such as inspection of bags, body frisking, etc. For cargoes and rolling cargoes, only a visual inspection is carried out.

According to interviews with the PPA Security Office, implementation of the International Ship and Port Facility Security (ISPS) code is being undertaken at most of their base ports and some of their major terminal ports.

The most sophisticated RoRo terminal in the country is located in Eva Macapagal Terminal in the South Harbor of the Port of Manila which is equipped with CCTV cameras in all terminal locations. The terminal is also equipped with two x-ray machines with walk-through detector and a K-9 dogs. In addition, the terminal has a hand-held device that can check whether passengers are in possession of gun powder. In connection with the above security measures, before the passengers proceed to the pre-departure area their picture will be taken and cross-referenced with a computer security database of the country's most notorious criminals. The picture taking will take only a few seconds and the computer can immediately match the picture of the passenger with the pictures of the criminals stored in the database. In addition, roaming guards are visible inside the terminal to ensure security measures are complied with and to check passengers' movements inside the terminal.

On the seaside of the terminal they have a Seaborne-One Vessel, a sea craft authorized by the Sea Marshals to deal with illegal activities in the seaside area. They have also high-tech CCTV cameras fronting the seaside area to monitor unauthorized vessels or any sea crafts coming into the area. Table 9-10 lists the names of PPA ports which are equipped with x-ray machines and walk-thru metal detectors.

### 9.5.2 Impact of Security Facilities

The impact of the security facilities inside the RoRo terminals is to minimize sea accident during sailing time. The port operator cannot compromise if accident happened. Data gathered from the PPA after installing and implementing security facilities revealed that they often confiscated bladed weapons, such as knife, bolo, etc., dangerous drugs as well as flammable materials. According to the PPA Head-Office Security Department their major accomplishment was the confiscation of a significant volume of marijuana in Lipata RoRo Terminal in Surigao from a foreign national.

**Table 9-10Names of PPA Ports which have Existing X-Ray Machines and Walk-Thru Metal Detectors**

| Names of Port | | No. of Units |
|---|---|---|
| **I.** | **Base Ports** | |
| | North Harbor Manila | 3 |
| | Davao | 1 |
| | Zamboanga | 2 |
| | Batangas | 1 |
| | Cagayan de Oro | 1 |
| | Iloilo | 1 |
| | Ozamiz | 1 |
| | Nasipit | 1 |
| | Dumaguete | 1 |
| | General Santos | 1 |
| | Puerto Princesa | 1 |
| | Iligan | 1 |
| | Surigao | 1 |
| | Calapan | 1 |
| | Dapitan | 1 |
| | **Sub-Total** | **18** |
| **II.** | **Terminal Ports** | |
| | Lipata | 1 |
| | Jagna | 1 |
| | Tabaco | 1 |
| | Liloan | 1 |
| | Orion | 1 |
| | Matnog | 1 |
| | **Sub-Total** | **6** |
| | **Grand Total** | **24** |

### 9.5.3 Future Plans of Facilities Establishment

Based on the interviews conducted with the PPA Security Department in the Central Office, they are now evaluating/awarding a contract for eight (8) baggage x-ray machines and walk-through metal detectors to seven locations nationwide. Table 9-11 lists the port locations and number of units given.

**Table 9-11 Establishment of New X-Ray Machines and Walk-Thru Metal Detectors**

| | Names of Port | No. of Units |
|---|---|---|
| **I.** | **Base Ports** | |
| | Ormoc | 1 |
| | Tagbilaran | 1 |
| | Cagayan de Oro | 2 |
| | **Sub-Total** | **4** |
| **II.** | **Terminal Ports** | |
| | Tubigon | 1 |
| | Coron | 1 |
| | Lucena | 1 |
| | Roxas | 1 |
| | **Sub-Total** | **4** |
| | **Grand Total** | **8** |

### 9.5.4 Proposal on Security Measures for Port Facilities

#### 1) Security

Security checks of vehicles are not strictly carried out. However, it is thought that weapons such as guns are often brought in by vehicle. Accordingly, security at entrance should be strengthened. In the case of car model identification, security guard needs to confirm contents and the bottom of a vehicle by visual observation.

Installation of a surveillance camera is extremely effective. At the time of installation, the port administrator erects a sign to make passengers aware that surveillance is being carried out.

#### 2) Safety

Crew members assisting in boarding procedures should always wear helmets and work clothes. Overloaded vehicles often go on board. It the vessel is subject to severe swaying, a vehicle may roll over. At the entrance gate, closer inspection needs to be carried out to ensure that overloaded vehicles are not permitted to board.

## 9.6 Private Sector Participation

### 9.6.1 General Philosophy in Promoting Private Sector Participation

Private Sector Participation (PSP) in developing ports was implemented by Philippine Ports Authority (PPA) a long time ago but only a few investors have shown interest due to a lack of government support and policies. In its charter, however, PPA is mandated to privatize basic port operations such as cargo handling operation, passenger terminal management and operation and other related services.

#### 1) Executive Order No. 170

Executive Order (EO) No. 170 encouraged Privatization of Public Ports. In the said EO the PPA and Cebu Ports Authority (CPA) was instructed to establish and construct RoRo Terminals through Private Sector Participation. The PPA and the CPA likewise take concrete steps to privatize state-owned Road RoRo terminals to attract investment in the Roll-On Roll-Off Terminal System (RRTS). The EO also encourages Local Government Units (LGUs) to form joint ventures with private investors.

#### 2) PPA Charter

Based on PPA Administrative Order (AO) No.06-95, PPA had encouraged private investor to develop ports. This AO liberalized regulations on private ports construction, development and operation with the compliance of PPA guidelines.

### 9.6.2 Present Condition of Public-Private Participation

PPA encouraged private sector involvement through the Public-Private Participation (PPP) as partners in developing ports. A Build-Operate-Transfer (BOT) Law and the Joint Venture (JV) schemes to expedite the provision of port infrastructure and services where dynamically needed. The PPA has a 25-year Port Development Plan that is updated by its Port Districts which incorporate the current Five-Year Medium Term Public Investment Program and the BOT and a JV projects. This is in line with the Philippine Government policy thrust to encourage foreign and local investments, tourism development, decentralization of government responsibilities and functions and concerns for safety and environmental protection.

### 9.6.3 General Principles and Basic Requirements for Private Sector Participation (PSP)

PPA Department Order No. 2003-16 is the implementation of E.O. 170 in promoting Private Sector Participation and Investment in the Development and Operation of the RRTS. The general principle of PSP is to encourage private involvement to invest in ports development in the Philippines to boost the local economy and create more jobs.

#### 1) RRTS Documentary Requirements

Per E.O. 170 the basic requirements are as follows:

1. CERTIFICATE OF PUBLIC CONVENIENCE (CPC):

   A RRTS water transport provider must satisfy the basic requisites for the grant of a CPC, pursuant to Rule V.1.a of MARINA Memo Circular No. 161;
   In the interest of maritime safety, public comfort and convenience, the valid streamlined documentary requirements as prescribed under MARINA Memo Circular No. 169, and its subsequent amendments must be submitted prior to acceptance of applications for issuance of CPC for RO-RO ships passing through the RRTS;
   The publication of the Notice of Hearing (NOH) once in a newspaper of general or regional/local circulation as required under Part 1, Rule 5, Secs. 3-6 of MARINA Memo Circular No. 74-A is hereby reduced to at least five days (5) prior to initial hearing. Further, the period of service by the Applicant of a copy of the NOH and the application by personal delivery, or courier service or registered mail when permitted by the MARINA, to affected parties is likewise reduced to at least three (3) days before the initial hearing;
   RO-RO ships shall comply with the pertinent provisions of Chapter 2 of SOLAS 1974, as amended, the 1997 PMMRR and the pertinent provisions of MARINA Memo Circulars, and their subsequent amendments, are hereby deemed incorporated by reference;
   All RO-RO ships in the RRTS shall comply with the minimum service standards under MARINA Memo Circular Nos. 65/65A and 150 and their subsequent amendments;
   The rules governing passenger manifesting under MARINA Memo Circular No. 180 shall apply; and
   RRTS water transport providers shall comply with the reporting requirements under Section 11 of the Anti-Carnapping Act of 1972 (R.A. 6539).

2. The provisions of MARINA Memo Circular No. 161 on the issuance of Provisional Authority (PA), pending final determination of an application for CPC, are hereby deemed incorporated by

reference except the period for setting the hearing of a Motion for Issuance of PA in Contested Applications (Rule V.2.d.2. thereof) which is hereby reduced to a period of five (5) days from the initial hearing. In case of uncontested applications, especially in pioneering routes/links, the PA may be issued upon application, even prior to hearing, provided all documentary requirements as aforestated are complied with.

3. All other provisions of MARINA Memo Circular Nos. 74-A, 161 and their subsequent amendments, not inconsistent herewith, are hereby deemed incorporated by reference.

**2) Environment and Business Related Requirements of the RRTS**

1. The Department of Environment and Natural Resources (DENR) shall issue Environmental Compliance Certificates to RRTS shore facilities, within a period of forty-five (45) days, after submission of requirement, and the proper Government Agency shall enter into a foreshore lease agreement within a period of ninety (90) days there from;

2. The LGUs are strongly encouraged to issue the necessary permits for the operation of RRTS shore facilities within three (3) days from date of application; and

3. The PPA, the CPA and the MARINA shall issue the permits necessary for the construction and/or operation of RRTS facilities within thirty (30) days from date of application.

**3) Criteria for Evaluation**

According to Article II, Section 4 of the PPA-AO No.3 – 2004, an RRTS Project Proponent must have the following qualifications in order for the proposed private investment to be considered:

1. Be a registered single proprietorship, partnership, corporation, or cooperative registered with the appropriate government agency. In case of a joint venture, the requirement for SEC registration shall be complied with before the issuance of a Certificate of Registration/Permit to Operate (COR/PTO).

2. Have under its employ key officials with at least two (2) years minimum experience in port management and/or vessel operations.

3. Have the financial capability to fund and sustain the detailed engineering design, construction and the operation and maintenance of the RRTS RoRo ferry terminal project to be implemented.

Existing PPA registered private port operators who desire to operate RoRo port services under the RRTS may likewise be qualified, subject to the above paragraphs 1, 2, 3 & Sec.

**4) Minimum Investment for an RRTS Facility**

All RRTS RoRo ferry terminals or ports must be able to cater to any type or design of RoRo vessels, whether berthing alongside or Mediterranean. It must likewise have sufficient facilities and amenities to cater to the passengers and RoRo vehicles related needs and requirements which shall include but not limited to:

1. Ro-Ro docking facilities (An ordinary ramp must be able to accommodate a RoRo vessel with 1,000 GRT or equivalent to the width of two (2) trucks);

2. Passenger Terminal facilities with basic amenities such as:

-sufficient passenger seats;

-clean comfort rooms for male/female;

-drinking stations and water system;

-child care stations with feeding area for nursing mothers/diaper changing table;

-access ramps, railings for handicapped passengers/port users;

-priority lanes for pregnant women, women with children and senior citizens;

-properly labeled receptacles to segregate wastes; and

-covered walkways within entry/exit doors.

3. Marshalling yard;
4. Lane meter measurement area;
5. Parking area; and
6. Security and safety facilities

**5) Incentives to RRTS Operators**

1. The RRTS Terminal Operator may be allowed to develop, construct and operate the RRTS terminal facility for a period of twenty-five (25) years and may be renewed for another twenty-five (25) years, subject to DENR and PPA requirements.

2. For the privilege of operating the port, the RRTS terminal operator shall pay the PPA through the PMO, an annual privilege fee of Php20,000.00 per port/terminal.

**6) Clearance to Develop, Construct & Operate RRTS Terminal Facility**

The following procedures shall be complied with in the processing of said clearance to develop.

1. The Applicant or Project Proponent shall file his formal letter of intent with the Port Management Office (PMO) concerned together with the documents required in **Annex A**. The PMO evaluates within one (1) week from receipt of complete documentary requirements and submits its recommendation to the Port District Office. In turn, the PDO reviews PMO's findings within one (1) week and forwards pertinent documents to the Office of the Assistant General Manager (AGM) for Operations Attn: Commercial Services Department (CSD).

2. The CSD evaluates within one (1) week and submits its recommendation to the General Manager thru the AGM for Operations. The General Manager may issue the corresponding clearance to develop and construct within one (1) week, copy furnished the PDO and the Applicant or Project Proponent.

3. The Project Proponent shall register their Ro-Ro ferry terminal or port upon its completion and shall submit the documents required under **Annex B**.

**7) Privatization of PPA-Owned Ro-Ro Ferry Terminal**

1. A Special Bids and Awards Committee (SBAC) shall be created to handle the documentation, evaluation and processing of the bid activities for the privatization of all identified PPA-owned RoRo ferry terminals under the RRTS, which shall endorse the same to the General Manager thru the AGM for Operations, for disposition.

As a general rule, the privatization of RoRo ferry terminals shall be conducted thru Open and Competitive Bidding based on the Terms of Reference to be prepared by the BAC.

2. All pertinent provisions contained under Republic Act (R.A.) 9184 shall likewise be complied with.

**8) Termination/Cancellation of Permit**

1. The terms of the permit shall include a condition that the PPA may suspend, cancel and terminate the certificate of registration/permit to operate for violations/infractions committed by the Permit. It shall also include a waiver of the Permit's rights, in favor of PPA, over the foreshore lease area where the facilities are located, including the corresponding easement or right of way.

2. Violations/infractions cited under Section 9.1 shall refer to non-compliance to any of the terms and conditions attached to and made an integral part of the certificate of registration/permit to operate, as shown in Annex C. It shall also refer to violations of other rules, laws and regulations promulgated and to be promulgated by PPA and other concerned Authorities relative to private port operations.

3. There shall be due process in the termination/cancellation as enumerated hereunder:

   -A Notice of Violation shall be issued to Permit of any infraction/s committed. Said Permit shall be granted a 30-day grace period within which to explain and resolve/correct the violation committed.

   -Should the Permit fail to correct, to the satisfaction of PPA, said violation/s within the 30-day grace period given, the PPA shall suspend the permit issued and temporarily take-over the operation of the port until appropriate actions have been taken. If after six (6) months, the violations remain unacted, PPA may cancel the RRTS permit and conduct public bidding for the lease, management and operation of the RRTS facility.

4. All RRTS Operations shall be strictly monitored by the PMOs. They shall oversee the implementation of all contract provisions including the terms and conditions of the permit issued. Any violation/s or infraction/s committed shall be reported immediately to the AGM for Operations, Attn: Commercial Services Department (CSD).

**9) Penalty Clause**

Violation of any of the provisions of this Order and other relevant PPA regulations shall subject the violators to the penalties provided for under Presidential Decree (PD) 857, as amended.

**10) Repealing Clause**

All PPA orders, rules and regulations or issuances inconsistent herewith are hereby deemed modified, amended or otherwise revoked accordingly.

**11) Separability Clause**

If any provision or section of this Order, or its application thereof to any person, corporate entity or circumstances is held invalid, the other provisions or sections of this Order shall not be affected and shall continue to be in full force and effect.

Annex A

## CHECKLIST OF REQUIREMENTS FOR CLEARANCE TO DEVELOP AND CONSTRUCT AN RRTS FACILITY

1. Three (3) copies of letter-proposal to develop Ro-Ro facility, addressed to the PMO, specifying the exact location of the foreshore area, area size in sq. m., RRTS facility/amenities to be put up.
2. Project summary of scope and description.
3. Copy of company profile.
4. Two (2) copies of vicinity map showing the location of the proposed RRTS facility relative to the foreshore site reclaimed land or private lands and to the nearest government pier.
5. DENR Approved Foreshore Lease Contract.
6. Copy of SEC Registration Permit.
7. Copy of Articles of Incorporation and By-Laws.
8. Copy of BIR Tax Identification Number Certificate
9. Copy of Environmental Compliance Certificate.
10. Detailed engineering plans and drawings, technical specification, design computations, PERT/CPM bar chart, construction schedules duly signed by a duly licensed Civil/Structural engineer.

(ALL DOCUMENTS TO BE FILED IN A FOLDER)

Annex B

## CHECKLIST OF REQUIREMENTS FOR ISSUANCE OF CERTIFICATE OF REGISTRATION/PERMIT TO OPERATE RRTS FACILITY

1. Project Completion Report accompanied by pictures of the RRTS Terminal/Port Facility, As-Built Plans/Sworn Statement signed by the Engineering supervising the project that the said facility was constructed in accordance with the plans and specifications.

2. Secretary's Certificate Authorizing Company's Representative to enter into an agreement with PPA.

3. Copy of Clearance to Develop and Construct.

4. PMO/PDO comments and recommendations.

(ALL DOCUMENTS TO BE FILED IN A FOLDER)

Annex C

## CONDITIONS

1. This certificate serves as a permit which entitles the PERMIT to operate the Road Roll-On/Roll-Off Terminal System (RRTS) facility herein registered.

2. This certificate is effective for _____ years and shall commence on the date of conform of the terms and conditions. Upon the expiration of the final period, said port facilities shall become the property of the PPA, free from any liens and encumbrances without any obligation on the part of PPA to make reimbursement of the value thereof of the owner/operator.

3. The PERMIT shall pay Php20,000.00 privilege fee per year exclusive of VAT.

4. The PERMIT shall allow authorized personnel of the Authority to inspect the facilities and its premises, including examination of specific records to determine compliance with this permit and other requirements and shall submit such data/documents or information which the Authority may require from time to time for statistical or other purposes.

5. The PERMIT shall ensure that the RRTS facility herein registered shall not be utilized for illegal activities such as gunrunning and smuggling as stipulated under PPA Operations Memorandum Order No. 02-2001 and other pertinent issuances.

6. The PERMIT shall maintain the RRTS facilities in good condition and shall be responsible for the safe and efficient operations thereof.

7. No alterations or improvements, other than ordinary repair for wear and tear shall be made on the existing facilities (as shown on the as-built plans submitted to and stamped received by this Authority) without the prior approval of PPA.

8. Where applicable, no other rates, dues or charges other than those officially authorized or published by the Authority shall be levied for the use of said facilities without the prior written approval of the Authority.

9. No vessel shall be allowed berth unless properly authorized by the Authority.

10. The PERMIT shall allow the Authority or any other government entity or other private port users to use said facilities in case of emergency, necessity or congestion at the government pier.

11. The PERMIT hereby absolves the Authority from any responsibility for any accidents, deaths, damages to property or person due to failure in the design, structural stability of the facilities or defects in the construction as well as from any legal suit/s court action/s which may result from said operation.

12. The PERMIT shall submit a comprehensive port security survey plan consistent with PPA Memorandum Circular (MC) No.10-2003.

13. The PERMIT must comply with the requirements for Shore Reception Facilities (SRF) as contained under PPA Administrative Order No. 02-2003 consistent with the MARPOL 73/78 requirements.

14. The PERMIT shall comply with the provisions of PPA AO_____ and other rules, laws and regulations promulgated and to be promulgated by the Authority, and/or other proper authorities.

15. Violation/s of any of the conditions herein specified shall be a sufficient ground for the Authority to temporarily suspend the operating permit. Under said circumstances, the PERMIT hereby waives his rights, in favor of PPA, over the foreshore area including easement and right of way to the RRTS facility.

16. Failure of the PERMIT to act on said violation/s within a period of six (6) months shall cause the pre-termination/cancellation of this permit.

CONFORME:

By:

_____
Authorized Representative

_____
Name of Company

_____
Date