

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS  
REPUBLIC OF THE PHILIPPINES



**MASTER PLAN STUDY ON LUZON ISLAND  
STRATEGIC ROAD NETWORK DEVELOPMENT PROJECT**

**FINAL REPORT**

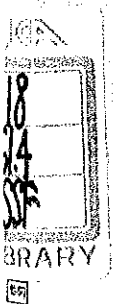
**PROJECT PROFILE**

**JULY 1993**

**KATAHIRA & ENGINEERS INTERNATIONAL  
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NIPPON INTERNATIONAL COOPERATION AGENCY (JICA)  
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS  
REPUBLIC OF THE PHILIPPINES  
MASTER PLAN STUDY ON LUZON ISLAND  
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FINAL REPORT - PROJECT PROFILE - JULY 1993  
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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS  
REPUBLIC OF THE PHILIPPINES

*LISR*

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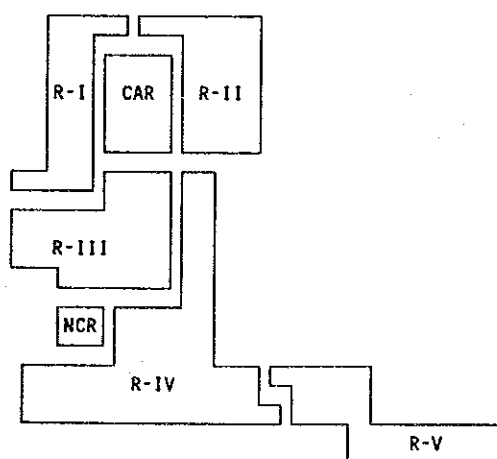
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# Table of Contents

|                                   | Page |
|-----------------------------------|------|
| 1 FORMATION OF LISR NETWORK ..... | 1    |
| 2 PROJECT IDENTIFICATION .....    | 5    |
| 3 IMPLEMENTATION SCHEDULE .....   | 11   |
| 4 PROJECT PROFILE .....           | 17   |







## 1. FORMATION OF LISR NETWORK

Basic road network necessary to interconnect important regional centers and support balanced regional development is called "Basic LISR Network". Roads to reinforce the basic LISR Network, such as substitutive roads in case of road closure due to disaster and expressways/bypasses to cope with traffic congestion due to insufficient capacity, are incorporated into the network. The road network including such reinforcement roads is called "LISR Network".

### PROCEDURE FOR ESTABLISHMENT OF LISR NETWORK

Procedure for establishment of LISR Network is shown in the Figure 1. The procedure is divided into two main steps as follows:

#### 1) Establishment of Basic LISR Network

At first, important regional centers and corridors of importance for regional development are selected. Then, the road network is drawn up to connect/cover the selected centers/corridors taking into consideration the topographic condition, existing road condition, traffic flow, etc. Where alternative routes are considered, preliminary comparative study is conducted for selection of better one. When vast areas without road (areas more than 25 km distant from the already selected roads) are found, additional roads are selected to eliminate such situation. Thus, an initial road network is established. Next, the initial network is examined on whether the component roads are well distributed or not. The "Network Value" is used as an indicator for the examination. If the indicator shows unbalanced road distribution, necessary adjustment is made for finalization of the basic LISR Network.

The basic LISR Network is considered as a skeleton expressing the routes necessary to attain the objectives of the Plan, not taking into consideration road capacity and flexibility in the occurrence of disaster.

#### 2) Establishment of LISR Network

Future traffic demand is estimated assuming the completion of the basic LISR Network. Then, the following analyses are carried out to decide the grade of each component road and to identify additionally necessary roads:

**Disaster-Detour Analysis:** Although preventive measures are to be taken for all disaster-prone sections, it is still very difficult and too costly to completely eliminate the occurrence of road disaster in some critical areas. In this case, detour route with tolerable extra distance should be secured to avoid severe damage to the socio-economic activity in the influenced area. To examine the adequacy of the basic LISR network in this view and to find the necessity of supplemental link, detour route to be taken and extra distance thereof in the occurrence of disaster are analyzed.

**Congestion Analysis:** To find the roads which are anticipated to be congested in the future and therefore need some countermeasures, volume-to-capacity ratio of each road is calculated based on the projected future traffic demand, assuming that all narrow/non-existing roads will have been widened/constructed with two lanes.

Based on the above analyses, grade of each component road (either 2-lane road or 4-lane road) and additional roads are decided. Thus, the LISR network is established.

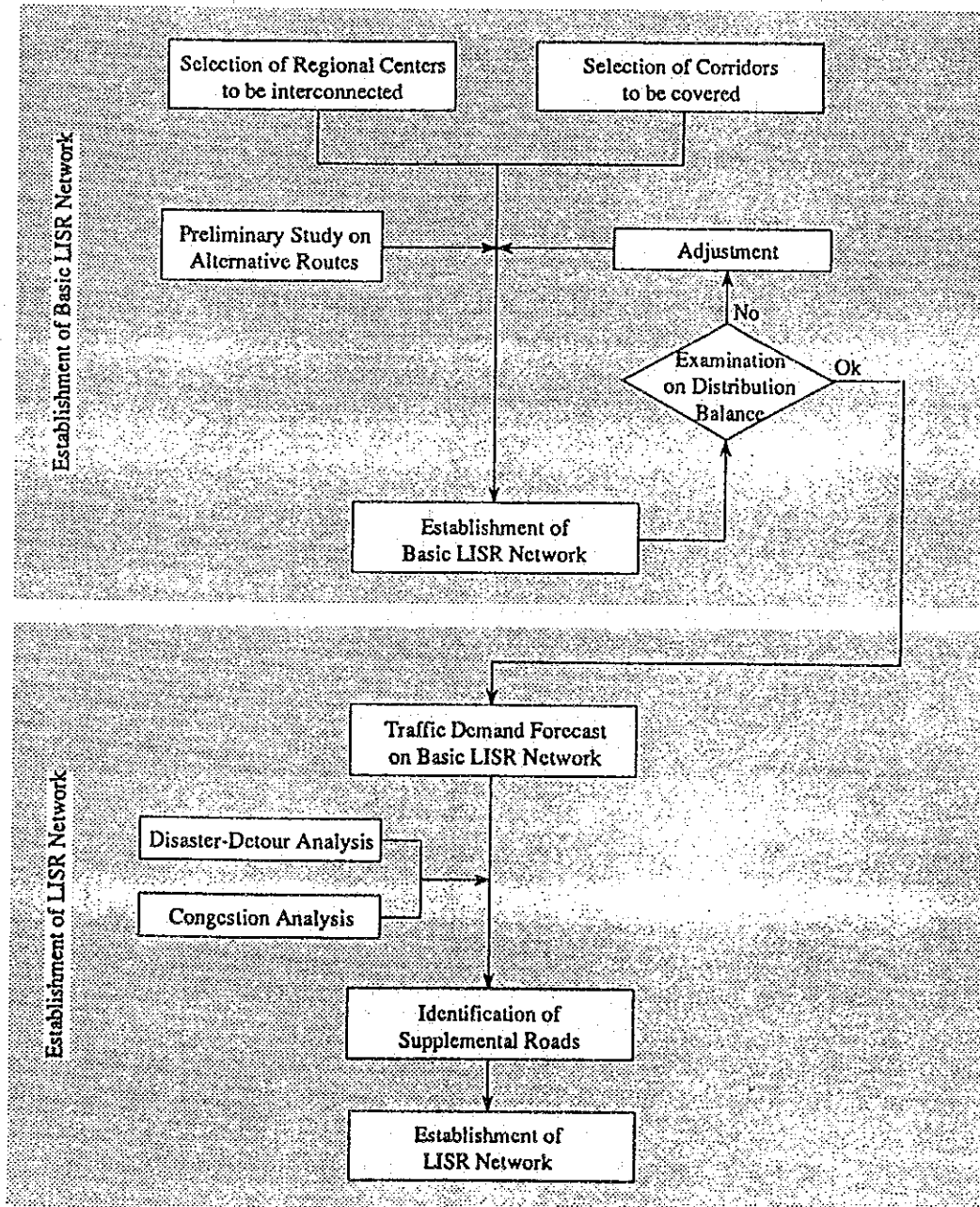


FIGURE 1 PROCEDURE FOR ESTABLISHMENT OF LISR NETWORK



**PROPOSED LISR NETWORK**

Basic LISR Network is a skeleton network which interconnects important regional centers and covers the areas of importance for balanced regional development. LISR Network is a major road network which includes upgrading of a part of roads and

additional roads to reinforce the basic LISR network. Basic LISR network can be considered as a skeleton showing the routes, and LISR network is a concrete network proposed in this Study to be developed.

**OBJECTIVES OF LISR NETWORK DEVELOPMENT**

- To enlarge and reinforce the physical foundation of the regional economy;
- To promote the regional development in the areas where sound development is presently restrained due to poor accessibility;
- To promote the effective use of land and contribute to unity of nation and preservation of peace;
- To minimize the disturbance to people's activity and economic loss in case of closure of road due to disaster.

**BASIC LISR NETWORK**

Basic LISR network is composed of the following four categories of roads:

- **Inter-Province-Capital Roads** which interconnect provincial capitals through the shortest routes as possible.
- **Inter-Major-Activity-Center Roads** which connect the major activity centers to the inter-province-capital roads.
- **Agricultural Development Support Roads** which penetrate vase agricultural areas not covered by the above two categories of roads.
- **National Integration Roads** which run along the coasts which are not covered by the above three categories of roads over a wide area.

**LISR NETWORK**

LISR network is established by reinforcing the basic LISR network to secure substitutive roads in case of occurrence of disaster and to increase traffic capacity of congested sections. The LISR network is composed of the following roads:

|                   | (km)           |                   |                |
|-------------------|----------------|-------------------|----------------|
|                   | Existing Road  | Non-existing Road | Total          |
| 2-lane Road       | 6,865.2        | 636.7             | 7,501.9        |
| 4-lane Road       | 764.9          | 380.9             | 1,145.8        |
| 4-lane Expressway | 21.7           | 311.3             | 333.0          |
| 6-lane Expressway | 109.8          | 0.0               | 109.8          |
| <b>Total</b>      | <b>7,761.6</b> | <b>1,328.9</b>    | <b>9,090.5</b> |

Note: Existing roads include narrow/impassable roads to be widened/reconstructed.

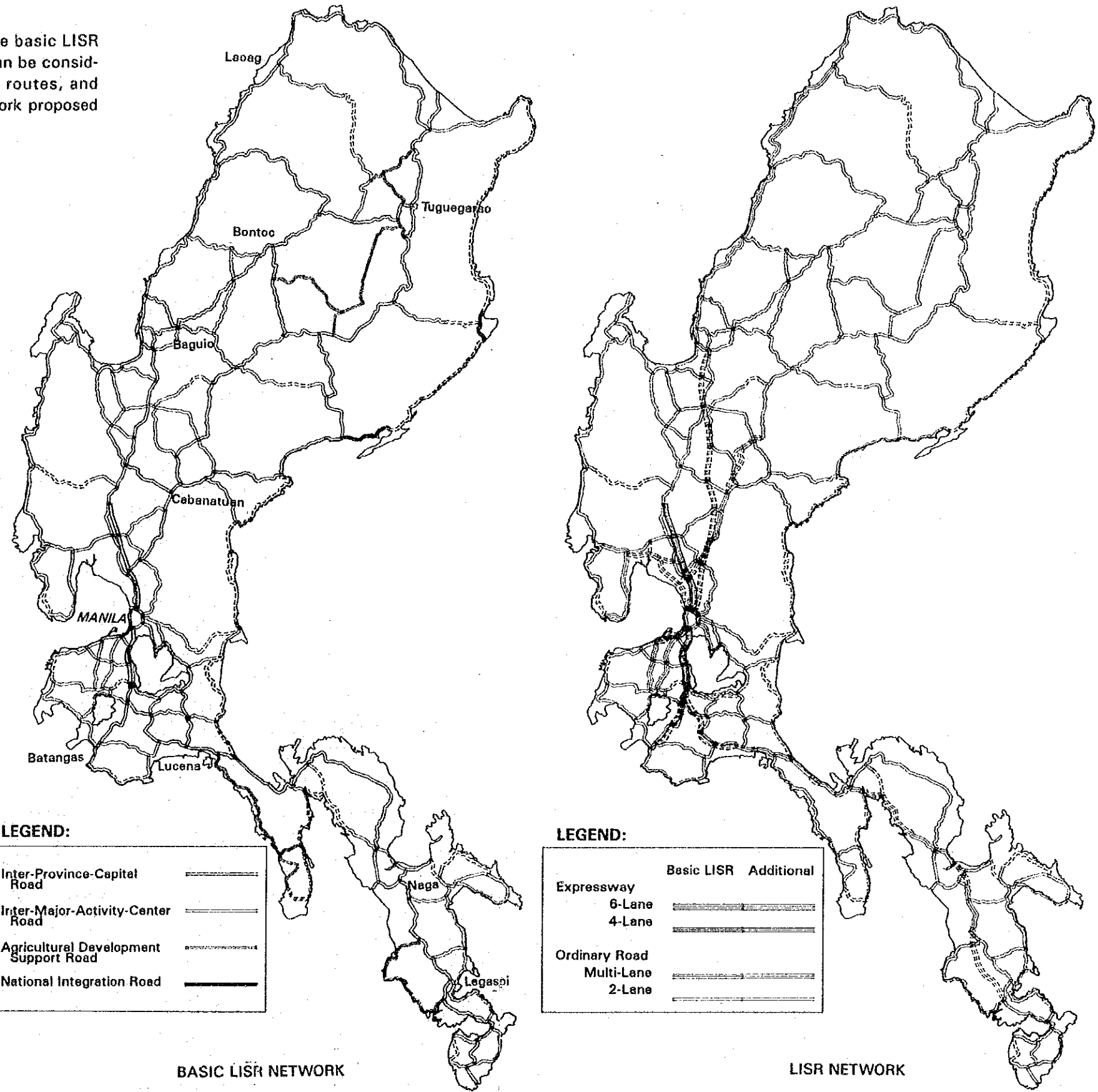


FIGURE 2 BASIC LISR NETWORK AND LISR NETWORK





## 2. PROJECT IDENTIFICATION

Road improvement works necessary to complete the LISR network are identified depending on target grade of each component road and its present condition in accordance with the criteria shown in Table 1.

**TABLE 1 TYPE OF WORK AND SELECTION CRITERIA**

| Item                | Target grade of road | Present Condition                            | Type of Work                                | Abbreviation |
|---------------------|----------------------|--|---|--------------|
| Road                | 2-lane ordinary road | Paved, but in bad or very bad condition      | Pavement rehabilitation                     | REH          |
|                     |                      | Unpaved                                      | Pavement construction                       | PAV          |
|                     |                      | Width less than 6.0m                         | Widening of ordinary road to 2-lane 1)      | WO2          |
|                     |                      | Non-existing                                 | New construction of 2-lane ordinary road 2) | NO2          |
|                     | 4-lane ordinary road | 2-lane road                                  | Widening of ordinary road to 4-lane 1)      | WO4          |
|                     |                      | Non-existing                                 | New construction of 4-lane ordinary road 2) | NO4          |
|                     | 4-lane expressway    | 2-lane expressway                            | Widening of expressway to 4-lane 1)         | WE4          |
|                     |                      | Non-existing                                 | New construction of 4-lane expressway 2)    | NE4          |
| 6-lane expressway   | 4-lane expressway    | Widening of expressway to 6-lane 1)          | WE6   |              |
| Bridge              | 2-lane ordinary road | Defective/temporary/non-existing             | New construction of 2-lane bridge           | NO2          |
|                     | 4-lane ordinary road | 2-lane bridge                                | Widening of bridge to 4-lane                | WO4          |
|                     |                      | Defective/temporary/non-existing             | New construction of 4-lane bridge           | NO4          |
|                     | 4-lane expressway    | 2-lane bridge                                | Widening of expressway bridge to 4-lane     | WE4          |
| Non-existing        |                      | New construction of 4-lane expressway bridge | NE4   |              |
| 6-lane expressway   | 4-lane bridge        | Widening of expressway bridge to 6-lane      | WE6   |              |
| Disaster Prevention | Any                  | Existing road with disaster potential        | Disaster prevention work                    | DIS          |

Note: 1) Widening of road includes improvement of existing portion if necessary.  
 2) New construction of road includes disaster prevention measures if necessary.

Road improvement works thus identified are shown in Figure 3. These works were divided into 91 road projects considering characteristics and function of road and improvement effect. Each project was further subdivided into 1 to 9 segment(s), totaling 178 segments. Project location map and project list are presented in Figure 4 and Table 2 respectively.

The full description of each project is presented in the PROJECT PROFILE sheets.







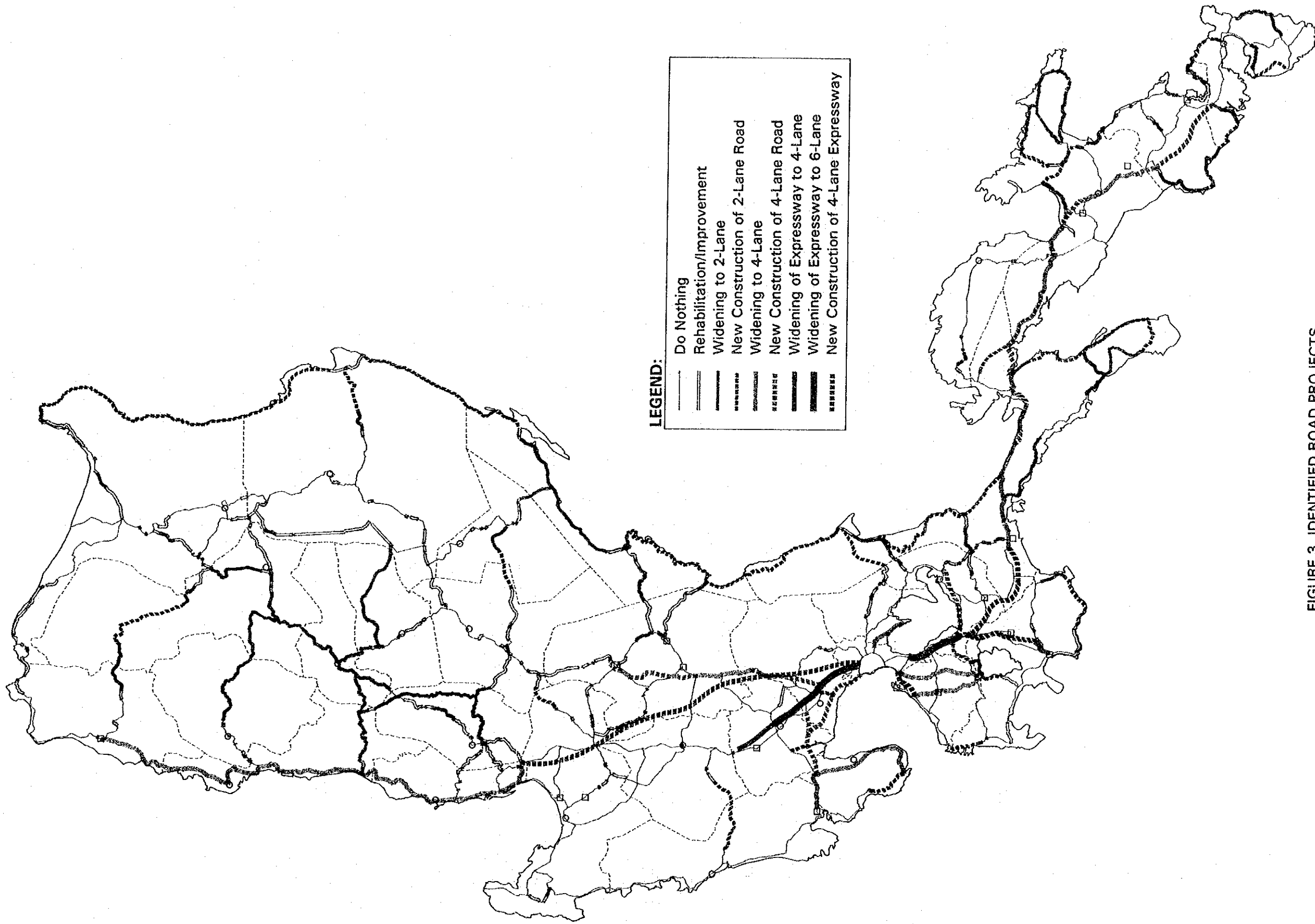


FIGURE 3 IDENTIFIED ROAD PROJECTS



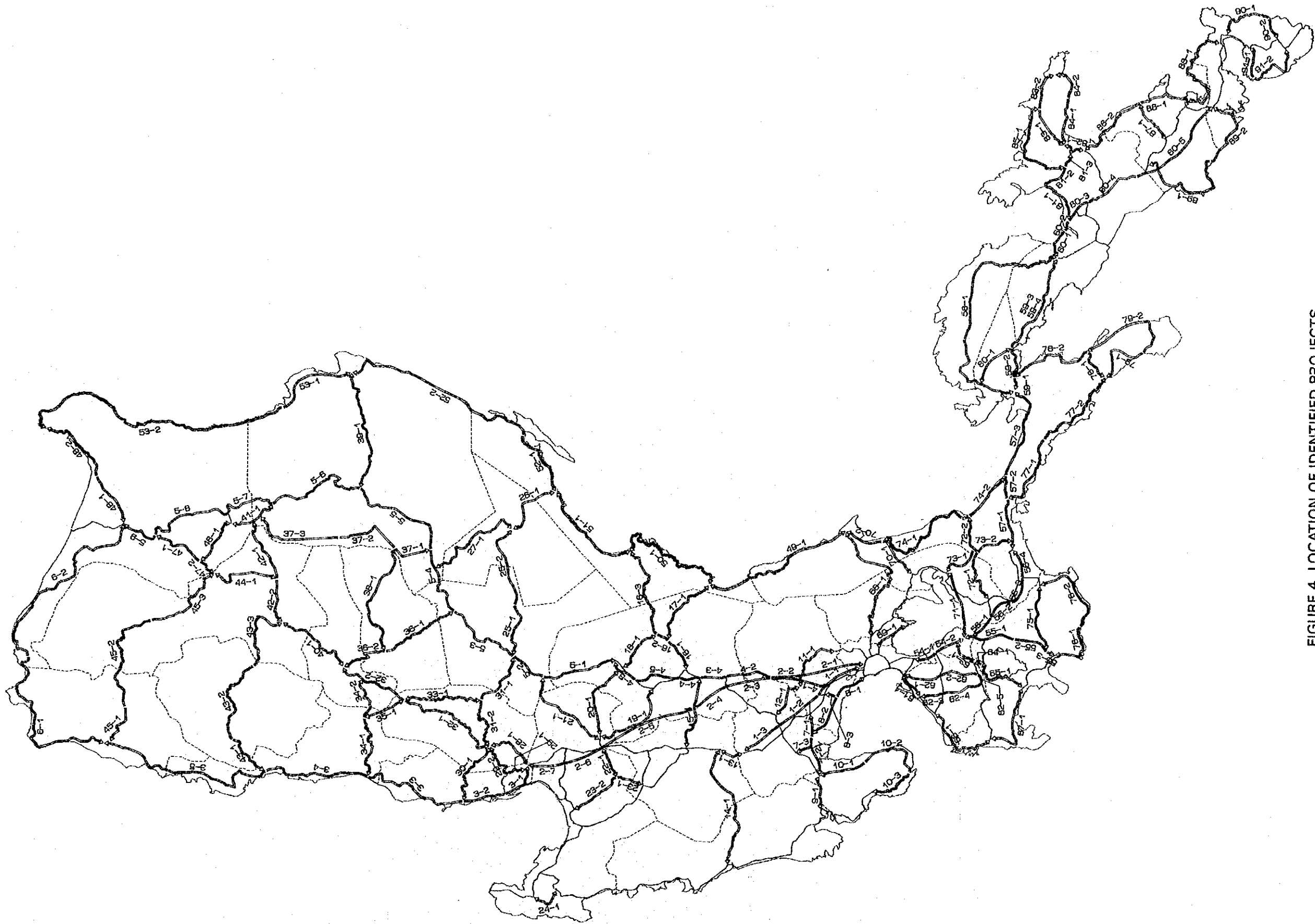


FIGURE 4 LOCATION OF IDENTIFIED PROJECTS











### 3. IMPLEMENTATION SCHEDULE

The recommended LISR network is composed of 9,090.5 Km road sections, of which 7,274.4 km are designated as the project sections. Taking account of already good or fair conditioned segments in the project sections, net construction length is 5,468.5 Km in total.

The said 7,274.4 km road sections are divided into 91 projects and they are further sub-divided into 177 segments. This project segment is the basic component to be scheduled. Every segment has been already classified by the "Balanced development Scenario" into three groups: the first, the second and the third 6-year program. Due to the financial constraint, two projects (four segments) are carried over to the period after 2010, those are Manila-Bataan Coastal road, South (8-1, 8-2, 8-3) and Palanan-Sta. Ana road (53-2).

The following items are paid attention to determine the starting year and the completion year of a project segment:

- a) To set the starting year so to complete the project in the designated program period.
- b) To make an increasing trend of annual investment amount without remarkable fluctuation.
- c) To implement a set of projects closely related each other in the same period, in order to lessen the cost.
- d) To schedule the detail design, just before the implementation of a project. However, for several segments in one project, they should be done together.

Standard size of one annual contract is assumed to be 60 million pesos as a rule of thumb. And in general, one segment is possibly completed within four years. Accordingly, construction period of a project is defined by the project cost as shown in the following table.

STANDARD CONSTRUCTION PERIOD

| Construction Cost<br>(Million P) | No. of Contract | Construction Period<br>(Year) |
|----------------------------------|-----------------|-------------------------------|
| 0 - 60                           | 1               | 1                             |
| 60 - 120                         | 1               | 1                             |
| 120 - 240                        | 2               | 2                             |
| 240 - 360                        | 3               | 2                             |
| 360 - 480                        | 4               | 2                             |
| 480 - 3,000                      | -               | 3                             |
| 3,000 -                          | -               | 4                             |

As for the detail design work, one year will be enough for each 100 km of ordinary road. In case of expressway, to design 30 km will take one year.

After repetitive workes by trial and error, annual schedule was finalized as shown in Table 3.

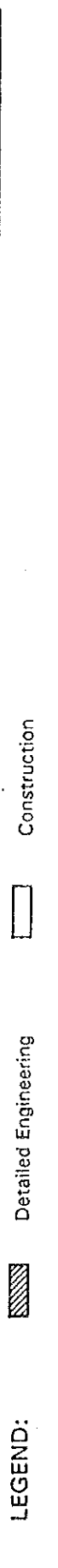






|    |                                 |                                      |  |               |
|----|---------------------------------|--------------------------------------|--|---------------|
| 13 | Mabalacat-Capas Rd              | 13-1                                 | 78.5                                       |               |
| 14 | Capas-Botolan Rd                | 14-1                                 | 808.4                                      |               |
| 15 | Sta.Rosa-Tarlac Rd              | 15-1                                 | 36.4                                       |               |
| 16 | Cabanatuan-Baler Rd             | 16-1<br>16-2<br>16-3                 | 21.6<br>11.8<br>1054.2                     |               |
| 17 | Palayan-Dingalan Rd             | 17-1                                 | 387.1                                      |               |
| 18 | San Jose-Bongabon Rd            | 18-1                                 | 430.2                                      |               |
| 19 | Rosales-Baloc Rd                | 19-1                                 | 125.9                                      |               |
| 20 | Rosales-San Jose Rd             | 20-1                                 | 57.3                                       |               |
| 21 | Rosales-Sta.Fe Rd               | 21-1                                 | 782.8                                      |               |
| 22 | Carmen-Bautista Rd              | 22-1                                 | 72.9                                       |               |
| 23 | Camiling-Birmaley Rd            | 23-1<br>23-2                         | 35.1<br>21.9                               |               |
| 24 | Burgos-Bani Rd                  | 24-1                                 | 108.3                                      |               |
| 25 | Aritao-Maddela Rd               | 25-1<br>25-2                         | 880.3<br>1119.7                            |               |
| 26 | Maddela-Dinalongan Rd           | 26-1                                 | 840.7                                      |               |
| 27 | Cordon-Maddela Rd               | 27-1                                 | 50.6                                       |               |
| 28 | Kenon Rd                        | 28-1                                 | 3708.6                                     |               |
| 29 | Rosario-Pugo-Baguio Rd          | 29-1<br>29-2                         | 34.0<br>761.2                              |               |
| 30 | Naguilian Rd                    | 30-1                                 | 467.4                                      |               |
| 31 | Aritao-Baguio Rd                | 31-1<br>31-2                         | 940.5<br>2541.3                            |               |
| 32 | Baguio-Bontoc Rd                | 32-1<br>32-2                         | 2076.3<br>1452.5                           |               |
| 33 | Bokod-Abatan Rd                 | 33-1                                 | 1432.6                                     |               |
| 34 | Tagudin-Sabangan Rd             | 34-1<br>34-2                         | 1111.7<br>916.9                            |               |
| 35 | Cervantes-Abatan Rd             | 35-1                                 | 722.1                                      |               |
| 36 | Bagabag-Bontoc Rd               | 36-1<br>36-2                         | 116.9<br>1175.3                            |               |
| 37 | Santiago-Sta.Maria Rd           | 37-1<br>37-2<br>37-3                 | 7.0<br>304.6<br>291.0                      |               |
| 38 | Ramon-Banaue Rd                 | 38-1                                 | 3869.3                                     |               |
| 39 | Haguilian-Palanan Rd            | 39-1                                 | 1294.2                                     |               |
| 40 | Lubuangan-Bontoc Rd             | 40-1                                 | 2438.7                                     |               |
| 41 | Cabagan-Solana Rd               | 41-1                                 | 546.3                                      |               |
| 42 | Enrile-Lubuangan Rd             | 42-1<br>42-2                         | 319.9<br>618.5                             |               |
| 43 | Narvacan-Lubuangan Rd           | 43-1<br>43-2<br>43-3                 | 21.2<br>1100.6<br>1245.3                   |               |
| 44 | Abbut-Tabuk Rd                  | 44-1                                 | 539.2                                      |               |
| 45 | San Nicolas-Abbut Rd            | 45-1<br>45-2<br>45-3                 | 3.2<br>1462.8<br>1440.3                    |               |
| 46 | Solana-Piat Rd                  | 46-1                                 | 110.5                                      |               |
| 47 | Massiping-Abbut Rd              | 47-1<br>47-2                         | 579.9<br>50.6                              |               |
| 48 | Magapit-Sta.Ana Rd              | 48-1<br>48-2                         | 310.6<br>304.6                             |               |
| 49 | Infanta-Dingalan Rd             | 49-1                                 | 2302.7                                     |               |
| 50 | Dingalan-Baler Rd               | 50-1                                 | 2884.0                                     |               |
| 51 | Baler-Dinalongan Rd             | 51-1                                 | 419.2                                      |               |
| 52 | Dinalongan-Palanan Rd           | 52-1<br>52-2                         | 413.0<br>2366.7                            |               |
| 53 | Palanan-Sta.Ana Rd              | 53-1<br>53-2                         | 915.1<br>3872.7                            | (Later years) |
| 54 | South Luzon Expressway          | 54-1<br>54-2                         | 150.3<br>423.0                             |               |
| 55 | S.Luzon Expy Ext, Batangas Line | 55-1<br>55-2<br>55-3                 | 2007.9<br>1276.3<br>64.8                   |               |
| 56 | S.Luzon Expy Ext, Lucena Line   | 56-1<br>56-2<br>56-3<br>56-4         | 961.9<br>970.7<br>1046.0<br>1044.5         |               |
| 57 | Pan-Phil H'way, Lucena-Calaug   | 57-1<br>57-2<br>57-3                 | 1167.9<br>325.1<br>1657.1                  |               |
| 58 | Pan-Phil H'way, Calaug-Sipocot  | 58-1                                 | 88.6                                       |               |
| 59 | Calaug-Sipocot Diversion Rd     | 59-1<br>59-2<br>59-3<br>59-4         | 128.5<br>1793.1<br>1317.6<br>1542.6        |               |
| 60 | Sipocot-Putiao Diversion Rd     | 60-1<br>60-2<br>60-3<br>60-4<br>60-5 | 340.4<br>638.8<br>465.5<br>620.5<br>1900.0 |               |
| 61 | Manila-Cavite Expressway        | 61-1                                 | 1413.9                                     |               |
| 62 | Bacoor-Tagaytay-Tanza Rd        | 62-1<br>62-2<br>62-3<br>62-4<br>62-5 | 344.9<br>526.8<br>265.0<br>600.8<br>137.1  |               |
| 63 | Calamba-Tagaytay Rd             | 63-1                                 | 204.7                                      |               |
| 64 | Tagaytay-Talisay Rd             | 64-1                                 | 107.1                                      |               |
| 65 | Talisay-Lemery Rd               | 65-1                                 | 363.3                                      |               |
| 66 | Naic-Nasugbu Rd                 | 66-1                                 | 949.8                                      |               |
| 67 | Nasugbu-Lemery Rd               | 67-1                                 | 104.6                                      |               |
| 68 | Marikina-Infanta Rd             | 68-1                                 | 1247.4                                     |               |
| 69 | Pasig-Binangonan Rd             | 69-1                                 | 779.1                                      |               |

| Item No. | Description         | 618.5 | 42-2   | 43-1   | 43-2  | 43-3 | 44-1   | 45-1   | 45-2  | 45-3  | 46-1 | 47-1  | 47-2  | 48-1   | 48-2   | 49-1  | 50-1  | 51-1   | 52-1  | 52-2   | 53-1  | 53-2  | 54-1   | 54-2   | 55-1 | 55-2  | 55-3  | 56-1   | 56-2   | 56-3   | 56-4  | 57-1   | 57-2 | 57-3  | 58-1   | 59-1   | 59-2   | 59-3  | 59-4  | 60-1  | 60-2  | 60-3   | 60-4   | 60-5  | 61-1  | 62-1  | 62-2  | 62-3  | 62-4  | 62-5  | 63-1  | 64-1  | 65-1  | 66-1   | 67-1  | 68-1  | 69-1  | 70-1   | 70-2  | 71-1  | 72-1  | 72-2 | 73-1   | 73-2  | 74-1 | 74-2  | 75-1  | 76-1  | 76-2  | 77-1  | 77-2   | 78-1  | 78-2   | 79-1  | 79-2  | 80-1  | 81-1 | 81-2 | 81-3  | 82-1  | 83-1  | 83-2  | 84-1   | 84-2  | 85-1  | 86-1 | 86-2  | 87-1  | 88-1  | 89-1  | 89-2  | 90-1  | 90-2  | 91-1 | 91-2 |
|----------|---------------------|-------|--------|--------|-------|------|--------|--------|-------|-------|------|-------|-------|--------|--------|-------|-------|--------|-------|--------|-------|-------|--------|--------|------|-------|-------|--------|--------|--------|-------|--------|------|-------|--------|--------|--------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|------|--------|-------|------|-------|-------|-------|-------|-------|--------|-------|--------|-------|-------|-------|------|------|-------|-------|-------|-------|--------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 43       | Narvacan-Lubagan Rd | 21.2  | 1100.6 | 1245.3 | 539.2 | 3.2  | 1462.8 | 1440.3 | 110.5 | 579.9 | 50.6 | 310.6 | 304.6 | 2302.7 | 2884.0 | 419.2 | 413.0 | 2366.7 | 915.1 | 3872.7 | 150.3 | 423.0 | 2007.9 | 1276.3 | 64.8 | 961.9 | 970.7 | 1046.0 | 1044.5 | 1167.9 | 325.1 | 1657.1 | 88.6 | 128.5 | 1793.1 | 1317.6 | 1542.6 | 340.4 | 638.8 | 465.5 | 620.5 | 1900.0 | 1413.9 | 344.9 | 526.8 | 265.0 | 600.8 | 137.1 | 204.7 | 107.1 | 363.3 | 949.8 | 104.6 | 1247.4 | 779.1 | 436.4 | 130.1 | 1572.9 | 203.9 | 207.2 | 130.3 | 85.7 | 2117.8 | 824.6 | 62.3 | 250.9 | 546.2 | 507.4 | 133.9 | 568.4 | 1363.7 | 341.0 | 1613.6 | 498.5 | 145.5 | 385.2 | 82.7 | 25.4 | 857.6 | 735.7 | 592.4 | 601.5 | 1698.5 | 122.5 | 446.8 | 80.0 | 830.7 | 699.4 | 484.1 | 190.1 | 159.2 | 169.5 | 516.0 |      |      |



LEGEND: Detailed Engineering Construction







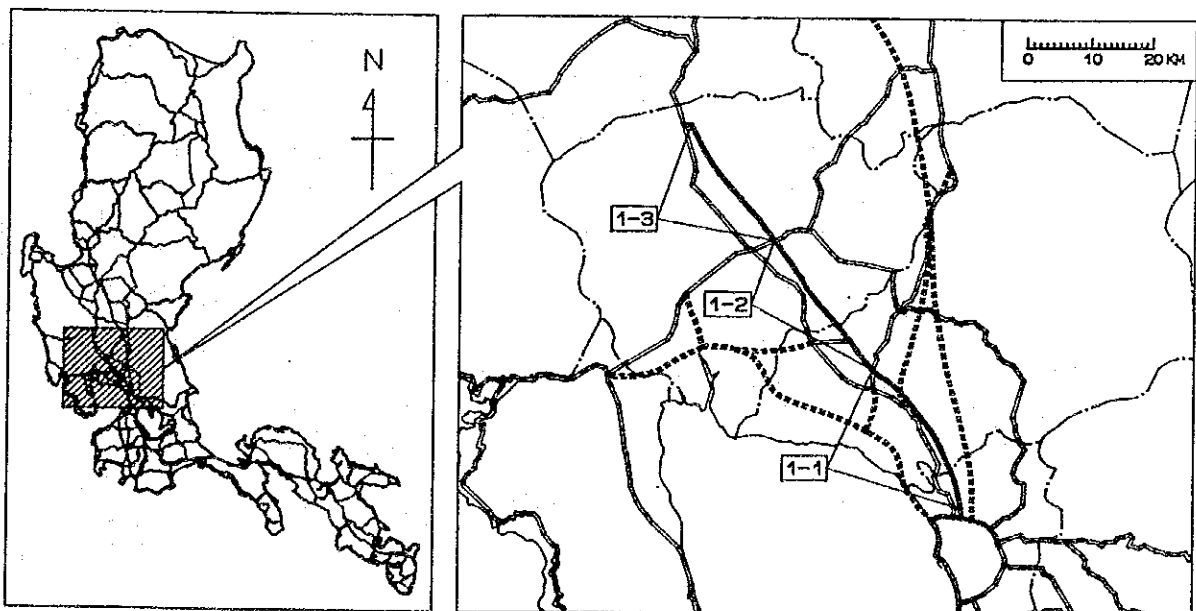
## **ROJECT PROFILE**



# PROJECT PROFILE

Project Number: 1

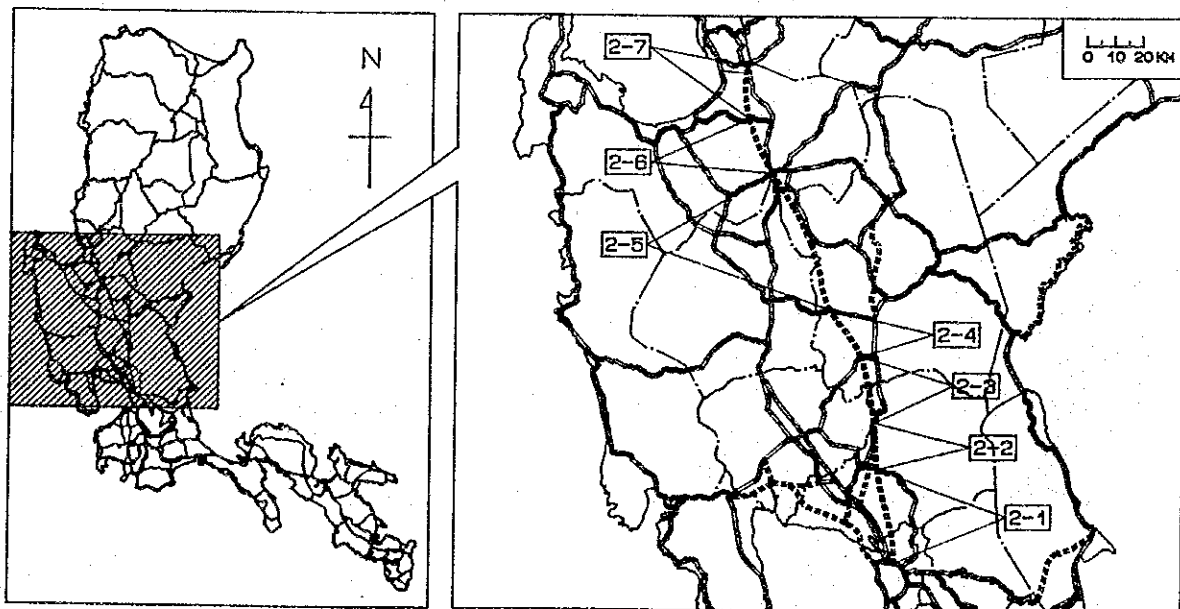
|                             |  |  |  |                           |  |                           |  |  |  |        |  |
|-----------------------------|--|--|--|---------------------------|--|---------------------------|--|--|--|--------|--|
| Name                        |  | North Luzon Expressway   |  |                           |  |                           |  | Province:<br>Manila, Bulacan<br>Pampanga     |  |        |  |
| Existing Road Condition     |  | Segment 1, 2: Number of lanes of existing expressway is 4. Pavement is in good condition. Carriageway may be inadequate to accommodate future traffic.<br>Segment 3 : Number of lanes of existing expressway is 2. Pavement is in good condition               |  |                           |  |                           |  | Population Coverage (1990):<br><br>2,060,917 |  |        |  |
| Objective                   |  | <ul style="list-style-type: none"> <li>• Decongest the road from heavy traffic by widening the road</li> <li>• Strengthen south-north link (Pampanga-Bulacan-NCR)</li> <li>• Promote regional development (Clark airport, industry and agriculture)</li> </ul> |  |                           |  |                           |  |  |  |        |  |
| Segment                     |  | 1-1  |  | 1-2                       |  | 1-3                       |  | Total  |  |        |  |
| Location                    |  | Malinta<br>Sta. Rita   |  | Sta. Rita<br>San Fernando |  | San Fernando<br>Mabalacat |  |  |  |        |  |
| Length (km)                 |  | 29.6   |  | 27.3                      |  | 21.7                      |  | 78.6   |  |        |  |
| Traffic Volume              |  | Year   |  | 1992                      |  | 2010                      |  |  |  |        |  |
|                             |  | Car  |  | 44,357                    |  | 58,002                    |  | 30,101                                       |  | 38,538 |  |
|                             |  | Jeepney  |  | 5,483                     |  | 6,922                     |  | 3,713  |  | 5,148  |  |
|                             |  | Bus  |  | 4,776                     |  | 4,211                     |  | 3,184  |  | 2,758  |  |
|                             |  | Truck  |  | 7,078                     |  | 7,734                     |  | 4,801  |  | 4,999  |  |
|                             |  | Total  |  | 61,694                    |  | 74,869                    |  | 41,799                                       |  | 51,443 |  |
| Work Item:                  |  |  |  |                           |  |                           |  |  |  |        |  |
| Widen to 6 Lane Expway (km) |  | 29.6   |  | 27.3                      |  | -                         |  | 56.9   |  |        |  |
| Widen to 6 Lane Bridge (m)  |  | 370  |  | 6,398                     |  | -                         |  | 6,768  |  |        |  |
| Widen to 4 Lane Expway (km) |  | -  |  | -                         |  | 21.7                      |  | 21.7   |  |        |  |
| Widen to 6 Lane Bridge (m)  |  | -  |  | -                         |  | 432                       |  | 432  |  |        |  |
| Cost: (P million)           |  |  |  |                           |  |                           |  |  |  |        |  |
| Right-of-Way                |  | 0.0  |  | 0.0                       |  | 0.0                       |  | 0.0  |  |        |  |
| Construction                |  | 1,127.5  |  | 1,392.7                   |  | 645.3                     |  | 3,165.5                                      |  |        |  |
| Engineering                 |  | 135.3  |  | 167.1                     |  | 77.4                      |  | 379.8  |  |        |  |
| Total                       |  | 1,262.8  |  | 1,559.8                   |  | 722.7                     |  | 3,545.3                                      |  |        |  |
| Implementation Schedule     |  | from<br>to   |  | 2001<br>2003              |  | 2002<br>2004              |  | 1994 2001<br>1996 2004                       |  |        |  |
| Economic Return             |  | IRR = 37.9%  |  | B/C = 3.27                |  | NPV = P2,044.9 M          |  |  |  |        |  |
| Remarks:                    |  |  |  |                           |  |                           |  |  |  |        |  |



# PROJECT PROFILE

Project Number: 2

|                               |      |  |                   |                   |                   |                   |                   |                   |  |
|-------------------------------|------|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--|
| Name                          |      | New North Luzon Expressway   |                   |                   |                   |                   |                   |                   | Province: Manila, Bulacan, Nueva Ecija, Pangasinan |
| Existing Road Condition       |      | No existing road along proposed alignment.<br>Proposed alignment passes through eastern side of Mt. Arayat to avoid lahar of Mt. Pinatubo.<br>Terrain is generally flat.   |                   |                   |                   |                   |                   |                   | Population Coverage (1990):<br><br>2,243,717       |
| Objective                     |      | <ul style="list-style-type: none"> <li>Provide alternate route of North Luzon Expressway and Manila North Road in case of closer of the existing road.</li> <li>Provide faster access from Northern Luzon to Manila</li> </ul> |                   |                   |                   |                   |                   |                   |  |
| Segment                       |      | 2-1  | 2-2               | 2-3               | 2-4               | 2-5               | 2-6               | 2-7               | Total  |
| Location                      | from | EDSA   | San Rafael        | San Ildefonso     | San Isidro        | Zaragoza          | Carmen            | Urdaneta          |  |
|                               | to   | San Rafael   | San Ildefonso     | San Isidro        | Zaragoza          | Carmen            | Urdaneta          | Rosario           |  |
| Length (km)                   |      | 33.7   | 16.4              | 23.9              | 19.8              | 53.1              | 20.9              | 18.8              | 186.6  |
| Traffic Volume                | 1992 | Car  | -                 | -                 | -                 | -                 | -                 | -                 | -  |
|                               |      | Jeepney  | -                 | -                 | -                 | -                 | -                 | -                 | -  |
|                               |      | Bus  | -                 | -                 | -                 | -                 | -                 | -                 | -  |
|                               | 2001 | Car  | 12,497            | 14,147            | 10,023            | 7,926             | 5,008             | 6,768             | 6,665  |
|                               |      | Jeepney  | 2,052             | 3,486             | 722               | 1,133             | 1,267             | 1,154             | 696  |
|                               |      | Bus  | 2,812             | 2,869             | 2,862             | 2,314             | 2,406             | 1,909             | 2,088  |
|                               |      | Truck  | 3,522             | 4,242             | 4,171             | 3,212             | 3,192             | 2,484             | 2,237  |
|                               |      | Total  | 20,883            | 24,744            | 17,778            | 14,585            | 14,873            | 12,315            | 11,686   |
| Work Item:                    |      |  |                   |                   |                   |                   |                   |                   |  |
| Cons't. of 4-Lane Expwy. (km) |      | 33.7   | 16.4              | 23.9              | 19.8              | 53.1              | 20.9              | 18.8              | 186.6  |
| Cons't. of 4-Lane Bridge (m)  |      | 500  | 525               | 350               | 275               | 625               | 250               | 150               | 2,675  |
| Cost: (P million)             |      |  |                   |                   |                   |                   |                   |                   |  |
| Right-of-Way                  |      | 14.9   | 21.3              | 25.5              | 12.5              | 13.4              | 26.1              | 24.0              | 137.7  |
| Construction                  |      | 1,895.1  | 918.3             | 1,339.6           | 1,108.6           | 3,114.6           | 1,174.6           | 1,055.6           | 10,606.4   |
| Engineering                   |      | 227.4  | 110.2             | 160.7             | 133.0             | 373.7             | 141.0             | 126.7             | 1,272.7  |
| Total                         |      | 2,137.4  | 1,049.8           | 1,525.8           | 1,254.1           | 3,501.7           | 1,341.7           | 1,206.3           | 12,016.8   |
| Implementation Schedule       |      | from 1995 to 1997  | from 1996 to 1998 | from 1998 to 2000 | from 1999 to 2001 | from 2003 to 2006 | from 2008 to 2010 | from 2008 to 2010 | 1995 to 2010                                       |
| Economic Return               |      | IRR = 36.6%  |                   |                   | B/C = 3.04        |                   |                   | NPV = P5,893.8 M  |  |
| Remarks:                      |      |  |                   |                   |                   |                   |                   |                   |  |

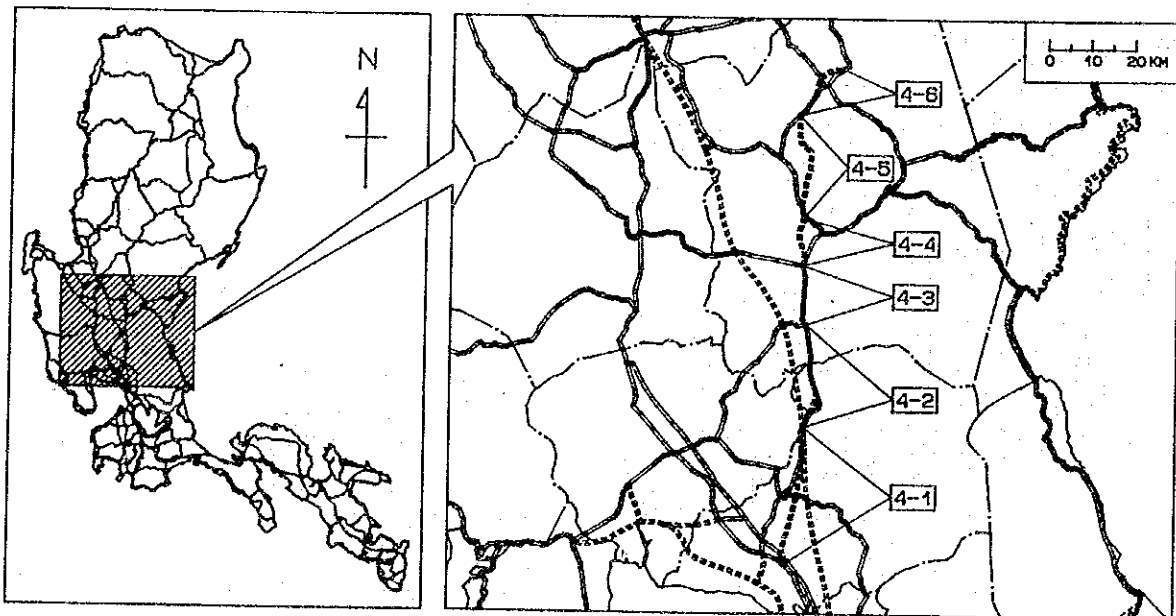




# PROJECT PROFILE

Project Number: 4

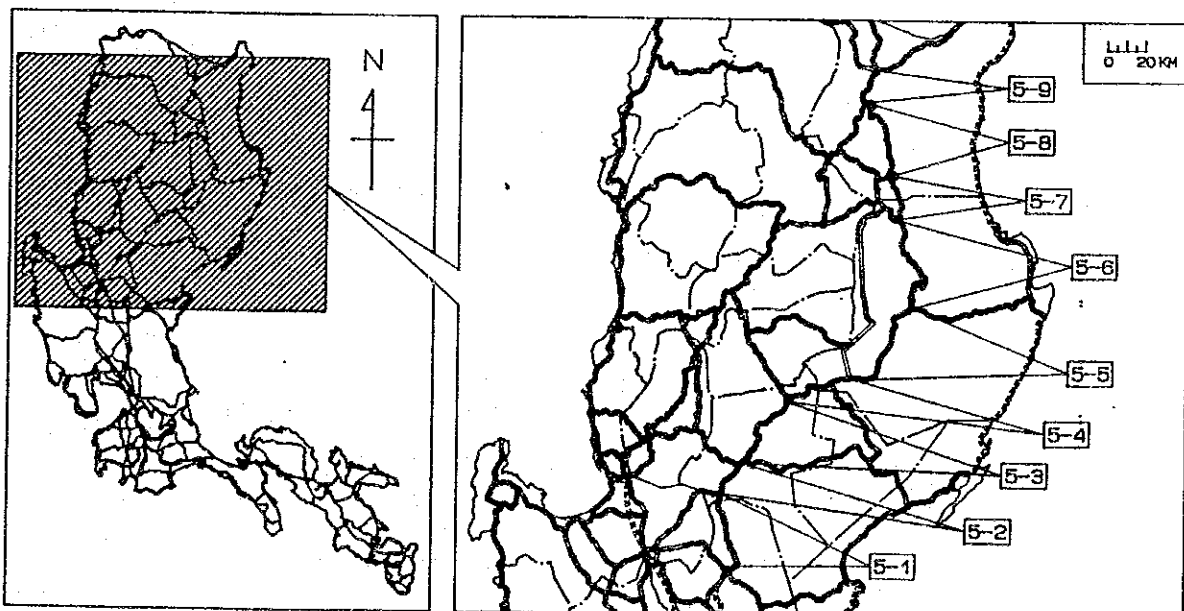
|                              |  |   |               |           |            |          |                  |  |
|------------------------------|--|---|---------------|-----------|------------|----------|------------------|--|
| Name                         |  | Pan-Philippine Highway, Sta. Rita - San Jose Section  |               |           |            |          |                  | Province: Bulacan, Nueva Ecija               |
| Existing Road Condition      |  | Segment 1,4~6: No existing road. Proposed alignment passes through outskirts of Sta. Rita, Cabanatuan and San Jose City<br>Segment 2,3 : Existing road is 2 lane PCC/AC paved road. Rehabilitation work is on-going |               |           |            |          |                  | Population Coverage (1990):<br><br>1,722,710 |
| Objective                    |  | <ul style="list-style-type: none"> <li>Strengthen south-north link (Region III to NCR)</li> <li>Alleviate traffic congestion in urban centers by constructing new by passes</li> </ul>                              |               |           |            |          |                  |  |
| Segment                      |  | 4-1   | 4-2           | 4-3       | 4-4        | 4-5      | 4-6              | Total  |
| Location                     |  | from Tabang   | San Ildefonso | Gapan     | Sta. Rosa  | Talavera | Munoz            |  |
|                              |  | to San Ildefonso  | Gapan         | Sta. Rosa | Talavera   | Munoz    | San Jose         |  |
| Length (km)                  |  | 31.7  | 25.8          | 13.0      | 11.1       | 24.9     | 15.8             | 122.3  |
| Traffic Volume               |  | 1 Car   | 2,332         | 4,379     | -          | -        | 707              |  |
|                              |  | 9 Jeepney   | 194           | 860       | -          | -        | 237              |  |
| 2 Bus                        |  | 9   | 595           | 942       | -          | -        | 252              |  |
|                              |  | 2 Truck   | 1,079         | 2,058     | -          | -        | 350              |  |
|                              |  | 0 Total   | 4,200         | 8,239     | -          | -        | 1,576            |  |
| 2 Car                        |  | 0   | 1,573         | 6,196     | 293        | 593      | 960              |  |
|                              |  | 0 Jeepney   | 895           | 1,115     | 224        | 179      | 332              |  |
| 0 Bus                        |  | 0   | 24            | 1,096     | 55         | 203      | 291              |  |
|                              |  | 1 Truck   | 0             | 101       | 2,734      | 110      | 194              | 277  |
|                              |  | 0 Total   | 2,953         | 11,141    | 682        | 1,169    | 1,860            |  |
| Work Item:                   |  |   |               |           |            |          |                  |  |
| Widen to 4-Lane Road (km)    |  | -   | 21.2          | 13.0      | -          | 3.4      | 6.2              | 43.8   |
| Widen to 4-Lane Bridge (m)   |  | -   | 562           | 112       | -          | -        | -                | 674  |
| Cons't. of 4-Lane Road (km)  |  | 31.7  | 4.6           | -         | 11.1       | 21.5     | 9.6              | 78.5   |
| Cons't. of 4-Lane Bridge (m) |  | 435   | 65            | -         | 205        | 75       | 120              | 900  |
| Disaster Prevention (m)      |  | -   | -             | -         | -          | 100      | -                | 100  |
| Cost: (P million)            |  |   |               |           |            |          |                  |  |
| Right-of-Way                 |  | 38.0  | 13.7          | 2.9       | 13.4       | 33.3     | 12.9             | 114.2  |
| Construction                 |  | 864.0   | 650.5         | 239.6     | 365.7      | 522.9    | 349.1            | 2,991.8                                      |
| Engineering                  |  | 103.7   | 78.1          | 28.8      | 43.9       | 62.8     | 41.9             | 359.2  |
| Total                        |  | 1,005.7   | 742.3         | 271.3     | 423.0      | 619.0    | 403.9            | 3,465.2                                      |
| Implementation Schedule      |  | from 1995   | 1996          | 1997      | 1999       | 2000     | 2001             | 1995   |
|                              |  | to 1997   | 1998          | 1998      | 2000       | 2002     | 2002             | 2002   |
| Economic Return              |  | IRR = 48.6%   |               |           | B/C = 4.60 |          | NPV = P4,472.1 M |  |
| Remarks:                     |  |   |               |           |            |          |                  |  |



# PROJECT PROFILE

Project Number: 5

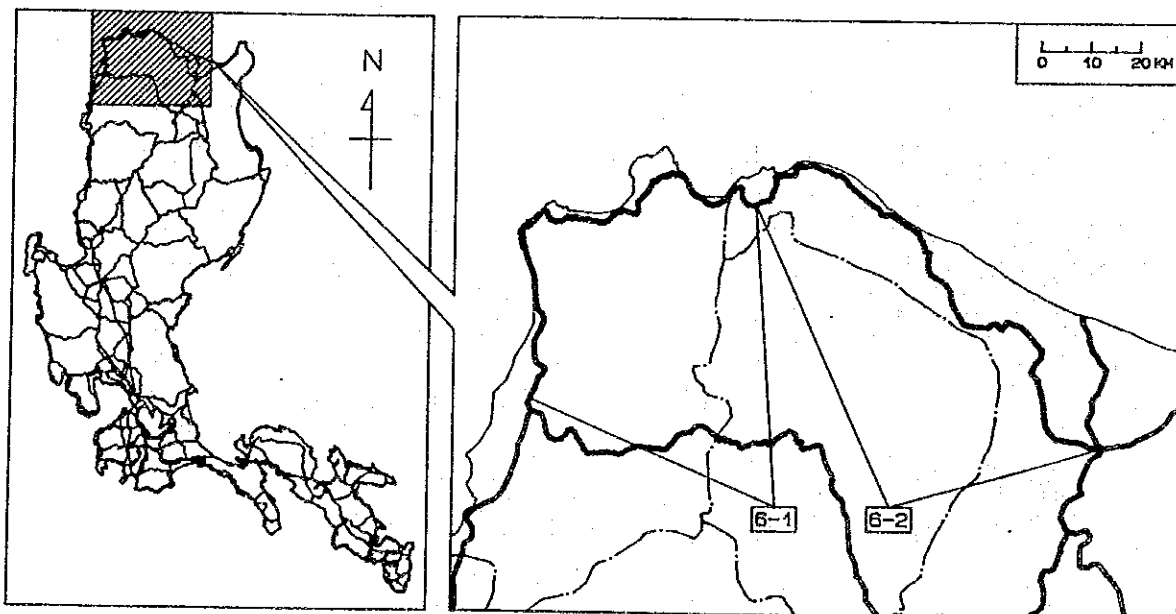
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|-------------------------|--|---|---|-----------------|---|----------------------|---|----------------------|---|---------------------|---|------------------|---|---|---|---|---|----|---|
| Name                    |  | Pan-Philippine Highway, San Jose - Magapit  |   |                 |   |                      |   |                      |   |                     | Province: Nueva Ecija, Nueva Vizcaya, Isabela, Cagayan          |                  |   |   |   |   |   |    |   |
| Existing Road Condition |  | Existing PCC pavement is generally fair. Nearly 70 km is identified for rehabilitation. Appreciable number of disaster spots are observed in Dalton Pass section. Rehabilitation work is on-going.                  |   |                 |   |                      |   |                      |   |                     | Population Coverage (1990):<br>1,551,324                        |                  |   |   |   |   |   |    |   |
| Objective               |  | <ul style="list-style-type: none"> <li>Secure stable traffic through the year by adopting proper-disaster prevention measures</li> <li>Attain smooth traffic by rehabilitation of existing PCC pavement.</li> </ul> |   |                 |   |                      |   |                      |   |                     |   |                  |   |   |   |   |   |    |   |
| Segment                 |  | 5-1   | 5-2   | 5-3             | 5-4   | 5-5                  | 5-6   | 5-7                  | 5-8   | 5-9                 | Total   |                  |   |   |   |   |   |    |   |
| Location                |  | San Jose Sta. Fe  | Sta. Aritao   | Aritao Baga-bag | Baga-bag San-tiago  | San-tiago Nagui-lian | Nagui-lian Caba-gan   | Caba-gan Tugue-garao | Tugue-garao Nassi-ping  | Nassi-ping Mega-pit |   |                  |   |   |   |   |   |    |   |
| Length (km)             |  | 50.3  | 19.9  | 47.7            | 44.6  | 56.7                 | 63.2  | 33.5                 | 38.2  | 34.7                | 388.8   |                  |   |   |   |   |   |    |   |
| Traffic Volume          |  | 1   | Car 759<br>Jeepney 161<br>Bus 315<br>Truck 601<br>Total 1,836 | 2               | Car 759<br>Jeepney 161<br>Bus 315<br>Truck 601<br>Total 1,836   | 3                    | Car 975<br>Jeepney 1,034<br>Bus 300<br>Truck 579<br>Total 2,888   | 4                    | Car 558<br>Jeepney 450<br>Bus 255<br>Truck 521<br>Total 1,784   | 5                   | Car 744<br>Jeepney 449<br>Bus 357<br>Truck 386<br>Total 1,936   | 6                | Car 868<br>Jeepney 329<br>Bus 387<br>Truck 450<br>Total 2,094   | 7 | Car 823<br>Jeepney 329<br>Bus 360<br>Truck 438<br>Total 1,950   | 8 | Car 554<br>Jeepney 598<br>Bus 295<br>Truck 225<br>Total 1,672   | 9  | Car 449<br>Jeepney 310<br>Bus 287<br>Truck 447<br>Total 1,493   |
|                         |  | 2   | Car 179<br>Jeepney 30<br>Bus 38<br>Truck 48<br>Total 295      | 3               | Car 1,549<br>Jeepney 285<br>Bus 571<br>Truck 969<br>Total 3,374 | 4                    | Car 2,108<br>Jeepney 2,022<br>Bus 602<br>Truck 960<br>Total 5,692 | 5                    | Car 1,525<br>Jeepney 844<br>Bus 583<br>Truck 934<br>Total 3,886 | 6                   | Car 1,480<br>Jeepney 781<br>Bus 763<br>Truck 457<br>Total 3,481 | 7                | Car 1,367<br>Jeepney 660<br>Bus 612<br>Truck 406<br>Total 3,165 | 8 | Car 1,003<br>Jeepney 325<br>Bus 612<br>Truck 328<br>Total 2,268 | 9 | Car 1,073<br>Jeepney 842<br>Bus 569<br>Truck 400<br>Total 2,884 | 10 | Car 1,148<br>Jeepney 755<br>Bus 674<br>Truck 748<br>Total 3,325 |
| Work Item:              |  |   |   |                 |   |                      |   |                      |   |                     |   |                  |   |   |   |   |   |    |   |
| Rehabilitation (km)     |  | 7.0   | 5.8   | -               | 30.8  | 15.4                 | -   | 3.3                  | 3.4   | 3.6                 | 69.3  |                  |   |   |   |   |   |    |   |
| Pavement (km)           |  | 1.0   | 0.6   | -               | -   | -                    | -   | -                    | -   | -                   | 1.6   |                  |   |   |   |   |   |    |   |
| Disaster Prevention (m) |  | 25,760  | 850   | 850             | 300   | -                    | 50  | -                    | -   | 50                  | 27,860  |                  |   |   |   |   |   |    |   |
| Cost: (P million)       |  |   |   |                 |   |                      |   |                      |   |                     |   |                  |   |   |   |   |   |    |   |
| Right-of-Way            |  | 0.0   | 0.0   | 0.0             | 0.0   | 0.0                  | 0.0   | 0.0                  | 0.0   | 0.0                 | 0.0   |                  |   |   |   |   |   |    |   |
| Construction            |  | 779.3   | 53.8  | 28.8            | 160.6   | 67.1                 | 1.4   | 14.4                 | 15.3  | 17.7                | 1,138.4   |                  |   |   |   |   |   |    |   |
| Engineering             |  | 93.5  | 6.5   | 3.5             | 19.3  | 8.1                  | 0.2   | 1.7                  | 1.8   | 2.1                 | 136.7   |                  |   |   |   |   |   |    |   |
| Total                   |  | 872.8   | 60.3  | 32.3            | 179.9   | 75.2                 | 1.6   | 16.1                 | 17.1  | 19.8                | 1,275.1   |                  |   |   |   |   |   |    |   |
| Implementation Schedule |  | from 1993<br>to 1995  | 1993<br>1993  | 1993<br>1993    | 1993<br>1994  | 1993<br>1993         | 1993<br>1993  | 1993<br>1993         | 1993<br>1993  | 1993<br>1993        | 1993<br>1995  |                  |   |   |   |   |   |    |   |
| Economic Return         |  | IRR = 104.3%  |   |                 |   |                      |   |                      |   |                     | B/C = 12.63   | NPV = P9,422.4 M |   |   |   |   |   |    |   |
| Remarks:                |  |   |   |                 |   |                      |   |                      |   |                     |   |                  |   |   |   |   |   |    |   |



# PROJECT PROFILE

Project Number: 6

|                              |  |   |  |                          |  |  |  |
|------------------------------|--|---|--|--------------------------|--|--|--|
| Name                         |  | Laoag-Magapit Road  |  |                          |  | Province: Ilocos Norte, Cagayan        |  |
| Existing Road Condition      |  | Segment 1: 92.2 km is PCC in generally fair condition. 9.3 km is AC in fair condition. 11.5 km is gravel in fair to bad condition. Total 4900 m cut slope failure sections are observed.<br>Segment 2: 75.8 km is PCC in fair condition. 39.5 km is gravel in fair to bad condition.                              |  |                          |  | Population Coverage (1990):<br>498,390 |  |
| Objective                    |  | <ul style="list-style-type: none"> <li>Strengthen east-west link (Region I and II) and inter-link of south-east road</li> <li>Strengthen economic linkage between northern part of Region I and Cagayan Valley</li> <li>Promote northern coastal development in agriculture, agro-industry and tourism</li> </ul> |  |                          |  |  |  |
| Segment                      |  | 6-1   |  | 6-2                      |  | Total                                  |  |
| Location                     |  | Laoag<br>Sta. Praxedes  |  | Sta. Praxedes<br>Magapit |  |  |  |
| Length (km)                  |  | 113.0   |  | 115.3                    |  | 228.3                                  |  |
| Traffic Volume               |  | Year  |  | 1992                     |  | 2010                                   |  |
|                              |  | Car   |  | 227                      |  | 128                                    |  |
|                              |  | Jeepney   |  | 540                      |  | 192                                    |  |
|                              |  | Bus   |  | 179                      |  | 71                                     |  |
|                              |  | Truck   |  | 342                      |  | 340                                    |  |
| Total                        |  | 1,288   |  | 731                      |  | 897                                    |  |
| Work Item:                   |  |   |  |                          |  |  |  |
| Rehabilitation (km)          |  | 1.1   |  | 1.0                      |  | 2.1                                    |  |
| Pavement (km)                |  | 11.0  |  | 39.5                     |  | 50.5                                   |  |
| Disaster Prevention (m)      |  | 4,900   |  | 50                       |  | 4,950                                  |  |
| Widen to 2 Lane (km)         |  | 0.6   |  | -                        |  | 0.6                                    |  |
| Cons't. of 2 Lane Bridge (m) |  | 84  |  | 122                      |  | 206                                    |  |
| Cost: (P million)            |  |   |  |                          |  |  |  |
| Right-of-Way                 |  | 7.4   |  | 0.0                      |  | 7.4                                    |  |
| Construction                 |  | 244.4   |  | 237.4                    |  | 481.8                                  |  |
| Engineering                  |  | 29.3  |  | 28.5                     |  | 57.8                                   |  |
| Total                        |  | 281.1   |  | 265.9                    |  | 547.0                                  |  |
| Implementation Schedule      |  | from 1993<br>to 1994  |  | 1993<br>1994             |  | 1993<br>1994                           |  |
| Economic Return              |  | IRR = 24.7%   |  | B/C = 1.66               |  | NPV = P239.6 M                         |  |
| Remarks:                     |  |   |  |                          |  |  |  |

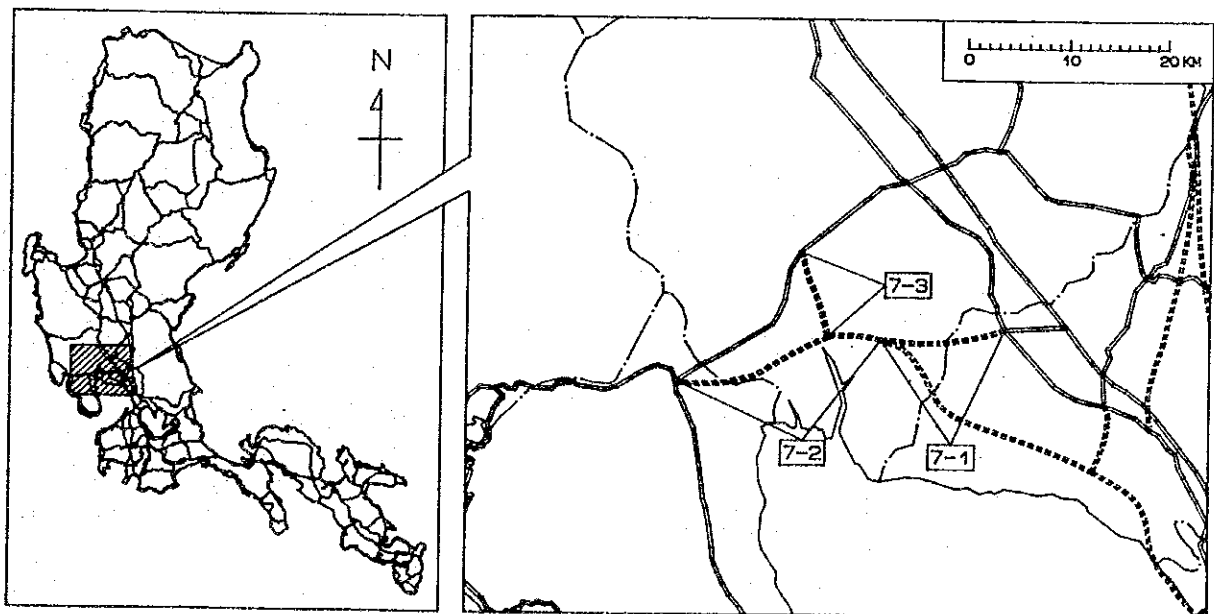




# PROJECT PROFILE

Project Number: 7

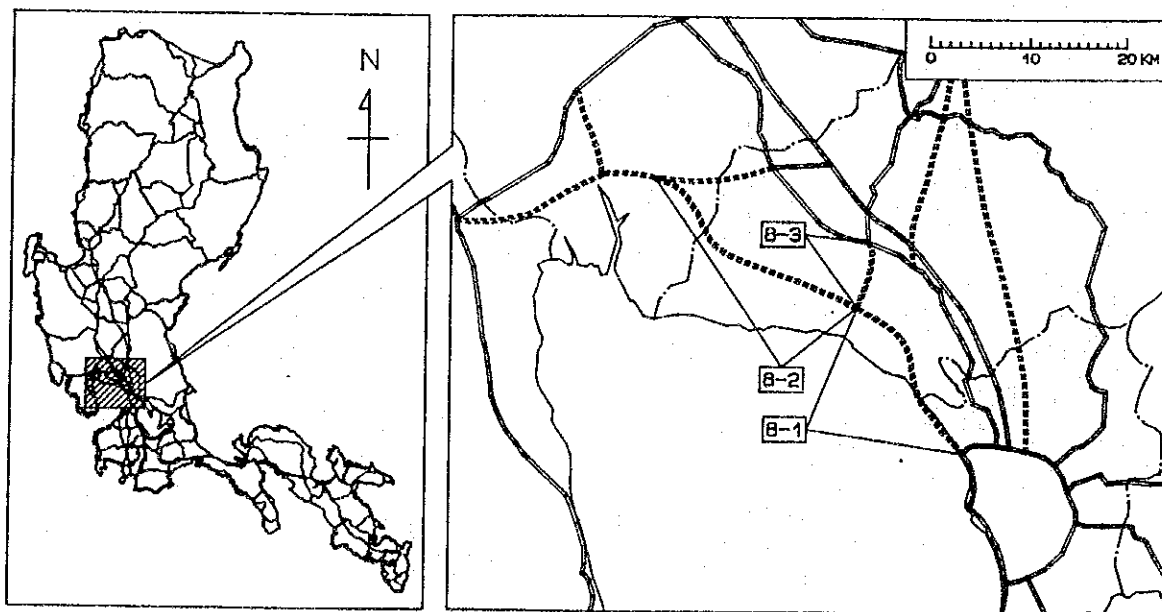
|                               |         |   |      |                         |        |                    |       |  |  |
|-------------------------------|---------|---|------|-------------------------|--------|--------------------|-------|--|--|
| Name                          |         | Manila-Bataan Coastal Road, North Section   |      |                         |        |                    |       | Province: Bulacan<br>Pampanga, Bataan        |  |
| Existing Road Condition       |         | Proposed alignment passes through swampy delta area in Pampanga. Extensive length of embankment is proposed. Access road to San Fernando-Olongapo road is also proposed.  |      |                         |        |                    |       | Population Coverage (1990):<br><br>1,087,314 |  |
| Objective                     |         | <ul style="list-style-type: none"> <li>• Provide a direct road linkage between Manila and Bataan peninsula</li> <li>• Support industrial development (Subic industrial estate, Bataan Export processing Zone, Hermosa Regional Industrial Center)</li> <li>• Strengthen Bataan-Pampanga-Bulacan coastal link</li> </ul> |      |                         |        |                    |       |  |  |
| Segment                       |         | 7-1   |      | 7-2                     |        | 7-3                |       | Total  |  |
| Location                      | from to | Calumpit<br>Macababe  |      | Macababe<br>Dinalupihan |        | Macababe<br>Guagua |       |  |  |
| Length                        | (km)    | 12.3  |      | 21.5                    |        | 9.0                |       | 42.8   |  |
| Traffic Volume                | Year    | 1992  | 2010 | 1992                    | 2010   | 1992               | 2010  |  |  |
|                               | Car     | -   | 17   | -                       | 12,162 | -                  | 3,731 |  |  |
|                               | Jeepney | -   | 2    | -                       | 2,030  | -                  | 1,642 |  |  |
|                               | Bus     | -   | 2    | -                       | 1,682  | -                  | 505   |  |  |
|                               | Truck   | -   | 6    | -                       | 3,003  | -                  | 1,453 |  |  |
|                               | Total   | -   | 27   | -                       | 18,877 | -                  | 7,331 |  |  |
| Work Item:                    |         |   |      |                         |        |                    |       |  |  |
| Cons't. of 4 Lane Road (km)   |         | 12.3  |      | 21.5                    |        | -                  |       | 33.8   |  |
| Cons't. of 4 Lane Bridge (km) |         | 165   |      | 625                     |        | -                  |       | 790  |  |
| Cons't. of 2 Lane Road (km)   |         | -   |      | -                       |        | 9.0                |       | 9.0  |  |
| Cons't. of 2 Lane Bridge (m)  |         | -   |      | -                       |        | 320                |       | 320  |  |
| Cost: (P million)             |         |   |      |                         |        |                    |       |  |  |
| Right-of-Way                  |         | 3.4   |      | 19.4                    |        | 5.4                |       | 28.2   |  |
| Construction                  |         | 350.0   |      | 1,992.9                 |        | 182.8              |       | 2,525.7                                      |  |
| Engineering                   |         | 42.0  |      | 239.1                   |        | 21.9               |       | 303.0  |  |
| Total                         |         | 395.4   |      | 2,251.4                 |        | 210.1              |       | 2,856.9                                      |  |
| Implementation Schedule       | from to | 1994<br>1995  |      | 1995<br>1997            |        | 1995<br>1996       |       | 1994<br>1997                                 |  |
| Economic Return               |         | IRR = 40.0%   |      | B/C = 3.89              |        | NPV = P4,023.4 M   |       |  |  |
| Remarks:                      |         |   |      |                         |        |                    |       |  |  |



# PROJECT PROFILE

Project Number: 8

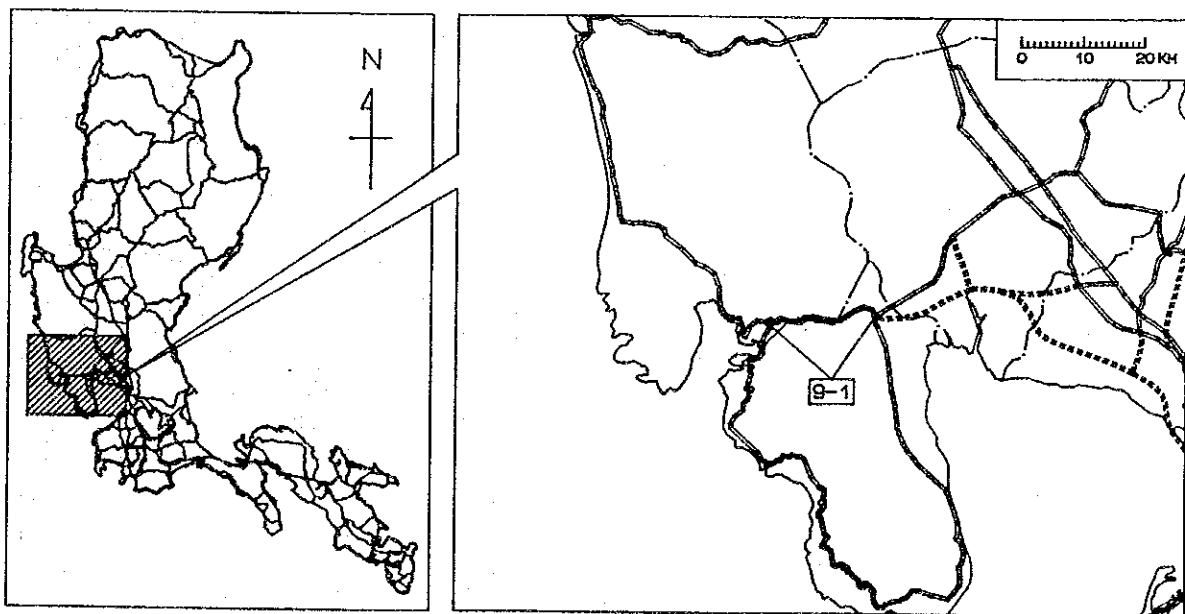
|                              |         |   |        |                   |        |                 |       |  |  |
|------------------------------|---------|---|--------|-------------------|--------|-----------------|-------|--|--|
| Name                         |         | Manila-Bataan Coastal Road, South Section   |        |                   |        |                 |       | Province: Manila, Bulacan, Pampanga      |  |
| Existing Road Condition      |         | Most of the alignment passes through open land of salt beds, marine ponds and patches of agricultural land. Access road to MacArthur Highway is provided.   |        |                   |        |                 |       | Population Coverage (1990):<br>1,270,404 |  |
| Objective                    |         | <ul style="list-style-type: none"> <li>• Provide a direct road linkage between Manila and Bataan Peninsula</li> <li>• Support industrial development (Subic industrial estate, Bataan Export processing zone, Hermosa Regional Industrial Center)</li> <li>• Strengthen Bataan-Pampanga-Bulacan coastal link</li> </ul> |        |                   |        |                 |       |  |  |
| Segment                      |         | 8-1   |        | 8-2               |        | 8-3             |       | Total                                    |  |
| Location                     | from to | Navotas Babangad  |        | Babangad Macabebe |        | Babangad Tabang |       |  |  |
| Length                       | (km)    | 19.0  |        | 25.7              |        | 7.0             |       | 51.7                                     |  |
| Traffic Volume               | Year    | 1992  | 2010   | 1992              | 2010   | 1992            | 2010  |  |  |
|                              | Car     | -   | 10,199 | -                 | 9,343  | -               | 1,492 |  |  |
|                              | Jespney | -   | 895    | -                 | 795    | -               | 136   |  |  |
|                              | Bus     | -   | 1,348  | -                 | 1,302  | -               | 54    |  |  |
|                              | Truck   | -   | 1,901  | -                 | 1,906  | -               | 406   |  |  |
|                              | Total   | -   | 14,343 | -                 | 13,346 | -               | 2,088 |  |  |
| Work Item:                   |         |   |        |                   |        |                 |       |  |  |
| Cons't. of 4 Lane Road (km)  |         | 19.0  |        | 25.7              |        | -               |       | 44.7                                     |  |
| Cons't. of 4 Lane Bridge (m) |         | 475   |        | 925               |        | -               |       | 1,400                                    |  |
| Cons't. of 2-Lane Road (km)  |         | -   |        | -                 |        | 7.0             |       | 7.0                                      |  |
| Cons't. of 2-Lane Bridge (m) |         | -   |        | -                 |        | 95              |       | 95                                       |  |
| Cost: (P million)            |         |   |        |                   |        |                 |       |  |  |
| Right-of-Way                 |         | 27.4  |        | 37.3              |        | 8.4             |       | 73.1                                     |  |
| Construction                 |         | 1,040.0   |        | 15,320.4          |        | 87.9            |       | 16,448.3                                 |  |
| Engineering                  |         | 124.8   |        | 1,838.5           |        | 10.5            |       | 1,973.8                                  |  |
| Total                        |         | 1,192.2   |        | 17,196.2          |        | 106.8           |       | 18,495.2                                 |  |
| Implementation Schedule      | from to | Later than 2010   |        | Later than 2010   |        | Later than 2010 |       | Later than 2010                          |  |
| Economic Return              |         | No economic evaluation  |        |                   |        |                 |       |  |  |
| Remarks:                     |         |   |        |                   |        |                 |       |  |  |



# PROJECT PROFILE

Project Number: 9

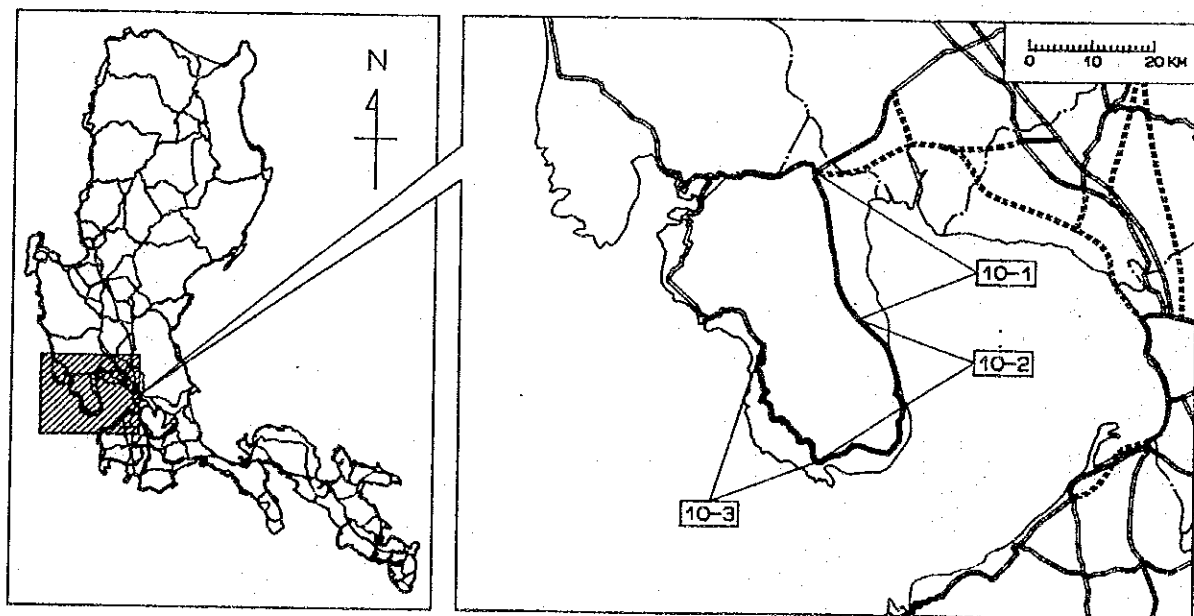
|                            |  |  |         |              |       |  |
|----------------------------|--|--|---------|--------------|-------|--|
| Name                       |  | Dinalupihan-Olongapo Road  |         |              |       | Province: Bataan,<br>Zambales                    |
| Existing Road Condition    |  | 14.2 km is PCC in good condition.<br>12.0 km is AC in good condition.<br>Carriageway width varies 6.0 ~ 7.0 meters.<br>Terrain is rolling to mountainous.  |         |              |       | Population<br>Coverage<br>(1990):<br><br>333,061 |
| Objectives                 |  | <ul style="list-style-type: none"> <li>• Strengthen Olongapo/Zambales - Pampanga link</li> <li>• Alleviate traffic congestion</li> <li>• Promote Subic industrial and tourism development</li> </ul> |         |              |       |  |
| Location                   |  | from: Dinalupihan  |         | to: Olongapo |       |  |
| Length (km)                |  | 26.2   |         |              |       |  |
| Traffic Volume             |  | Car  | Jeepney | Bus          | Truck | Total  |
| 1992                       |  | 4,004  | 892     | 1,075        | 1,196 | 7,167  |
| 2010                       |  | 6,748  | 1,442   | 1,854        | 1,854 | 11,898   |
| Work Item:                 |  |  |         |              |       |  |
| Widen to 4 Lane Road (km)  |  | 26.2   |         |              |       |  |
| Widen to 4 Lane Bridge (m) |  | 223  |         |              |       |  |
| Cost: (P million)          |  |  |         |              |       |  |
| Right-of-Way               |  | 2.9  |         |              |       |  |
| Construction               |  | 788.8  |         |              |       |  |
| Engineering                |  | 94.7   |         |              |       |  |
| Total                      |  | 886.4  |         |              |       |  |
| Implementation Schedule    |  | from   |         | 1995         |       |  |
|                            |  | to   |         | 1997         |       |  |
| Economic Return            |  | IRR = 22.4 %   |         | B/C = 1.66   |       | NPV = P270.1 M                                   |
| Remarks:                   |  |  |         |              |       |  |



**PROJECT PROFILE**

Project Number: 10

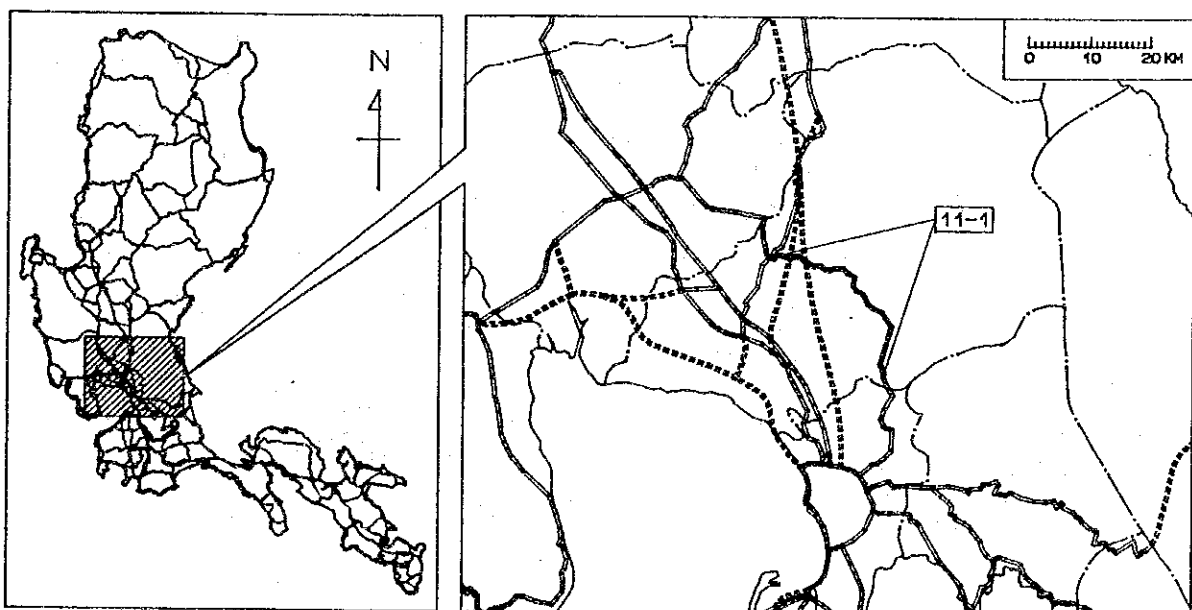
|                               |  |  |  |                    |  |                    |  |  |  |        |  |
|-------------------------------|--|--|--|--------------------|--|--------------------|--|--|--|--------|--|
| Name                          |  | Dinalupihan--Mariveles--Bagac Road   |  |                    |  |                    |  | Province: Bataan                           |  |        |  |
| Existing Road Condition       |  | Segment 1, 2: Existing road is 2 lane PCC paved road. Pavement is in good condition.<br>Segment 3 : No existing road, except 3.7 km gravel road in Bagac proper. Terrain condition in no road section is mostly mountainous.           |  |                    |  |                    |  | Population Coverage (1990):<br><br>408,648 |  |        |  |
| Objective                     |  | <ul style="list-style-type: none"> <li>• Augment traffic capacity</li> <li>• Strengthen Bataan Peninsula link</li> <li>• Support industrial development (Bataan Export processing zone, Hermosa Regional Industrial Center)</li> </ul> |  |                    |  |                    |  |  |  |        |  |
| Segment                       |  | 10-1   |  | 10-2               |  | 10-3               |  | Total                                      |  |        |  |
| Location                      |  | Dinalupihan<br>Pilar   |  | Pilar<br>Mariveles |  | Mariveles<br>Bagac |  |  |  |        |  |
| Length (km)                   |  | 24.3   |  | 39.7               |  | 38.9               |  | 102.9                                      |  |        |  |
| Traffic Volume                |  | Year   |  | 1992               |  | 2010               |  |  |  |        |  |
|                               |  | Car  |  | 4,356              |  | 7,464              |  | 2,289                                      |  | 4,405  |  |
|                               |  | Jeepney  |  | 1,815              |  | 2,948              |  | 982  |  | 2,142  |  |
|                               |  | Bus  |  | 1,179              |  | 2,022              |  | 1,398                                      |  | 3,065  |  |
|                               |  | Truck  |  | 1,514              |  | 2,651              |  | 1,000                                      |  | 1,828  |  |
|                               |  | Total  |  | 8,864              |  | 15,085             |  | 5,669                                      |  | 11,440 |  |
| Work Item:                    |  |  |  |                    |  |                    |  |  |  |        |  |
| Widen to 4 Lanes Road (km)    |  | 24.3   |  | 39.7               |  | -                  |  | 64.0                                       |  |        |  |
| Widen to 4 Lanes Bridge (m)   |  | -  |  | 22                 |  | -                  |  | 22   |  |        |  |
| Widen to 2 Lanes Road (km)    |  | -  |  | -                  |  | 3.2                |  | 3.2  |  |        |  |
| Const't. of 2 Lane Road (km)  |  | -  |  | -                  |  | 34.9               |  | 34.9                                       |  |        |  |
| Const't. of 2 Lane Bridge (m) |  | -  |  | -                  |  | 249                |  | 249  |  |        |  |
| Cost: (P million)             |  |  |  |                    |  |                    |  |  |  |        |  |
| Right-of-Way                  |  | 2.7  |  | 4.4                |  | 5.3                |  | 12.4                                       |  |        |  |
| Construction                  |  | 495.1  |  | 848.2              |  | 427.9              |  | 1,771.2                                    |  |        |  |
| Engineering                   |  | 59.4   |  | 101.8              |  | 51.3               |  | 212.5                                      |  |        |  |
| Total                         |  | 557.2  |  | 954.4              |  | 484.5              |  | 1,996.1                                    |  |        |  |
| Implementation Schedule       |  | from 1998 to 2000  |  | 1998 to 2000       |  | 1997 to 1998       |  | 1997 to 2000                               |  |        |  |
| Economic Return               |  | IRR = 16.3%  |  | B/C = 1.10         |  | NPV = P63.0 M      |  |  |  |        |  |
| Remarks:                      |  |  |  |                    |  |                    |  |  |  |        |  |



# PROJECT PROFILE

Project Number: 11

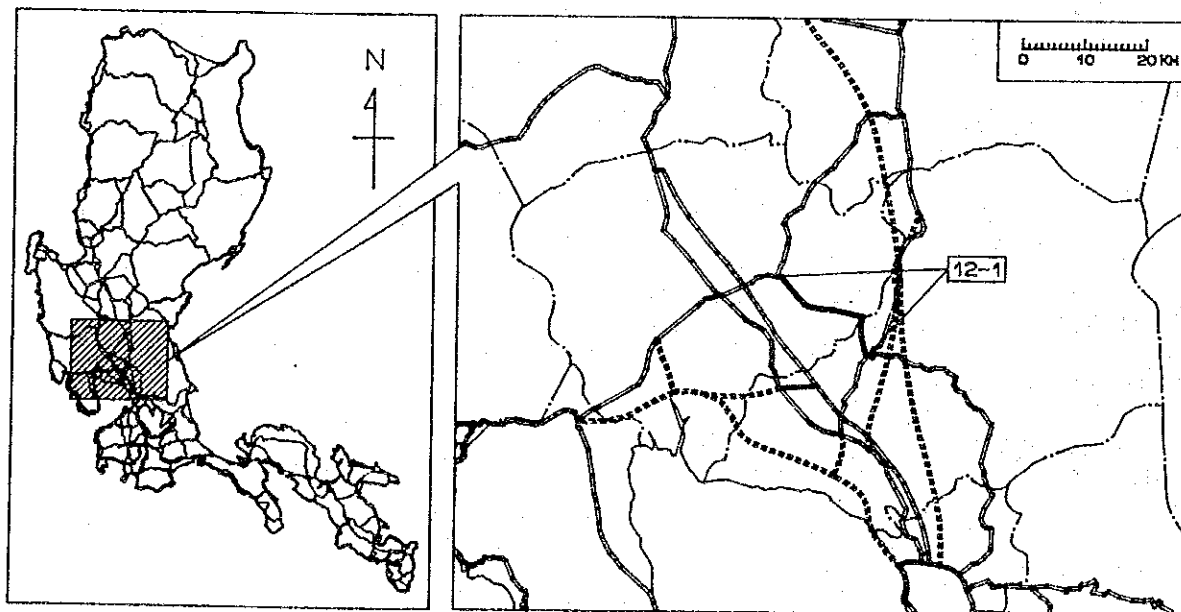
|                         |      |   |         |                        |       |  |
|-------------------------|------|---|---------|------------------------|-------|--|
| Name                    |      | Baliuag - San Jose Del Monte Road   |         |                        |       | Province:<br>Bulacan                       |
| Existing Road Condition |      | 25.5 km is paved with PCC in good condition.<br>4.4 km is paved with PCC in bad condition.<br>1.5 km is paved with AC in good condition.<br>5.3 km is paved with AC in bad condition. |         |                        |       | Population Coverage (1990):<br><br>526,653 |
| Objective               |      | <ul style="list-style-type: none"> <li>Strengthen Bulacan-NCR link</li> <li>Promote provincial development in agriculture and industry</li> </ul>                                     |         |                        |       |  |
| Location                |      | from: Baliuag   |         | to: San Jose del Monte |       |  |
| Length (km)             |      | 36.9  |         |                        |       |  |
| Traffic Volume          |      | Car   | Jeepney | Bus                    | Truck | Total                                      |
|                         | 1992 | 84  | 498     | 4                      | 75    | 661  |
|                         | 2010 | 469   | 1,067   | 25                     | 201   | 1,762                                      |
| Work Item:              |      |   |         |                        |       |  |
| Rehabilitation (km)     |      | 9.7   |         |                        |       |  |
| Cost: (P million)       |      |   |         |                        |       |  |
| Right-of-Way            |      | 0.0   |         |                        |       |  |
| Construction            |      | 46.4  |         |                        |       |  |
| Engineering             |      | 5.6   |         |                        |       |  |
| Total                   |      | 52.0  |         |                        |       |  |
| Implementation Schedule | from | 1999  |         |                        |       |  |
|                         | to   | 1999  |         |                        |       |  |
| Economic Return         |      | IRR = 115.8%  |         | B/C = 8.54             |       | NPV = P117.0 M                             |
| Remarks:                |      |   |         |                        |       |  |



# PROJECT PROFILE

Project Number: 12

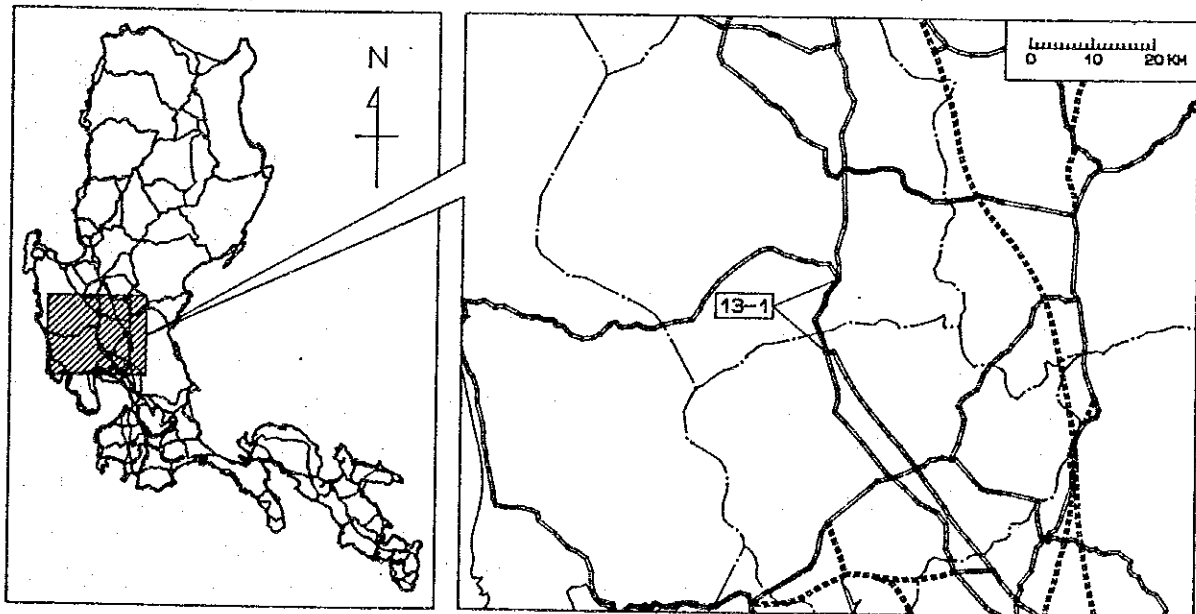
|                         |  |  |         |              |       |  |
|-------------------------|--|--|---------|--------------|-------|--|
| Name                    |  | Baliuag - Sta. Ana Road  |         |              |       | Province: Bulacan<br>Pampanga              |
| Existing Road Condition |  | 9.2 km is PCC in good condition<br>3.4 km is AC in fair condition<br>11.0 km is gravel in very bad condition   |         |              |       | Population Coverage (1990):<br><br>798,900 |
| Objective               |  | <ul style="list-style-type: none"> <li>Strengthen Pampanga - Bulacan link</li> <li>Promote inter-provincial (Bulacan, Pampanga) development in agriculture and industry</li> </ul> |         |              |       |  |
| Location                |  | from: Baliuag  |         | to: Sta. Ana |       |  |
| Length (km)             |  | 23.6   |         |              |       |  |
| Traffic Volume          |  | Car  | Jeepney | Bus          | Truck | Total                                      |
| 1992                    |  | 0  | 0       | 0            | 0     | 0  |
| 2010                    |  | 161  | 24      | 13           | 29    | 227  |
| Work Item:              |  |  |         |              |       |  |
| Pavement (km)           |  | 11.0   |         |              |       |  |
| Cost: (P million)       |  |  |         |              |       |  |
| Right-of-Way            |  | 0.0  |         |              |       |  |
| Construction            |  | 54.1   |         |              |       |  |
| Engineering             |  | 6.5  |         |              |       |  |
| Total                   |  | 60.6   |         |              |       |  |
| Implementation Schedule |  | from   |         | 1999         |       |  |
|                         |  | to   |         | 1999         |       |  |
| Economic Return         |  | IRR = 109.4%   |         | B/C = 7.58   |       | NPV = P119.1 M                             |
| Remarks:                |  |  |         |              |       |  |



# PROJECT PROFILE

Project Number: 13

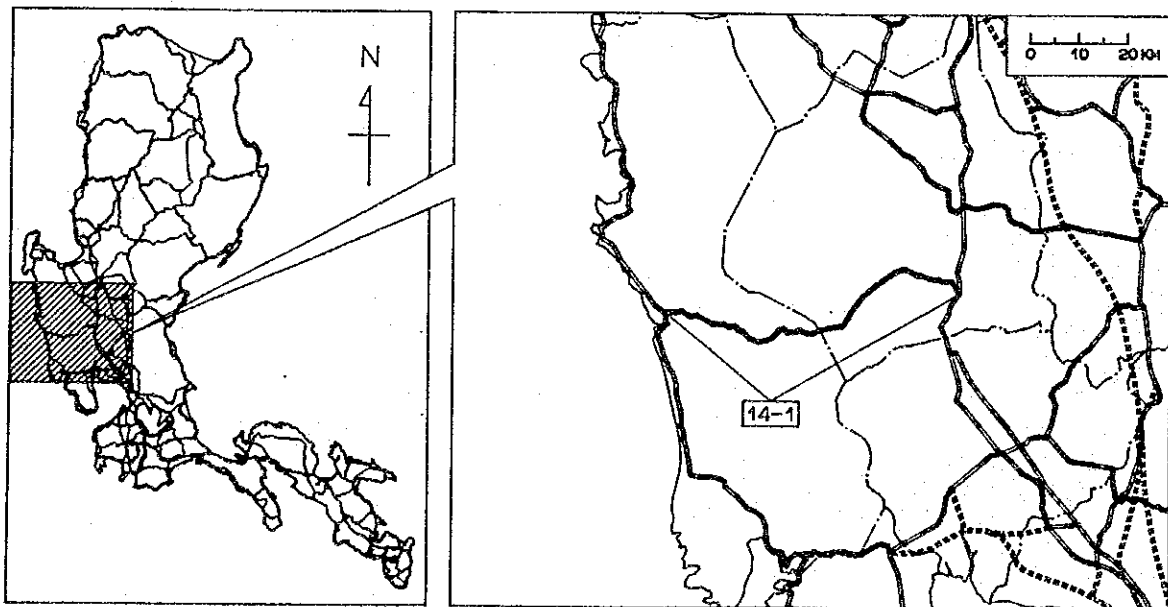
|                              |  |       |            |       |               |  |
|------------------------------|--|-------|------------|-------|---------------|--|
| Name                         | Mabalacat--Capas Road  |       |            |       |               | Province:<br>Pampanga,<br>Tarlac           |
| Existing Road Condition      | Pavement type is AC in good condition<br>Bamban bridge and Bamban overhead bridge are totally washed out by lahar from Mt. Pinatubo  |       |            |       |               | Population Coverage (1990):<br><br>601,730 |
| Objective                    | <ul style="list-style-type: none"> <li>• Strengthen south--north link</li> <li>• Prevent lahar devastation</li> <li>• Provide year--round Bamban river crossing</li> </ul> |       |            |       |               |  |
| Location                     | from: Mabalacat  |       |            |       |               | to: Capas                                  |
| Length (km)                  |  |       |            |       |               | 14.1                                       |
| Traffic Volume               |  | Car   | Jeepney    | Bus   | Truck         | Total                                      |
|                              | 1992   | 5,066 | 1,467      | 1,104 | 2,010         | 9,647                                      |
|                              | 2010   | 3,715 | 1,724      | 283   | 1,330         | 7,052                                      |
| Work Item:                   |  |       |            |       |               |  |
| Cons't. of 2 Lane Bridge (m) |  |       |            |       |               | 194  |
| Cost: (P million)            |  |       |            |       |               |  |
| Right-of-Way                 |  |       |            |       |               | 0.0  |
| Construction                 |  |       |            |       |               | 70.1                                       |
| Engineering                  |  |       |            |       |               | 8.4  |
| Total                        |  |       |            |       |               | 78.5                                       |
| Implementation Schedule      | from   |       |            |       |               | 1998                                       |
|                              | to   |       |            |       |               | 1998                                       |
| Economic Return              | IRR = 22.4 %   |       | B/C = 1.58 |       | NPV = P85.7 M |  |
| Remarks:                     |  |       |            |       |               |  |



# PROJECT PROFILE

Project Number: 14

|  |  |  |         |            |       |  |  |
|--|--|--|---------|------------|-------|--|--|
| Name   |  | Capas--Botolan Road  |         |            |       | Province: Tarlac,<br>Zambales              |  |
| Existing Road Condition  |  | 7.2 km is PCC in good condition<br>17.4 km is AC in good to fair condition<br>8.2 km is gravel in bad condition<br>Remaining 49.0 km is impassable or no road. The road passes through northern slope of Mt. Pinatubo and most impassable sections are buried by lahar |         |            |       | Population Coverage (1990):<br><br>264,815 |  |
| Objective  |  | <ul style="list-style-type: none"> <li>• Strengthen east-west link (Zambales-Tarlac)</li> <li>• Strengthen economic linkage between Luzon central plain and Zambales coastal area</li> <li>• Enhance provincial development in Zambales</li> </ul>                     |         |            |       |  |  |
| Location   |  | from: Capas  |         |            |       | to: Botolan                                |  |
| Length (km)  |  | 81.8   |         |            |       |  |  |
| Traffic Volume   |  | Car  | Jeepney | Bus        | Truck | Total                                      |  |
| 1992   |  | 0  | 0       | 0          | 0     | 0  |  |
| 2010   |  | 328  | 135     | 45         | 112   | 620  |  |
| Work Item:   |  |  |         |            |       |  |  |
| Pavement (km)  |  | 8.2  |         |            |       |  |  |
| Cons't. of 2-Lane Road (km)  |  | 49.0   |         |            |       |  |  |
| Cons't. of 2-Lane Bridge (m)   |  | 70   |         |            |       |  |  |
| Cost: (P million)  |  |  |         |            |       |  |  |
| Right-of-Way   |  | 7.3  |         |            |       |  |  |
| Construction   |  | 715.3  |         |            |       |  |  |
| Engineering  |  | 85.8   |         |            |       |  |  |
| Total  |  | 808.4  |         |            |       |  |  |
| Implementation Schedule  |  | from   |         | 2007       |       |  |  |
|  |  | to   |         | 2009       |       |  |  |
| Economic Return  |  | IRR = 15.8 %   |         | B/C = 1.03 |       | NPV = P32.3 M                              |  |
| Remarks:   |  |  |         |            |       |  |  |
| Construction of Sta. Cruz-Mangatarem road may be recommended as an alternative route, if implementation of Capas-Botolan road will be difficult due to continuing lahar from Mt. Pinatubo. |  |  |         |            |       |  |  |

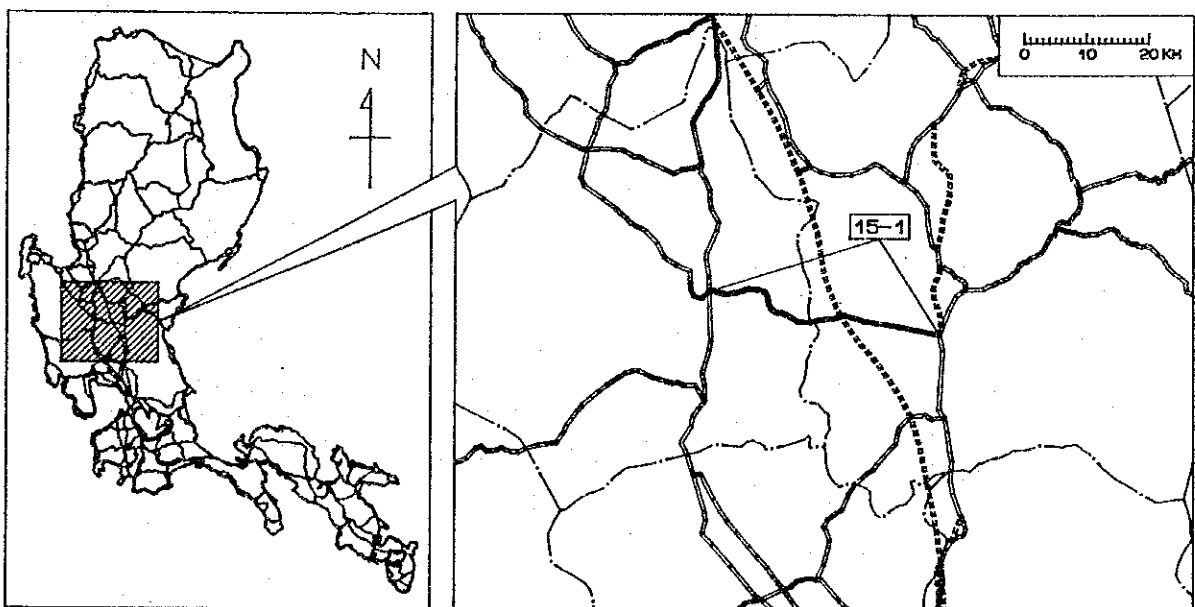




**PROJECT PROFILE**

Project Number: 15

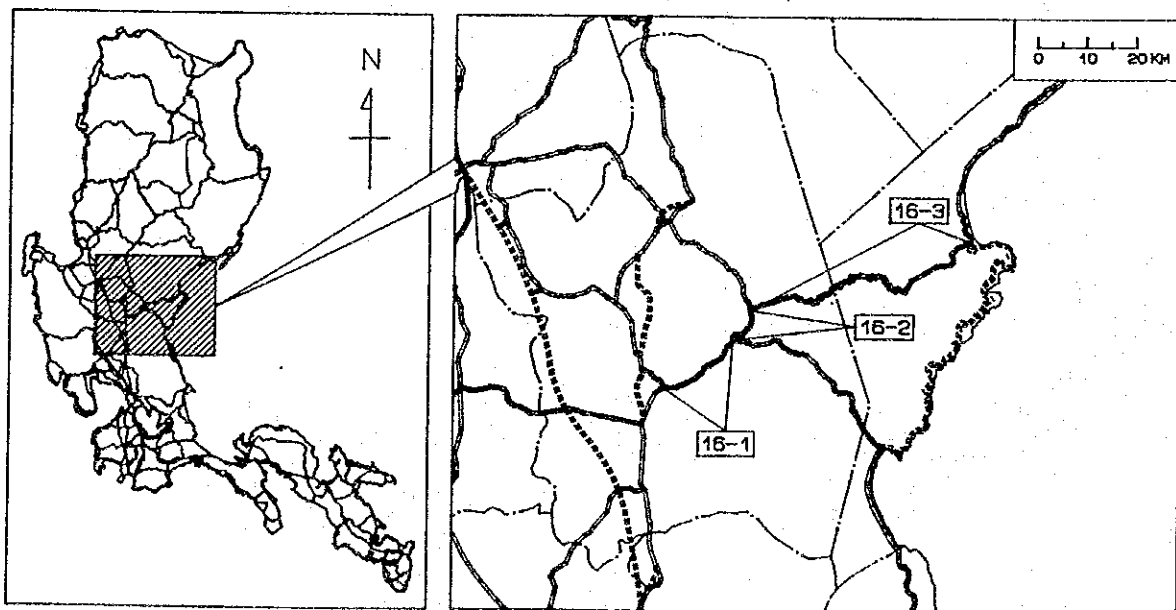
|                              |      |  |         |            |       |  |
|------------------------------|------|--|---------|------------|-------|--|
| Name                         |      | Sta. Rosa – Tarlac Road  |         |            |       | Province:<br>Nueva Ecija,<br>Tarlac        |
| Existing Road Condition      |      | The road is paved with PCC in good condition over entire length.<br>One spillway with a length of 90 m is in Tarlac.   |         |            |       | Population Coverage (1990):<br><br>615,440 |
| Objective                    |      | <ul style="list-style-type: none"> <li>• Strengthen east–west link (Tarlac–Nueva Ecija)</li> <li>• Inter link south–north road (Manila North Road – Pan Philippine Highway)</li> <li>• Strengthen economic linkage within Luzon central plain</li> </ul> |         |            |       |  |
| Location                     |      | from: Sta. Rosa  |         | to: Tarlac |       |  |
| Length (km)                  |      | 40.6   |         |            |       |  |
| Traffic Volume               | 1992 | Car  | Jeepney | Bus        | Truck | Total                                      |
|                              | 2010 | 1,113  | 1,054   | 48         | 657   | 2,872                                      |
| Work Item:                   |      |  |         |            |       |  |
| Cons't. of 2–Lane Bridge (m) |      | 90   |         |            |       |  |
| Cost: (P million)            |      |  |         |            |       |  |
| Right-of-Way                 |      | 0.0  |         |            |       |  |
| Construction                 |      | 32.5   |         |            |       |  |
| Engineering                  |      | 3.9  |         |            |       |  |
| Total                        |      | 36.4   |         |            |       |  |
| Implementation Schedule      |      | from   |         | 1994       |       |  |
|                              |      | to   |         | 1994       |       |  |
| Economic Return              |      | IRR = 74.9 %   |         | B/C = 5.04 |       | NPV = P89.2 M                              |
| Remarks:                     |      |  |         |            |       |  |



# PROJECT PROFILE

Project Number: 16

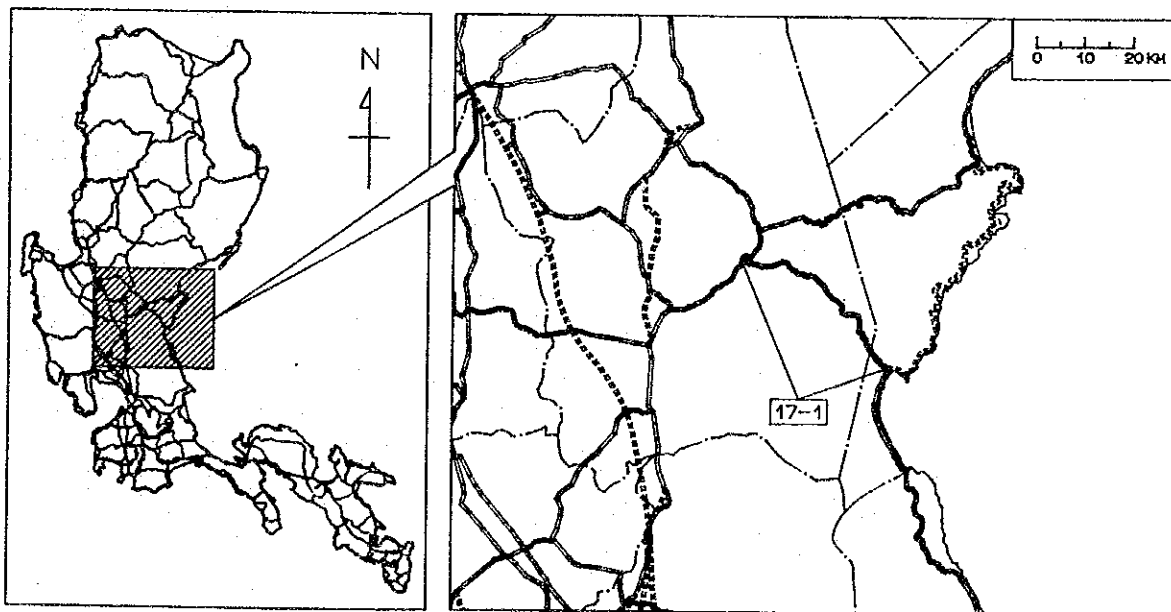
|                              |  |   |  |                   |  |                   |  |  |  |
|------------------------------|--|---|--|-------------------|--|-------------------|--|--|--|
| Name                         |  | Cabanatuan – Baler Road   |  |                   |  |                   |  | Province: Nueva Ecija, Aurora              |  |
| Existing Road Condition      |  | Segment 1,2: Surface is paved with mostly PCC in good condition. There are 5.3 km of gravel road sections.<br>Segment 3 : The road passes mountainous areas. Surface is mostly gravel in fair to bad. There are one 105 m bailey bridge and 9 spillways.          |  |                   |  |                   |  | Population Coverage (1990):<br><br>444,689 |  |
| Objective                    |  | <ul style="list-style-type: none"> <li>• Strengthen east-west link (Nueva Ecija-Aurora)</li> <li>• Strengthen economic linkage between Aurora and Central Luzon</li> <li>• Promote regional development in agriculture in upland and mountainous areas</li> </ul> |  |                   |  |                   |  |  |  |
| Segment                      |  | 16-1  |  | 16-2              |  | 16-3              |  | Total                                      |  |
| Location                     |  | Cabanatuan Palayan  |  | Palayan Bongabon  |  | Bongabon Baler    |  |  |  |
| Length (km)                  |  | 19.0  |  | 8.2               |  | 87.3              |  | 114.5                                      |  |
| Traffic Volume               |  | Year  |  | Year              |  | Year              |  |  |  |
|                              |  | 1992  |  | 2010              |  | 1992              |  | 2010                                       |  |
|                              |  | Car   |  | 778               |  | 95                |  | 300  |  |
|                              |  | Jeepney   |  | 913               |  | 121               |  | 199  |  |
|                              |  | Bus   |  | 153               |  | 38                |  | 103  |  |
|                              |  | Truck   |  | 410               |  | 73                |  | 157  |  |
|                              |  | Total   |  | 2,254             |  | 327               |  | 759  |  |
| Work Item:                   |  |   |  |                   |  |                   |  |  |  |
| Rehabilitation (km)          |  | -   |  | -                 |  | 6.3               |  | 6.3  |  |
| Pavement (km)                |  | 3.2   |  | 2.1               |  | 32.4              |  | 37.7                                       |  |
| Widen to 2 Lane Road (km)    |  | -   |  | -                 |  | 39.8              |  | 39.8                                       |  |
| Const't of 2 Lane Bridge (m) |  | 15  |  | -                 |  | 259               |  | 274  |  |
| Cost: (P million)            |  |   |  |                   |  |                   |  |  |  |
| Right-of-Way                 |  | 0.0   |  | 0.0               |  | 1.2               |  | 1.2  |  |
| Construction                 |  | 19.3  |  | 10.5              |  | 940.2             |  | 970.0                                      |  |
| Engineering                  |  | 2.3   |  | 1.3               |  | 112.8             |  | 116.4                                      |  |
| Total                        |  | 21.6  |  | 11.8              |  | 1,054.2           |  | 1,087.6                                    |  |
| Implementation Schedule      |  | from 1994 to 1994   |  | from 1994 to 1994 |  | from 1994 to 1996 |  | from 1994 to 1996                          |  |
| Economic Return              |  | IRR = 21.8 %  |  | B/C = 1.62        |  | NPV = P360.7 M    |  |  |  |
| Remarks:                     |  |   |  |                   |  |                   |  |  |  |



**PROJECT PROFILE**

Project Number: 17

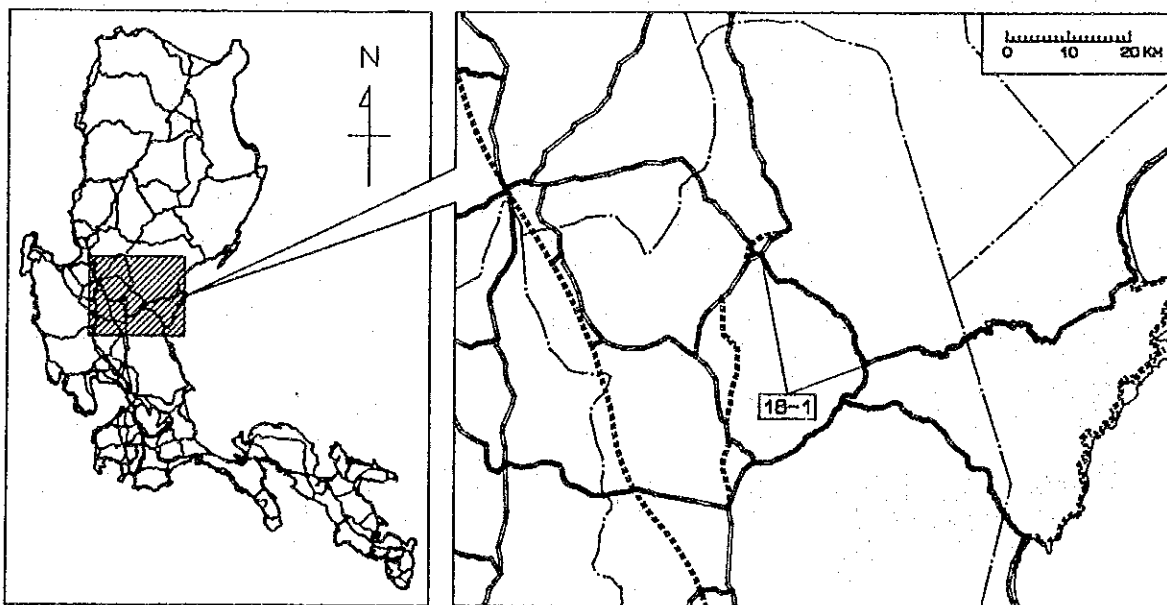
|                              |   |      |              |     |  |       |
|------------------------------|---|------|--------------|-----|--|-------|
| Name                         | Palayan – Dingalan Road   |      |              |     | Province:<br>Nueva Ecija,<br>Aurora        |       |
| Existing Road Condition      | Surface type is mostly gravel with fair to bad condition. Road width is less than 5.0 m in mountainous section. There are 11 timber bridges with total length of 191 m.   |      |              |     | Population Coverage (1990):<br><br>139,676 |       |
| Objective                    | <ul style="list-style-type: none"> <li>• Strengthen east–west link (Nueva Ecija–Aurora)</li> <li>• Strengthen economic linkage between Aurora and Central Luzon</li> <li>• Promote regional development in agriculture in upland and mountainous areas</li> </ul> |      |              |     |  |       |
| Location                     | from: Palayan   |      | to: Dingalan |     |  |       |
| Length (km)                  | 47.0  |      |              |     |  |       |
| Traffic Volume               |   | Car  | Jeepney      | Bus | Truck                                      | Total |
|                              | 1992  | 0    | 0            | 0   | 0  | 0     |
|                              | 2010  | 24   | 1            | 14  | 9  | 48    |
| Work Item:                   |   |      |              |     |  |       |
| Rehabilitation (km)          | 1.3   |      |              |     |  |       |
| Pavement (km)                | 34.7  |      |              |     |  |       |
| Widening to 2 Lane Road (km) | 6.5   |      |              |     |  |       |
| Cons't. of 2 Lane Bridge (m) | 191   |      |              |     |  |       |
| Cost: (P million)            |   |      |              |     |  |       |
| Right-of-Way                 | 0.2   |      |              |     |  |       |
| Construction                 | 345.4   |      |              |     |  |       |
| Engineering                  | 41.5  |      |              |     |  |       |
| Total                        | 387.1   |      |              |     |  |       |
| Implementation Schedule      | from  | 2009 |              |     |  |       |
|                              | to  | 2010 |              |     |  |       |
| Economic Return              | IRR = 15.1%   |      | B/C = 1.01   |     | NPV = P23.8 M                              |       |
| Remarks:                     |   |      |              |     |  |       |



# PROJECT PROFILE

Project Number: 18

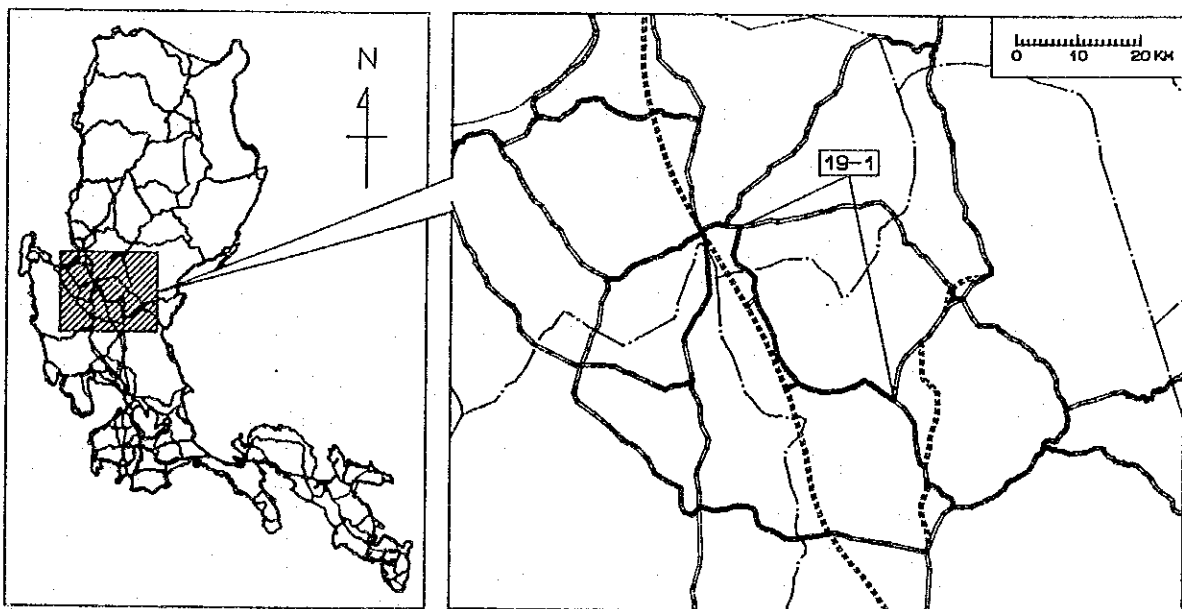
|                              |   |     |            |     |              |  |
|------------------------------|---|-----|------------|-----|--------------|--|
| Name                         | San Jose -- Bongabon Road   |     |            |     |              | Province:<br>Nueva Ecija                   |
| Existing Road Condition      | The road passes flat area. Elevation of road surface is low and tend to be flooded during rainy season. Concrete surface (L = 11.9 km) is in good condition. Gravel surface (L = 17.2 km) is bad to very bad. There are two ford crossings (L = 125 m) and one spillway (L = 100 m) along the road. |     |            |     |              | Population Coverage (1990):<br><br>226,564 |
| Objective                    | <ul style="list-style-type: none"> <li>• Strengthen east-west link (Nueva Ecija)</li> <li>• Strengthen economic linkage between provincial capital and San Jose City</li> </ul>   |     |            |     |              |  |
| Location                     | from: San Jose City   |     |            |     |              | to: Bongabon                               |
| Length (km)                  |   |     |            |     |              | 29.1                                       |
| Traffic Volume               |   | Car | Jeepney    | Bus | Truck        | Total                                      |
|                              | 1992  | 0   | 0          | 0   | 0            | 0  |
|                              | 2010  | 126 | 103        | 32  | 32           | 293  |
| Work Item:                   |   |     |            |     |              |  |
| Pavement (km)                |   |     |            |     |              | 7.9  |
| Widen to 2 Lane (km)         |   |     |            |     |              | 9.3  |
| Cons't. of 2 Lane Bridge (m) |   |     |            |     |              | 225  |
| Disaster Prevention (m)      |   |     |            |     |              | 4,800                                      |
| Cost: (P million)            |   |     |            |     |              |  |
| Right-of-Way                 |   |     |            |     |              | 1.1  |
| Construction                 |   |     |            |     |              | 383.1                                      |
| Engineering                  |   |     |            |     |              | 46.0                                       |
| Total                        |   |     |            |     |              | 430.2                                      |
| Implementation Schedule      | from  |     |            |     |              | 2009                                       |
|                              | to  |     |            |     |              | 2010                                       |
| Economic Return              | IRR = 18.8%   |     | B/C = 1.23 |     | NPV = P6.1 M |  |
| Remarks:                     |   |     |            |     |              |  |



# PROJECT PROFILE

Project Number: 19

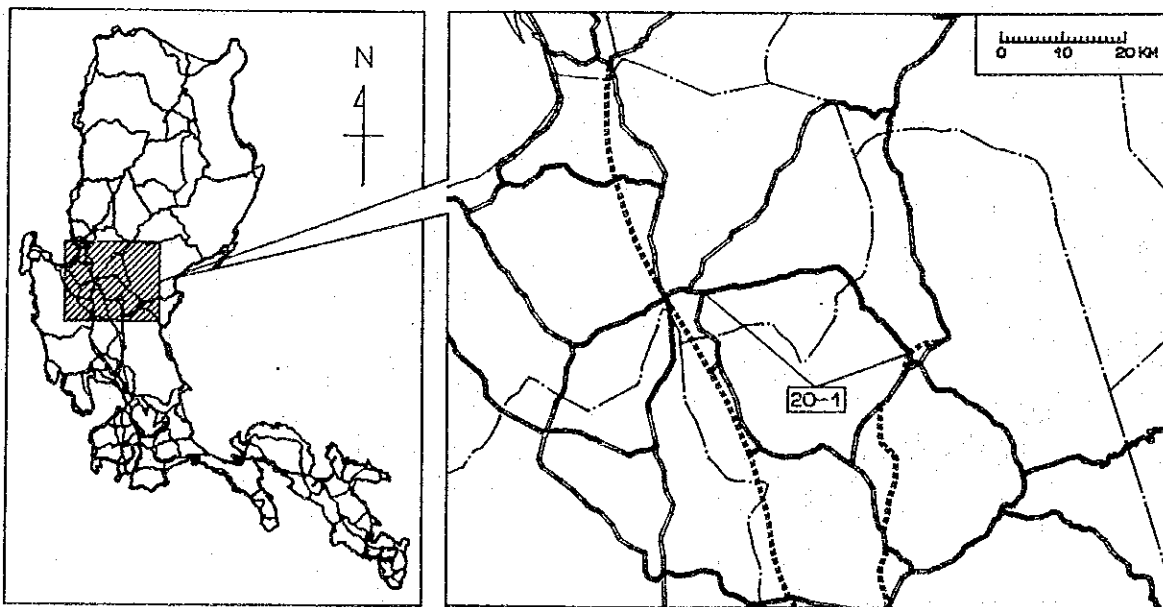
|                              |  |     |            |     |               |  |
|------------------------------|--|-----|------------|-----|---------------|--|
| Name                         | Rosales -- Baloc Road  |     |            |     |               | Province:<br>Pangasinan,<br>Nueva Ecija    |
| Existing Road Condition      | 21.1 km is paved with PCC in good condition<br>4.4 km is paved with AC in fair condition<br>20.8 km is gravel in fair to bad condition<br>Gravel road in rolling section (L = 8.9 km) at provincial boundary is very bad condition |     |            |     |               | Population Coverage (1990):<br><br>451,626 |
| Objective                    | <ul style="list-style-type: none"> <li>Strengthen east-west link (Pangasinan-Nueva Ecija)</li> <li>Strengthen economic linkage in the northern part of Luzon central plain</li> </ul>  |     |            |     |               |  |
| Location                     | from: Rosales  |     |            |     |               | to: Baloc                                  |
| Length (km)                  |  |     |            |     |               | 46.3                                       |
| Traffic Volume               |  | Car | Jeepney    | Bus | Truck         | Total                                      |
|                              | 1992   | 330 | 222        | 116 | 122           | 790  |
|                              | 2010   | 623 | 198        | 114 | 180           | 1,115                                      |
| Work Item:                   |  |     |            |     |               |  |
| Pavement (km)                |  |     |            |     |               | 21.8                                       |
| Cons't. of 2 Lane Bridge (m) |  |     |            |     |               | 6  |
| Cost: (P million)            |  |     |            |     |               |  |
| Right-of-Way                 |  |     |            |     |               | 0.0  |
| Construction                 |  |     |            |     |               | 112.4                                      |
| Engineering                  |  |     |            |     |               | 13.5                                       |
| Total                        |  |     |            |     |               | 125.9                                      |
| Implementation Schedule      | from   |     |            |     |               | 1999                                       |
|                              | to   |     |            |     |               | 2000                                       |
| Economic Return              | IRR = 46.0%  |     | B/C = 3.26 |     | NPV = P79.3 M |  |
| Remarks:                     |  |     |            |     |               |  |



# PROJECT PROFILE

Project Number: 20

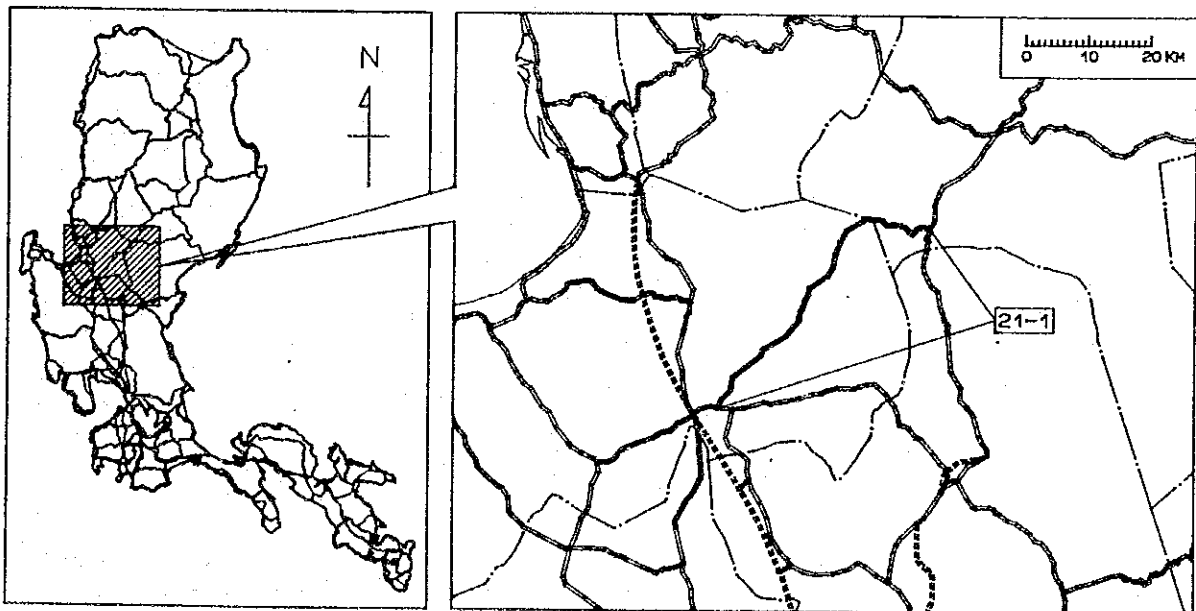
|                              |  |   |  |            |  |  |  |
|------------------------------|--|---|--|------------|--|--|--|
| Name                         |  | Rosales - San Jose Road   |  |            |  | Province:<br>Pangasinan,<br>Nueva Ecija          |  |
| Existing Road Condition      |  | About 31.5 km is PCC in fair to good condition.<br>Remaining part is AC in dilapidated condition.<br>One 15 m bailey bridge is in Pangasinan.   |  |            |  | Population<br>Coverage<br>(1990):<br><br>330,882 |  |
| Objectives                   |  | <ul style="list-style-type: none"> <li>• Provide alternative route of Pan-Philippine highway in the case of closer to traffic caused by disaster at Dalton Pass section.</li> <li>• Strengthen east-west link (Pangasinan-Nueva Ecija)</li> </ul> |  |            |  |  |  |
| Location                     |  | from: Rosales   |  |            |  | to: San Jose                                     |  |
| Length (km)                  |  | 42.3  |  |            |  |  |  |
| Traffic Volume               |  | Car   |  | Jeepney    |  | Bus  |  |
|                              |  | 1992  |  | 418        |  | 88   |  |
|                              |  | 2010  |  | 590        |  | 46   |  |
| Work Item:                   |  |   |  |            |  |  |  |
| Rehabilitation (km)          |  | 9.6   |  |            |  |  |  |
| Pavement (km)                |  | 1.2   |  |            |  |  |  |
| Cons'l. of 2 Lane Bridge (m) |  | 15  |  |            |  |  |  |
| Cost: (P million)            |  |   |  |            |  |  |  |
| Right-of-Way                 |  | 0.0   |  |            |  |  |  |
| Construction                 |  | 51.2  |  |            |  |  |  |
| Engineering                  |  | 6.1   |  |            |  |  |  |
| Total                        |  | 57.3  |  |            |  |  |  |
| Implementation Schedule      |  | from  |  | to         |  | 1996   |  |
|                              |  |   |  |            |  | 1996   |  |
| Economic Return              |  | IRR = 95.2%   |  | B/C = 6.52 |  | NPV = P144.9 M                                   |  |
| Remarks:                     |  |   |  |            |  |  |  |



# PROJECT PROFILE

Project Number: 21

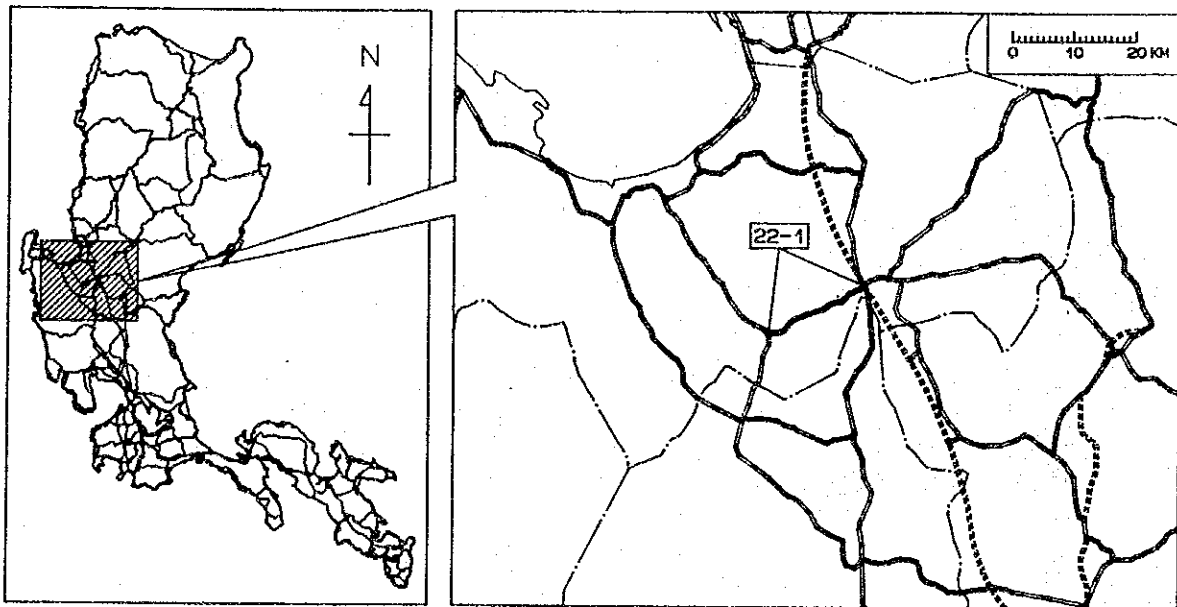
|                             |  |       |            |     |                |  |
|-----------------------------|--|-------|------------|-----|----------------|--|
| Name                        | Rosales -- Sta. Fe Road  |       |            |     |                | Province:<br>Pangasinan,<br>Nueva Vizcaya  |
| Existing Road Condition     | About one half of the road is flat terrain with relatively good surface condition.<br>Remaining one half of the road is in mountainous terrain with 29.9 km impassable section.<br>Construction of 2 lane gravel road is on-going between Sta. Fe and provincial boundary.   |       |            |     |                | Population Coverage (1990):<br><br>426,937 |
| Objective                   | <ul style="list-style-type: none"> <li>To provide alternative route of Pan-Philippine Highway in the case of closer to traffic caused by disaster at Dalton Pass section.</li> <li>Strengthen east-west link (Pangasinan-Nueva Vizcaya)</li> <li>Strengthen economic linkage between northern part of Luzon central plain and upland/mountainous</li> </ul>                      |       |            |     |                |  |
| Location                    | from: Rosales  |       |            |     |                | to: Sta. Fe                                |
| Length (km)                 |  |       |            |     |                | 76.0                                       |
| Traffic Volume              |  | Car   | Jeepney    | Bus | Truck          | Total                                      |
|                             | 1992   | 244   | 365        | 19  | 80             | 708  |
|                             | 2010   | 1,833 | 786        | 561 | 1,066          | 4,246                                      |
| Work Item:                  |  |       |            |     |                |  |
| Pavement (km)               |  |       |            |     |                | 17.4                                       |
| Const. of 2 Lane Road (km)  |  |       |            |     |                | 29.9                                       |
| Const. of 2 Lane Bridge (m) |  |       |            |     |                | 165  |
| Cost: (P million)           |  |       |            |     |                |  |
| Right-of-Way                |  |       |            |     |                | 4.5  |
| Construction                |  |       |            |     |                | 694.9                                      |
| Engineering                 |  |       |            |     |                | 83.4                                       |
| Total                       |  |       |            |     |                | 782.8                                      |
| Implementation Schedule     | from   |       |            |     |                | 1997                                       |
|                             | to   |       |            |     |                | 1999                                       |
| Economic Return             | IRR = 20.9%  |       | B/C = 1.46 |     | NPV = P124.8 M |  |
| Remarks:                    | <p>Construction of the road may have significant impacts on the tribal people residing in the area between Sta. Fe and Sta. Maria East. Detailed environmental impact study may be required prior to the implementation. Construction of San Jose-Carranglar --Sta. Fe road will be recommended as an alternative route if preservation of the tribal area will be proposed.</p> |       |            |     |                |  |



# PROJECT PROFILE

Project Number: 22

|                             |  |       |            |     |               |  |
|-----------------------------|--|-------|------------|-----|---------------|--|
| Name                        | Carmen – Bautista Road   |       |            |     |               | Province:<br>Pangasinan                    |
| Existing Road Condition     | Most part of the road is paved by AC and PCC in good condition, 1.4 km is gravel in very bad condition. There are one 156 m timber bridge and one 12 m bailey bridge.  |       |            |     |               | Population Coverage (1990):<br><br>295,088 |
| Objective                   | <ul style="list-style-type: none"> <li>• Strengthen east-west link in Pangasinan</li> <li>• Strengthen economic linkage in the northern part of Luzon Central plain</li> <li>• Promote provincial development in agriculture and industry</li> </ul> |       |            |     |               |  |
| Location                    | from: Carmen   |       |            |     |               | to: Bautista                               |
| Length (km)                 |  |       |            |     |               | 18.3                                       |
| Traffic Volume              |  | Car   | Jeepney    | Bus | Truck         | Total                                      |
|                             | 1992   | 358   | 388        | 83  | 165           | 994  |
|                             | 2010   | 1,361 | 712        | 219 | 604           | 2,896                                      |
| Work Item:                  |  |       |            |     |               |  |
| Rehabilitation (km)         |  |       |            |     |               | 0.4  |
| Pavement (km)               |  |       |            |     |               | 1.4  |
| Const. of 2 Lane bridge (m) |  |       |            |     |               | 156  |
| Cost: (P million)           |  |       |            |     |               |  |
| Right-of-Way                |  |       |            |     |               | 0.0  |
| Construction                |  |       |            |     |               | 65.1                                       |
| Engineering                 |  |       |            |     |               | 7.8  |
| Total                       |  |       |            |     |               | 72.9                                       |
| Implementation Schedule     | from   |       |            |     |               | 1999                                       |
|                             | to   |       |            |     |               | 1999                                       |
| Economic Return             | IRR = 28.8%  |       | B/C = 1.93 |     | NPV = P20.2 M |  |
| Remarks:                    |  |       |            |     |               |  |

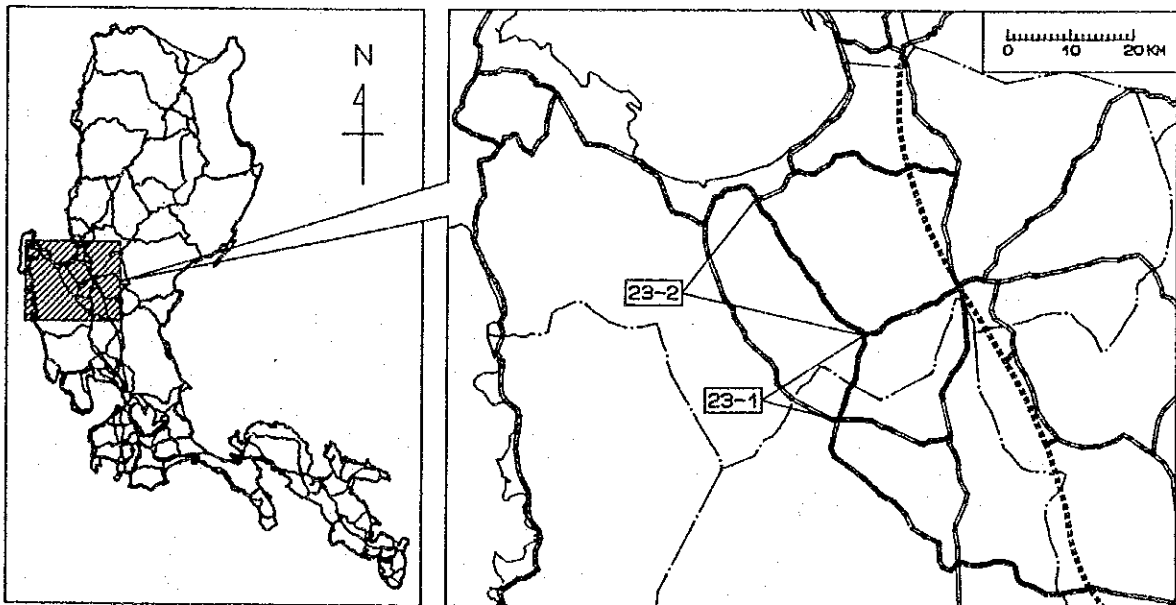




# PROJECT PROFILE

Project Number: 23

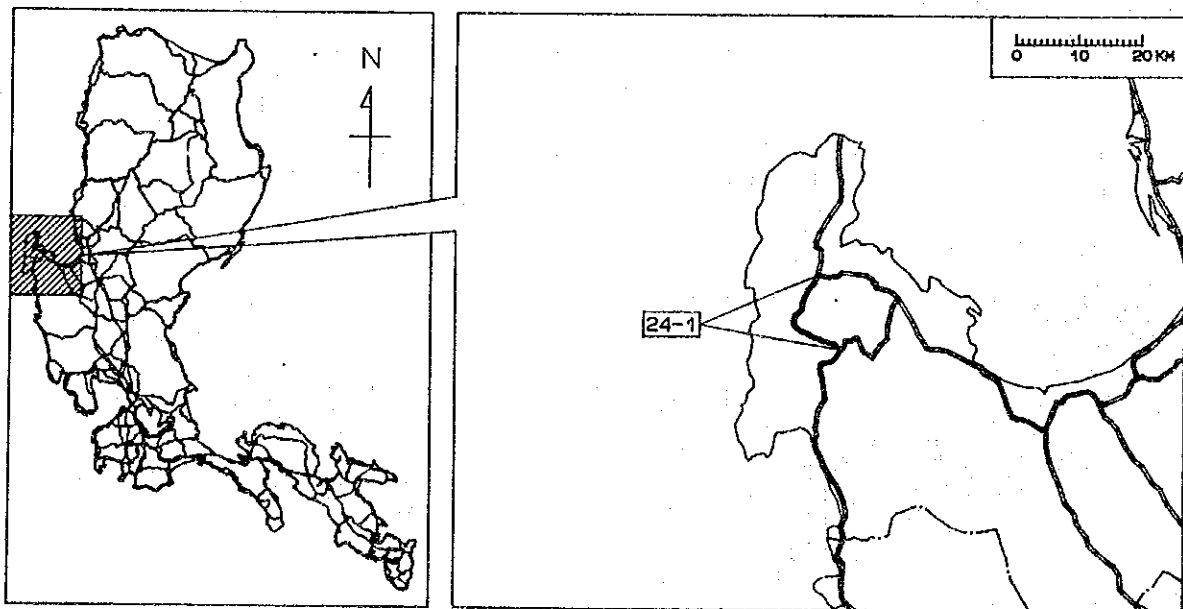
|                             |  |   |      |                      |      |  |
|-----------------------------|--|---|------|----------------------|------|--|
| Name                        |  | Camiling – Binmaley Road  |      |                      |      | Province:<br>Tarlac, Pangasinan            |
| Existing Road Condition     |  | Segment 1: Most part of the road is paved by PCC in good condition, 7.2 km is paved by AC in bad condition<br>Segment 2: Most part of the road is paved by AC and PCC in good condition, 2.4 km is still gravel in bad condition. There is one 12 m bailey bridge |      |                      |      | Population Coverage (1990):<br><br>896,661 |
| Objective                   |  | <ul style="list-style-type: none"> <li>• Strengthen south-north link (Pangasinan-Tarlac)</li> <li>• Improve access between central plain and Lingayen coastal area</li> <li>• Promote inter-provincial development (agriculture, industry)</li> </ul>             |      |                      |      |  |
| Segment                     |  | 23-1  |      | 23-2                 |      | Total                                      |
| Location                    |  | Camiling<br>Bautista  |      | Bautista<br>Binmaley |      |  |
| Length (km)                 |  | 15.3  |      | 25.3                 |      | 40.6                                       |
| Traffic Volume              |  | Year  | 1992 | 2010                 | 1992 | 2010                                       |
|                             |  | Car   | 358  | 812                  | 219  | 193  |
|                             |  | Jeepney   | 388  | 524                  | 467  | 729  |
|                             |  | Bus   | 83   | 129                  | 83   | 72   |
|                             |  | Truck   | 165  | 323                  | 168  | 31   |
|                             |  | Total   | 994  | 1,788                | 937  | 1,025                                      |
| Work Item:                  |  |   |      |                      |      |  |
| Rehabilitation (km)         |  | 7.2   |      | 1.1                  |      | 8.3  |
| Pavement (km)               |  | -   |      | 2.4                  |      | 2.4  |
| Const. of 2 lane bridge (m) |  | -   |      | 12                   |      | 12   |
| Cost: (P million)           |  |   |      |                      |      |  |
| Right-of-Way                |  | 0.0   |      | 0.0                  |      | 0.0  |
| Construction                |  | 31.3  |      | 19.6                 |      | 50.9                                       |
| Engineering                 |  | 3.8   |      | 2.3                  |      | 6.1  |
| Total                       |  | 35.1  |      | 21.9                 |      | 57.0                                       |
| Implementation Schedule     |  | from  | 1999 |                      | 1999 | 1999                                       |
|                             |  | to  | 1999 |                      | 1999 | 1999                                       |
| Economic Return             |  | IRR = 153.6 %   |      | B/C = 15.75          |      | NPV = P260.4 M                             |
| Remarks:                    |  |   |      |                      |      |  |



# PROJECT PROFILE

Project Number: 24

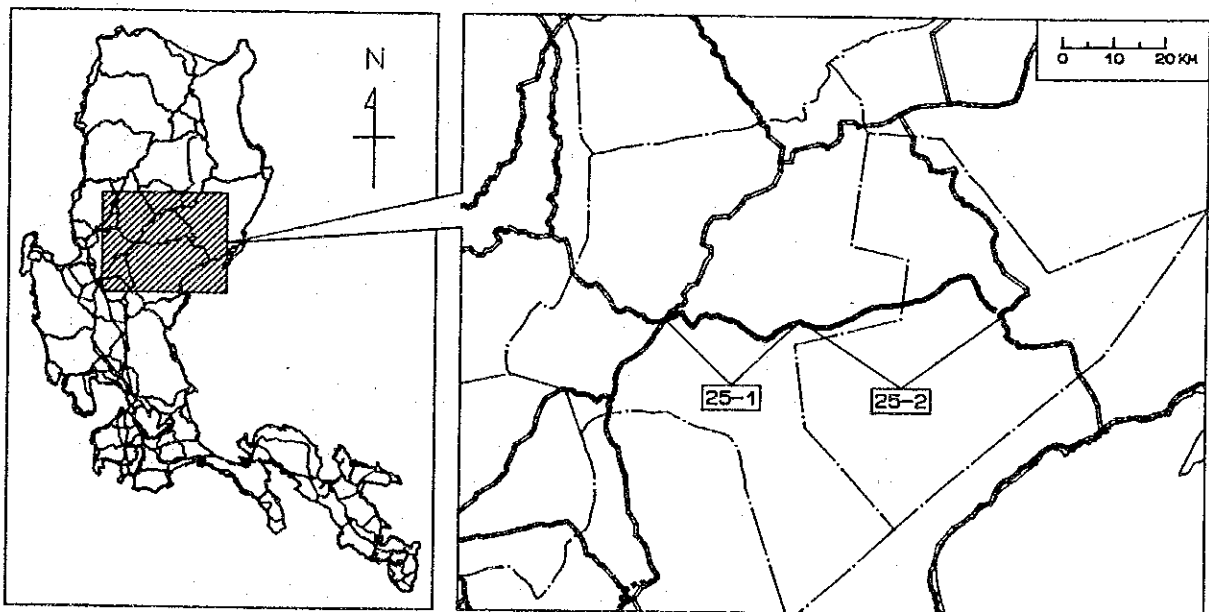
|                            |   |      |            |     |   |       |
|----------------------------|---|------|------------|-----|---|-------|
| Name                       | Burgos – Bani Road  |      |            |     | Province:<br>Pangasinan                   |       |
| Existing Road Condition    | 7.2 km is AC in good condition<br>6.0 km is AC in good condition<br>3.8 km is AC with carriageway width of 5.0 m<br>0.6 km is gravel in very bad condition  |      |            |     | Population Coverage (1990):<br><br>90,779 |       |
| Objective                  | <ul style="list-style-type: none"> <li>• Strengthen peninsular link in Pangasinan</li> <li>• Improve accessibility to the Peninsula's remote area</li> <li>• Promote area development (tourism, agriculture)</li> </ul> |      |            |     |   |       |
| Location                   | from: Burgos  |      |            |     | to: Bani                                  |       |
| Length (km)                | 17.6  |      |            |     |   |       |
| Traffic Volume             |   | Car  | Jeepney    | Bus | Truck                                     | Total |
|                            | 1992  | 17   | 18         | 0   | 51  | 86    |
|                            | 2010  | 29   | 28         | 0   | 69  | 126   |
| Work Item:                 |   |      |            |     |   |       |
| Rehabilitation (km)        | 6.0   |      |            |     |   |       |
| Pavement (km)              | 0.3   |      |            |     |   |       |
| Widen to 2 Lanes Road (km) | 4.2   |      |            |     |   |       |
| Disaster Prevention (m)    | 100   |      |            |     |   |       |
| Cost: (P million)          |   |      |            |     |   |       |
| Right-of-Way               | 0.1   |      |            |     |   |       |
| Construction               | 96.6  |      |            |     |   |       |
| Engineering                | 11.6  |      |            |     |   |       |
| Total                      | 108.3   |      |            |     |   |       |
| Implementation Schedule    | from  | 2010 |            |     |   |       |
|                            | to  | 2010 |            |     |   |       |
| Economic Return            | IRR = 16.6%   |      | B/C = 1.12 |     | NPV = P5.6 M                              |       |
| Remarks:                   |   |      |            |     |   |       |



**PROJECT PROFILE**

Project Number: 25

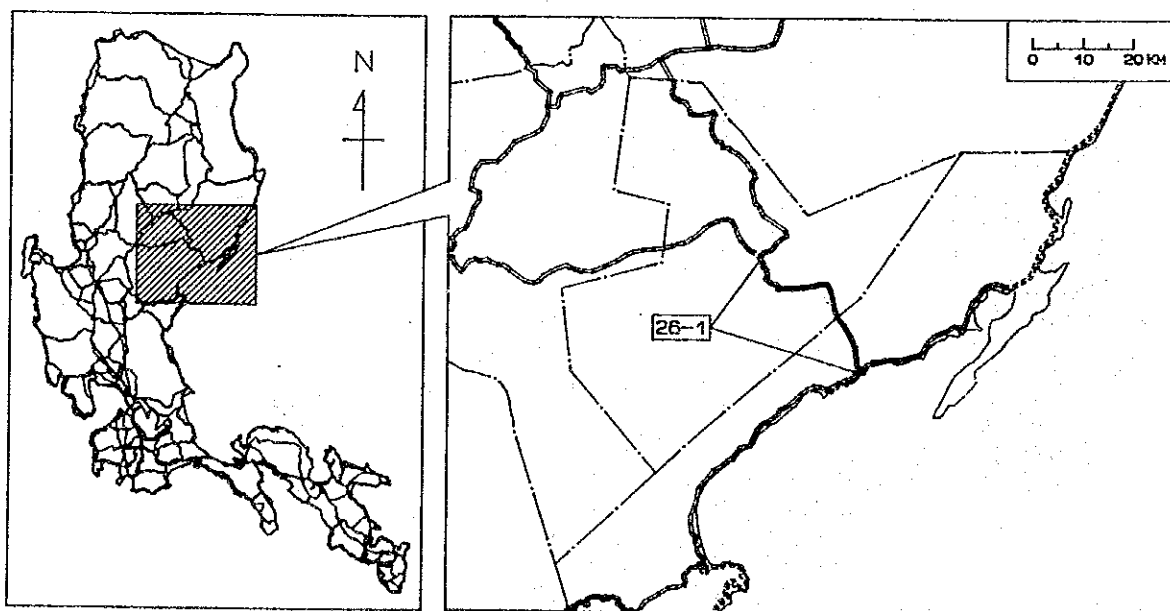
|                              |         |  |      |                   |      |  |
|------------------------------|---------|--|------|-------------------|------|--|
| Name                         |         | Aritao – Maddela Road  |      |                   |      | Province: Nueva Vizcaya, Quirino           |
| Existing Road Condition      |         | Segment 1: 8.5 km is paved by PCC in good condition. Most part of the road is gravel with carriageway width 5.0 ~ 6.0 m<br>Segment 2: Almost one-half of the road is non-existing. Remaining one half is earth and gravel with carriageway width 3.0 ~ 6.0 m   |      |                   |      | Population Coverage (1990):<br><br>148,959 |
| Objective                    |         | <ul style="list-style-type: none"> <li>• Strengthen east-west link (Nueva Vizcaya-Quirino).</li> <li>• Strengthen economic linkage among upland/mountainous areas in the southern part of Cagayan Valley.</li> <li>• Promote inter-provincial development, especially agriculture in upland and mountainous area.</li> </ul> |      |                   |      |  |
| Segment                      |         | 25-1   |      | 25-2              |      | Total                                      |
| Location                     | from to | Aritao<br>Kasibu   |      | Kasibu<br>Maddela |      |  |
| Length                       | (km)    | 43.6   |      | 56.7              |      | 100.3                                      |
| Traffic Volume               | Year    | 1992   | 2010 | 1992              | 2010 |  |
|                              | Car     | -  | 62   | -                 | 62   |  |
|                              | Jeepney | -  | 23   | -                 | 23   |  |
|                              | Bus     | -  | 25   | -                 | 25   |  |
|                              | Truck   | -  | 34   | -                 | 34   |  |
|                              | Total   | -  | 144  | -                 | 144  |  |
| Work Item:                   |         |  |      |                   |      |  |
| Pavement (km)                |         | 27.8   |      | 4.0               |      | 31.8                                       |
| Widen to 2 lane road (km)    |         | 7.3  |      | 29.2              |      | 36.5                                       |
| Cons't. of 2 lane road (m)   |         | -  |      | 23.5              |      | 23.5                                       |
| Cons't. of 2 lane bridge (m) |         | 454  |      | 270               |      | 724  |
| Disaster Prevention (m)      |         | 16,600   |      | -                 |      | 16,600                                     |
| Cost: (P million)            |         |  |      |                   |      |  |
| Right-of-Way                 |         | 0.4  |      | 4.4               |      | 4.8  |
| Construction                 |         | 785.6  |      | 995.8             |      | 1,781.4                                    |
| Engineering                  |         | 94.3   |      | 119.5             |      | 213.8                                      |
| Total                        |         | 880.3  |      | 1,119.7           |      | 2,000.0                                    |
| Implementation Schedule      | from to | 2008<br>2010   |      | 2008<br>2010      |      | 2008<br>2010                               |
| Economic Return              |         | IRR = 7.9%   |      | B/C = 0.57        |      | NPV = P-57.2M                              |
| Remarks:                     |         |  |      |                   |      |  |



# PROJECT PROFILE

Project Number: 26

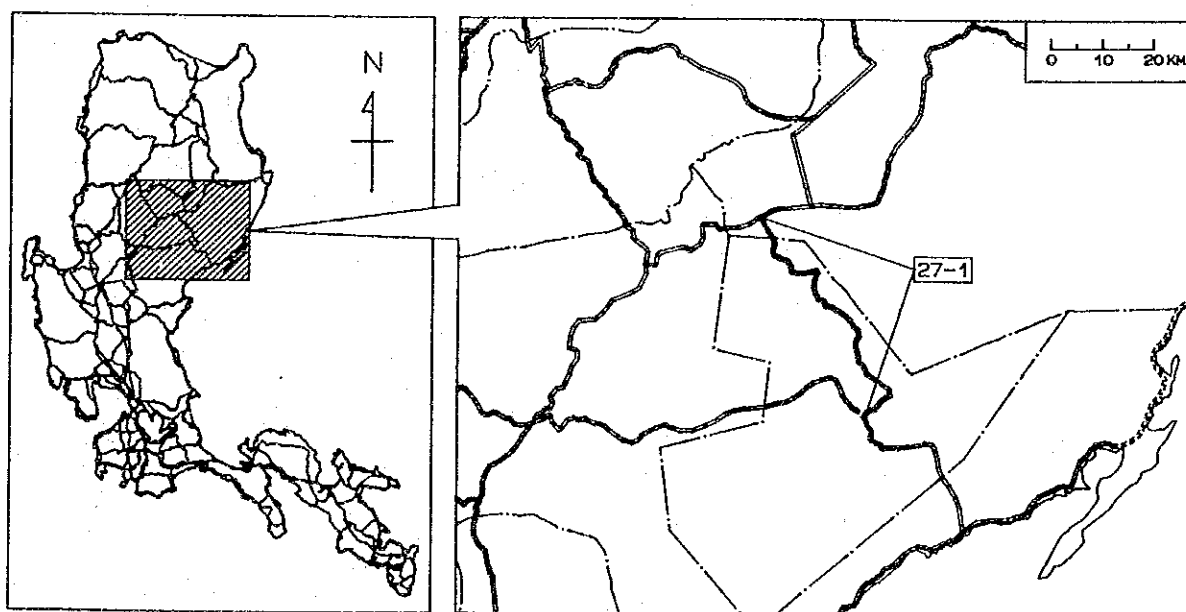
|                              |  |       |               |       |                |   |
|------------------------------|--|-------|---------------|-------|----------------|---|
| Name                         | Maddela -- Dinalonga Road  |       |               |       |                | Province: Nueva Vizcaya, Aurora           |
| Existing Road Condition      | Surface is gravel in bad condition with 3.0 ~ 6.0 m carriageway width.<br>No bridge at Cagayan River (L = 300 m).<br>Terrain condition is rolling to mountainous.  |       |               |       |                | Population Coverage (1990):<br><br>34,728 |
| Objective                    | <ul style="list-style-type: none"> <li>• Strengthen east-west link (Quirino - Aurora) and interlink of south-north road (No. 5, 51, 52)</li> <li>• Strengthen economic linkage between Cagayan Valley southern upland area and Aurora coastal area</li> <li>• Promote inter-provincial development, especially agriculture in upland and mountainous area</li> </ul> |       |               |       |                |   |
| Location                     | from: Maddela  |       |               |       |                | to: Dinalongan                            |
| Length (km)                  | 58.6   |       |               |       |                |   |
| Traffic Volume               |  | C a r | J e e p n e y | B u s | T r u c k      | T o t a l                                 |
|                              | 1992   | 0     | 0             | 0     | 0              | 0   |
|                              | 2010   | 54    | 23            | 18    | 15             | 110                                       |
| Work Item:                   |  |       |               |       |                |   |
| Pavement (km)                |  |       |               |       |                | 10.9                                      |
| Widen to 2 Lane Road (km)    |  |       |               |       |                | 36.5                                      |
| Cons't. of 2 Lane Bridge (m) |  |       |               |       |                | 310                                       |
| Cost: (P million)            |  |       |               |       |                |   |
| Right-of-Way                 |  |       |               |       |                | 1.1                                       |
| Construction                 |  |       |               |       |                | 749.6                                     |
| Engineering                  |  |       |               |       |                | 90.0                                      |
| Total                        |  |       |               |       |                | 840.7                                     |
| Implementation Schedule      | from   |       |               |       |                | 2008                                      |
|                              | to   |       |               |       |                | 2010                                      |
| Economic Return              | IRR = 1.3%   |       | B/C = 0.23    |       | NPV = P-43.4 M |   |
| Remarks:                     |  |       |               |       |                |   |



# PROJECT PROFILE

Project Number: 27

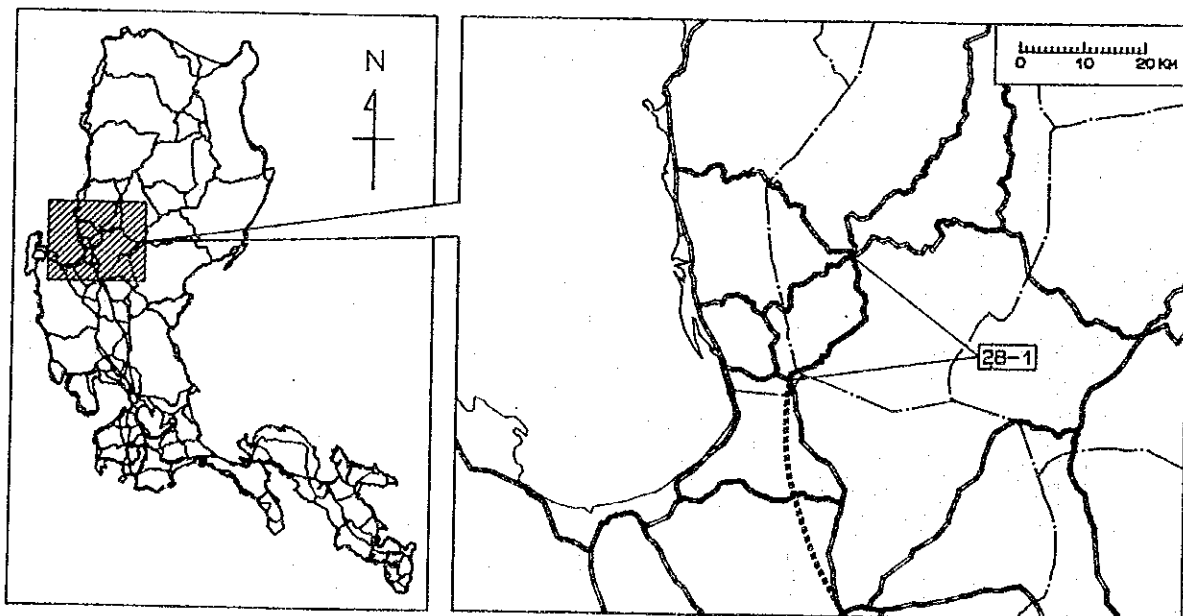
|                              |  |     |            |     |              |  |
|------------------------------|--|-----|------------|-----|--------------|--|
| Name                         | Cordon – Maddela Road  |     |            |     |              | Province: Isabela, Quirino                 |
| Existing Road Condition      | Approximately 17.1 km is paved by concrete in good condition. AC pavement is on-going in remaining part of the road section. There are one spillway, 2 timber bridges and one bailey bridge with total length of 135 m.  |     |            |     |              | Population Coverage (1990):<br><br>232,463 |
| Objective                    | <ul style="list-style-type: none"> <li>• Strengthen east-west link (Isabela-Quirino)</li> <li>• Strengthen economic linkage between Cagayan valley plain and upland/mountainous area</li> <li>• Promote inter-provincial development, especially agriculture in upland and mountainous area</li> </ul> |     |            |     |              |  |
| Location                     | from: Cordon   |     |            |     |              | to: Maddela                                |
| Length (km)                  |  |     |            |     |              | 49.2                                       |
| Traffic Volume               |  | Car | Jeepney    | Bus | Truck        | Total                                      |
|                              | 1992   | 121 | 131        | 27  | 96           | 375  |
|                              | 2010   | 307 | 276        | 55  | 136          | 774  |
| Work Item:                   |  |     |            |     |              |  |
| Cons't. of 2 lane bridge (m) |  |     |            |     |              | 135  |
| Cost: (P million)            |  |     |            |     |              |  |
| Right-of-Way                 |  |     |            |     |              | 0.0  |
| Construction                 |  |     |            |     |              | 45.2                                       |
| Engineering                  |  |     |            |     |              | 5.4  |
| Total                        |  |     |            |     |              | 50.6                                       |
| Implementation Schedule      | from   |     |            |     |              | 2009                                       |
|                              | to   |     |            |     |              | 2009                                       |
| Economic Return              | IRR = 4.2%   |     | B/C = 0.41 |     | NPV = P-2.0M |  |
| Remarks:                     |  |     |            |     |              |  |



# PROJECT PROFILE

Project Number: 28

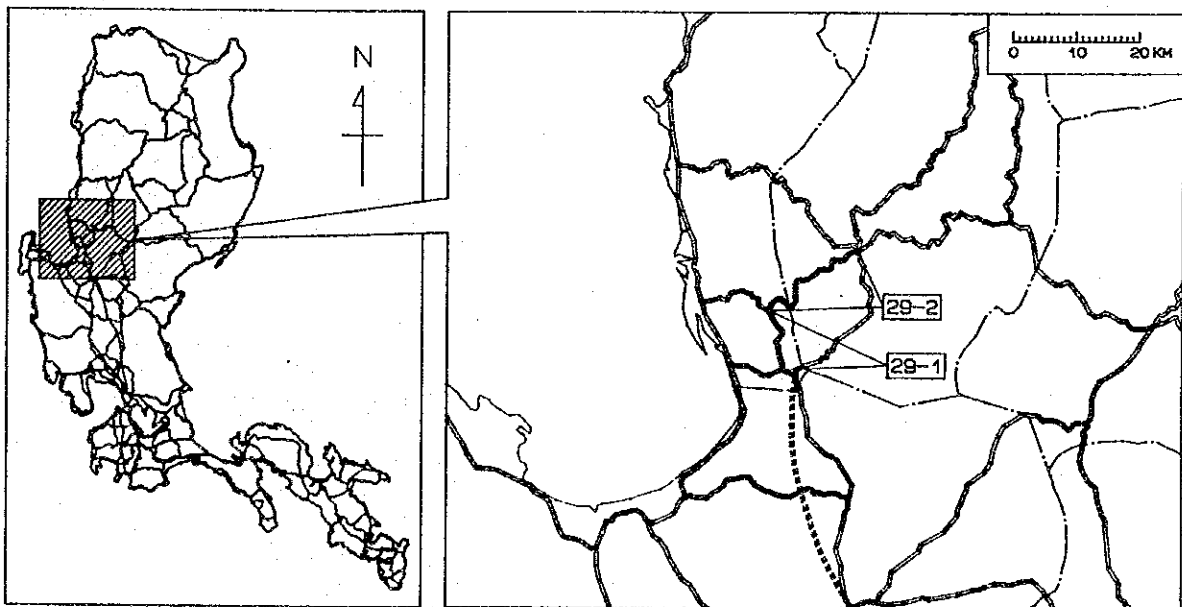
|                         |   |      |            |     |               |  |
|-------------------------|---|------|------------|-----|---------------|--|
| Name                    | Kennon Road   |      |            |     |               | Province:<br>La Union, Benguet         |
| Existing Road Condition | Damaged pavement and bridges by 1990 earthquake are being restored but repeatedly damaged by heavy rains. Slope failures and debris flow frequently occur during rainy days. Extensive disaster prevention measures are required to maintain all weather type of road.          |      |            |     |               | Population Coverage (1990):<br>400,664 |
| Objective               | <ul style="list-style-type: none"> <li>• Provide the shortest access to Bagulo from Manila.</li> <li>• Strengthen economic linkage between Bagulo and NCR.</li> <li>• Promote regional development (highland agriculture, Bagulo Export processing zone and Tourism)</li> </ul> |      |            |     |               |  |
| Location                | from: Rosario   |      |            |     |               | to: Bagulo                             |
| Length (km)             | 36.4  |      |            |     |               |  |
| Traffic Volume          |   | Car  | Jeepney    | Bus | Truck         | Total                                  |
|                         | 1992  | 1709 | 27         | 421 | 439           | 2596                                   |
|                         | 2010  | 4081 | 109        | 952 | 974           | 6116                                   |
| Work Item:              |   |      |            |     |               |  |
| Rehabilitation (km)     | 2.3   |      |            |     |               |  |
| Disaster Prevention (m) | 19,850  |      |            |     |               |  |
| Cost: (P million)       |   |      |            |     |               |  |
| Right-of-Way            | 0.0   |      |            |     |               |  |
| Construction            | 3,311.3   |      |            |     |               |  |
| Engineering             | 397.3   |      |            |     |               |  |
| Total                   | 3,708.6   |      |            |     |               |  |
| Implementation Schedule | from  | 2004 |            |     |               |  |
|                         | to  | 2007 |            |     |               |  |
| Economic Return         | IRR = 13.3%   |      | B/C = 0.89 |     | NPV = P-49.6M |  |
| Remarks:                |   |      |            |     |               |  |



# PROJECT PROFILE

Project Number: 29

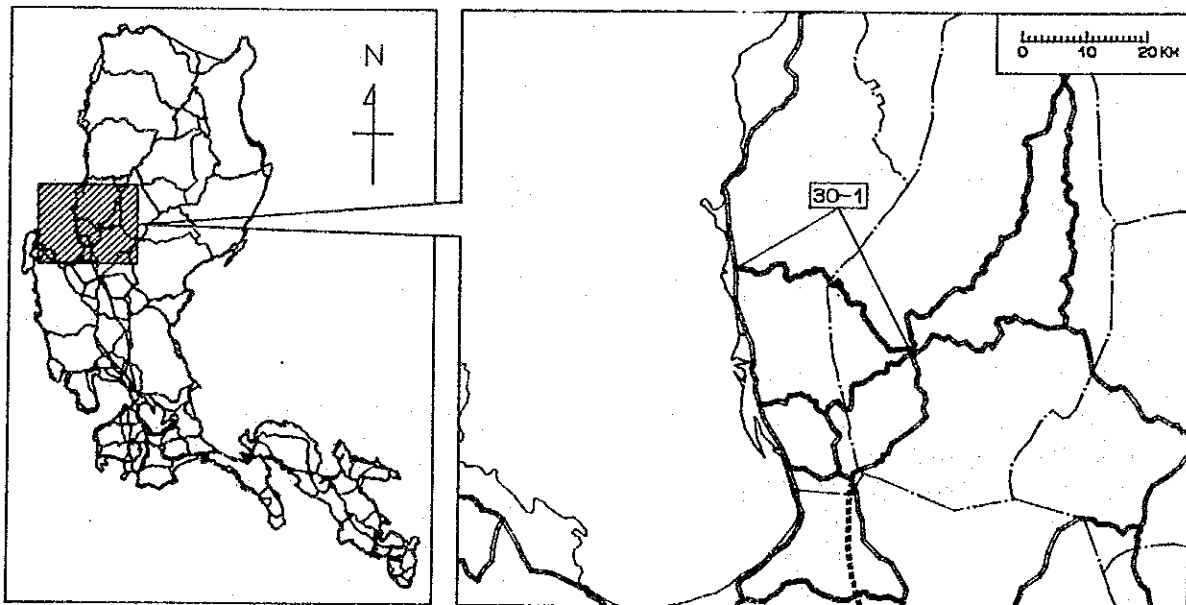
|                           |  |   |      |                   |      |  |
|---------------------------|--|---|------|-------------------|------|--|
| Name                      |  | Rosario-Pugo-Baguio Road  |      |                   |      | Province:<br>La Union, Benguet             |
| Existing Road Condition   |  | Segment 1: Upgrading work from gravel to PCC is on-going. Widening of the road at Rosario proper and slope protection is still required.<br>Segment 2: PCC pavement is under construction. Total 12,300 m cut slope and embankment slope failure section is identified.                   |      |                   |      | Population Coverage (1990):<br><br>460,093 |
| Objective                 |  | <ul style="list-style-type: none"> <li>• Provide alternative access from Manila to Baguio</li> <li>• Strengthen economic linkage between central/northern Luzon and NCR</li> <li>• Promote regional development (highland agriculture, tourism, Baguio Export processing Zone)</li> </ul> |      |                   |      |  |
| Segment                   |  | 29-1  |      | 29-2              |      | Total                                      |
| Location                  |  | Rosario to Pugo   |      | Pugo to Baguio    |      |  |
| Length (km)               |  | 13.2  |      | 33.5              |      | 46.7                                       |
| Traffic Volume            |  | Year  |      | Year              |      |  |
|                           |  | 1992  | 2010 | 1992              | 2010 |  |
| Car                       |  | 0   | 0    | 130               | 333  |  |
| Jeepney                   |  | 0   | 0    | 138               | 338  |  |
| Bus                       |  | 0   | 0    | 1                 | 16   |  |
| Truck                     |  | 0   | 0    | 30                | 56   |  |
| Total                     |  | 0   | 0    | 299               | 743  |  |
| Work Item:                |  |   |      |                   |      |  |
| Rehabilitation (km)       |  | -   |      | 4.8               |      | 4.8  |
| Pavement (km)             |  | 0.7   |      | 6.3               |      | 7.0  |
| Widen to 2 Lane Road (km) |  | 0.4   |      | -                 |      | 0.4  |
| Disaster Prevention (km)  |  | 884   |      | 12,300            |      | 13,184                                     |
| Cost: (P million)         |  |   |      |                   |      |  |
| Right-of-Way              |  | 0.5   |      | 0.0               |      | 0.5  |
| Construction              |  | 29.9  |      | 679.6             |      | 709.5                                      |
| Engineering               |  | 3.6   |      | 81.6              |      | 85.2                                       |
| Total                     |  | 34.0  |      | 761.2             |      | 795.2                                      |
| Implementation Schedule   |  | from 1995 to 1995   |      | from 1995 to 1997 |      | 1995 to 1997                               |
| Economic Return           |  | IRR = 18.5%   |      | B/C = 1.26        |      | NPV = P89.8 M                              |
| Remarks:                  |  |   |      |                   |      |  |



# PROJECT PROFILE

Project Number: 30

|                         |   |       |            |     |                |  |
|-------------------------|---|-------|------------|-----|----------------|--|
| Name                    | Naguillan Road  |       |            |     |                | Province:<br>La Union, Benguet             |
| Existing Road Condition | 30.7 km is AC in good condition<br>15.5 km is AC in bad condition<br>0.9 km is PCC in good condition<br>Total 12,950 m is identified as cut slope and embankment slope failure section  |       |            |     |                | Population Coverage (1990):<br><br>460,551 |
| Objective               | <ul style="list-style-type: none"> <li>• Strengthen east-west link (Region I - CAR)</li> <li>• Strengthen economic linkage between Region I and CAR mountainous area</li> <li>• Promote regional development (highland agriculture, industry - Baguio Export Processing Zone, San Fernando provincial industrial center)</li> </ul> |       |            |     |                |  |
| Location                | from: Bauang  |       |            |     |                | to: Baguio                                 |
| Length (km)             | 47.1  |       |            |     |                |  |
| Traffic Volume          |   | Car   | Jeepney    | Bus | Truck          | Total                                      |
|                         | 1992  | 674   | 450        | 360 | 575            | 2,059                                      |
|                         | 2010  | 1,562 | 510        | 586 | 829            | 3,487                                      |
| Work Item:              |   |       |            |     |                |  |
| Rehabilitation (km)     | 15.5  |       |            |     |                |  |
| Disaster Prevention (m) | 12,950  |       |            |     |                |  |
| Cost: (P million)       |   |       |            |     |                |  |
| Right-of-Way            | 6.0   |       |            |     |                |  |
| Construction            | 412.0   |       |            |     |                |  |
| Engineering             | 49.4  |       |            |     |                |  |
| Total                   | 467.4   |       |            |     |                |  |
| Implementation Schedule | from  | 1993  |            |     |                |  |
|                         | to  | 1994  |            |     |                |  |
| Economic Return         | IRR = 23.7%   |       | B/C = 1.66 |     | NPV = P204.7 M |  |
| Remarks:                |   |       |            |     |                |  |

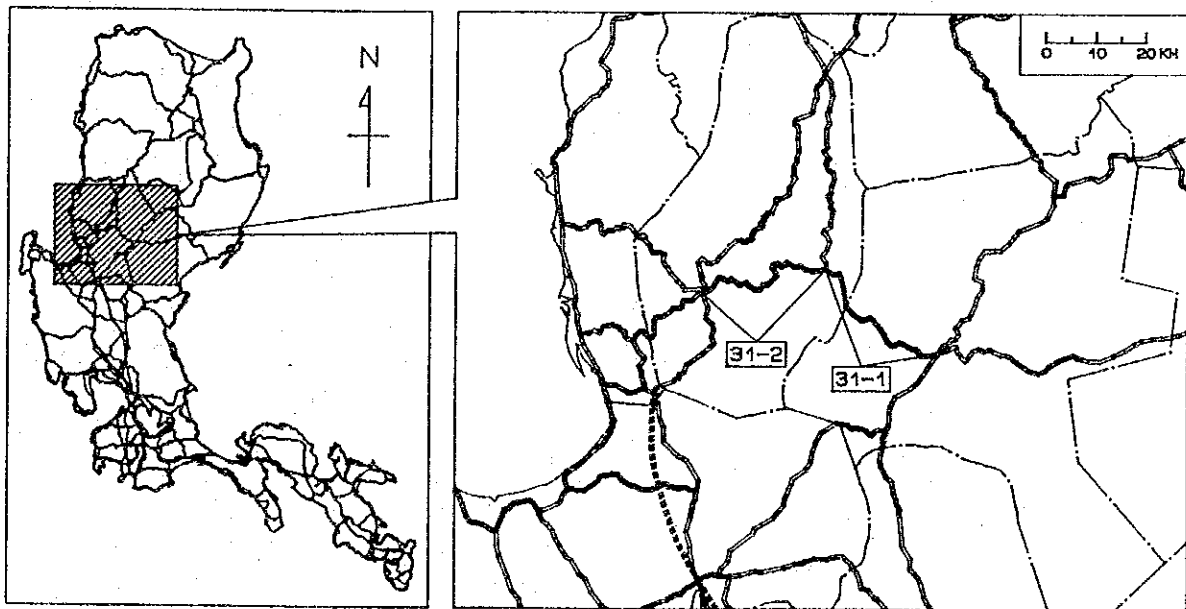




**PROJECT PROFILE**

Project Number: 31

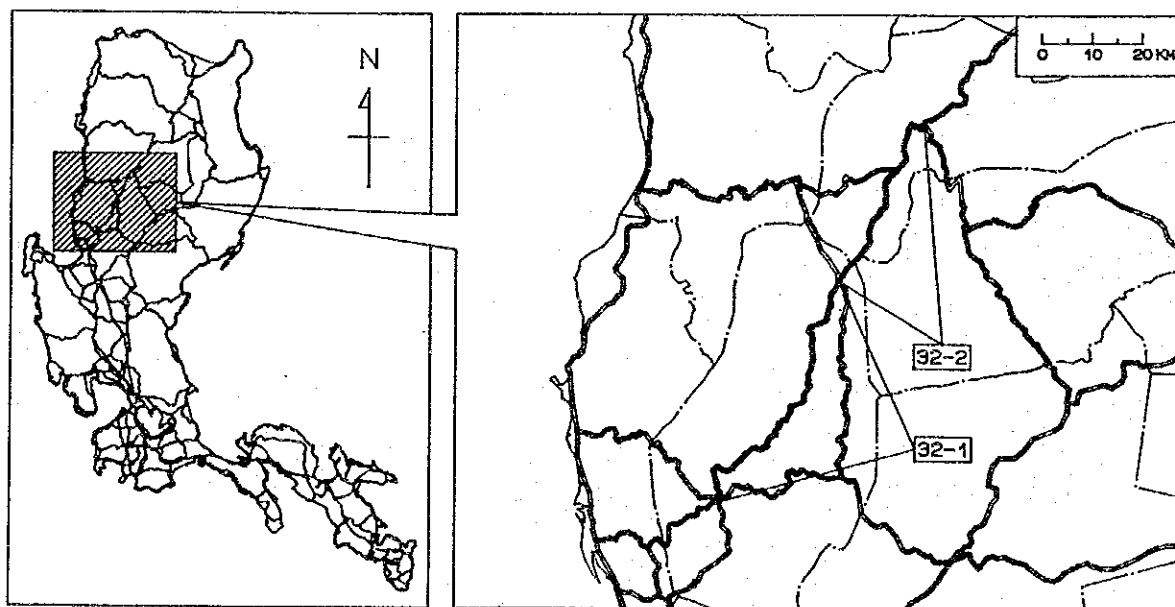
|                              |  |   |      |                 |      |  |
|------------------------------|--|---|------|-----------------|------|--|
| Name                         |  | Aritao – Baguio Road  |      |                 |      | Province: Benguet<br>Nueva Vizcaya         |
| Existing Road Condition      |  | Segment 1: Gravel road is under construction. The road traverses rugged mountainous area where 1000 m disaster potential section is identified<br>Segment 2: 17.9 km is paved by AC in bad condition. 30.4 km is gravel road. Carriageway width is less than 5.0 m in most sections. 59,750 m is identified as disaster potential section |      |                 |      | Population Coverage (1990):<br><br>422,064 |
| Objective                    |  | <ul style="list-style-type: none"> <li>• Strengthen east-west link (CAR-Region II) and interlink of south-north road (No. 3 and No. 5)</li> <li>• Strengthen economic linkage between Region II and CAR mountainous areas</li> <li>• Promote regional development (highland agriculture, tourism, mining)</li> </ul>                      |      |                 |      |  |
| Segment                      |  | 31-1  |      | 31-2            |      | Total                                      |
| Location                     |  | Aritao<br>Bokod   |      | Bokod<br>Baguio |      |  |
| Length (km)                  |  | 58.0  |      | 49.6            |      | 107.6                                      |
| Traffic Volume               |  | Year  | 1992 | 2010            | 1992 | 2010                                       |
|                              |  | Car   | -    | 257             | -    | 471  |
|                              |  | Jeepney   | -    | 16              | -    | 17   |
|                              |  | Bus   | -    | 96              | -    | 137  |
|                              |  | Truck   | -    | 64              | -    | 122  |
|                              |  | Total   | -    | 433             | -    | 747  |
| Work Item:                   |  |   |      |                 |      |  |
| Pavement (km)                |  | 37.6  |      | 0.9             |      | 38.5                                       |
| Widen to 2 Lane Road (km)    |  | 20.4  |      | 46.4            |      | 66.8                                       |
| Cons't. of 2 Lane Bridge (m) |  | 87  |      | 515             |      | 602  |
| Disaster Prevention (m)      |  | 10,000  |      | 59,750          |      | 69,750                                     |
| Cost: (P million)            |  |   |      |                 |      |  |
| Right-of-Way                 |  | 0.6   |      | 1.4             |      | 2.0  |
| Construction                 |  | 839.2   |      | 2,267.8         |      | 3,107.0                                    |
| Engineering                  |  | 100.7   |      | 272.1           |      | 372.8                                      |
| Total                        |  | 940.5   |      | 2,541.3         |      | 3,481.8                                    |
| Implementation Schedule      |  | from  | 1991 |                 | 2000 | 1999                                       |
|                              |  | to  | 2001 |                 | 2002 | 2002                                       |
| Economic Return              |  | IRR = 22.6%   |      | B/C = 1.62      |      | NPV = P516.4 M                             |
| Remarks:                     |  |   |      |                 |      |  |



# PROJECT PROFILE

Project Number: 32

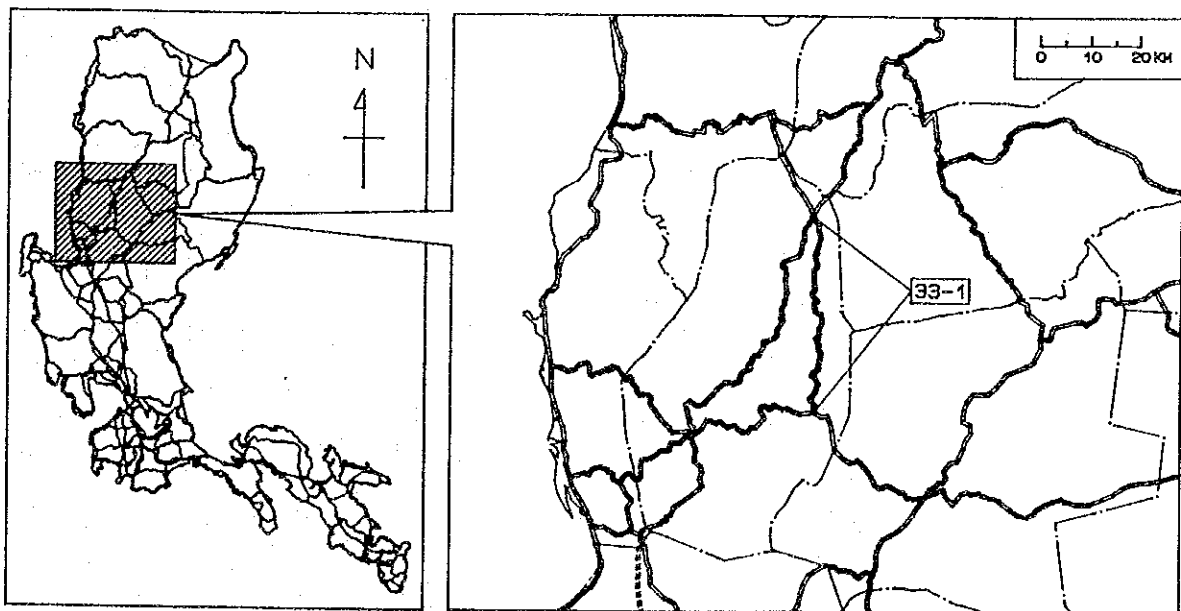
|                             |         |   |       |                  |       |  |
|-----------------------------|---------|---|-------|------------------|-------|--|
| Name                        |         | Baguio--Bontoc Road   |       |                  |       | Province: Benguet<br>Mt. Province          |
| Existing Road Condition     |         | Segment 1: 63.4 km is paved by PCC in good condition. 19.1 km is gravel in bad condition with carriageway width less than 5.0 m.<br>Segment 2: 45.3 km is paved by 3.0 ~ 5.0 m AC in fair to bad condition. 4.2 km is still gravel road. 29,200 m is identified as disaster potential sections. |       |                  |       | Population Coverage (1990):<br><br>506,428 |
| Objective                   |         | <ul style="list-style-type: none"> <li>• Strengthen south-north mountain link (Benguet - Mt. Province)</li> <li>• Strengthen economic linkage among CAR provinces</li> <li>• Promote regional/provincial development (highland agriculture, tourism, mining)</li> </ul>                         |       |                  |       |  |
| Segment                     |         | 32-1  |       | 32-2             |       | Total                                      |
| Location                    | from to | Baguio<br>Abatan  |       | Abatan<br>Bontoc |       |  |
| Length                      | (km)    | 82.5  |       | 59.0             |       | 141.5                                      |
| Traffic Volume              | Year    | 1992  | 2010  | 1992             | 2010  |  |
|                             | Car     | 746   | 2,013 | 462              | 1,441 |  |
|                             | Jeepney | 314   | 610   | 49               | 418   |  |
|                             | Bus     | 124   | 397   | 66               | 344   |  |
|                             | Truck   | 308   | 632   | 93               | 347   |  |
|                             | Total   | 1,492   | 3,652 | 670              | 2,550 |  |
| Work Item:                  |         |   |       |                  |       |  |
| Rehabilitation (km)         |         | 1.0   |       | 1.2              |       | 2.2  |
| Pavement (km)               |         | -   |       | 1.3              |       | 1.3  |
| Widen to 2 Lane Road (km)   |         | 19.1  |       | 48.1             |       | 67.2                                       |
| Const. of 2 Lane Bridge (m) |         | -   |       | 57               |       | 57   |
| Disaster Prevention (m)     |         | 59,940  |       | 29,200           |       | 89,140                                     |
| Cost: (P million)           |         |   |       |                  |       |  |
| Right-of-Way                |         | 0.6   |       | 1.4              |       | 2.0  |
| Construction                |         | 1,853.3   |       | 1,295.6          |       | 3,148.9                                    |
| Engineering                 |         | 222.4   |       | 155.5            |       | 377.9                                      |
| Total                       |         | 2,076.3   |       | 1,452.5          |       | 3,528.8                                    |
| Implementation Schedule     | from to | 2002<br>2004  |       | 2002<br>2004     |       | 2002<br>2004                               |
| Economic Return             |         | IRR = 10.9%   |       | B/C = 0.74       |       | NPV = P-152.3 M                            |
| Remarks:                    |         |   |       |                  |       |  |



# PROJECT PROFILE

Project Number: 33

|                              |   |     |            |     |               |   |
|------------------------------|---|-----|------------|-----|---------------|---|
| Name                         | Bokod -- Abatan Road  |     |            |     |               | Province:<br>Benguet                      |
| Existing Road Condition      | This road composed of gravel road varying width of 3.0 m to 6.0 m in fair to very bad condition.<br>6,800 m cut and embankment slope failure section is identified.<br>Terrain condition is mostly mountainous.   |     |            |     |               | Population Coverage (1990):<br><br>88,161 |
| Objectives                   | <ul style="list-style-type: none"> <li>• Strengthen south-north mountain link (Benguet)</li> <li>• Strengthen economic linkage among CAR province</li> <li>• Promote regional/provincial development (highland agriculture, industry, tourism, mining)</li> </ul> |     |            |     |               |   |
| Location                     | from: Bokod   |     |            |     |               | to: Abatan                                |
| Length (km)                  |   |     |            |     |               | 65.8                                      |
| Traffic Volume               |   | Car | Jeepney    | Bus | Truck         | Total                                     |
|                              | 1992  | 354 | 42         | 66  | 83            | 545                                       |
|                              | 2010  | 711 | 78         | 144 | 122           | 1,055                                     |
| Work Item:                   |   |     |            |     |               |   |
| Pavement (km)                |   |     |            |     |               | 1.6                                       |
| Widen to 2 Lanes Road (km)   |   |     |            |     |               | 64.2                                      |
| Cons't. of 2 Lane Bridge (m) |   |     |            |     |               | 323                                       |
| Disaster Prevention (m)      |   |     |            |     |               | 6,800                                     |
| Cost: (P million)            |   |     |            |     |               |   |
| Right-of-Way                 |   |     |            |     |               | 1.9                                       |
| Construction                 |   |     |            |     |               | 1,277.4                                   |
| Engineering                  |   |     |            |     |               | 153.3                                     |
| Total                        |   |     |            |     |               | 1,432.6                                   |
| Implementation Schedule      | from  |     |            |     |               | 2008                                      |
|                              | to  |     |            |     |               | 2010                                      |
| Economic Return              | IRR = 22.8 %  |     | B/C = 1.56 |     | NPV = P53.4 M |   |
| Remarks:                     |   |     |            |     |               |   |

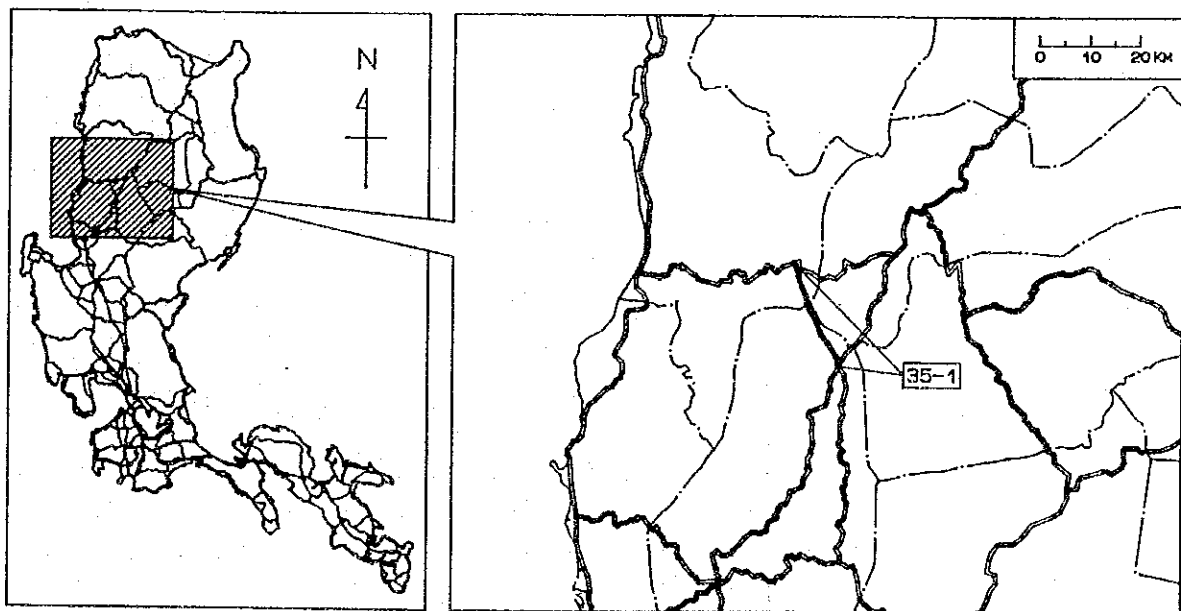




# PROJECT PROFILE

Project Number: 35

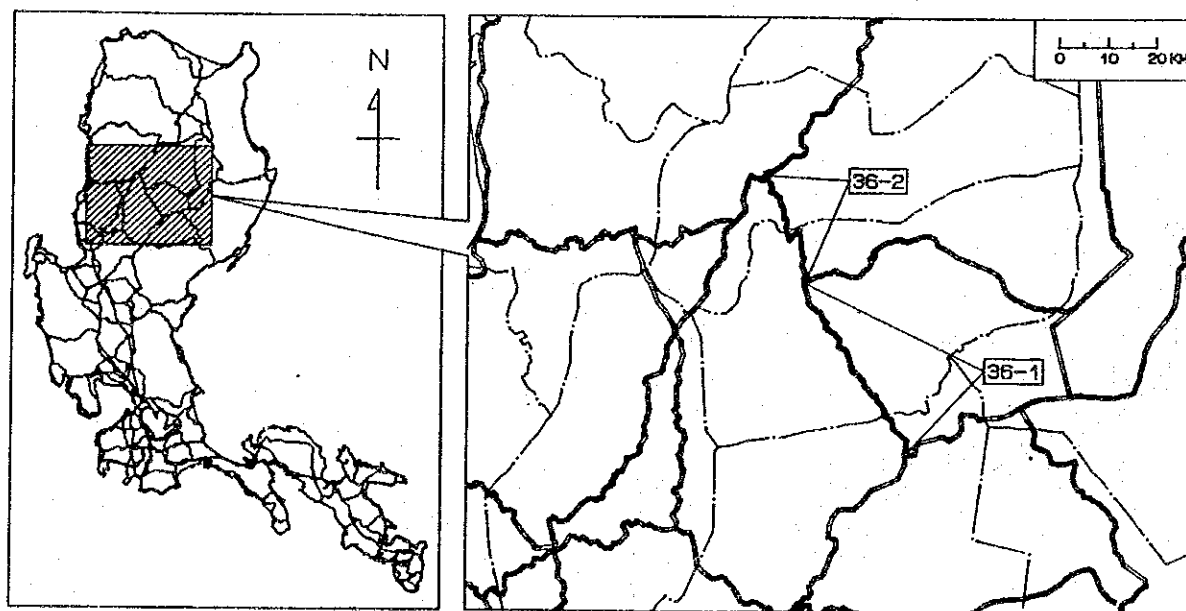
|                            |      |  |         |            |       |   |
|----------------------------|------|--|---------|------------|-------|---|
| Name                       |      | Cervantes -- Abatan Road   |         |            |       | Province: Benguet<br>Ilocos Sur           |
| Existing Road Condition    |      | 4.0 km is paved by AC with 3.0 ~ 6.0 m width.<br>Remaining part of the road is gravel with 4.0 - 6.0 m width.<br>6,700 m is identified as cut and embankment slope failure sections.   |         |            |       | Population Coverage (1990):<br><br>93,226 |
| Objective                  |      | <ul style="list-style-type: none"> <li>• Strengthen south-north mountain link (Benguet-Ilocos Sur)</li> <li>• Strengthen economic linkage between Region I and CAR mountainous area</li> <li>• Promote regional development (highland agriculture, tourism, mining)</li> </ul> |         |            |       |   |
| Location                   |      | from: Cervantes  |         | to: Abatan |       |   |
| Length (km)                |      | 33.3   |         |            |       |   |
| Traffic Volume             |      | Car  | Jeepney | Bus        | Truck | Total                                     |
|                            | 1992 | 0  | 0       | 0          | 0     | 0   |
|                            | 2010 | 161  | 343     | 45         | 28    | 577                                       |
| Work Item:                 |      |  |         |            |       |   |
| Rehabilitation (km)        |      | 0.8  |         |            |       |   |
| Pavement (km)              |      | 5.1  |         |            |       |   |
| Widen to 2 Lanes Road (km) |      | 27.2   |         |            |       |   |
| Disaster Prevention (m)    |      | 6,700  |         |            |       |   |
| Cost: (P million)          |      |  |         |            |       |   |
| Right-of-Way               |      | 0.8  |         |            |       |   |
| Construction               |      | 644.0  |         |            |       |   |
| Engineering                |      | 77.3   |         |            |       |   |
| Total                      |      | 722.1  |         |            |       |   |
| Implementation Schedule    |      | from   |         | 2008       |       |   |
|                            |      | to   |         | 2010       |       |   |
| Economic Return            |      | IRR = 11.7%  |         | B/C = 0.8  |       | NPV = P-9.9M                              |
| Remarks:                   |      |  |         |            |       |   |



**PROJECT PROFILE**

Project Number: 36

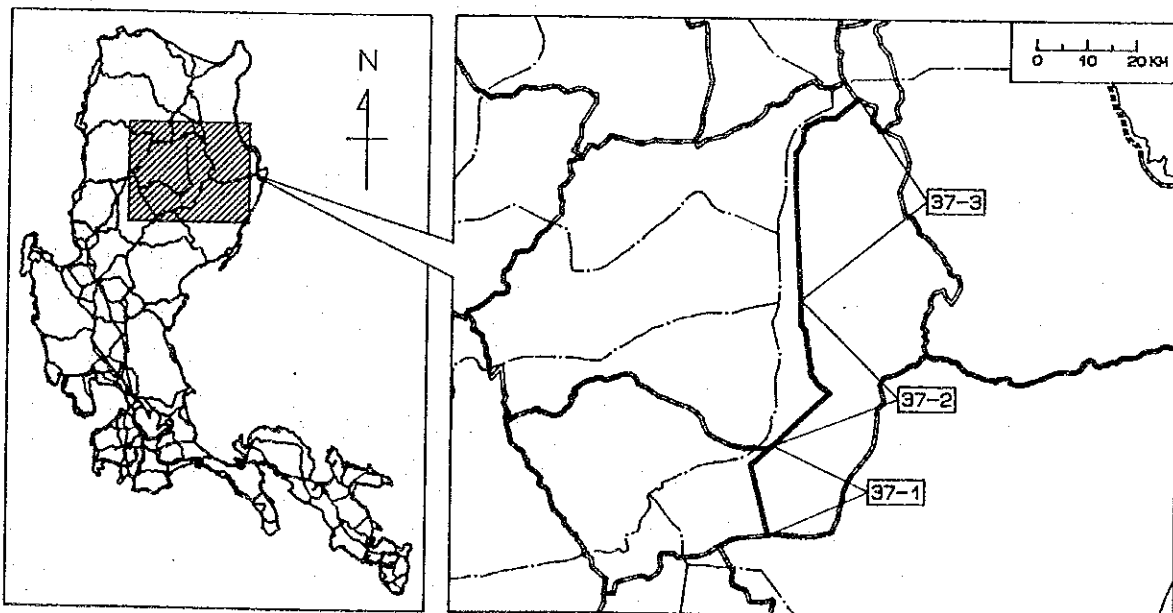
|                               |  |  |  |                   |  |   |  |
|-------------------------------|--|--|--|-------------------|--|---|--|
| Name                          |  | Bagabag – Bontoc Road  |  |                   |  | Province: Nueva Vizcaya, Ifugao, Mt. Province |  |
| Existing Road Condition       |  | Segment 1: 56 km is paved by PCC in good condition. 1.8 km is still gravel road. 3,100 m is identified as cut and embankment slope failure potential section.<br>Segment 2: 2.4 km is paved by AC in bad condition, 45.1 km is gravel road with 3.0~6.0 m width, 13,200 m identified as slope failure potential section. No bridge at Chico River. |  |                   |  | Population Coverage (1990):<br><br>206,730    |  |
| Objective                     |  | <ul style="list-style-type: none"> <li>Strengthen east-west link (CAR – Region II)</li> <li>Strengthen economic linkage between Region II and CAR mountainous area</li> <li>Promote regional development (highland agriculture, tourism)</li> </ul>  |  |                   |  |   |  |
| Segment                       |  | 36-1   |  | 36-2              |  | Total   |  |
| Location                      |  | Bagabag<br>Banaue  |  | Banaue<br>Bontoc  |  |   |  |
| Length (km)                   |  | 57.8   |  | 47.5              |  | 105.3   |  |
| Traffic Volume                |  | Year   |  | 1992              |  | 2010  |  |
|                               |  | Car  |  | 215               |  | 371   |  |
|                               |  | Jeepney  |  | 729               |  | 1,130   |  |
|                               |  | Bus  |  | 35                |  | 40  |  |
|                               |  | Truck  |  | 128               |  | 147   |  |
|                               |  | Total  |  | 1,107             |  | 1,688   |  |
| Work Item:                    |  |  |  |                   |  |   |  |
| Rehabilitation (km)           |  | -  |  | 0.3               |  | 0.3   |  |
| Pavement (km)                 |  | 1.5  |  | 8.1               |  | 9.6   |  |
| Widen to 2 Lanes Road (km)    |  | 0.3  |  | 39.1              |  | 39.4  |  |
| Cons't. of 2 Lane Bridges (m) |  | -  |  | 205               |  | 205   |  |
| Disaster Prevention (m)       |  | 3,100  |  | 13,200            |  | 16,300  |  |
| Cost: (P million)             |  |  |  |                   |  |   |  |
| Right-of-Way                  |  | 0.0  |  | 1.2               |  | 1.2   |  |
| Construction                  |  | 104.4  |  | 1,048.3           |  | 1,152.7                                       |  |
| Engineering                   |  | 12.5   |  | 125.8             |  | 138.3   |  |
| Total                         |  | 116.9  |  | 1,175.3           |  | 1,292.2                                       |  |
| Implementation Schedule       |  | from 2008 to 2008  |  | from 2008 to 2010 |  | from 2008 to 2010                             |  |
| Economic Return               |  | IRR = 19.6%  |  | B/C = 1.13        |  | NPV = P28.0 M                                 |  |
| Remarks:                      |  |  |  |                   |  |   |  |



# PROJECT PROFILE

Project Number: 37

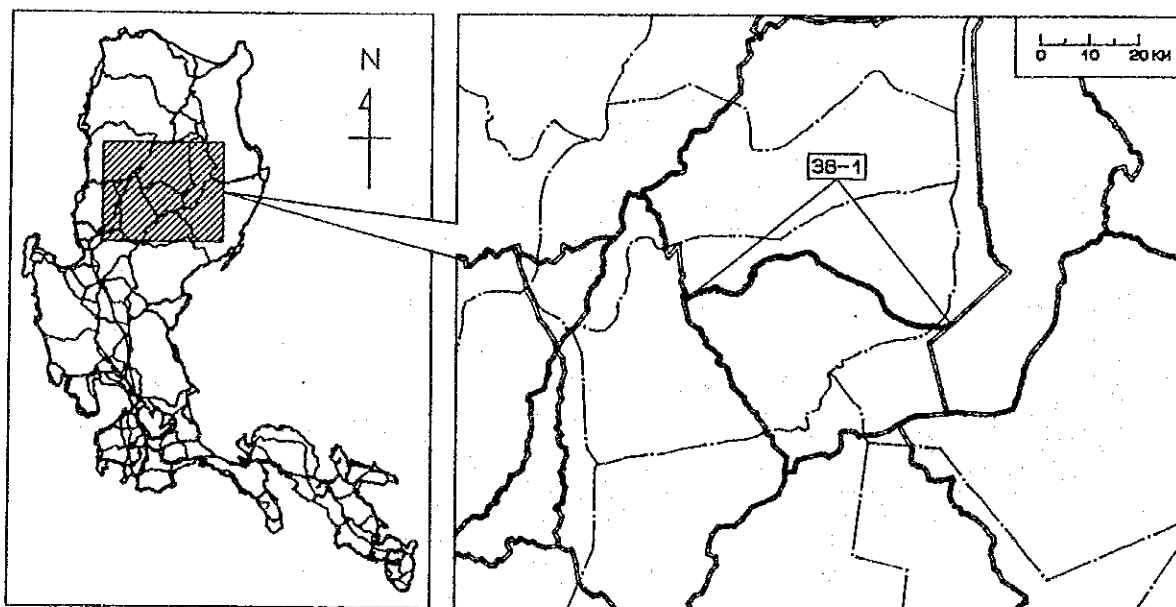
|                            |         |   |       |             |       |                  |       |  |  |
|----------------------------|---------|---|-------|-------------|-------|------------------|-------|--|--|
| Name                       |         | Santiago – Sta. Maria Road  |       |             |       |                  |       | Province:<br>Isabela                       |  |
| Existing Road Condition    |         | Segment 1: 13.3 km is paved by PCC in good condition, 1.3 km is still gravel<br>Segment 2: 4.2 km is AC pavement in bad condition. Gravel section is 35.4 km. There is 2,008 m<br>Segment 3: Almost all sections are gravel   |       |             |       |                  |       | Population Coverage (1990):<br><br>447,998 |  |
| Objective                  |         | <ul style="list-style-type: none"> <li>Strengthen south-north upland link (Isabela)</li> <li>Strengthen economic linkage between upland area and Cagayan valley plain</li> <li>Promote provincial/regional development (highland and upland agriculture, rural industry)</li> </ul> |       |             |       |                  |       |  |  |
| Segment                    |         | 37-1  |       | 37-2        |       | 37-3             |       | Total                                      |  |
| Location                   | from to | Santiago Ramon  |       | Ramon Roxas |       | Roxas Sta. Maria |       |  |  |
| Length                     | (km)    | 14.6  |       | 39.6        |       | 48.9             |       | 103.1                                      |  |
| Traffic Volume             | Year    | 1992  | 2010  | 1992        | 2010  | 1992             | 2010  |  |  |
|                            | Car     | 338   | 1,455 | 338         | 1,465 | 202              | 1,271 |  |  |
|                            | Jeepney | 435   | 908   | 435         | 935   | 392              | 1,005 |  |  |
|                            | Bus     | 138   | 367   | 138         | 369   | 112              | 319   |  |  |
|                            | Truck   | 208   | 681   | 208         | 681   | 183              | 645   |  |  |
|                            | Total   | 1,119   | 3,411 | 1,119       | 3,450 | 889              | 3,240 |  |  |
| Work Item:                 |         |   |       |             |       |                  |       |  |  |
| Rehabilitation (km)        |         | -   |       | 2.6         |       | -                |       | 2.6  |  |
| Pavement (km)              |         | 1.3   |       | 35.4        |       | 43.0             |       | 79.7                                       |  |
| Widen to 2 Lanes Road (km) |         | -   |       | -           |       | 5.0              |       | 5.0  |  |
| Disaster Prevention (m)    |         | -   |       | 2,008       |       | -                |       | 2,008                                      |  |
| Cost: (P million)          |         |   |       |             |       |                  |       |  |  |
| Right-of-Way               |         | 0.0   |       | 0.0         |       | 0.1              |       | 0.1  |  |
| Construction               |         | 6.3   |       | 272.0       |       | 259.7            |       | 538.0                                      |  |
| Engineering                |         | 0.7   |       | 32.6        |       | 31.2             |       | 64.5                                       |  |
| Total                      |         | 7.0   |       | 304.6       |       | 291.0            |       | 602.6                                      |  |
| Implementation Schedule    | from to | 1994 1994   |       | 1994 1995   |       | 1994 1995        |       | 1994 1995                                  |  |
| Economic Return            |         | IRR = 40.8%   |       | B/C = 3.15  |       | NPV = P736.2 M   |       |  |  |
| Remarks:                   |         |   |       |             |       |                  |       |  |  |



# PROJECT PROFILE

Project Number: 38

|                               |  |   |         |            |       |  |
|-------------------------------|--|---|---------|------------|-------|--|
| Name                          |  | Ramon--Banaue Road  |         |            |       | Province: Ifugao,<br>Isabela               |
| Existing Road Condition       |  | Most sections of the road is gravel with less than 5.0 m width and bad condition.<br>Terrain is dominantly mountainous.<br>There are 12,198 m of substandard alignment sections.<br>Total 72,000 m of cut and embankment slope failure sections are identified.     |         |            |       | Population Coverage (1990):<br><br>173,063 |
| Objective                     |  | <ul style="list-style-type: none"> <li>• Strengthen east-west link (CAR--Region II)</li> <li>• Strengthen economic linkage between Region II and CAR mountainous area</li> <li>• Promote provincial/regional development (highland agriculture, tourism)</li> </ul> |         |            |       |  |
| Location                      |  | from: Ramon   |         | to: Banaue |       |  |
| Length (km)                   |  | 107.3   |         |            |       |  |
| Traffic Volume                |  | Car   | Jeepney | Bus        | Truck | Total                                      |
| 1992                          |  | 0   | 0       | 0          | 0     | 0  |
| 2010                          |  | 10  | 27      | 1          | 0     | 38   |
| Work Item:                    |  |   |         |            |       |  |
| Pavement (km)                 |  | 6.7   |         |            |       |  |
| Widen to 2 Lanes Road (km)    |  | 100.5   |         |            |       |  |
| Cons't. of 2 Lanes Bridge (m) |  | 54  |         |            |       |  |
| Disaster Prevention (m)       |  | 72,000  |         |            |       |  |
| Cost: (P million)             |  |   |         |            |       |  |
| Right-of-Way                  |  | 3.0   |         |            |       |  |
| Construction                  |  | 3,452.1   |         |            |       |  |
| Engineering                   |  | 414.2   |         |            |       |  |
| Total                         |  | 3,869.3   |         |            |       |  |
| Implementation Schedule       |  | 2007 to 2010  |         |            |       |  |
| Economic Return               |  | IRR = 12.2 %  |         | B/C = 0.81 |       | NPV = P-52.3 M                             |
| Remarks:                      |  |   |         |            |       |  |

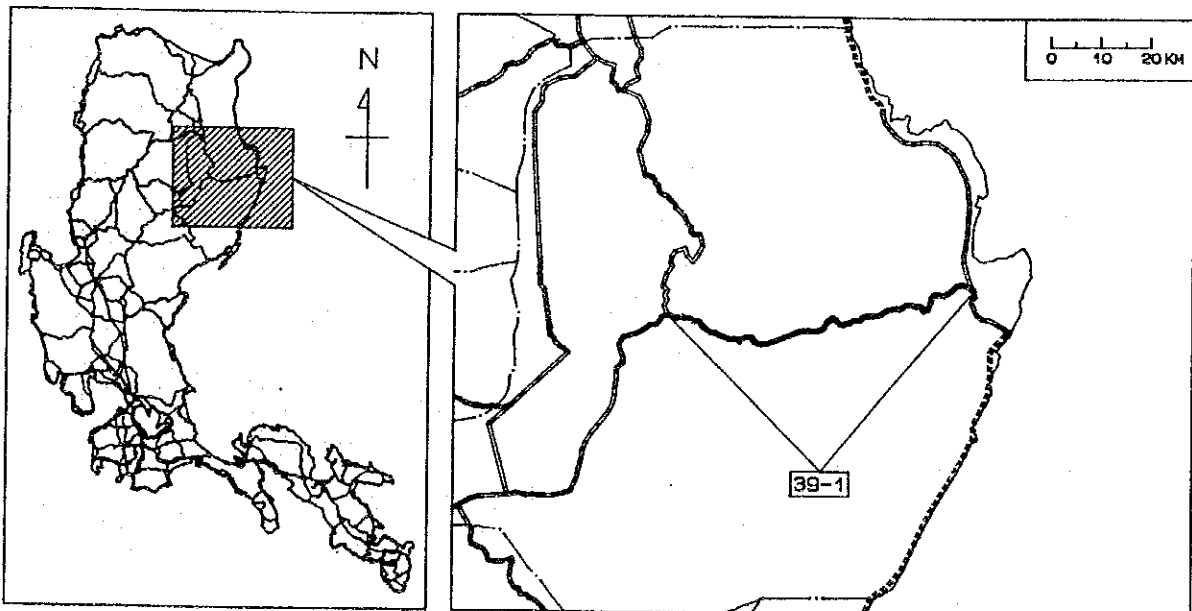




# PROJECT PROFILE

Project Number: 39

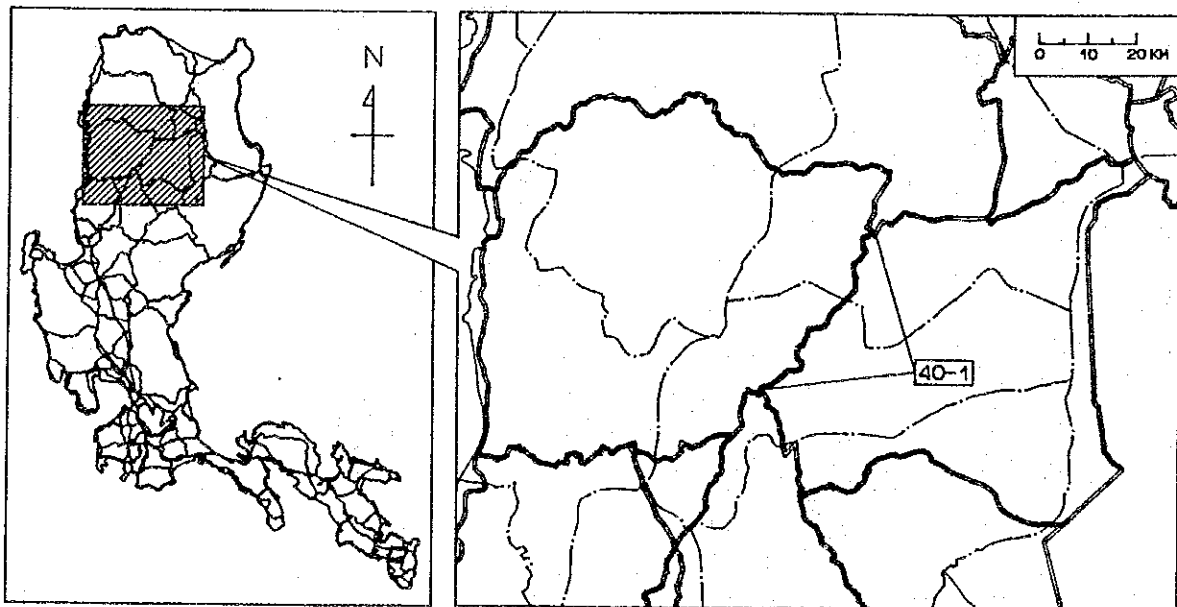
|                               |  |      |            |     |                |  |
|-------------------------------|--|------|------------|-----|----------------|--|
| Name                          | Naguilian-Palanan Road   |      |            |     |                | Province:<br>Isabela                       |
| Existing Road Condition       | 22.3 km in Naguilian side is PCC in good condition.<br>47.5 km in Palanan side is impassable/non-existing.<br>Terrain is impassable/non-existing section is mostly mountainous.<br>9.2 km is gravel/earth in very bad condition.                                       |      |            |     |                | Population Coverage (1990):<br><br>128,373 |
| Objective                     | <ul style="list-style-type: none"> <li>• Strengthen east-west link in Isabela</li> <li>• Strengthen economic linkage among Cagayan valley lowland, upland and Isabela Pacific coastal area</li> <li>• Promote provincial development (agriculture, tourism)</li> </ul> |      |            |     |                |  |
| Location                      | from: Naguilian  |      |            |     |                | to: Palanan                                |
| Length (km)                   | 79.0   |      |            |     |                |  |
| Traffic Volume                |  | Car  | Jeepney    | Bus | Truck          | Total                                      |
|                               | 1992   | 110  | 49         | 38  | 35             | 232  |
|                               | 2010   | 187  | 116        | 70  | 62             | 435  |
| Work Item:                    |  |      |            |     |                |  |
| Pavement (km)                 |  |      |            |     |                | 1.4  |
| Widen to 2 Lanes Road (km)    |  |      |            |     |                | 7.8  |
| Cons't. of 2 Lanes Road (km)  |  |      |            |     |                | 47.5                                       |
| Cons't. of 2 Lanes Bridge (m) |  |      |            |     |                | 467  |
| Cost: (P million)             |  |      |            |     |                |  |
| Right-of-Way                  |  |      |            |     |                | 7.4  |
| Construction                  |  |      |            |     |                | 1,148.9                                    |
| Engineering                   |  |      |            |     |                | 137.9                                      |
| Total                         |  |      |            |     |                | 1,294.2                                    |
| Implementation Schedule       | from   | 1996 |            |     |                |  |
|                               | to   | 1998 |            |     |                |  |
| Economic Return               | IRR = 18.5%  |      | B/C = 1.22 |     | NPV = P117.2 M |  |
| Remarks:                      |  |      |            |     |                |  |



# PROJECT PROFILE

Project Number: 40

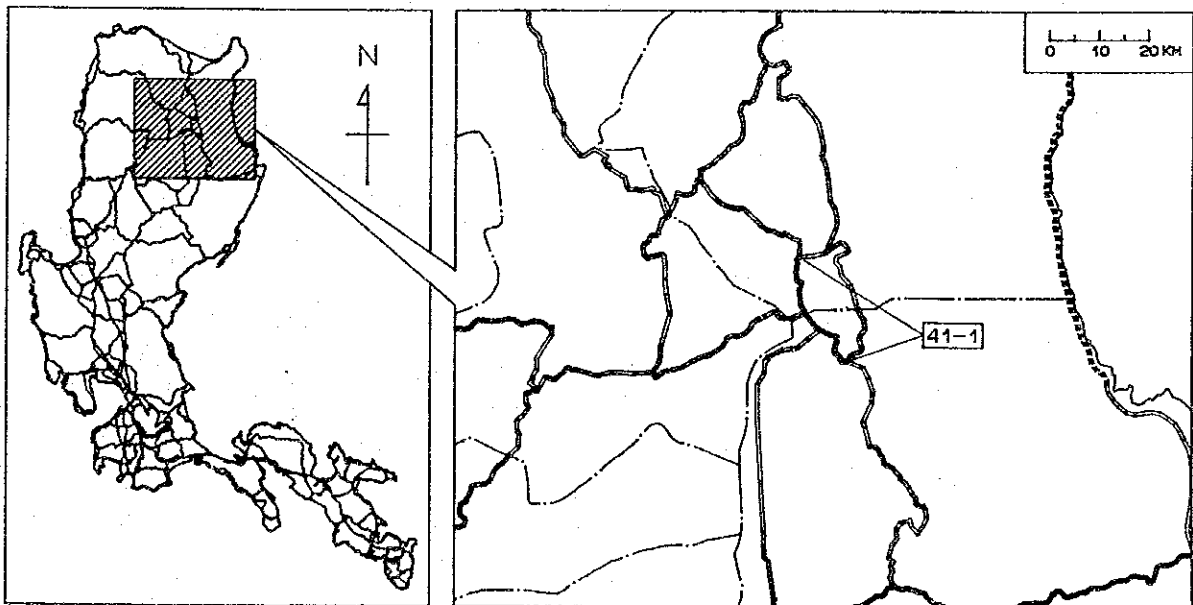
|                               |   |     |            |     |                |   |
|-------------------------------|---|-----|------------|-----|----------------|---|
| Name                          | Lubuagan -- Bontoc Road   |     |            |     |                | Province: Mt. Prov.<br>Kalinga--Apayao    |
| Existing Road Condition       | The road passes steep mountainous area.<br>Road alignment is so winding.<br>Surface is gravel except in Bontoc proper, average width is 3.5 m.<br>Slope failures, and debris flow sections are ubiquitously observed.   |     |            |     |                | Population Coverage (1990):<br><br>74,092 |
| Objective                     | <ul style="list-style-type: none"> <li>• Strengthen south--north mountain link (Mountain--Kalinga--Apayao)</li> <li>• Strengthen economic linkage among CAR provinces</li> <li>• Promote regional/provincial development (highland agriculture, tourism, mining)</li> </ul> |     |            |     |                |   |
| Location                      | from: Lubuagan  |     |            |     |                | to: Bontoc                                |
| Length (km)                   |   |     |            |     |                | 72.4                                      |
| Traffic Volume                |   | Car | Jeepney    | Bus | Truck          | Total                                     |
|                               | 1992  | 18  | 76         | 4   | 7              | 105                                       |
|                               | 2010  | 652 | 780        | 211 | 152            | 1,795                                     |
| Work Item:                    |   |     |            |     |                |   |
| Widen to 2 Lanes Road (km)    |   |     |            |     |                | 72.0                                      |
| Cons't. of 2 Lanes Bridge (m) |   |     |            |     |                | 300                                       |
| Disaster Prevention (m)       |   |     |            |     |                | 40,250                                    |
| Cost: (P million)             |   |     |            |     |                |   |
| Right-of-Way                  |   |     |            |     |                | 2.2                                       |
| Construction                  |   |     |            |     |                | 2,175.4                                   |
| Engineering                   |   |     |            |     |                | 261.1                                     |
| Total                         |   |     |            |     |                | 2,438.7                                   |
| Implementation Schedule       | from  |     |            |     |                | 2002                                      |
|                               | to  |     |            |     |                | 2004                                      |
| Economic Return               | IRR = 13.0%   |     | B/C = 0.87 |     | NPV = P-55.0 M |   |
| Remarks:                      |   |     |            |     |                |   |



# PROJECT PROFILE

Project Number: 41

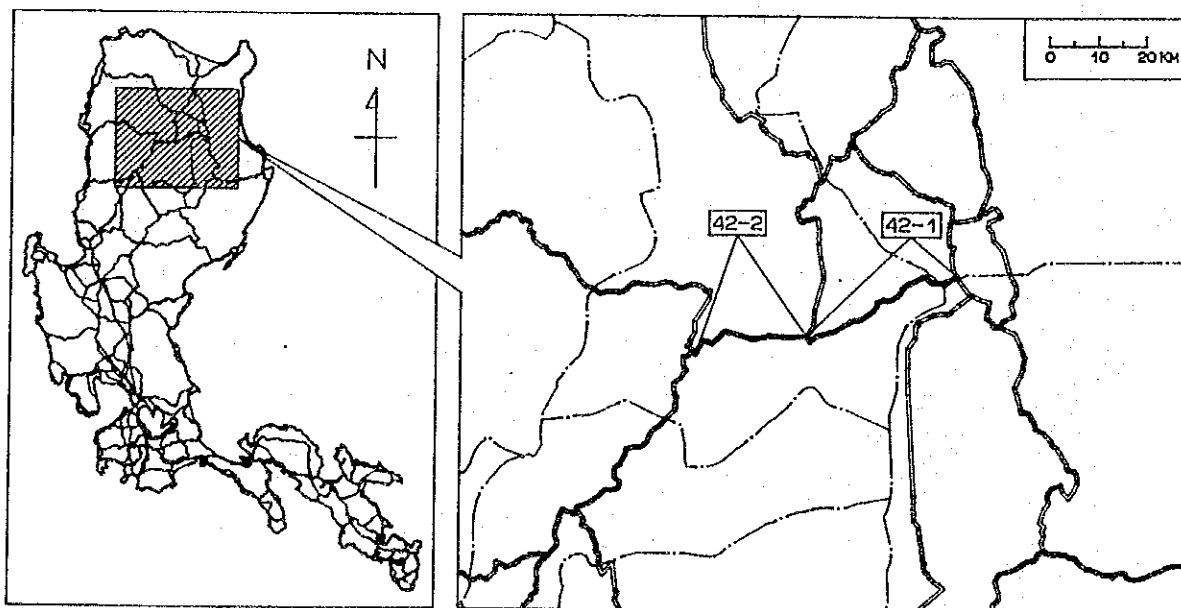
|                               |   |     |            |     |               |  |
|-------------------------------|---|-----|------------|-----|---------------|--|
| Name                          | <b>Cabagan -- Solana Road</b>   |     |            |     |               | Province: Isabela<br>Cagayan               |
| Existing Road Condition       | 2.1 km is PCC in good condition.<br>3.5 km is AC in good condition.<br>24.6 km is gravel in fair condition.<br>There is no bridge at Cagayan river. Approx. 1000 m bridge is to be constructed on the river.  |     |            |     |               | Population Coverage (1990):<br><br>263,250 |
| Objective                     | <ul style="list-style-type: none"> <li>• Strengthen south-north link (Cagayan-Isabela)</li> <li>• Strengthen economic linkage between right and left banks of the Cagayan river</li> <li>• Promote inter-provincial agricultural development (Cagayan, Isabela), especially lowland and upland agriculture</li> </ul> |     |            |     |               |  |
| Location                      | from: Cabagan   |     |            |     |               | to: Solana                                 |
| Length (km)                   |   |     |            |     |               | 30.2                                       |
| Traffic Volume                |   | Car | Jeepney    | Bus | Truck         | Total                                      |
|                               | 1992  | 110 | 235        | 59  | 110           | 514  |
|                               | 2010  | 893 | 749        | 216 | 404           | 2,262                                      |
| Work Item:                    |   |     |            |     |               |  |
| Pavement (km)                 |   |     |            |     |               | 24.6                                       |
| Cons't. of 2 Lanes Bridge (m) |   |     |            |     |               | 1,000                                      |
| Cost: (P million)             |   |     |            |     |               |  |
| Right-of-Way                  |   |     |            |     |               | 0.0  |
| Construction                  |   |     |            |     |               | 487.8                                      |
| Engineering                   |   |     |            |     |               | 58.5                                       |
| Total                         |   |     |            |     |               | 546.3                                      |
| Implementation Schedule       | from  |     |            |     |               | 1996                                       |
|                               | to  |     |            |     |               | 1998                                       |
| Economic Return               | IRR = 17.6%   |     | B/C = 1.21 |     | NPV = P45.7 M |  |
| Remarks:                      |   |     |            |     |               |  |



# PROJECT PROFILE

Project Number: 42

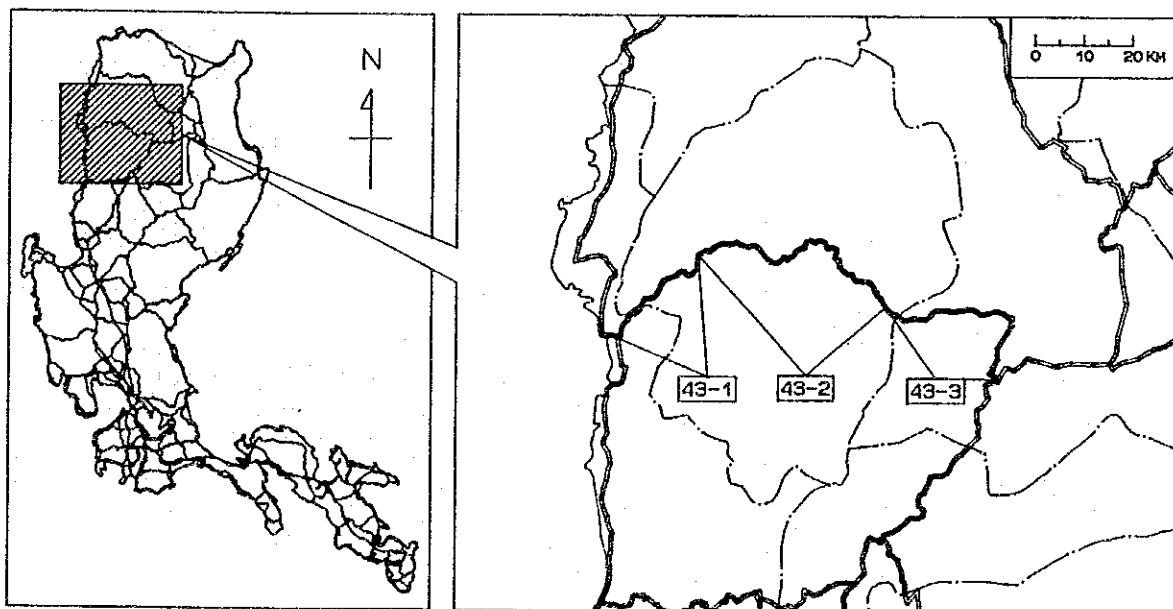
|                              |  |   |      |                         |      |  |
|------------------------------|--|---|------|-------------------------|------|--|
| Name                         |  | Enrile - Lubuagan Road  |      |                         |      | Province: Kalinga-Apayao                   |
| Existing Road Condition      |  | Segment 1: 13.2 km is paved by PCC in good condition, 19.9 km is still gravel surface. There is one bridge (L = 261 m) with carriageway width only 4.25 m.<br>Segment 2: Whole road section is gravel surface with road width of 4.0 - 6.0 m, 11,500 m of debris flow and slope failure sections are identified |      |                         |      | Population Coverage (1990):<br><br>149,181 |
| Objective                    |  | <ul style="list-style-type: none"> <li>Strengthen east-west link (CAR-Region II)</li> <li>Strengthen economic linkage between Region II and CAR mountainous areas</li> <li>Promote region/provincial development (highland and upland agriculture, tourism, mining)</li> </ul>                                  |      |                         |      |  |
| Segment                      |  | 42-1  |      | 42-2                    |      | Total                                      |
| Location                     |  | Enrile<br>to<br>Tabuk   |      | Tabuk<br>to<br>Lubuagan |      |  |
| Length (km)                  |  | 39.7  |      | 31.8                    |      | 71.5                                       |
| Traffic Volume               |  | Year  |      | Year                    |      |  |
|                              |  | 1992  | 2010 | 1992                    | 2010 |  |
|                              |  | Car   | 56   | 265                     | 45   | 759  |
|                              |  | Jeepney   | 55   | 270                     | 80   | 975  |
|                              |  | Bus   | 23   | 55                      | 11   | 212  |
|                              |  | Truck   | 57   | 44                      | 30   | 178  |
|                              |  | Total   | 191  | 634                     | 166  | 2,124                                      |
| Work Item:                   |  |   |      |                         |      |  |
| Rehabilitation (km)          |  | 3.6   |      | -                       |      | 3.6  |
| Pavement (km)                |  | 19.9  |      | 7.9                     |      | 27.8                                       |
| Widen to 2 Lane Road (km)    |  | 1.2   |      | 23.9                    |      | 25.1                                       |
| Cons't. of 2 Lane Bridge (m) |  | 261   |      | 135                     |      | 396  |
| Disaster Prevention (m)      |  | 2,000   |      | 11,500                  |      | 13,500                                     |
| Cost: (P million)            |  |   |      |                         |      |  |
| Right-of-Way                 |  | 0.0   |      | 0.7                     |      | 0.7  |
| Construction                 |  | 285.6   |      | 551.6                   |      | 837.2                                      |
| Engineering                  |  | 34.3  |      | 66.2                    |      | 100.5                                      |
| Total                        |  | 319.9   |      | 618.5                   |      | 938.4                                      |
| Implementation Schedule      |  | from 1996<br>to 1997  |      | from 1996<br>to 1998    |      | 1996<br>1998                               |
| Economic Return              |  | IRR = 23.7%   |      | B/C = 1.74              |      | NPV = P287.3 M                             |
| Remarks:                     |  |   |      |                         |      |  |



# PROJECT PROFILE

Project Number: 43

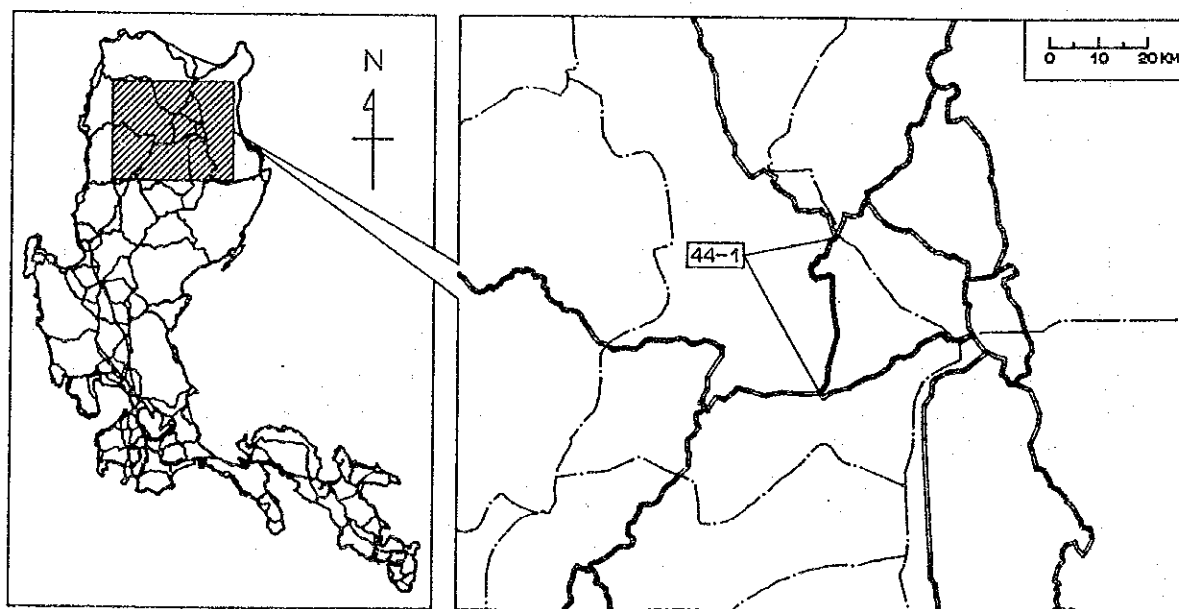
|                           |  |   |  |                   |  |                    |  |  |  |
|---------------------------|--|---|--|-------------------|--|--------------------|--|--|--|
| Name                      |  | Narvacan – Lubuagan Road  |  |                   |  |                    |  | Province: Ilocos Sur, Abra, Kalinga Apayao |  |
| Existing Road Condition   |  | Segment 1: Surface is paved by PCC and AC in good condition, except for 1.1 km, several cut slope failure section is observed<br>Segment 2: Bangued–Lagangilang is paved by PCC and AC. Lagangilang–Malibcong is gravel in very bad condition<br>Segment 3: Entire section is earth/gravel in bad condition |  |                   |  |                    |  | Population Coverage (1990):<br><br>257,422 |  |
| Objective                 |  | <ul style="list-style-type: none"> <li>• Strengthen east–west link (Region I – CAR)</li> <li>• Strengthen economic linkage between Region I and mountainous areas in CAR</li> <li>• Promote regional/provincial development (highland and upland agriculture, tourism, mining)</li> </ul>                   |  |                   |  |                    |  |  |  |
| Segment                   |  | 43-1  |  | 43-2              |  | 43-3               |  | Total                                      |  |
| Location                  |  | Narvacan Bangued  |  | Bangued Malibcong |  | Malibcong Lubuagan |  |  |  |
| Length (km)               |  | 30.4  |  | 81.0              |  | 65.8               |  | 177.2                                      |  |
| Traffic Volume            |  | Year  |  | 1992              |  | 2010               |  |  |  |
|                           |  | Car   |  | 240               |  | 766                |  | 156  |  |
|                           |  | Jeepney   |  | 393               |  | 873                |  | 264  |  |
|                           |  | Bus   |  | 134               |  | 314                |  | 42   |  |
|                           |  | Truck   |  | 104               |  | 187                |  | 35   |  |
| Total                     |  | 871   |  | 2,140             |  | 497                |  | 1,531                                      |  |
| Work Item:                |  |   |  |                   |  |                    |  |  |  |
| Rehabilitation (km)       |  | 1.1   |  | 5.9               |  | -                  |  | 7.0  |  |
| Pavement (km)             |  | -   |  | 4.9               |  | -                  |  | 4.9  |  |
| Widen to 2 Lane Road (km) |  | -   |  | 57.3              |  | 65.8               |  | 123.1                                      |  |
| Cons't. 2 Lane Bridge (m) |  | -   |  | 42                |  | 223                |  | 265  |  |
| Disaster Prevention (m)   |  | 500   |  | -                 |  | -                  |  | 500  |  |
| Cost: (P million)         |  |   |  |                   |  |                    |  |  |  |
| Right-of-Way              |  | 0.0   |  | 1.7               |  | 2.0                |  | 3.7  |  |
| Construction              |  | 18.9  |  | 981.2             |  | 1,110.1            |  | 2,110.2                                    |  |
| Engineering               |  | 2.3   |  | 117.7             |  | 133.2              |  | 253.2                                      |  |
| Total                     |  | 21.2  |  | 1,100.6           |  | 1,245.3            |  | 2,367.1                                    |  |
| Implementation Schedule   |  | from 1996 to 1996   |  | from 1996 to 1998 |  | from 1997 to 1999  |  | from 1996 to 1999                          |  |
| Economic Return           |  | IRR = 17.1%   |  | B/C = 1.16        |  | NPV = P140.5 M     |  |  |  |
| Remarks:                  |  |   |  |                   |  |                    |  |  |  |



# PROJECT PROFILE

Project Number: 44

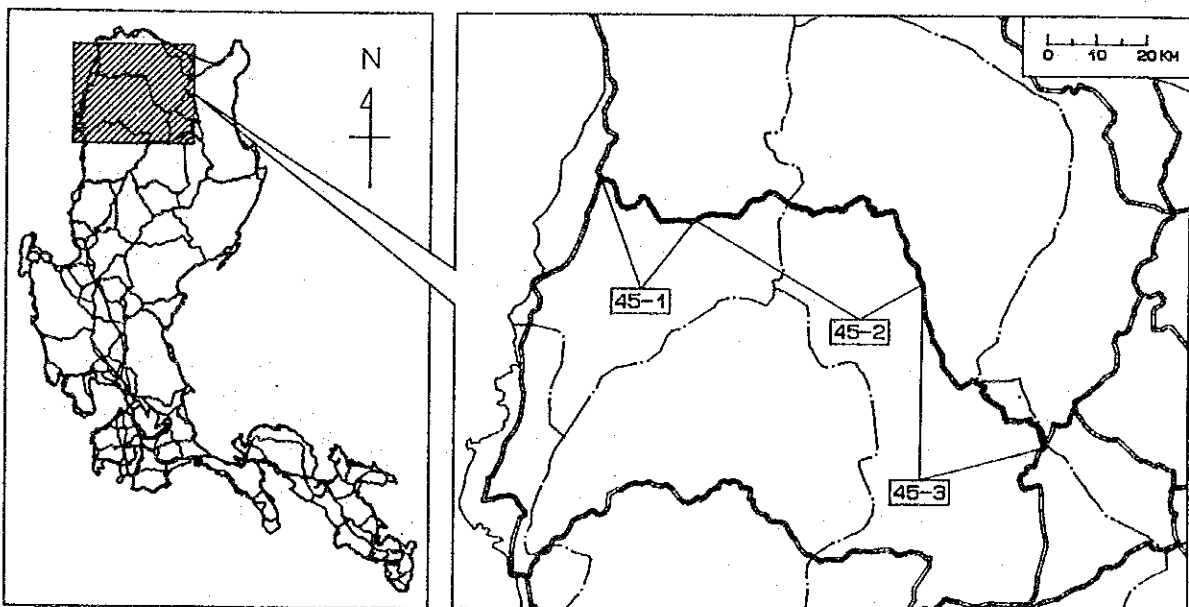
|                              |   |     |            |     |               |  |
|------------------------------|---|-----|------------|-----|---------------|--|
| Name                         | Tuao - Tabuk Road   |     |            |     |               | Province: Kalinga-Apayao                   |
| Existing Road Condition      | The whole stretch is a 4.0 to 6.0 m wide gravel road in fair to bad condition.<br>There are 4 temporary bridges (L = 217 m) along the road.   |     |            |     |               | Population Coverage (1990):<br><br>132,113 |
| Objective                    | <ul style="list-style-type: none"> <li>Strengthen south-north link (Kalinga Apayao) and interlink of east-west road (no. 42, 45 and 47)</li> <li>Strengthen economic linkage among upland areas in Kalinga Apayao</li> <li>Promote provincial development, especially upland agriculture</li> </ul> |     |            |     |               |  |
| Location                     | from: Abbut   |     |            |     |               | to: Tabuk                                  |
| Length (km)                  |   |     |            |     |               | 40.8                                       |
| Traffic Volume               |   | Car | Jeepney    | Bus | Truck         | Total                                      |
|                              | 1992  | 27  | 60         | 2   | 16            | 105  |
|                              | 2010  | 477 | 716        | 143 | 167           | 1,503                                      |
| Work Item:                   |   |     |            |     |               |  |
| Pavement (km)                |   |     |            |     |               | 5.2  |
| Widen to 2 Lanes Road (km)   |   |     |            |     |               | 35.6                                       |
| Const'. of 2 Lane Bridge (m) |   |     |            |     |               | 267  |
| Cost: (P million)            |   |     |            |     |               |  |
| Right-of-Way                 |   |     |            |     |               | 1.1  |
| Construction                 |   |     |            |     |               | 480.4                                      |
| Engineering                  |   |     |            |     |               | 57.7                                       |
| Total                        |   |     |            |     |               | 539.2                                      |
| Implementation Schedule      | from  |     |            |     |               | 1999                                       |
|                              | to  |     |            |     |               | 2001                                       |
| Economic Return              | IRR = 18.8 %  |     | B/C = 1.31 |     | NPV = P43.4 M |  |
| Remarks:                     |   |     |            |     |               |  |



# PROJECT PROFILE

Project Number: 45

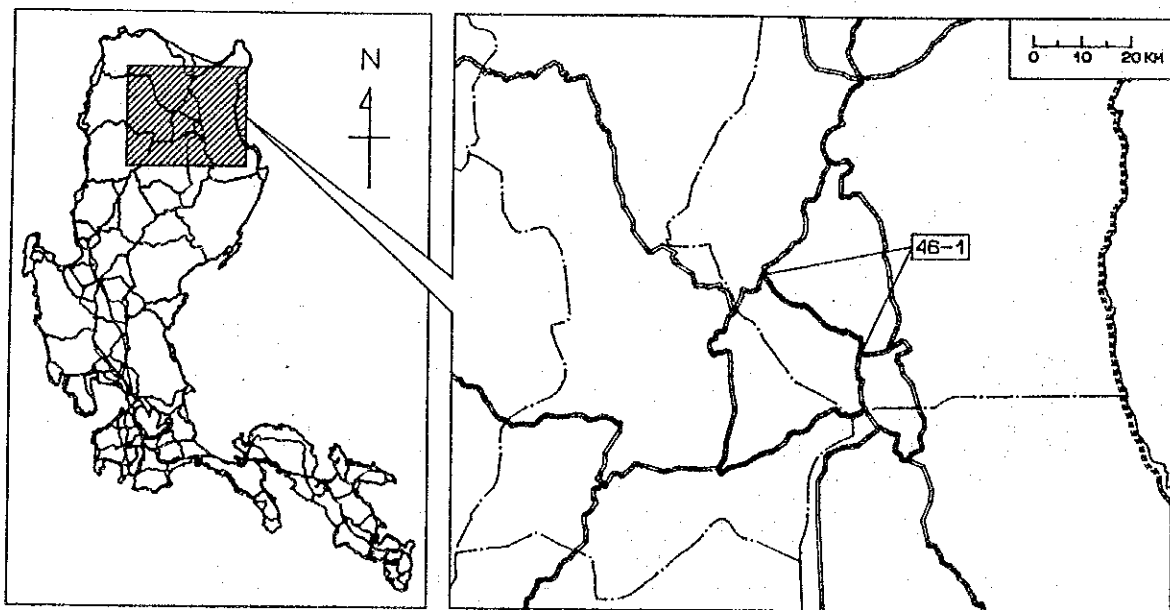
|                              |  |   |       |                    |       |                  |      |  |      |
|------------------------------|--|---|-------|--------------------|-------|------------------|------|--|------|
| Name                         |  | San Nicolas – Abbut Road  |       |                    |       |                  |      | Province:<br>Ilocos Norte                  |      |
| Existing Road Condition      |  | Segment 1: Concrete paved in good condition. Minor cut slope failure<br>Segment 2: 47 km no-road, 18 km earth-very bad, 4.8 km gravel – bad, 1.1 km PCC – Good<br>Segment 3: 23 km no-road, 28.1 km earth-very bad, 51.9 km gravel fair to bad                                  |       |                    |       |                  |      | Population Coverage (1990):<br><br>368,379 |      |
| Objective                    |  | <ul style="list-style-type: none"> <li>Strengthen east-west link (Region I – CAR)</li> <li>Strengthen economic linkage between Region I and CAR mountainous area</li> <li>Promote regional/provincial development (highland and upland agriculture, tourism, mining)</li> </ul> |       |                    |       |                  |      |  |      |
| Segment                      |  | 45-1  |       | 45-2               |       | 45-3             |      | Total                                      |      |
| Location                     |  | San Nicolas<br>Solsona  |       | Solsona<br>Kabugao |       | Kabugao<br>Abbut |      |  |      |
| Length (km)                  |  | 27.2  |       | 70.9               |       | 103.0            |      | 201.1                                      |      |
| Traffic Volume               |  | Year  |       | 1992               | 2010  | 1992             | 2010 | 1992                                       | 2010 |
|                              |  | Car   |       | 257                | 1,029 | –                | 663  | –  | 368  |
|                              |  | Jeepney   |       | 308                | 731   | –                | 297  | –  | 224  |
|                              |  | Bus   |       | 34                 | 141   | –                | 90   | –  | 59   |
|                              |  | Truck   |       | 73                 | 267   | –                | 170  | –  | 74   |
| Total                        |  | 677   | 2,168 | –                  | 1,220 | –                | 725  |  |      |
| Work Item:                   |  |   |       |                    |       |                  |      |  |      |
| Pavement (km)                |  | –   |       | 3.6                |       | 51.9             |      | 55.5                                       |      |
| Widen to 2 Lanes Road (km)   |  | –   |       | 19.2               |       | 28.1             |      | 47.3                                       |      |
| Const. of 2 Lanes Road (km)  |  | –   |       | 47.0               |       | 23.0             |      | 70   |      |
| Const. of 2 Lanes Bridge (m) |  | –   |       | 155                |       | 109              |      | 264  |      |
| Disaster Prevention (m)      |  | 100   |       | –                  |       | –                |      | 100  |      |
| Cost: (P million)            |  |   |       |                    |       |                  |      |  |      |
| Right-of-Way                 |  | 0.0   |       | 7.6                |       | 4.3              |      | 11.9                                       |      |
| Construction                 |  | 2.9   |       | 1,299.3            |       | 1,282.1          |      | 2,584.3                                    |      |
| Engineering                  |  | 0.3   |       | 155.9              |       | 153.9            |      | 310.1                                      |      |
| Total                        |  | 3.2   |       | 1,462.8            |       | 1,440.3          |      | 2,906.3                                    |      |
| Implementation Schedule      |  | from<br>1998<br>to<br>1998  |       | 1998<br>2000       |       | 1999<br>2001     |      | 1998<br>2001                               |      |
| Economic Return              |  | IRR = 25.6%   |       | B/C = 1.74         |       |                  |      | NPV = P497.5 M                             |      |
| Remarks:                     |  |   |       |                    |       |                  |      |  |      |



# PROJECT PROFILE

Project Number: 46

|                              |  |     |            |     |              |  |
|------------------------------|--|-----|------------|-----|--------------|--|
| Name                         | Salana - Piat Road   |     |            |     |              | Province:<br>Cagayan                       |
| Existing Road Condition      | 26.9 km is PCC and in good condition.<br>1.8 km is AC in fair condition.<br>There is one 273 m spillway.   |     |            |     |              | Population Coverage (1990):<br><br>238,438 |
| Objective                    | <ul style="list-style-type: none"> <li>Strengthen east-west link in Cagayan</li> <li>Strengthen economic linkage between upland and lowland in the western part of Cagayan province</li> <li>Promote provincial development</li> </ul> |     |            |     |              |  |
| Location                     | from: Solana   |     |            |     |              | to: Piat                                   |
| Length (km)                  |  |     |            |     |              | 28.7                                       |
| Traffic Volume               |  | Car | Jeepney    | Bus | Truck        | Total                                      |
|                              | 1992   | 147 | 662        | 53  | 165          | 1,027                                      |
|                              | 2010   | 399 | 1,262      | 87  | 218          | 1,966                                      |
| Work Item:                   |  |     |            |     |              |  |
| Cons't. of 2 Lane Bridge (m) |  |     |            |     |              | 273  |
| Cost: (P million)            |  |     |            |     |              |  |
| Right-of-Way                 |  |     |            |     |              | 0.0  |
| Construction                 |  |     |            |     |              | 98.7                                       |
| Engineering                  |  |     |            |     |              | 11.8                                       |
| Total                        |  |     |            |     |              | 110.5                                      |
| Implementation Schedule      | from   |     |            |     |              | 2000                                       |
|                              | to   |     |            |     |              | 2000                                       |
| Economic Return              | IRR = 17.2%  |     | B/C = 1.15 |     | NPV = P4.3 M |  |
| Remarks:                     |  |     |            |     |              |  |

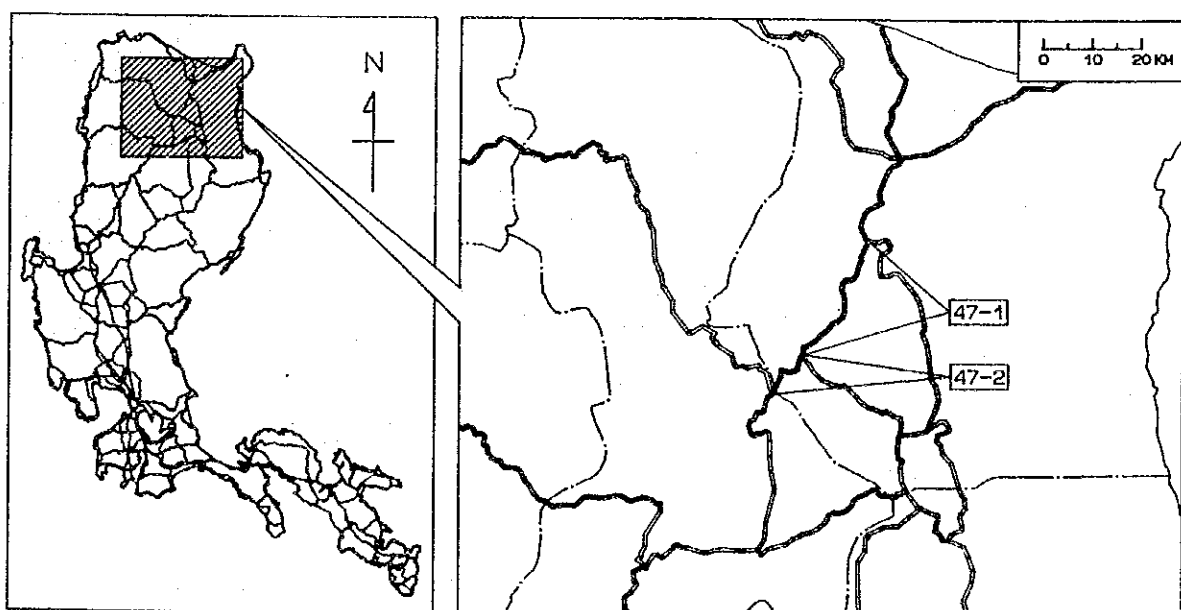




# PROJECT PROFILE

Project Number: 47

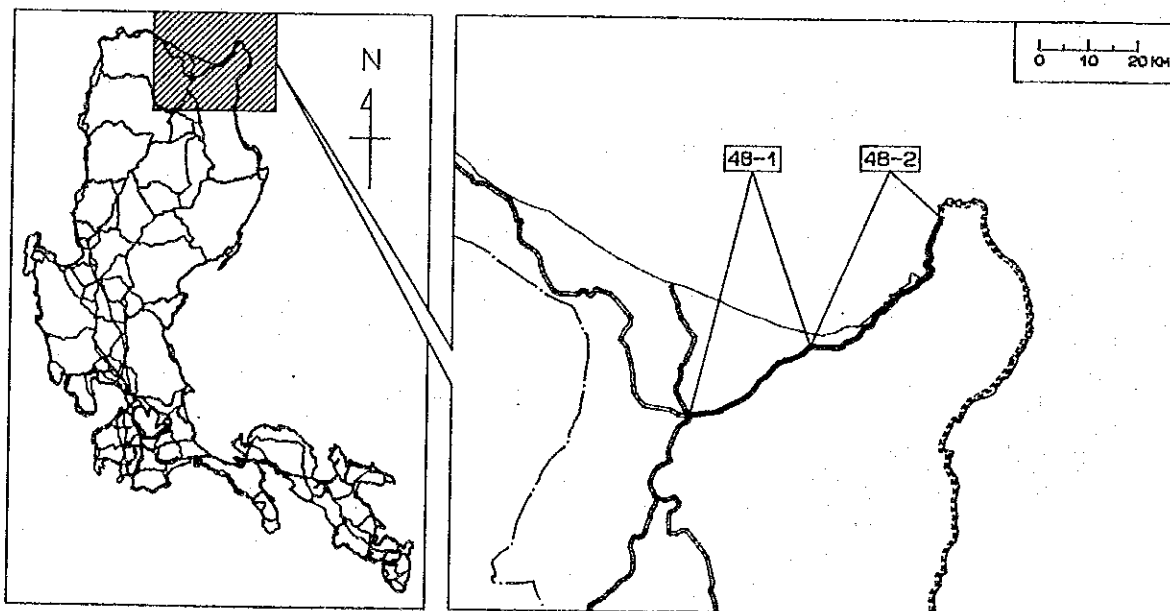
|                              |         |   |       |            |       |  |
|------------------------------|---------|---|-------|------------|-------|--|
| Name                         |         | Nassipig-Abbut Road   |       |            |       | Province: Cagayan<br>Kalinga Apayao    |
| Existing Road Condition      |         | Segment 1: No bridge at Cagayan river, 4.9 km is AC-fair to bad, 23.7 km is gravel fair to bad. 1.6 km is PCC-good. There are 700 m slope failure sections.<br>Segment 2: 8.3 km paved-good, 5.5 km-gravel fair, two temporary bridges.                         |       |            |       | Population Coverage (1990):<br>109,466 |
| Objective                    |         | <ul style="list-style-type: none"> <li>Strengthen east-west link (CAR-Region II)</li> <li>Strengthen economic linkage between Cagayan province and CAR mountainous area</li> <li>Promote inter-provincial development between Kalinga Apayao-Cagayan</li> </ul> |       |            |       |  |
| Segment                      |         | 47-1  |       | 47-2       |       | Total                                  |
| Location                     | from to | Nassipig Plat   |       | Plat Abbut |       |  |
| Length                       | (km)    | 30.2  |       | 13.8       |       | 44.0                                   |
| Traffic Volume               | Year    | 1992  | 2010  | 1992       | 2010  |  |
|                              | Car     | -   | 314   | 99         | 679   |  |
|                              | Jeepney | -   | 617   | 442        | 1,458 |  |
|                              | Bus     | -   | 135   | 33         | 202   |  |
|                              | Truck   | -   | 71    | 106        | 255   |  |
|                              | Total   | -   | 1,137 | 660        | 2,594 |  |
| Work Item:                   |         |   |       |            |       |  |
| Rehabilitation (km)          |         | 0.4   |       | -          |       | 0.4                                    |
| Pavement (km)                |         | 17.8  |       | 5.5        |       | 23.3                                   |
| Widen to 2 Lane Road (km)    |         | 5.9   |       | -          |       | 5.9                                    |
| Cons't. of 2 lane bridge (m) |         | 999   |       | 54         |       | 1,053                                  |
| Disaster Prevention (m)      |         | 700   |       | -          |       | 700                                    |
| Cost: (P million)            |         |   |       |            |       |  |
| Right-of-Way                 |         | 0.2   |       | 0.0        |       | 0.2                                    |
| Construction                 |         | 517.6   |       | 45.2       |       | 562.8                                  |
| Engineering                  |         | 62.1  |       | 5.4        |       | 67.5                                   |
| Total                        |         | 579.9   |       | 50.6       |       | 630.5                                  |
| Implementation Schedule      | from to | 1999 2001   |       | 1999 1999  |       | 1999 2001                              |
| Economic Return              |         | IRR = 26.2%   |       | B/C = 1.96 |       | NPV = P160.8 M                         |
| Remarks:                     |         |   |       |            |       |  |



# PROJECT PROFILE

Project Number: 48

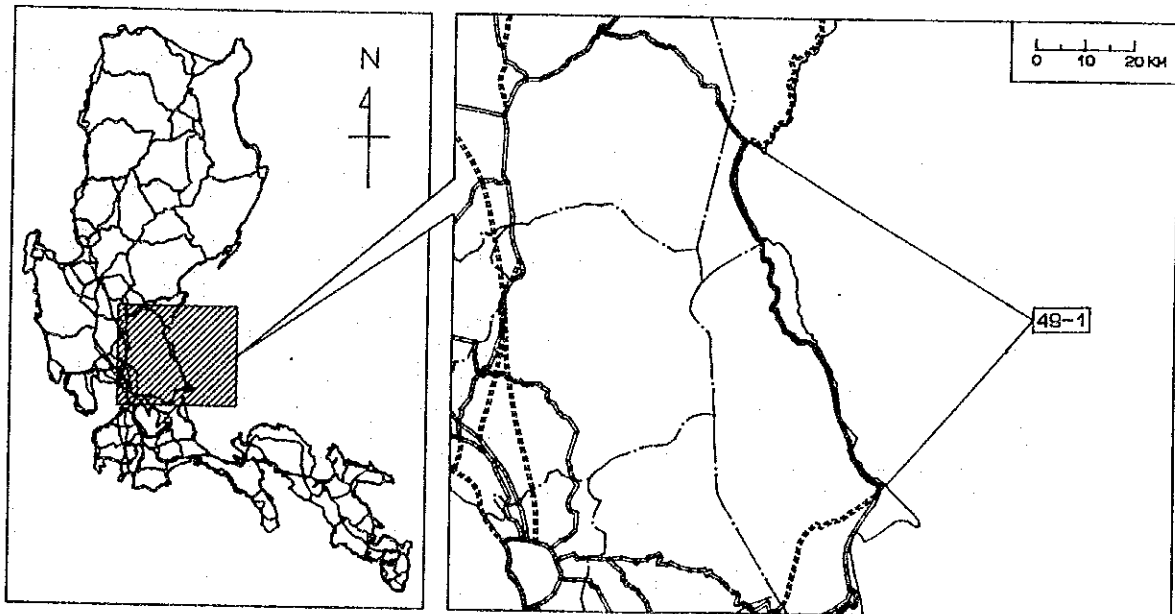
|                             |  |  |  |                           |  |  |
|-----------------------------|--|--|--|---------------------------|--|--|
| Name                        |  | Magapit – Sta. Ana Road  |  |                           |  | Province:<br>Cagayan                       |
| Existing Road Condition     |  | Segment 1: Gravel/earth – fair to bad condition over entire stretch<br>Segment 2: 15.2 km concrete in good condition, 31 km gravel – fair<br>There are 17 temporary bridges (total 369 m)  |  |                           |  | Population Coverage (1990):<br><br>151,534 |
| Objective                   |  | <ul style="list-style-type: none"> <li>• Strengthen east–west coastal link in Cagayan</li> <li>• Strengthen economic linkage between Cagayan valley and northern coastal area in Region II and promote export at port Irene</li> <li>• Promote regional/provincial development (lowland agriculture, fishery)</li> </ul> |  |                           |  |  |
| Segment                     |  | 48–1   |  | 48–2                      |  | Total                                      |
| Location                    |  | Magapit<br>Sta. Teresita   |  | Sta. Teresita<br>Sta. Ana |  |  |
| Length (km)                 |  | 34.3   |  | 46.2                      |  | 80.5                                       |
| Traffic Volume              |  | Year   |  | 1992                      |  | 2010                                       |
|                             |  | Car  |  | 192                       |  | 375  |
|                             |  | Jeepney  |  | 213                       |  | 307  |
|                             |  | Bus  |  | 132                       |  | 230  |
|                             |  | Truck  |  | 200                       |  | 283  |
|                             |  | Total  |  | 737                       |  | 1,195                                      |
| Work Item:                  |  |  |  |                           |  |  |
| Pavement (km)               |  | 23.3   |  | 31.0                      |  | 54.3                                       |
| Widen to 2 Lane Road (km)   |  | 11.0   |  | –                         |  | 11.0                                       |
| Const. of 2 Lane Bridge (m) |  | –  |  | 369                       |  | 369  |
| Cost: (P million)           |  |  |  |                           |  |  |
| Right-of-Way                |  | 0.0  |  | 0.0                       |  | 0.0  |
| Construction                |  | 277.3  |  | 272.0                     |  | 549.3                                      |
| Engineering                 |  | 33.3   |  | 32.6                      |  | 65.9                                       |
| Total                       |  | 310.6  |  | 304.6                     |  | 615.2                                      |
| Implementation Schedule     |  | from<br>1999<br>to<br>2000   |  | 1999<br>2000              |  | 1999<br>2000                               |
| Economic Return             |  | IRR = 21.0 %   |  | B/C = 1.43                |  | NPV = P73.2 M                              |
| Remarks:                    |  |  |  |                           |  |  |



# PROJECT PROFILE

Project Number: 49

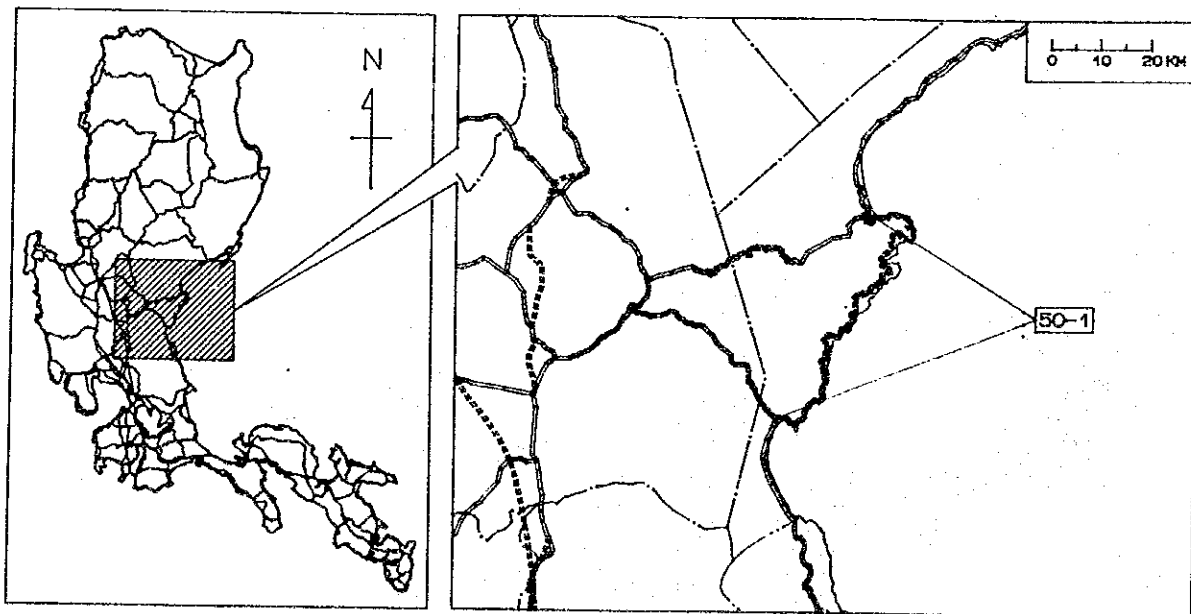
|                              |  |   |         |              |       |   |
|------------------------------|--|---|---------|--------------|-------|---|
| Name                         |  | Infanta--Dingalan Road  |         |              |       | Province: Quezon,<br>Aurora               |
| Existing Road Condition      |  | There is 6.2 km existing road in Infanta proper.<br>Remaining section is impassable or non-existing.<br>Proposed alignment passes mountainous area along coastal line.                            |         |              |       | Population Coverage (1990):<br><br>90,106 |
| Objective                    |  | <ul style="list-style-type: none"> <li>• Strengthen south-north Pacific coastal link</li> <li>• Establish national integration</li> <li>• Promote inter-provincial coastal development</li> </ul> |         |              |       |   |
| Location                     |  | from: Infanta   |         | to: Dingalan |       |   |
| Length (km)                  |  | 101.5   |         |              |       |   |
| Traffic Volume               |  | Car   | Jeepney | Bus          | Truck | Total                                     |
| 1992                         |  | 0   | 0       | 0            | 0     | 0   |
| 2010                         |  | 32  | 1       | 18           | 13    | 64  |
| Work Item:                   |  |   |         |              |       |   |
| Pavement (km)                |  | 4.1   |         |              |       |   |
| Widen to 2 Lane Road (km)    |  | 6.5   |         |              |       |   |
| Cons't. of 2 Lane Road (km)  |  | 89.9  |         |              |       |   |
| Cons't. of 2 Lane Bridge (m) |  | 1,390   |         |              |       |   |
| Cost: (P million)            |  |   |         |              |       |   |
| Right-of-Way                 |  | 14.3  |         |              |       |   |
| Construction                 |  | 2,043.2   |         |              |       |   |
| Engineering                  |  | 245.2   |         |              |       |   |
| Total                        |  | 2,302.7   |         |              |       |   |
| Implementation Schedule      |  | from  | 2005    |              |       | to  |
|                              |  |   | 2007    |              |       |   |
| Economic Return              |  | IRR = 19.0 %  |         | B/C = 1.29   |       | NPV = P71.4 M                             |
| Remarks:                     |  |   |         |              |       |   |



# PROJECT PROFILE

Project Number: 50

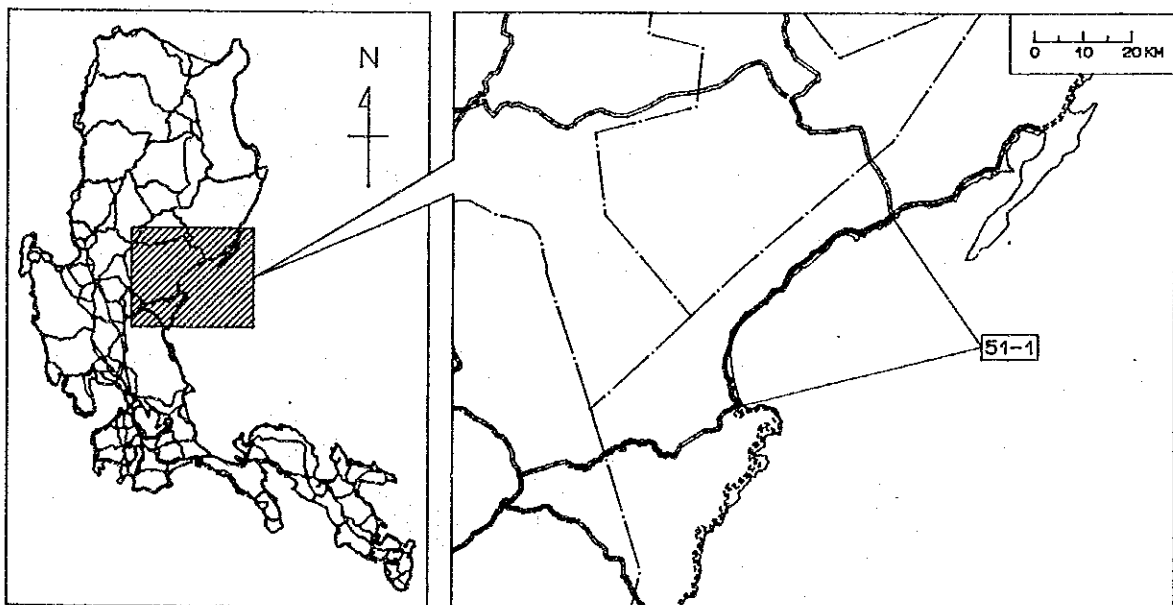
|                             |   |      |            |     |               |  |
|-----------------------------|---|------|------------|-----|---------------|--|
| Name                        | Dingalan -- Baler Road  |      |            |     |               | Province:<br>Aurora                        |
| Existing Road Condition     | No existing road at all.<br>Terrain condition along proposed alignment is mountainous.  |      |            |     |               | Population Coverage (1990):<br><br>106,026 |
| Objective                   | <ul style="list-style-type: none"> <li>• Strengthen south-north pacific coastal link</li> <li>• Establish national integration</li> <li>• Promote Aurora coastal development</li> </ul> |      |            |     |               |  |
| Location                    | from: Dingalan  |      |            |     |               | to: Baler                                  |
| Length (km)                 | 118.7   |      |            |     |               |  |
| Traffic Volume              |   | Car  | Jeepney    | Bus | Truck         | Total                                      |
|                             | 1992  | 0    | 0          | 0   | 0             | 0  |
|                             | 2010  | 8    | 0          | 5   | 4             | 17   |
| Work Item:                  |   |      |            |     |               |  |
| Const. of 2 Lane Road (km)  | 118.7   |      |            |     |               |  |
| Const. of 2 Lane Bridge (m) | 655   |      |            |     |               |  |
| Cost: (P million)           |   |      |            |     |               |  |
| Right-of-Way                | 17.8  |      |            |     |               |  |
| Construction                | 2,559.1   |      |            |     |               |  |
| Engineering                 | 307.1   |      |            |     |               |  |
| Total                       | 2,884.0   |      |            |     |               |  |
| Implementation Schedule     | from  | 2005 |            |     |               |  |
|                             | to  | 2007 |            |     |               |  |
| Economic Return             | IRR = 16.1%   |      | B/C = 1.11 |     | NPV = P84.0 M |  |
| Remarks:                    |   |      |            |     |               |  |



# PROJECT PROFILE

Project Number: 51

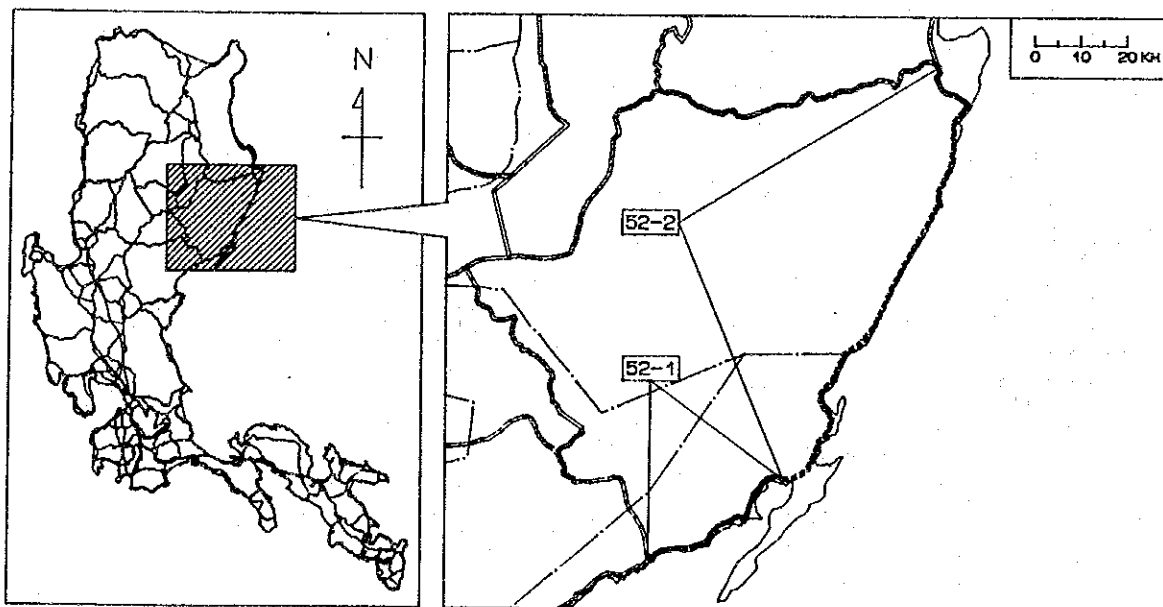
|                             |  |      |                |     |   |       |
|-----------------------------|--|------|----------------|-----|---|-------|
| Name                        | Baler – Dinalongan Road  |      |                |     | Province:<br>Aurora                       |       |
| Existing Road Condition     | 3.2 km is paved by PCC and AC in good condition.<br>Remaining 61.4 km is gravel in bad condition.<br>There is one 12 m long timber bridge.   |      |                |     | Population Coverage (1990):<br><br>88,758 |       |
| Objective                   | <ul style="list-style-type: none"> <li>• Strengthen south–north pacific coastal link in Aurora</li> <li>• Establish national integration</li> <li>• Promote Aurora coastal development in agriculture, fishery, tourism</li> </ul> |      |                |     |   |       |
| Location                    | from: Baler  |      | to: Dinalongan |     |   |       |
| Length (km)                 | 64.6   |      |                |     |   |       |
| Traffic Volume              |  | Car  | Jeepney        | Bus | Truck                                     | Total |
|                             | 1992   | 111  | 70             | 18  | 128                                       | 327   |
|                             | 2010   | 312  | 159            | 92  | 308                                       | 871   |
| Work Item:                  |  |      |                |     |   |       |
| Pavement (km)               | 9.0  |      |                |     |   |       |
| Widen to 2 Lane Road (km)   | 52.4   |      |                |     |   |       |
| Const. of 2 Lane Bridge (m) | 12   |      |                |     |   |       |
| Cost: (P million)           |  |      |                |     |   |       |
| Right-of-Way                | 6.3  |      |                |     |   |       |
| Construction                | 368.7  |      |                |     |   |       |
| Engineering                 | 44.2   |      |                |     |   |       |
| Total                       | 419.2  |      |                |     |   |       |
| Implementation Schedule     | from   | 1999 |                |     |   |       |
|                             | to   | 2000 |                |     |   |       |
| Economic Return             | IRR = 28.0%  |      | B/C = 1.99     |     | NPV = P116.8 M                            |       |
| Remarks:                    |  |      |                |     |   |       |



# PROJECT PROFILE

Project Number: 52

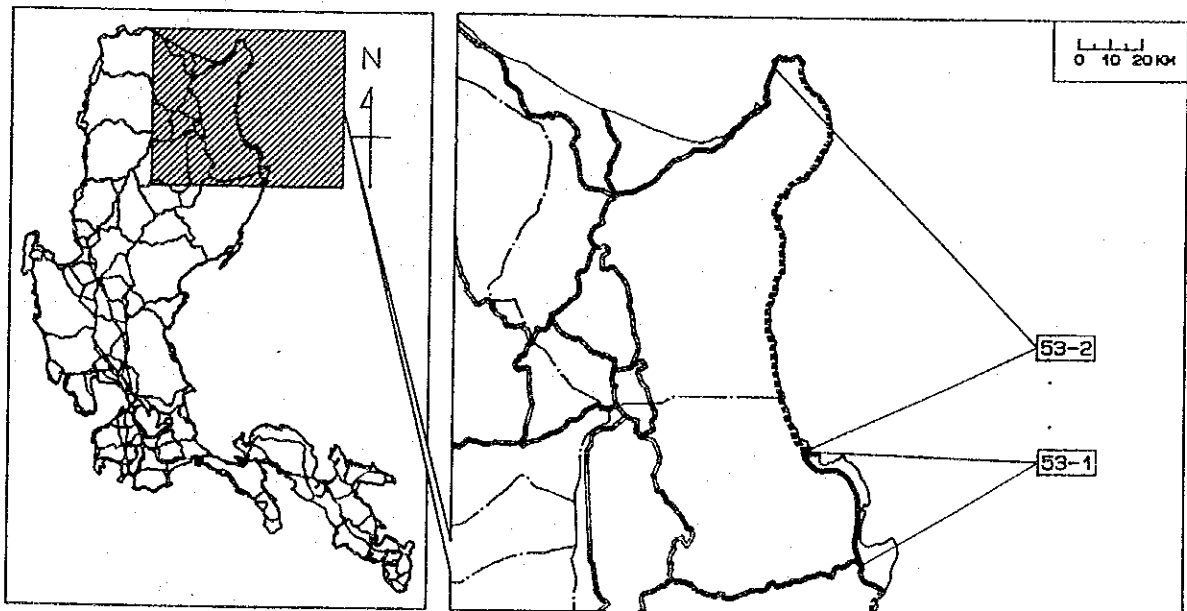
|                              |  |   |      |                      |      |   |  |
|------------------------------|--|---|------|----------------------|------|---|--|
| Name                         |  | Dinalongan -- Palanan Road  |      |                      |      | Province:<br>Aurora, Isabela              |  |
| Existing Road Condition      |  | Segment 1: Entire section is 5.0 m gravel road. There are 6 temporary bridges<br>Segment 2: No existing road over 108 km, proposed alignment passes mountainous coastal line in Aurora and Isabela  |      |                      |      | Population Coverage (1990):<br><br>49,889 |  |
| Objective                    |  | <ul style="list-style-type: none"> <li>• Strengthen south-north pacific coastal link in Aurora and Isabela</li> <li>• Establish national integration</li> <li>• Promote inter-provincial coastal development in agriculture, fishery and tourism</li> </ul> |      |                      |      |   |  |
| Segment                      |  | 52-1  |      | 52-2                 |      | Total                                     |  |
| Location                     |  | Dinalongan<br>Casiguran   |      | Casiguran<br>Palanan |      |   |  |
| Length (km)                  |  | 56.3  |      | 115.5                |      | 171.8                                     |  |
| Traffic Volume               |  | Year  | 1992 | 2010                 | 1992 | 2010                                      |  |
|                              |  | Car   | 111  | 311                  | -    | 76  |  |
|                              |  | Jeepney   | 70   | 159                  | -    | 25  |  |
|                              |  | Bus   | 18   | 94                   | -    | 39  |  |
|                              |  | Truck   | 128  | 308                  | -    | 35  |  |
|                              |  | Total   | 327  | 872                  | -    | 175                                       |  |
| Work Item:                   |  |   |      |                      |      |   |  |
| Pavement (km)                |  | -   |      | 7.5                  |      | 7.5                                       |  |
| Widen to 2 Lane Road (km)    |  | 56.3  |      | -                    |      | 56.3                                      |  |
| Cons't. of 2 Lane Road (km)  |  | -   |      | 108.0                |      | 108.0                                     |  |
| Cons't. of 2 Lane Bridge (m) |  | 60  |      | 1,615                |      | 1,675                                     |  |
| Cost: (P million)            |  |   |      |                      |      |   |  |
| Right-of-Way                 |  | 6.8   |      | 16.2                 |      | 23.0                                      |  |
| Construction                 |  | 362.7   |      | 2,098.7              |      | 2,461.4                                   |  |
| Engineering                  |  | 43.5  |      | 251.8                |      | 295.3                                     |  |
| Total                        |  | 413.0   |      | 2,366.7              |      | 2,779.7                                   |  |
| Implementation Schedule      |  | from<br>to  |      | 2007<br>2008         |      | 2007<br>2010                              |  |
| Economic Return              |  | IRR = 15.1%   |      | B/C = 1.01           |      | NPV = P2.3 M                              |  |
| Remarks:                     |  |   |      |                      |      |   |  |



**PROJECT PROFILE**

Project Number: 53

|   |         |   |      |                       |      |   |
|---|---------|---|------|-----------------------|------|---|
| Name  |         | Palanan - Sta. Ana Road   |      |                       |      | Province: Isabela, Cagayan                |
| Existing Road Condition                                       |         | Segment 1: Existing road is earth in impassable condition.<br>There are 7 ford crossings (L = 165 m).<br>Segment 2: No existing road, proposed alignment passes mountainous coastal line in Isabela and Cagayan   |      |                       |      | Population Coverage (1990):<br><br>38,783 |
| Objective   |         | <ul style="list-style-type: none"> <li>• Strengthen south-north pacific coastal link in Isabela and Cagayan</li> <li>• Establish national integration</li> <li>• Promote coastal development in Cagayan and Isabela in the field of agriculture, fishery and tourism</li> </ul> |      |                       |      |   |
| Segment   |         | 53-1  |      | 53-2                  |      | Total                                     |
| Location  | from to | Palanan<br>Maconacon  |      | Maconacon<br>Sta. Ana |      |   |
| Length  | (km)    | 50.0  |      | 156.5                 |      | 206.5                                     |
| Traffic Volume  | Year    | 1992  | 2010 | 1992                  | 2010 |   |
|   | Car     | -   | 103  | -                     | 103  |   |
|   | Jeepney | -   | 51   | -                     | 51   |   |
|   | Bus     | -   | 37   | -                     | 37   |   |
|   | Truck   | -   | 17   | -                     | 17   |   |
|   | Total   | -   | 208  | -                     | 208  |   |
| Work Item:  |         |   |      |                       |      |   |
| Pavement (km)   |         | 10.0  |      | -                     |      | 10.0                                      |
| Cons't. of 2 Lane Road (km)                                   |         | 40.0  |      | 156.5                 |      | 196.5                                     |
| Cons't. of 2 Lane Bridge (m)                                  |         | 165   |      | 1,604                 |      | 1,769                                     |
| Cost: (P million)   |         |   |      |                       |      |   |
| Right-of-Way  |         | 6.0   |      | 23.5                  |      | 29.5                                      |
| Construction  |         | 811.7   |      | 3,436.8               |      | 4,248.5                                   |
| Engineering   |         | 97.4  |      | 412.4                 |      | 509.8                                     |
| Total   |         | 915.1   |      | 3,872.7               |      | 4,787.8                                   |
| Implementation Schedule                                       | from to | 2008<br>2010  |      | Later than 2010<br>-  |      | 2008<br>2010                              |
| Economic Return   |         | IRR = 15.9%   |      | B/C = 1.06            |      | NPV = P3.6 M                              |
| Remarks: Result of Economic Evaluation is only for Segment-1. |         |   |      |                       |      |   |



**PROJECT PROFILE**

Project Number: 54

|                             |  |  |  |                    |  |  |  |
|-----------------------------|--|--|--|--------------------|--|--|--|
| Name                        |  | South Luzon Expressway   |  |                    |  | Province: Manila, Laguna                   |  |
| Existing Road Condition     |  | The existing 4-lane expressway is paved by concrete in good condition. It is anticipated that the expressway cannot accommodate growing traffic if the expressway extension will be completed.                     |  |                    |  | Population Coverage (1990):<br><br>844,830 |  |
| Objective                   |  | <ul style="list-style-type: none"> <li>• Strengthen south-north link between NCR and CALABAR region</li> <li>• Alleviate traffic congestion</li> <li>• Promote industrial development in CALABAR region</li> </ul> |  |                    |  |  |  |
| Segment                     |  | 54-1   |  | 54-2               |  | Total                                      |  |
| Location                    |  | Alabang<br>Carmona   |  | Carmona<br>Calamba |  |  |  |
| Length (km)                 |  | 11.1   |  | 16.6               |  | 27.7                                       |  |
| Traffic Volume              |  | Year   |  | 1992               |  | 2010                                       |  |
|                             |  | Car  |  | 20,569             |  | 37,011                                     |  |
|                             |  | Jeepney  |  | 4,150              |  | 7,858                                      |  |
|                             |  | Bus  |  | 2,545              |  | 4,618                                      |  |
|                             |  | Truck  |  | 3,074              |  | 5,752                                      |  |
| Total                       |  | 30,338   |  | 55,239             |  | 25,981                                     |  |
| Work Item:                  |  | 11.1   |  | 16.6               |  | 27.7                                       |  |
| Widen to 6-Lane Expway (km) |  |  |  |                    |  |  |  |
| Cost: (P million)           |  | 0.0  |  | 0.0                |  | 0.0  |  |
| Right-of-Way                |  | 134.2  |  | 377.7              |  | 511.9                                      |  |
| Construction                |  | 16.1   |  | 45.3               |  | 61.4                                       |  |
| Engineering                 |  | 150.3  |  | 423.0              |  | 573.3                                      |  |
| Total                       |  |  |  |                    |  |  |  |
| Implementation              |  | 1997   |  | 1998               |  | 1997                                       |  |
| Schedule                    |  | 1998   |  | 1999               |  | 1999                                       |  |
| Economic Return             |  | IRR = 42.2 %   |  | B/C = 3.55         |  | NPV = P493.2 M                             |  |
| Remarks:                    |  |  |  |                    |  |  |  |

