NO.

JAPAN INTERNATIONAL COOPERATION AGENCY(JICA)

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REPUBLIC OF THE PHILIPPINES

THE STUDY ON ROAD NETWORK IMPROVEMENT FOR DEVELOPMENT OF REGIONAL GROWTH CENTERS IN THE REPUBLIC OF THE PHILIPPINES

FINAL REPORT

EXECUTIVE SUMMARY

October 2004

KATAHIRA & ENGINEERS INTERNATIONAL
ALMEC CORPORATION

SD
JR
04-33

EXCHANGE RATE

METRO ILOILO AND METRO BACOLOD

January 2004

1 US$ = 55.36 Pesos
1 US$ = 106.85 Yen
1 Pesos = 1.930 Yen

METRO CAGAYAN DE ORO

July 2004

1 US$ = 56.04 Pesos
1 US$ = 109.64 Yen
1 Pesos = 1.956 Yen

SOURCE: Central Bank of the Philippines

JICA SECRETARIAT, ADVISORY COMMITTEE AND STUDY TEAM

JICA Secretariat

1) Mr. Takeshi NARUSE	:	Director, First Development Study Division
2) Mr. Toshiyuki KUROYANAGI	:	Director, First Development Study Division
3) Mr. Akira NAKAMURA	:	Director, First Development Study Division / Group Director, Group III (Transportation)
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5) Mr. Hideaki MARUYAMA	:	Deputy Director, First Development Study Division
6) Mr. Takanori ZEMMOTO	:	First Development Study Division
7) Mr. Hideki YOKOYAMA	:	First Development Study Division / Group III, Urban and Regional Development Team

JICA Advisory Committee

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JICA Study Team

1) Mr. Mitsuo KIUCHI	:	Team Leader / Highway Planner
2) Mr. Iwane MIZUNO	:	Urban Planner
3) Mr. Toshinori TODA	:	Deputy Team Leader / Highway Planner
4) Mr. Toshisada KATSURADA	:	Traffic Engineer
5) Mr. Kenji ISOMOTO	:	Traffic Engineer
6) Mr. Ryuichi UENO	:	Traffic Engineer
7) Mr. Seiya MATSUOKA	:	Road/Facility Planner / Traffic Management Specialist
8) Mr. Mitsunori MIZUISHI	:	Highway Engineer
9) Mr. Yasushi AOKI	:	Engineering Survey Specialist
10) Dr. Jovito SANTOS	:	Structural Engineer
11) Mr. Toshio KIMURA	:	Transport Economist
12) Ms. Annabelle HERRERA	:	Environmental Specialist
13) Ms. Lynn VENETIA	:	Local Government System Specialist
14) Mr. Takao MITSUISHI	:	Social Survey Specialist
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INTER-AGENCY STEERING COMMITTEE, TECHNICAL WORKING GROUP AND COUNTERPART TEAM

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Mr. Joji Nakano, JICA Highway Advisor	:	Member
Representative from DOTC	:	Member
PPDO, Government of Iloilo Province	:	Member
PPDO, Government of Negros Occidental Province	:	Member
PPDO, Government of Misamis Oriental Province	:	Member
CPDO, Government of Iloilo City	:	Member
CPDO, Government of Bacolod City	:	Member
CPDO, Government of Cagayan de Oro City	:	Member

COUNTERPART TEAM

DPWH Counterpart Team

Ms. Victoria A. Corpuz	:	Coordinator/Urban and Transport Planner
Mr. Ephraim D. Capucao	:	Highway Planner
Mr. Generoso S. Alconis	:	Urban Roads Engineer
Mr. Antonio Yaptangco	:	Traffic Engineer
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Mr. Alvin Madrid	:	Environmental and Traffic Impact Specialist
Mr. Rene P. Teniozo	:	Social Impact Specialist

PREFACE

In response to a request from the Government of the Republic of the Philippines, the Government of Japan decided to conduct the Study on *Road Network Improvement for Development of Regional Growth Centers in the Republic of the Philippines* and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA dispatched a study team headed by Mr. Mitsuo Kiuchi of Katahira & Engineers International, and consisting of Katahira & Engineers International and Almec Corporation to the Republic of the Philippines, four times between March 2003 and September 2004.

The team held discussions with the officials concerned in the Government of the Republic of the Philippines, and conducted field surveys in the three regional growth centers, namely Metro Iloilo, Metro Bacolod and Metro Cagayan de Oro. Upon returning to Japan, the team prepared this report.

I hope that this report will contribute to the improvement of road network of regional growth centers in the Republic of the Philippines and to the enhancement of friendly relations between our two countries.

Finally, I wish to express my sincere appreciation to the officials of the Government and those concerned in the Republic of the Philippines for the close cooperation they extended to the study.

October 2004

KAZUHISA MATSUOKA
Vice President
Japan International Cooperation Agency

MR. KAZUHISA MATSUOKA
Vice President
Japan International Cooperation Agency
Tokyo, Japan

October 2004

Dear Mr. Matsuoka,

Letter of Transmittal

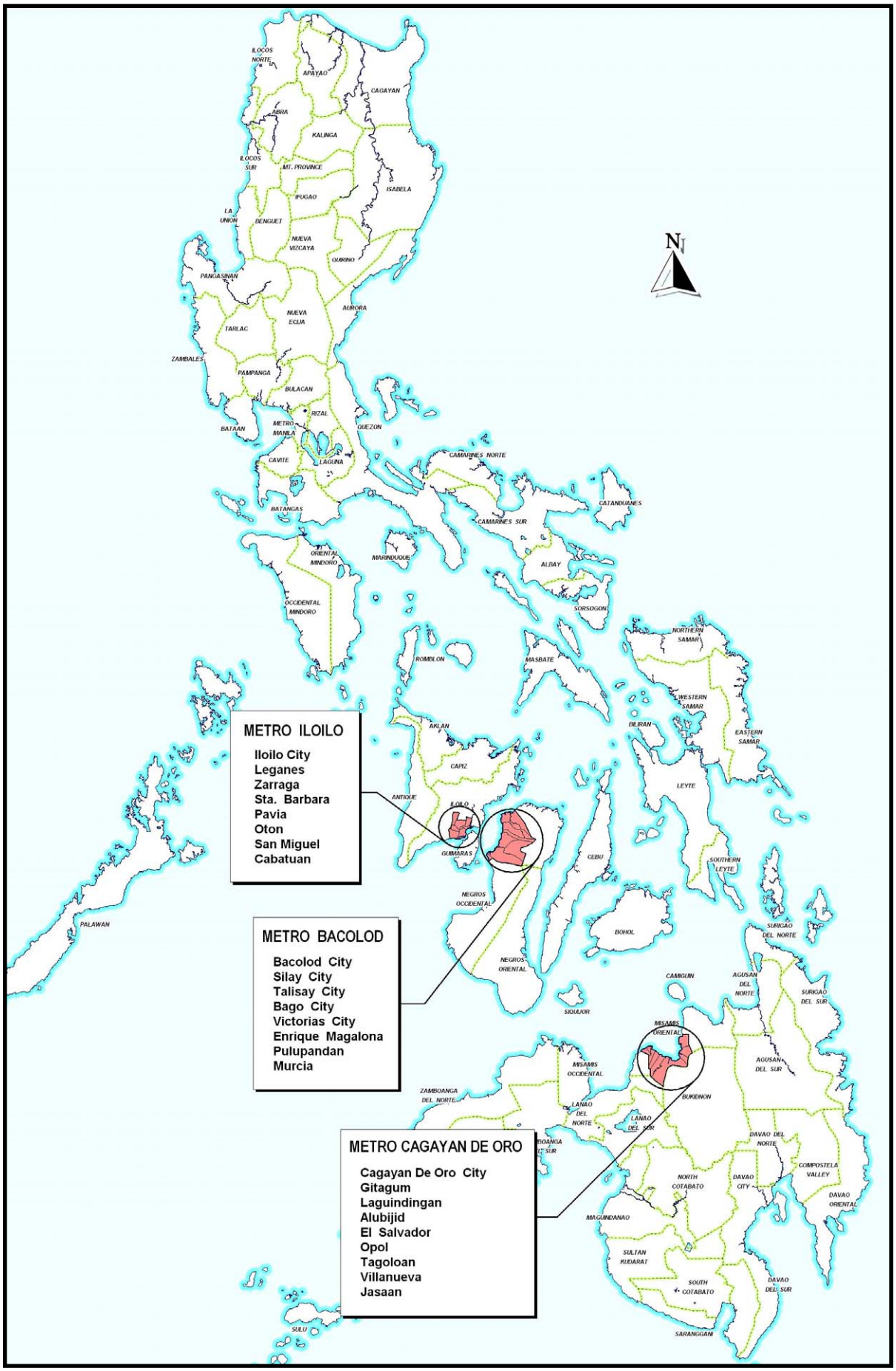
We are pleased to submit to you the report of *"The Study on Road Network Improvement for Development of Regional Growth Centers in the Republic of the Philippines"*. The report includes the advises and suggestions of the authorities concerned of the Government of Japan and your agency as well as the comments made by the Department of Public Works and Highways and other authorities concerned in the Republic of the Philippines.

The report studies and analyses the condition of road network development in three regional growth centers of Metro Iloilo, Metro Bacolod and Metro Cagayan de Oro, all of which suffer traffic congestion, aggravation of urban amenity and disorderly urban expansion. The report presents the road network development plan for the years 2005-2022, and the results of feasibility study of high priority road projects. The Study concludes that these projects are technically, economically, financially and environmentally viable and contribute to the socio-economic development of regional growth centers as well as to the balanced regional development of the country. In view of the urgency of these projects, we recommend the Government of the Philippines to implement the projects with top priority.

We wish to take this opportunity to express our sincere gratitude to your agency, the Ministry of Foreign Affairs and the Ministry of Land, Infrastructure and Transport. We also wish to express our deep gratitude to the Governmental Agencies concerned in the Republic of the Philippines for the close cooperation and assistance extended to us during the Study. We hope this report will contribute to the development of regional growth centers in the Republic of the Philippines.

Very truly yours,

MR. MITSUO KIUCHI
Team Leader
of the Study on Road Network Improvement
for Development of Regional Growth Centers
in the Republic of the Philippines



LOCATION MAP

SUMMARY

BACKGROUND

Metro Manila has been the mega center of economic and social activities in the Philippines, where people have to suffer from too much concentration of population, serious traffic congestion, aggravated urban amenity, etc. At the same time, disparities in economic outputs and people's income between Metro Manila and the rest of the regions have widened. To cope with such problems, the Government is pursuing a balanced regional development. Urban centers in various parts of the country are encouraged to grow so that they could become attractive investment sites and catalyze growth in the regions. In order to achieve this objective, infrastructure development in the regional growth centers is vitally needed.

OBJECTIVES OF THE STUDY

1) to formulate a Master Plan for the Urban Road Network Development including short, medium and long term implementation programs;
2) to carry out a feasibility study for high priority road projects;
3) to enhance the capability of the National Government as well as the Local Government Units; and
4) to pursue technology transfer in the course of the implementation of the Study.

STUDY AREA

1) Metro Iloilo: Iloilo City and 7 Municipalities
2) Metro Bacolod: Bacolod City and 4 Cities / 3 Municipalities
3) Metro Cagayan de Oro: Cagayan de Oro City and 8 Municipalities

ROAD NETWORK DEVELOPMENT PLAN

Metro Iloilo

- The present radial road network is converted to a radial and circumferential type of network.
- Circumferential roads to be formed:
  - C-1 : about 5km in radius
  - C-2 : about 10km in radius
  - C-3 : about 15km in radius
  - C-4 : about 20~25km in radius
- Existing inter-city roads form radial components of a network:
  - R-1 : Iloilo-Antique Road
  - R-2 : Iloilo-San Miguel Road
  - R-3 : Iloilo-Sta. Barbara-Kalibo Road
  - R-4 : Iloilo-Roxas Road
  - R-5 : Iloilo Coastal Road
- 3 Bypasses are constructed to decongest radial roads:
  - R-1 Bypass
  - R-4 Bypass
  - Cabatuan Bypass
- Top five priority projects are as follows:
  - o C-1 : Iloilo Circumferential Road No. 1
  - o R-3 : Iloilo-Sta. Barbara Road (accessing to New Airport)
  - o B-2 : R-4 Bypass
  - C-2 : Circumfefential Road No. 2
  - R-4 : Iloilo-Roxas Road

Note: o Selected for F/S

Metro Bacolod

- The present comb-type of road network is converted to a ladder type.
- In addition to the existing spine of Bacolod Coastal Road (NS-1), two spines (NS-2 and NS-3) in the north-south direction will be formed.
- Existing east-west direction roads will function as links to connect spines with each other. In Bacolod City, additional links will be constructed to provide access to the priority development areas.
- NS-2 will provide direct access to new Bacolod Airport and guide urbanization towards inland side.
- NS-3 will link existing sugar mills with sugar cane production areas, thus the sugar industry will be vitally supported and sugar cane trucks can be avoided to pass through urban areas.

Top five priority projects are as follows:

- o NS-2 : New Airport Access Road
- SI-1 : Silay-Guimbalacion Road
- BC-2 : Bacolod-Granada Road
- BC-3 : Bacolod Circumferential Road
- o NS-3 : Sugar Road (North Section)

Note: o Selected for F/S

Metro Cagayan de Oro

Due to physical constraints and wide spread urban areas in the narrow coastal plain, a systematic road network such as a radial and circumferential network cannot be formed, thus the road network configuration was planned focusing on how to remedy the weakness of the existing road network. Key issues were as follows:

- How to strengthen East-West transport axis
- How to improve accessibility to CBD

Measures proposed to cope with issues are:

- Strengthening of E-W transport axis
  - Widening of Iligan-CDO-Butuan Road
  - J.R. Borja Extension
  - Western Coastal Road
  - Opol Diversion Road
- Improvement of Accessibility to CBD
  - 5^{th} to 8^{th} Bridges
  - West Diversion Road

Top five priority projects are as follows:

- o EW-3 : Western Coastal Road
- o EW-2 : J.R. Borja Extension
- EW-1 : Iligan-CDO-Butuan Road
- o UC-3 : 7^{th} Bridge
- o NS-5 : West Diversion Road

Note: o Selected for F/S

RESULT OF FEASIBILITY STUDY

Results of feasibility study are summarized below. All projects were evaluated to be feasible from all aspects.

- Among F/S projects, Iloilo-Sta.Barbara Road derives the highest economic return. It is the widening of existing road to 4 lanes within the existing ROW. High economic return is contributed by low construction and ROW acquisition costs and high traffic benefits derived from the improvement of transport efficiency of normal and airport related traffic.

- New Airport Access Road in Metro Bacolod has the 2nd highest economic return which is contributed by low construction cost and high traffic benefits which are derived from shorter access distance from the airport to Bacolod City.
- Although construction and ROW acquisition costs of the 7th Bridge in CDO City are high, the project greatly contributes to traffic distribution in the area and traffic decongestion of existing Carmen Bridge, high economic return is achieved.
- J.R.Borja Extension shows the lowest economic return among F/S projects, followed by Western Coastal Road. The project is a new 4-lane road construction and requires to traverse a mountainous section, thus high construction cost results in relatively low economic return. Western Coastal Road is also a new 4-lane road construction project of which high construction and ROW acquisition costs are major causes of relatively low economic return.
- The rest of 3 projects show medium economic return. These are a new 2-lane road construction project. Though ROW acquisition cost to accommodate future 4 lanes is included, EIRR of about 30% is expected due to high traffic decongestion impact on related roads.

RECOMMENDATIONS:

DPWH

- The proposed Road Network Plan should be authorized by agencies concerned.
- Priority projects should be included in the DPWH Medium-Term Public Investment Program
- Urgent projects of 3 Metro Areas should be packaged to obtain immediate foreign finance as shown below.
- ECC of priority projects should be secured as early as possible.
- Memorandum of Agreement between DPWH and concerned LGUs should be exchanged concerning the securing of the proposed road ROW.
- DPWH should determine an implementing office of Regional Growth Center Projects as soon as possible.
- Road re-classification should be discussed with LGUs. Some roads should be reclassified from Provincial Road to National Road or vis-à-vis.
- DPWH should review and update proposed Road Network Plan periodically. This Plan was prepared under the present tight financial situation. When the financial situation improves, some of the projects could be implemented ahead of the proposed schedule.
- DPWH should undertake a similar study in other Regional Growth Centers.

Concerned LGUs

- The proposed road network should be reflected in the land use plan.
- Development within the proposed road ROW should be strictly controlled. City / municipal ordinance to control such development should be enacted as soon as possible.
- Maintenance of local roads should be intensified. Regular amount should be allocated yearly to road maintenance.
- The Governments of Iloilo, Bacolod and CDO should implement the proposed traffic management plan in the city proper area and its adjoining areas.
- Resettlement site for the project-affected persons should be secured as early as possible.

RESULTS OF F/S

Area	Projects	Length (km)	Type of Work	No.of Lane	Standard ROW	Project Cost (Million P)	No. of Project Affected Families	Economic IRR (%)
Metro Iloilo	C-1	14.3	New Construction	2-lane (1)	40m (18m-30m)	1,022.5	69	31.0
	Iloilo-Sta.Barbara Road	13.1	Widening	4-lane	20m/14.4m	568.2	502	39.1
	R-4 Bypass	11.9	New Construction	2-lane	30m	713.2	23	31.8
Metro Bacolod	New Airport Access Road	10.1	New Construction	2-lane (1)	40m	643.2	9	38.3
	Sugar Road	34.0	New Construction	2-lane (2)	40(U) 30m(R)	2,021.1	18	30.7
Metro CDO	Western Coastal Road	7.6	New Construction	4-lane	35m (24-26m)	763.3	59	29.0
	J.R. Borja Extension	7.7	New Construction	4-lane	35m (25m)	1,497.2	32	24.2
	7th Bridge and Approach Rd.	1.0	New Construction	2-lane	20m	240.4	215	36.4
	West Diversion Road	5.0	New Construction	2-lane	25m	304.7	39	36.4

Note: (1) First phase. To be widened to 4-lane in the future. *ROW: Figure in ( ) shows ROW of socially critical Section.*
(2) Urban section. To be widened to 4-lane in the future.

RECOMMENDED PACKAGE FOR IMMEDIATE FOREIGN FINANCING

Area	Project	Project Cost (Million Pesos)	Implementation								
			2005	2006	2007	2008	2009	2010	2011	2012	2013
Metro Iloilo	C-1	1,022.5	-----	////////	58.1	125.1	125.1	238	238	238.2	
	Iloilo-Sta. Barbara	568.2	-----	////////	17.7	36.6	36.6	238.6	238.7		
Metro Bacolod	New Airport Access	643.2	-----	////////	34.3	100.3	100.4	204.1	204.1		
	Bacolod Circumferential	687.6	-----	////////	22.1	34.9	34.9	148.9	148.9	148.9	149.0
Metro CDO	Western Coastal Road	763.3	-----	////////	24.1	43.6	43.7	163.0	163.0	163.0	162.9
	7th Bridge	240.4	-----	////////	7.7	23.7	104.5	104.5			
Total/Annual Investment (Million Pesos)		3,925.2	-	-	164.0	364.2	445.2	1097.1	992.7	550.1	311.9

Legend: ----- Fund Preparation; //////// Selection of Consultant; Detailed Design; ROW / Resettlement and Contractor Selection; Construction and Construction Supervision

TABLE OF CONTENTS

PART A
INTRODUCTION

BACKGROUND

Metro Manila has been the mega center of economic and social activities in the Philippines, where people have to suffer from too much concentration of population, serious traffic congestion, aggravated urban amenity, etc. At the same time, disparities in economic outputs and people's income between Metro Manila and the rest of the regions have widened. To cope with such problems, the Government is pursuing a balanced regional development. Urban centers in various parts of the country are encouraged to grow so that they could become attractive investment sites and catalyze growth in the regions. In order to achieve this objective, infrastructure development in the regional growth centers is vitally needed.

In general, regional growth centers are commonly suffering from the following problems:

- Concentration of people and socio-economic activities at the narrow downtown area is worsening the urban environment and amenity.
- Serious traffic congestion in the urbanized area is paralyzing sound socio-economic activities and also causing traffic pollution.
- Due to lack of proper urban road network, urban development pressure is only absorbed along the areas of the existing inter-city arterial roads, thus sound urbanization is being affected.
- Inter-modal connection between road traffic and sea/air traffic has not been planned harmoniously, resulting in traffic concentration and congestion at the sea/air terminals.

With this in view, the Government of the Republic of the Philippines (GOP) through the Department of Public Works and Highways (DPWH) sought a technical assistance from the Government of Japan (GOJ) for the conduct of the Study on Road Network Improvement for Development of Regional Growth Centers in the Republic of the Philippines (the Study).

In response to the request of GOP, GOJ decided to conduct the Study. The Japan International Cooperation Agency (JICA) organized a Study Team to be engaged in the Study. The JICA Study Team, in close collaboration with the DPWH Counterpart Team, commenced work in March 2003 and completed in October 2004.

OBJECTIVES OF THE STUDY

1) to formulate a Master Plan for the Urban Road Network Development including short, medium and long term implementation programs;
2) to carry out a feasibility study for high priority road projects;
3) to enhance the capability of the National Government as well as the Local Government Units (hereinafter referred to as "LGUs") for urban road network planning and feasibility study methodology; and
4) to pursue technology transfer in the course of the implementation of the Study

STUDY AREA

The Study covered the following three cities and its surrounding areas:

1) Metro Iloilo

   Iloilo City and Municipalities of Leganes, Zarraga, Sta. Barbara, Pavia, Oton, San Miguel and Cabatnan, in the province of Iloilo, Region VI.

2) Metro Bacolod

   Bacolod City, Silay City, Talisay City, Bago City, Victorias City and Municipalities of Enrique Magalona, Pulupandan and Murcia in the province of Negros Occidental, Region VI.

3) Metro Cagayan de Oro

   Cagayan de Oro City and the Municipalities of Gitagum, Laguindingan, Alubijid, El Salvador, Opol, Tagoloan, Villanueva and Jasaan in the province of Misamis Oriental, Region X.

FINAL REPORT ORGANIZATION

The final report consists of the following:

- Executive Summary
- Main Text
  - Vol. 1 : Part A Introduction
    Part B Metro Iloilo
  - Vol. 2 : Part C Metro Bacolod
  - Vol. 3 : Part D Metro Cagayan de Oro
- Drawings
  - Volume 4 Metro Iloilo
  - Volume 5 Metro Bacolod
  - Volume 6 Metro Cagayan de Oro

PART B
ROAD NETWORK DEVELOPMENT PLAN FOR METRO ILOILO

B1. PRESENT SET-UP

Present set-up of Metro Iloilo is as follows:

- Iloilo City is the regional capital of Western Visayas Region and the center of business, commercial, administration and education.
- Iloilo City is functioning as the sea and air transport hub of the region.
- Metro Iloilo is identified as the Iloilo-Cebu-Tacloban Triangle Growth Corridor.
- Regional Agri-Industrial Growth Center is located in the municipality of Pavia.
- The existing Iloilo Airport will be transferred to Sta.Barbara/Cabatuan, and scheduled to open in 2007.

B2. PHYSICAL FEATURES

The study area is located on the flat alluvial plain. Ground elevation varies from 0 to 20m. Two large rivers, i.e. Iloilo River and Jaro River cross the study area. Low-lying areas of Iloilo City, Leganes, Zarraga and Oton suffer flooding during heavy rain. Soft ground layers exist to the depth of 10 to 15m in the 5km zone from the coast.

B3. SOCIO-ECONOMIC CONDITIONS: PRESENT AND FUTURE

Population of the study area will grow by about 1.4 times from 621,000 in 2000 to 859,000 in 2022. Iloilo City accommodates about 60% of study area population.

Number of employment (work place base) will increase by about 1.8 times from 281,000 in 2000 to 514,000 in 2022. Iloilo City absorbs about 70% of employments.

Number of employment (residence base) will increase by about 1.6 times from 281,000 in 2000 to 457,000 in 2022. About 61% of employment reside in Iloilo City.

Regional economy is expected to grow at about 5.2% per annum from 2005 to 2010, and 4.6% from 2011 to 2022.

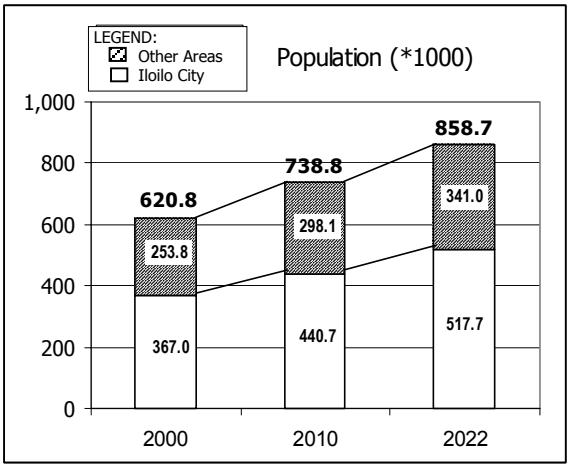
Economic Growth By Sector

Sector	2005-2010	2011-2022
Primary	3.5%	2.7%
Secondary	5.3%	4.8%
Tertiary	5.9%	5.2%
Total	5.2%	4.6%

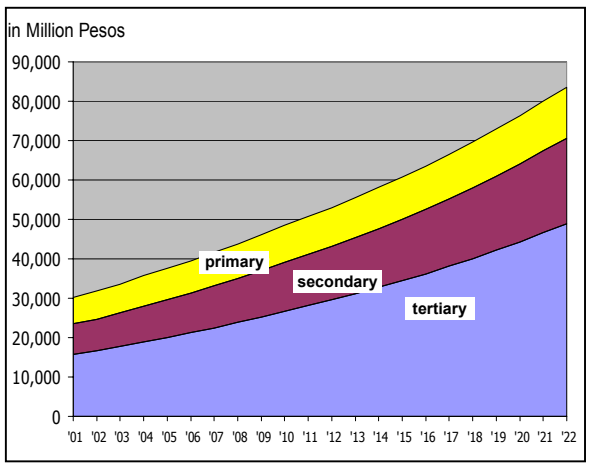
Number of vehicles in the Study Area is 31,200 in 2002 which is estimated to increase to 47,900 in 2010 and to 80,800 in 2022.

Vehicle Ownership

		2002	2010	2022
Iloilo City	No. of veh. (per 1000 persons)	28,100 (76.8)	43,100 (97.7)	72,500 (140.1)
Other Areas	No. of veh. (per 1000 persons)	3,100 (11.6)	4,800 (16.1)	8,300 (24.3)
Study Area	No. of veh. (per 1000 persons)	31,200 (50.4)	47,900 (64.8)	80,800 (94.2)



POPULATION GROWTH



ECONOMIC GROWTH

B4. LAND USE: PRESENT AND FUTURE

Present land use map (2002) prepared by each LGU was utilized with minor adjustment based on the satellite photo map.

The land use plan for 2010 has been prepared by each LGU which was basically adopted by the Study Team.

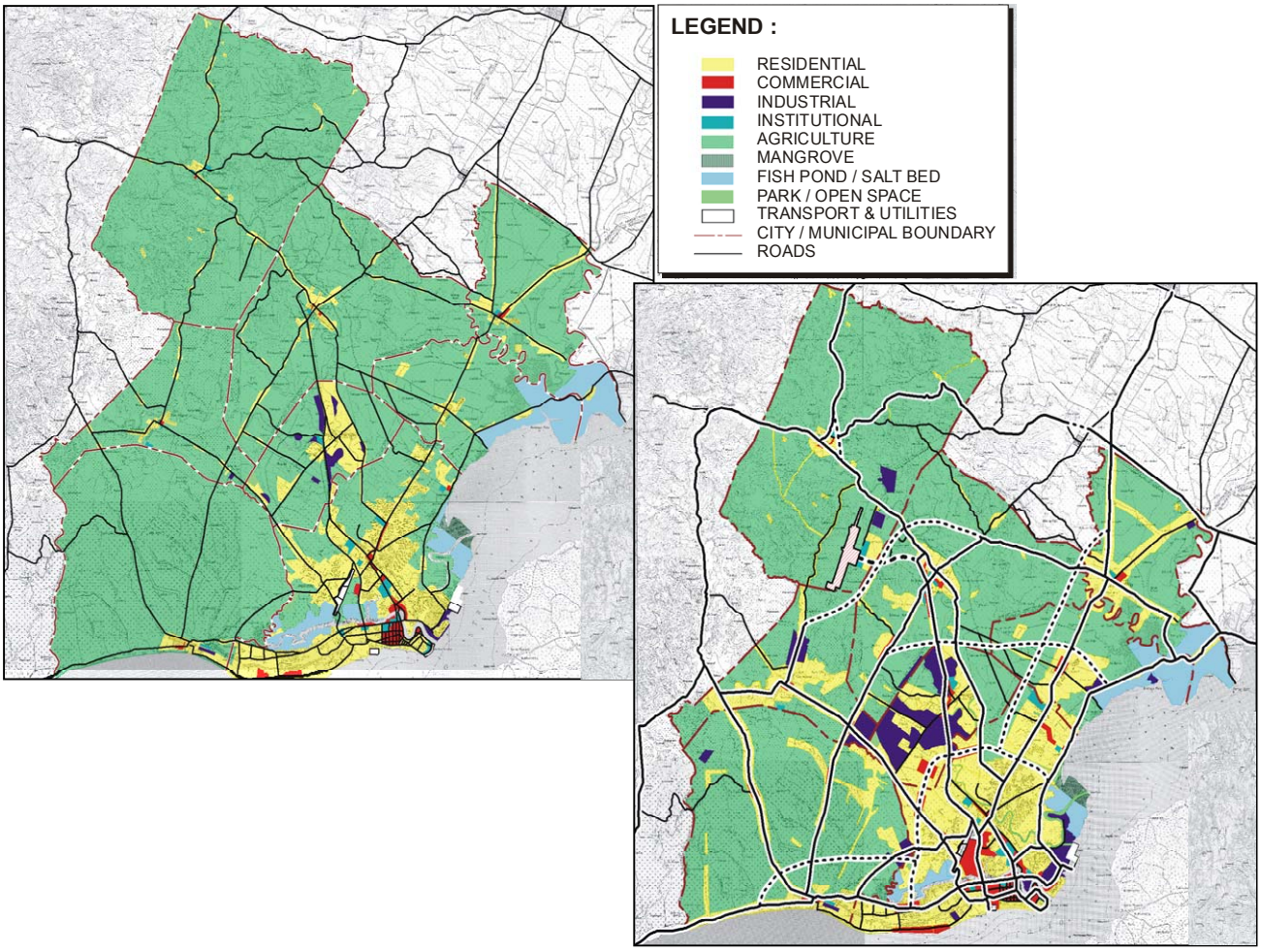
The land use plan for 2022 was prepared by the Study Team based on future socio-economic framework.

Residential area needs to be expanded by 2.1 times, commercial area by 5.6 times, and industrial area by 7.3 times of the present area.

Present and Future Land Use (sq.km)

Land Use	2003		2022		2022/2003
Residential	54.35	(11.9%)	114.89	(25.0%)	2.1
Commercial	2.50	(0.5%)	14.09	(3.1%)	5.6
Industrial	2.17	(0.5%)	15.75	(3.4%)	7.3
Institutional	1.73	(0.4%)	2.78	(0.6%)	1.6
Agriculture	377.49	(82.6%)	292.70	(63.8%)	0.8
Mangrove	1.02	(0.2%)	1.01	(0.2%)	1.0
Fishpond/Saltbed	16.55	(3.6%)	13.54	(3.0%)	0.8
Park/Open Space	0.47	(0.1%)	2.72	(0.6%)	5.8
Transport/Utilities	0.77	(0.2%)	1.29	(0.3%)	1.7
Total	457.05	(100.0%)	458.77	(100.0%)	1.0

Note: Land area in 2022 includes planned reclamation area.



PRESENT LAND USE (2003) **FUTURE LAND USE (2022)**

B5. TRAFFIC DEMAND: PRESENT AND FUTURE

Present traffic volume is as follows:

- Roads within CBD : 18,000~45,000 veh/day
- Roads at Iloilo City Boundary : 3,000~17,000 "
- Roads at Study Area Boundary: 2,100~5,700 "

Total vehicle trips per day in the Study Area are 223,500 in 2003 which are estimated to grow to 305,000 in 2010 and 475,000 in 2022 with an average annual traffic growth rate of 4.5% from 2003 to 2010 and 3.7% from 2010 to 2022.

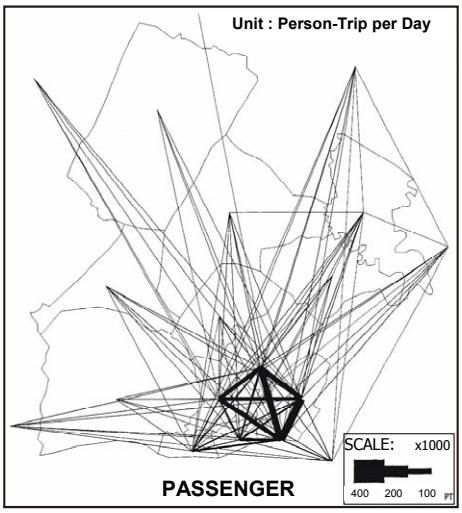
Car trips are expected to grow with the highest rate due to increased car ownership, followed by truck trips.

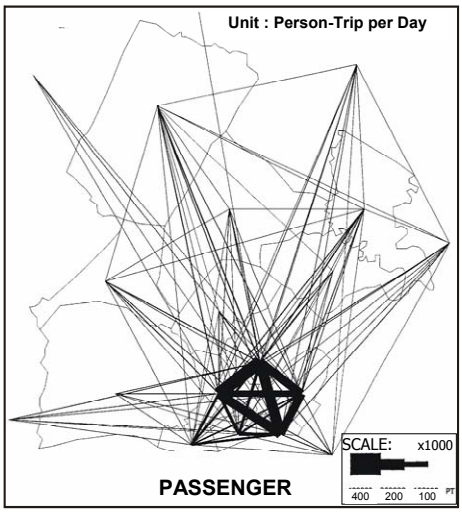
Trip pattern will be almost the same as present one.

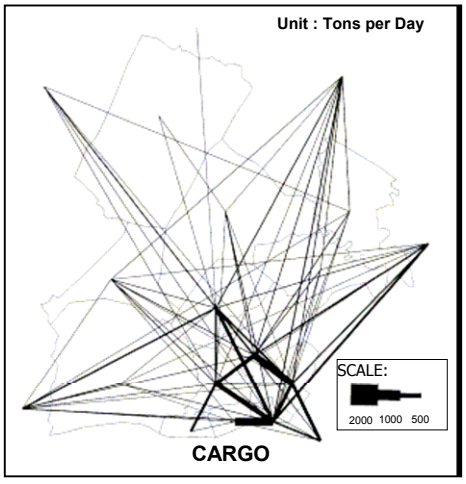
Airport related traffic will increase from 7,400 veh/day in 2002 to 9,200 in 2010 and 12,300 in 2022. Iloilo-Sta.Barbara Road will carry most of these traffic after the airport is transferred to Cabatuan.

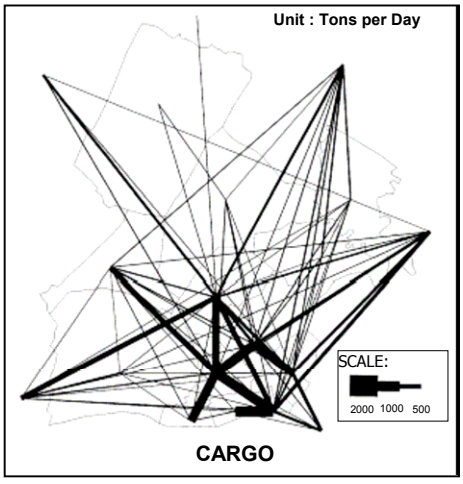
TRAFFIC GROWTH

Vehicle Type	Vehicle Trips / day			Average Traffic Growth Rate (%)	
	2003	2010	2022	03-10	10-22
Car	123,704	179,800	303,558	5.5	4.5
Jeepney	88,910	110,234	147,878	3.1	2.5
Bus	1,175	1,430	1,937	2.8	2.6
Truck	9,717	13,686	20,606	5.0	3.5
Total	**223,506**	**305,150**	**473,979**	**4.5**	**3.7**









PRESENT DESIRE LINE (2003)

FUTURE DESIRE LINE (2022)

B6. ROAD NETWORK ISSUES

Present Issues

a) Study Area

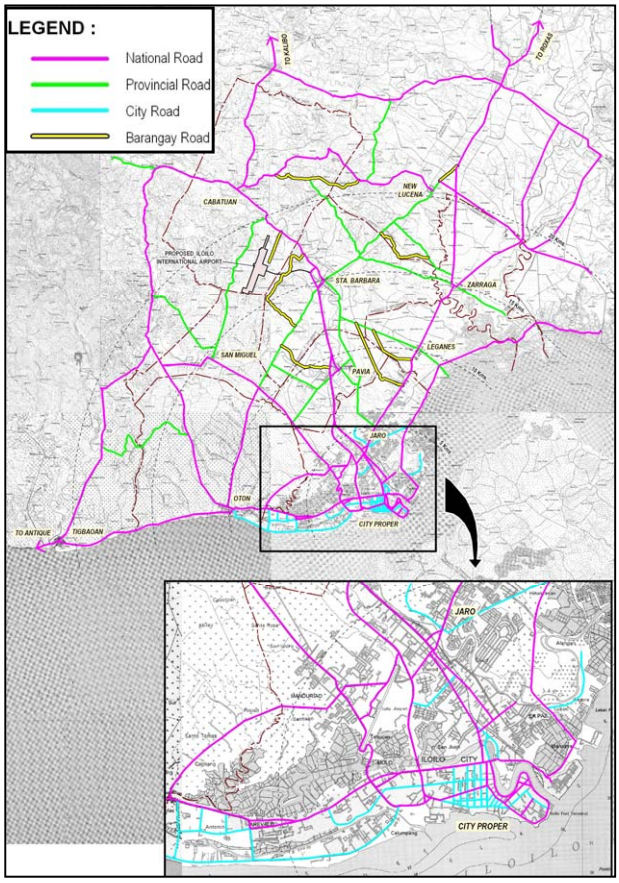
- Road network in the Study Area is composed of only radial roads.
- Urbanized area of Municipalities of Oton, Pavia and Leganes is formed at about 10 km radius from the Iloilo City proper, those of San Miguel, Sta. Barbara and Zarraga at about 15 km radius and Cabatuan at about 23 km radius.
- Due to lack of circumferential roads, trips between above town propers (such as Oton to Pavia or vice versa) have to pass through Iloilo City.
- Among inter-city roads, Iloilo-Roxas Road carries the heaviest traffic, followed by Iloilo-Sta. Barbara-Kalibo Road and Iloilo-Antique Road. When the airport is transferred to Cabatuan, Iloilo-Sta. Barbara Road will carry the heaviest traffic.
- The inter-city road passes through the town proper of Oton, Leganes and Zarraga where a bypass is needed to separate through traffic and local traffic.

b) Iloilo City

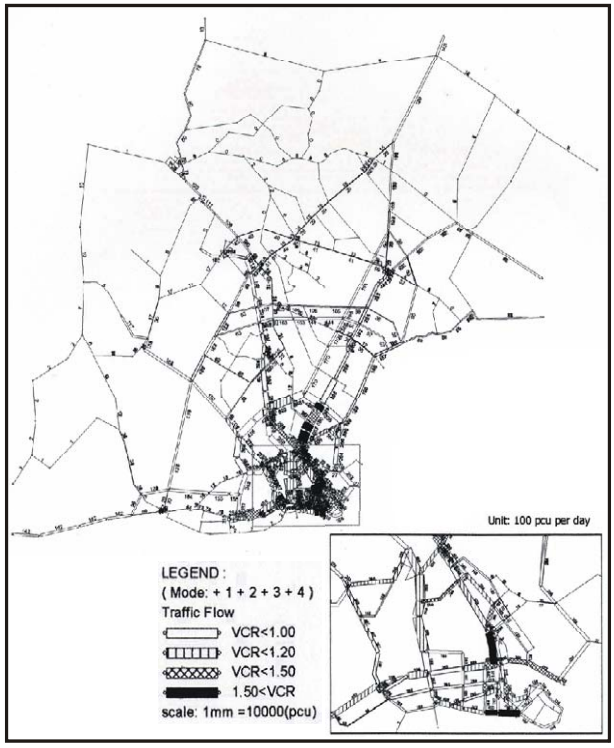
- A mesh-type road network is formed within the Iloilo City proper. Roadsides of all roads have been densely built-up, widening of existing roads or construction of new road is extremely difficult.
- Road network outside the Iloilo City proper is a complex one. Roadsides of most road have also been densely developed.
- Trip desire line shows that there are high demand of trips which wishes to travel along circumferential direction at about the Iloilo City boundary.
- The City Government of Iloilo plans to expand urban areas outside the existing urbanized areas. by controlling further development of City Proper area However, a road which guides the planned urban expansion does not exist yet.

Future Issues

- Heavy traffic will be concentrated on roads not only inside Iloilo City but also within the radius of 10 km (or between Oton, Pavia, Leganes and Iloilo City).
- Inside Iloilo City, all radial roads will exceed their traffic capacity, most of which have slight possibility of widening.
- Inside the Iloilo City proper, most of roads except 4-lane divided roads will exceed their capacity. However, further widening of such roads are extremely difficult.



EXISTING ROAD NETWORK



TRAFFIC ASSIGNMENT 2022
[DO NOTHING CASE]

B.7 ROAD NETWORK DEVELOPMENT OBJECTIVES AND STRATEGIES

DEVELOPMENT OBJECTIVES

- Reduction of traffic congestion in the City Proper area.
- Road network which will guide and support planned urban development.
- Formation of flexible road network which will provide alternative routes to road users.
- Road network which will contribute to the economic development of the Study Area as well as its hinterland.
- Road network which will enhance international and domestic investment in the Study Area as well as its hinterland.
- Road network which will realize expected investment effects of related projects.
- Road network development with environmental and social considerations.

DEVELOPMENT STRATEGIES

- Removal of unnecessary traffic to pass through the City Proper area.
- Full utilization of existing road stock in the city proper area.
- Providing new roads at the strategic areas.
- Improvement of transport efficiency of the routes which connect agricultural production area, agro-industry area and export facility.
- Strengthening of accessibility to new airports and the container terminal port.
- Avoiding road network development in the environmentally and socially critical areas.

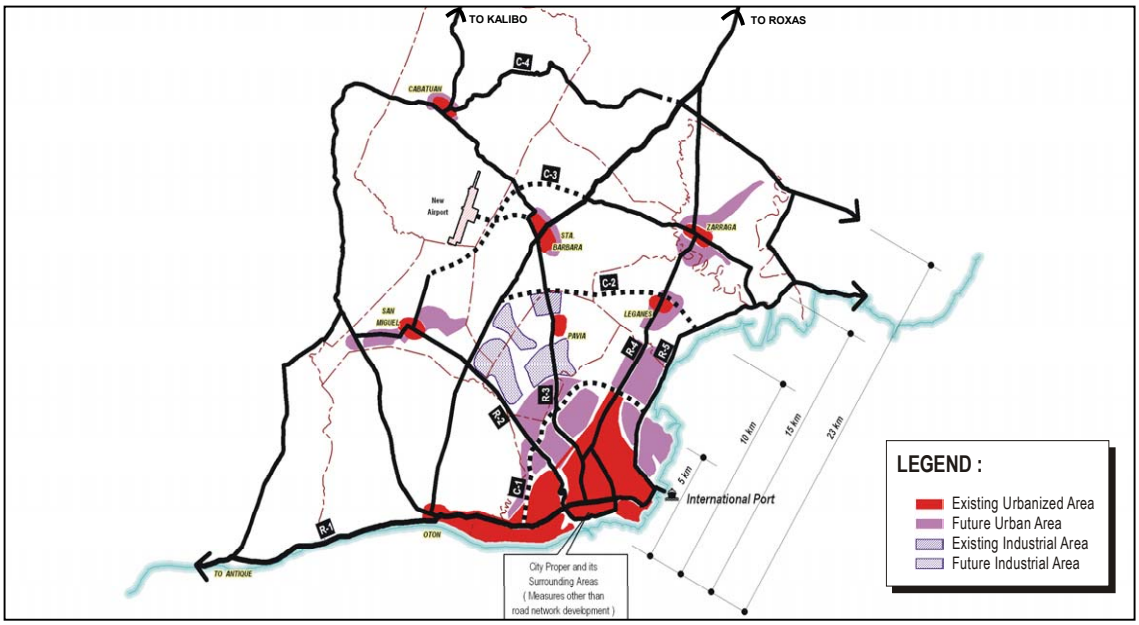
B.8 BASIC CONCEPTS FOR DEVELOPMENT OF ROAD NETWORK CONFIGURATION

Inside the City Proper area and its adjacent areas

- Due to wide spread of build-up area new road construction requires high number of dislocation of people and structures, therefore is not planned.
- Widening of existing road is planned only for the section where an adverse social impact is minimum.
- Measures other than road development are recommended:
  - Control of further urban development. Urbanization should target outside this area.
  - Efficient traffic management
  - Modal shift from jeepney to city bus

Outside the City Proper area and its adjacent areas

- A radial and circumferential road network is to be formed.
- In due consideration of distribution of municipal urban centers (town propers), a circumferential road is planned at the following radius from Iloilo City proper:
  - C-1 : about 5 km (or Iloilo city boundary)
  - C-2 : about 10 km
  - C-3 : about 15 km
  - C-4 : between 20 to 25 km (mostly outside the Study Area)
- Existing inter-city roads form radial components of a network:
  - R-1 : Iloilo-Antique Road
  - R-2 : Iloilo-San Miguel Road
  - R-3 : Iloilo-Sta. Barbara-Kalibo Road
  - R-4 : Iloilo-Roxas Road
  - R-5 : Iloilo Coastal Road



BASIC CONCEPT FOR FUTURE ROAD NETWORK DEVELOPMENT

B.9 PROPOSED ROAD NETWORK PLAN

PROPOSED ROAD NETWORK

A radial and circumferential road network consisting of five radials (R-1 to R-5) and four circumferentials (C-1 to C-4) was proposed. To strengthen radial roads, three bypasses (B-1 to B-3) were planned.

Major components of the proposed road network are as follows:

a) New roads to be constructed

C-1	: L=13.0 km
About ½ Section of C-2	: L=11.5 km
About 1/3 Section of C-3	: L=10.6 km
R-1 Bypass	: L= 8.6 km
R-4 Bypass	: L=11.5 km
Cabatuan Bypass	: L= 2.1 km
Total	: L= 57.3 km

b) Widening of existing roads

R-3	: L=13.8 km
R-4	: L=10.4 km
R-5	: L=5.0 km
Total	: L= 29.2 km

c) Improvement of existing roads

About ½ Section of C-2	: L=15.6 km
About 2/3 Section of C-3	: L=14.9 km
S-1	: L=12.0 km
S-2	: L= 7.7 km
Total	: L= 50.2 km

C-1 will guide planned urbanization of Iloilo City, distribute traffic on radial roads to its optimum route for access to a destination and provide transport linkage between Pavia Industrial Zone and the Iloilo International Port.

Other circumferential roads will directly connect municipal centers with each other and distribute traffic on radial roads.

R-1 Bypass will reduce traffic congestion of Iloilo-Antique Road (R-1) of which widening is difficult, R-4 Bypass is for Iloilo-Roxas Road (R-4) and Cabatuan Bypass for Iloilo-Kalibo Road (R-3).

To provide easy access to New Iloilo Airport, widening of Iloilo-Sta.Barbara Road is planned.

FINANCIAL FRAMEWORK

In order to formulate realizable implementation plan, possible investment amount for each 6-year term was estimated. Due to current financial constraints of the Government, possible investment amount for the short term (2005-2010) is quite limited and estimated to be less than 1 Billion Pesos for national roads.

(Unit: Million Peso)

Term	DPWH	Iloilo Province	Iloilo City
Short Term (05-10)	890-970	123-230	112-135
Medium Term (11-16)	1,490-1,740	115-124	68-112
Long Term (17-22)	2,190-2,550	115-124	68-112
Total	4,510-5,260	353-478	248-359

PRIORITY OF PROJECTS

Priority of road projects were evaluated by the degree of contribution to the following factors and urgency:

- Guide and support planned urban development
- Flexibility improvement of road network
- Reduction of traffic congestion of City Proper
- Traffic efficiency improvement
- Accessibility improvement for related projects
- Economic development
- Social and environmental impacts
- Traffic safety
- Enhancement of international / local investment
- Urgency

Top five priority projects are as follows:

C-1 : Iloilo Circumferential Road No. 1
R-3 : Iloilo-Sta.Barbara Road
B-2 : R-4 Bypass
C-2 : Circumferential Road No. 2
R-4 : Iloilo-Roxas Road (Inside C-1)

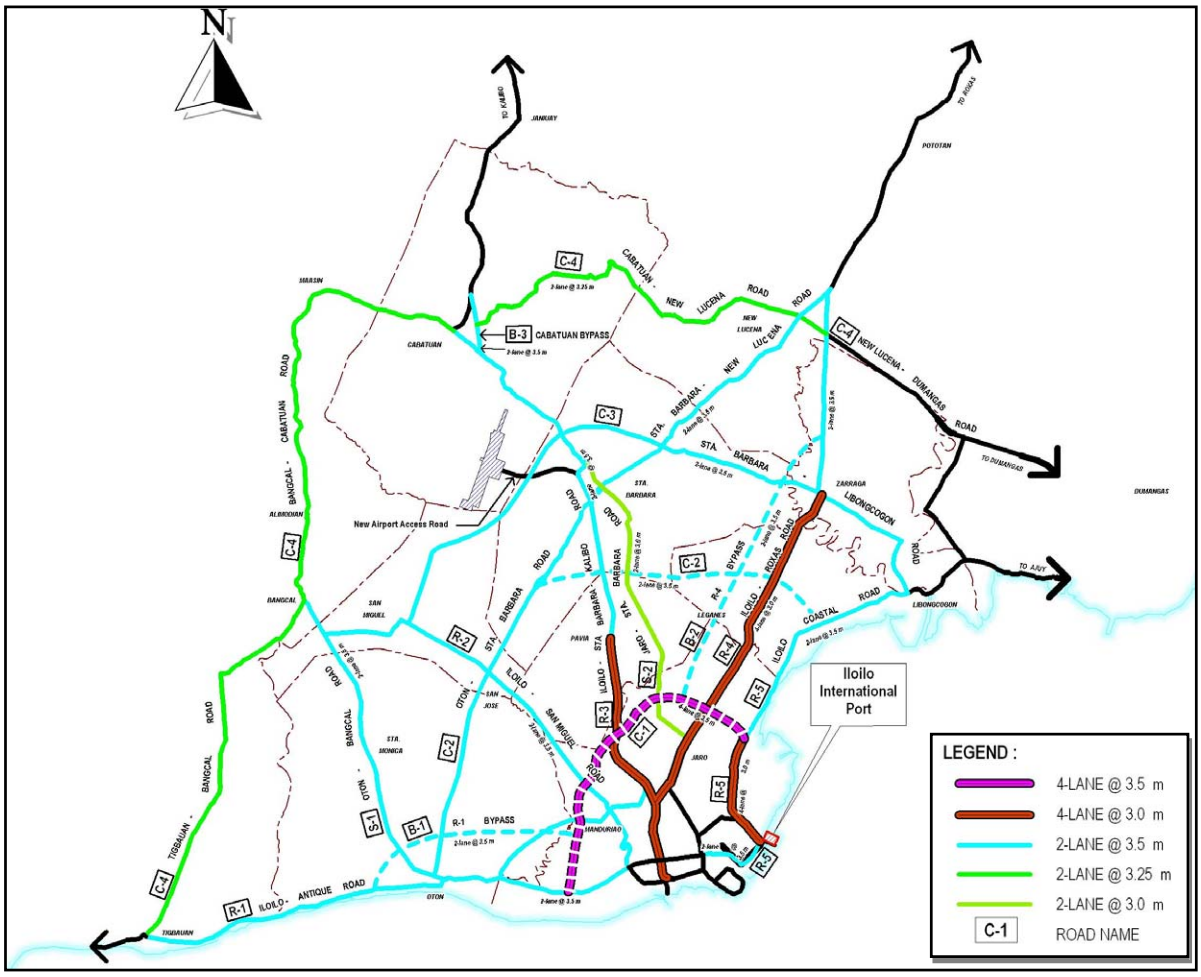
SELECTED ROAD PROJECTS FOR F/S

Road projects subjected to a feasibility study were selected based on the following criteria:

- Priority is high
- Road ROW needs to be determined as early as possible
- The project is vitally needed to support on-going related projects

Top three priority projects were selected for a feasibility study:

• Iloilo Circumferential Road No.1 (C-1)	L=13 km
• Iloilo-Sta.Barbara Road	L=14 km
• R-4 Bypass	L=12 km
Total :	L=39 km



PROPOSED ROAD NETWORK PLAN

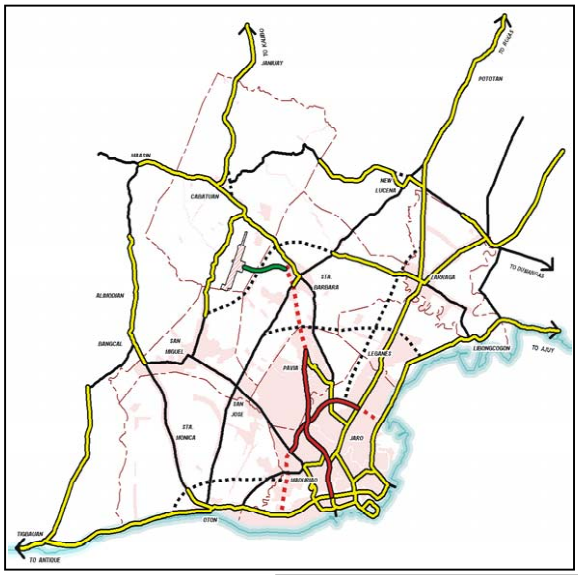
PROPOSED IMPLEMENTATION SCHEDULE

	Road Name	Short-Term						Medium-Term						Long-Term						After 2022
		05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	
C-1	C-1 (2-lane)																			
C-1	C-1 (widening)																			
C-2	C-2 (New)																			
C-2	C-2 (Existing)																			
C-3	C-3																			
R-1	Iloilo-Antique																			
R-2	Iloilo-San Miguel																			
R-3	Iloilo-Sta. Barbara																			
R-4	Iloilo-Roxas																			
R-5	Iloilo Coastal																			
B-1	R-1 Bypass																			
B-2	R-4 Bypass																			
B-3	Cabatuan Bypass																			
S-1	Oton-Bangcal																			
S-2	Jaro-Sta.Barbara																			
Investment (Million P)		**875.8**						**2,328.8**						**2,561.4**						**815.7**

Legend : Detailed Design ROW/Resettlement & Tendering Construction / C/S

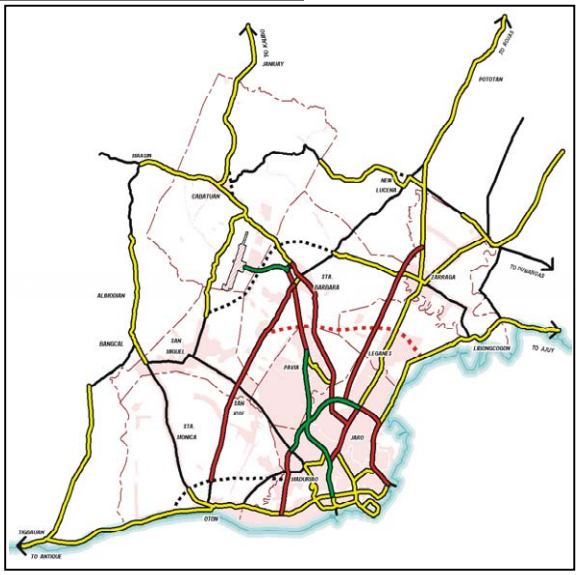
B.10 ROAD NETWORK DEVELOPMENT BY TERM

Considering the financial constraints and priority road projects, the road network Master Plan was formulated for the following three terms: Short-Term - 2005 to 2010; Medium-Term - 2011 to 2016; Long-Term - 2017 to 2022.



SHORT TERM
(By Year 2010)

LEGEND:
16.3 km
12.0 km

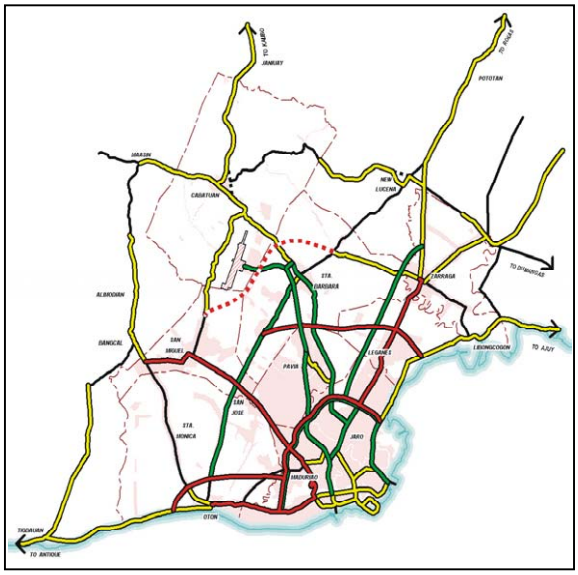


MEDIUM TERM
(By Year 2016)

LEGEND:
57.4 km
11.5 km

LONG TERM
(By Year 2022)

LEGEND:
66.1 km
10.8 km

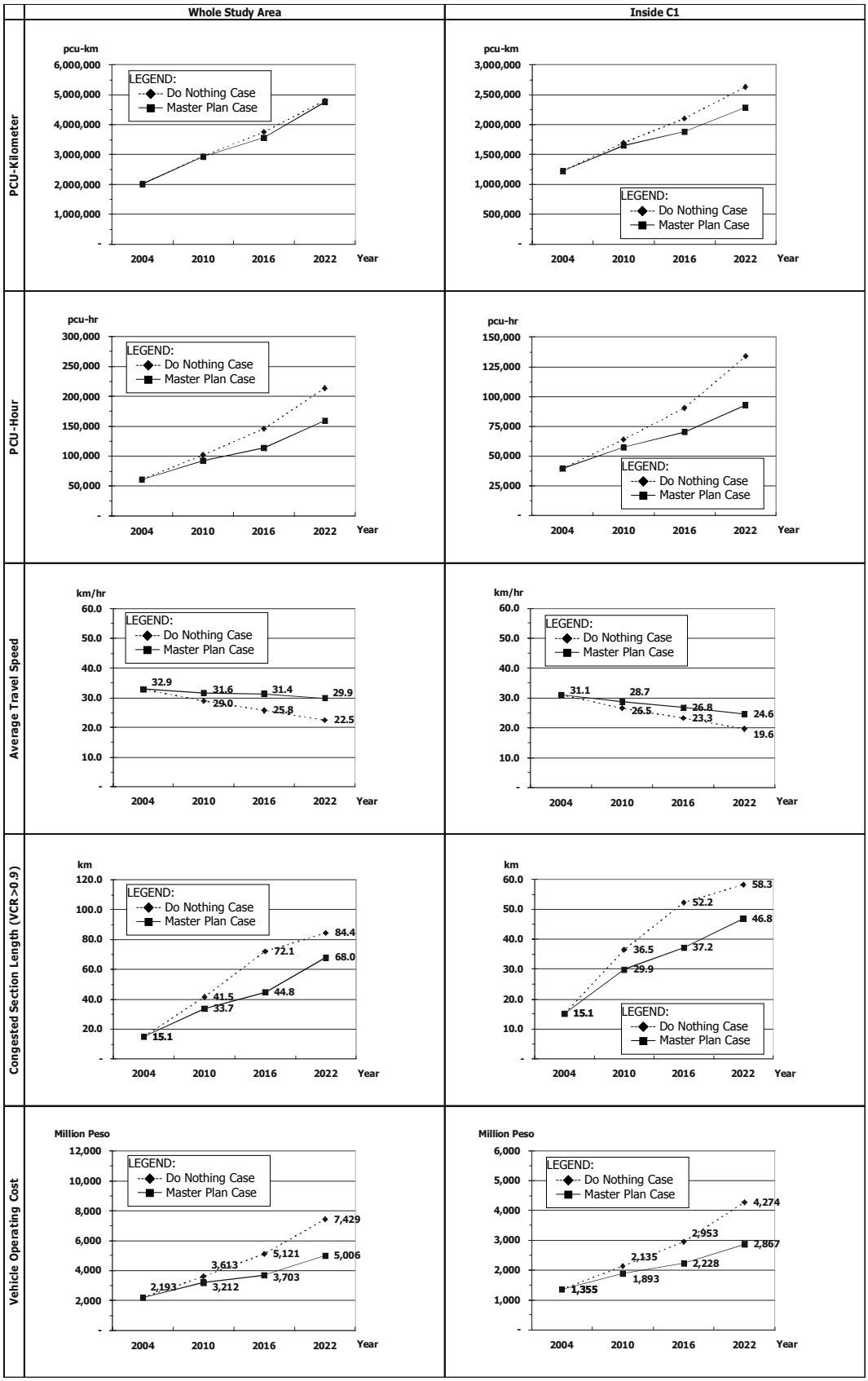


LEGEND :

- COMPLETED DURING THE TERM
- ON-GOING AS OF END OF THE TERM
- COMPLETED DURING THE PREVIOUS TERM
- PAVED IN GOOD/FAIR CONDITION IN 2003
- PLANNED URBAN AREA

B.11 TRANSPORT EFFICIENCY IMPROVEMENT BY MASTER PLAN

The transport efficiency was evaluated comparing the "Do Nothing" Case with the Master Plan using the following indicators: vehicle travel distance(pcu-km), vehicle travel time(pcu-hr), average travel speed, congested road section length, and vehicle operating cost.



B12. TRAFFIC MANAGEMENT PLAN

To make traffic flow more efficient and to enhance traffic safety in the City Proper area and its suburbs, the following measures are recommended:

a) Geometric Improvement of Intersection: Intersection geometry is to be reviewed and improved. For intersections in suburbs, paved sidewalk shall be provided.

b) Traffic Engineering Approach: Review of one-way system, banning of left turn, banning of on-street parking, truck ban, jeepney route, traffic accident analysis, and traffic safety program shall be undertaken using traffic engineering approach.

c) Enhancement of Pedestrian Environment: Removal of obstruction on sidewalk, restoring sidewalk used as parking area, and planting of trees shall be undertaken to create friendly environment for pedestrians.

d) Installation of Traffic Control and Safety Device: **Traffic sign:** Traffic signs of stop, no-parking, one-way, no entry, no left turn, no loading and unloading, etc. shall be installed.

Pavement marking: Pavement markings such as stop line, pedestrian crossing, center line, lane line, etc. shall be installed on national roads and other arterial streets in Iloilo City.

Others: Chatter bar, delineator, guardrail, reflector, pavement stud, etc. shall be installed at locations where such devices are needed.

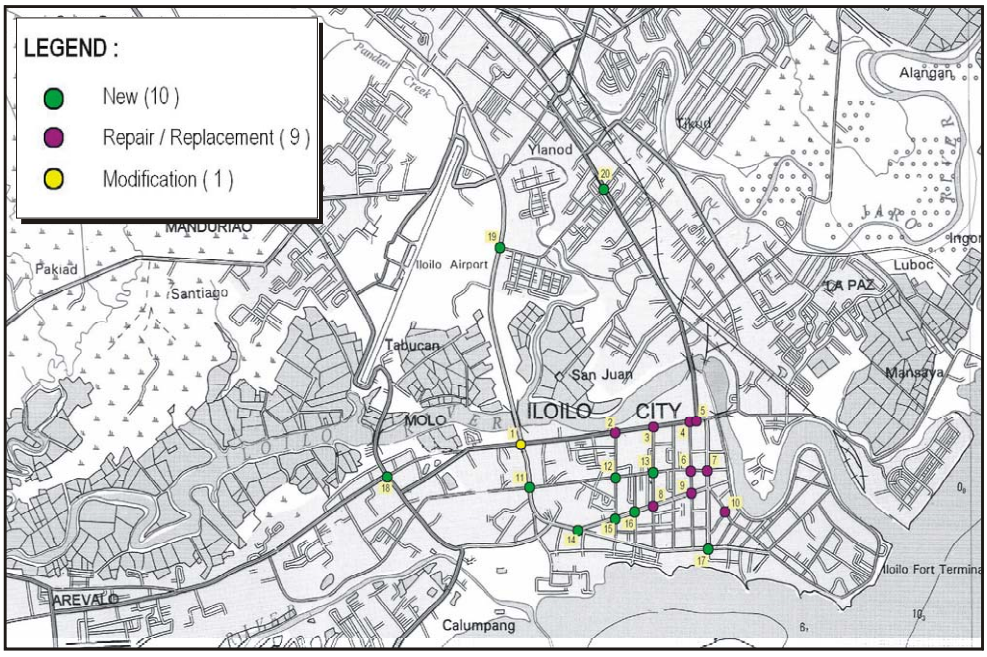
e) Restoration of Existing Signals and Installation of New Signals: The existing non-working signals shall be repaired urgently. New signals shall be installed at 10 locations. Those signals installed at city center where distance between intersections is short, signals must be coordinated.

f) Establishment of Parking Policy and its Implementation: A parking management policy shall be established, in which requirement of parking space for new building must be implemented strictly, parking on main streets must be prohibited, paid on-street or off-street parking must be developed and parking business by private sector is encouraged.

g) Training of Staff Engaged in Traffic Management: Training on traffic facility development and traffic operation shall be provided to traffic police, traffic aides, city hall staff engaged in traffic management.

ESTIMATED COST FOR TRAFFIC MANAGEMENT IMPROVEMENT WORKS

Improvement Measure	Estimated Cost (1,000 Peso)	Remarks
Intersection Geometric Improvement	11,160	28 intersections
Traffic Signal	42,373	10 existing and 10 new
Pavement Markings	21,675	33.6 km
Traffic Sign	1,347	526 traffic signs
Total	76,554	



TRAFFIC SIGNAL INTERSECTIONS

B.13 F/S OF CIRCUMFERENTIAL ROAD NO. 1

OBJECTIVES OF THE PROJECT

- To reduce traffic congestion within the City Proper by removing unnecessary through traffic within the City,
- To guide and support planned urban development, thus avoiding further concentration of socio-economic activities within the City,
- To enhance international and domestic investment in the Study Area by providing easy access to Pavia Industrial Area.
- To provide easy access to Iloilo International Port and new Iloilo Airport.

DESIGN CRITERIA AND ROAD ROW WIDTH

- Design criteria adhere to DPWH and AASHTO Design recommendations.
- Design speed is 60km/hr to minimize adverse social impact.
- Countermeasures against soft ground are properly considered.
- Left turn lane provided at major intersections.
- Road right-of-way width shall be:
  - ♦ Standard ROW : 40m
  - ♦ Socially Critical Area : 18m, 22m, 30m

STAGE CONSTRUCTION

C-1 Road will be implemented in 2 stages:

- ♦ Initial Stage : 2-lane road by 2012
- ♦ Ultimate Stage : widening to 4-lane divided by end of 2022

ENVIRONMENTAL/SOCIAL IMPACTS

- The IEE conducted indicated that there was no significant environmentally sensitive spot (historical structures, religious institutions, protected areas) along the alignment.
- However, planned development of subdivisions, memorial parks, socialized housing and garbage dumping site are expected along the alignment. Selection of final alignment for C-1 considered such developments.
- Land use is mostly rice fields, fish ponds and residential areas.
- Social Impact :
  - ♦ No. affected families : 69
  - ♦ No. affected houses and structures : 87
  - ♦ Land Take : 56 has
- Impact to environment is minimal.
- LGUs expressed their full support to the project.

ESTIMATED PROJECT COST

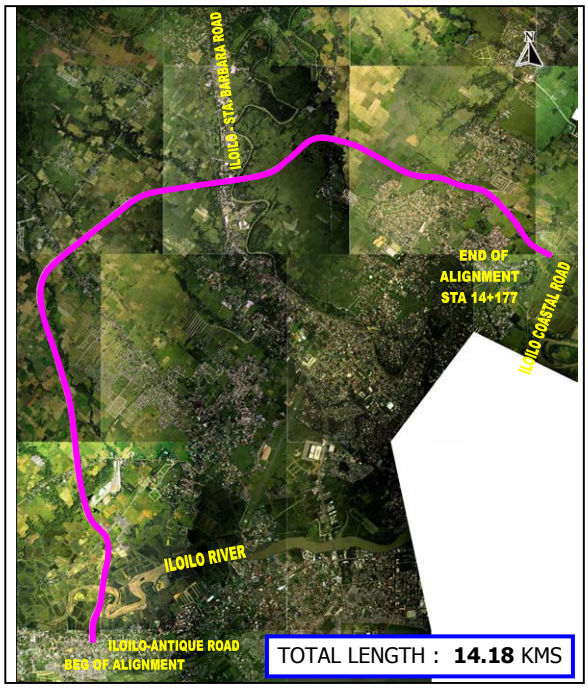
The 2-lane Initial Stage Cost of C-1 Road is as follows:

	Foreign	Local	Tax	Total
Detailed Eng.	32.0	20.3	5.8	58.1
ROW/Resettlement	-	225.2	25.0	250.2
Construction	358.3	198.0	105.0	661.3
Const. Supervision	29.1	18.5	5.3	52.9
Total	419.4	462.0	141.1	1,022.5

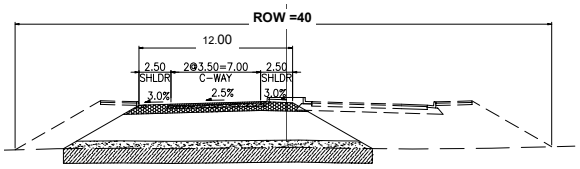
ECONOMIC EVALUATION

The project was evaluated economically highly feasible with EIRR of 31.0%. High economic return is mainly contributed by traffic congestion reduction in the City Proper Area.

Costs	Indicator	Benefits		
		20% Down	Base Case	20% Up
20% down	NPV (P million)	677.0	925.0	1,173.0
	B/C Ratio	3.14	3.93	4.72
	EIRR (%)	31.0	34.9	38.4
Base Case	NPV (P million)	598.0	846.0	1,095.0
	B/C Ratio	2.52	3.14	3.77
	EIRR (%)	27.3	31.0	34.2
20% up	NPV (P million)	519.0	767.0	1,016.0
	B/C Ratio	2.10	2.62	3.14
	EIRR (%)	24.5	28.0	31.0



SELECTED ALIGNMENT FOR C-1



INITIAL STAGE TYPICAL ROAD SECTION

B.14 F/S OF ILOILO-STA.BARBARA ROAD

OBJECTIVES OF THE PROJECT

- To reduce traffic congestion due to normal and airport related traffic by expanding traffic capacity;
- To provide easy access to New Airport;
- To enhance international/domestic investment by providing easy access to Pavia Industrial Area.
- To contribute to the economic development of the Study Area and its hinterland.

DESIGN CRITERIA AND ROAD ROW WIDTH

- Road alignment follows existing Iloilo-Sta. Barbara Road. No improvement in horizontal alignment is necessary with design speed of 60km/hr.
- Left turn lane provided at major intersections.
- ROW for widening:
  - Iloilo to Pavia : 20m
  - Pavia to Sta. Barbara : 14.4m
- ROW is minimized by removing medians on 4-lane sections and setting lane width to 3.0m.
- Retaining walls will be provided where existing ground is lower than proposed elevation to minimize ROW take.
- Additional drainage facility is provided where existing capacity is insufficient.

ENVIRONMENTAL/SOCIAL IMPACTS

- The IEE conducted indicated no significant environmentally critical spots but a fairly large number of residents currently within the ROW will be dislocated by the widening project.
- Although DPWH previously acquired a 60m and 30m wide right-of-way for the existing road, it was revealed by residents that land acquisition has not been completed yet and that documentations by DPWH could not be found. This will be the critical issue during RAP implementation.
- Land use is mainly residential with isolated commercial areas in Iloilo City and Pavia and agricultural and residential in Sta. Barbara.
- Impact to environment is minimal.
- Social Impact :
  - No. affected families : 502
  - No. affected houses and structures : 471
- Affected residents are aware that their structures are inside DPWH ROW and subject to ejections with replacement cost as compensations.
- LGUs expressed their full support to the project.

ESTIMATED PROJECT COST

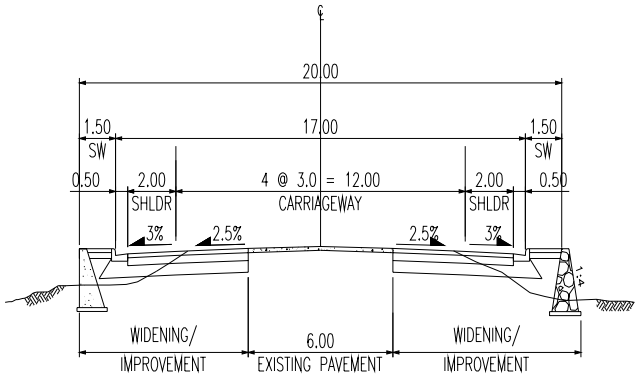
The estimated project cost for the widening of Iloilo-Sta.Barbara Road is presented below.

	Foreign	Local	Tax	Total
Detailed Eng.	9.7	6.2	1.8	17.7
ROW/Resettlement	-	65.9	7.3	73.2
Construction	253.8	115.8	72.3	441.9
Const. Supervision	19.5	12.4	3.5	35.4
Total	283.0	200.3	84.9	568.2

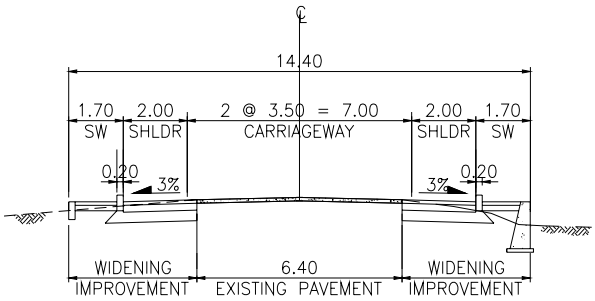
ECONOMIC EVALUATION

The project is economically highly feasible with EIRR of 39.1%., which is the highest among F/S projects in this Study . This is due to high impact of traffic congestion reduction by widening with relatively low construction cost.

Costs	Indicator	Benefits		
		20% Down	Base Case	20% Up
20% down	NPV (P million)	432.0	584.0	735.0
	B/C Ratio	3.51	4.39	5.27
	EIRR (%)	39.1	45.1	50.3
Base Case	NPV (P million)	389.0	541.0	692.0
	B/C Ratio	2.81	3.51	4.21
	EIRR (%)	33.8	39.1	43.9
20% up	NPV (P million)	346.0	497.0	649.0
	B/C Ratio	2.34	2.93	3.51
	EIRR (%)	29.8	34.7	39.1



4-LANE WIDENING
ILOILO-PAVIA SECTION (STA. 2+232 - 8+400)
L = 6.2 km



2-LANE WIDENING
PAVIA-STA BARBARA SECTION (STA. 8+400 - 15+328)
L = 6.9 km

ILOILO-STA. BARBARA ROAD SECTION

B.15 F/S OF R-4 BYPASS

OBJECTIVES OF THE PROJECT

- To reduce traffic congestion of Iloilo-Roxas Road in the sections of Iloilo City and Leganes/Zarraga town proper.
- To form a flexible road network that provides alternative routes to road users.
- To contribute to the economic development of the Study Area as well as its hinterland.

DESIGN CRITERIA AND ROAD ROW WIDTH

- Design speed is 80 km/hr to achieve mobility oriented design.
- For flood section, embankment elevation is properly selected with bridge/culvert opening properly planned.
- Road is designed as 2-lane road to carry future traffic beyond 2022.
- Left turn lane provided at major intersection.
- Countermeasures against soft ground are properly selected.
- Required right-of-way (ROW) width : 30m

ENVIRONMENTAL/SOCIAL IMPACTS

- IEE revealed no significant environmentally critical spots along the alignment.
- Land use is mainly agricultural/rice fields with spotted residential areas along intersections and feeder roads.
- Social Impact :
  - ♦ No. affected families : 23
  - ♦ No. affected houses and structures : 40
  - ♦ Land Take : 56 has
- Impact to environment is minimal.
- LGUs expressed their full support to the project.

ESTIMATED PROJECT COST

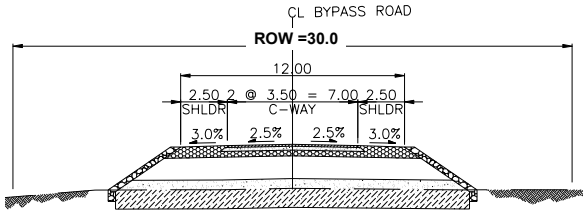
The cost of the 2-lane R-4 road is as follows:

	Foreign	Local	Tax	Total
Detailed Eng.	11.5	7.3	2.1	20.9
ROW/Resettlement	-	114.2	12.7	126.9
Construction	287.9	153.6	82.0	523.5
Const. Supervision	23.0	14.7	4.2	41.9
Total	322.4	289.8	101.0	713.2

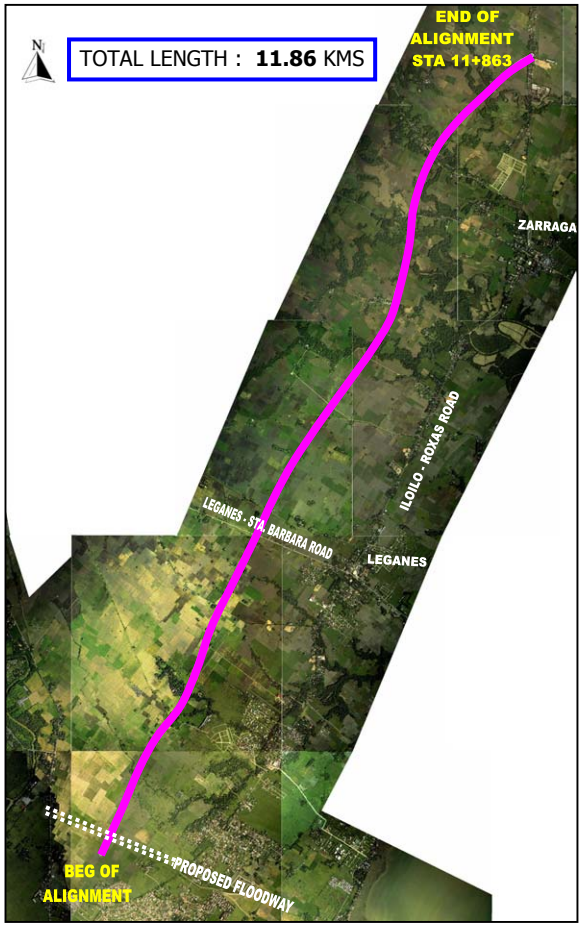
ECONOMIC EVALUATION

The project is economically highly feasible with EIRR of 31.8%. High economic return is mainly contributed by traffic congestion reduction along the existing road with relatively low cost of construction.

Costs	Indicator	Benefits		
		20% Down	Base Case	20% Up
20% down	NPV (P million)	185.0	262.0	338.0
	B/C Ratio	2.56	3.20	3.84
	EIRR (%)	31.8	36.9	41.3
Base Case	NPV (P million)	156.0	232.0	308.0
	B/C Ratio	2.05	2.56	3.07
	EIRR (%)	27.2	31.8	35.9
20% up	NPV (P million)	120.0	202.0	278.0
	B/C Ratio	1.75	2.13	2.56
	EIRR (%)	23.7	28.0	31.8



TYPICAL ROAD SECTION



SELECTED ALIGNMENT FOR R-4 BYPASS

B16. INFORMATION DISCLOSURE AND CONSULTATION MEETINGS

Information on the Study and priority projects was disclosed as follows:

Workshop/Meeting	Month	Major Topics	Participants
First Workshop	Apr. 2003	• Outline of the Study • Presentation by Metro Iloilo Development Committee on urban problems, priority development area, road network, etc. • Road projects planned by concerned LGUs • LGU's participation in the implementation of the project	• Regional Offices of Central Government (DPWH, NEDA, DOTC, PPA, LTO) • LGUs (1 city,7 municipalities and 1 province)
Second Workshop	Oct. 2003	• Proposed road network plan • Priority of road projects and projects selected for F/S • Comments by LGUs • Announcement of social/environmental surveys requesting participation and coordination of stakeholders.	• Same as above • Private subdivision developers.
Barangay Level Consultation Meetings	Feb. 2004	• Objectives, needs and implementation schedule of the project. • Alignment of proposed road (1/2,500 aerial photo map with proposed ROW) • Opinions of directly and indirectly affected people.	• Barangay Captain • Directly and indirectly affected people. (39 Barangays)
Perception Survey	Feb. 2004	• Acceptability of the project • How and when did he know about the project? • Suggestions on how to make the project better for you.	• Directly and indirectly affected people.
Technical Scoping	Feb. 2004	• Level of environmental Study (IEE, EIS) • Environmental items to be focused.	• EMB (Region) • Proponent (DPWH) • Environmental Consultant
Social Impact Survey	Feb. 2004	• Survey on affected houses and structures. • Name of owner, type of structure, floor area, photo, etc.	• All affected structures
Socio-economic Survey	Feb. 2004	• Household structure, occupation, family income and expenditure, ownership of land and house, work place/school, place, cost of transportation, period of stay, requirement for relocation.	• About 80% of directly affected households
Third Workshop	July 2004	• Selected alignment • Results of socio-environmental survey • Government's and DPWH's policies on compensation.	• Same as Second Workshop • Representatives from Barangays
Fourth Workshop	Aug. 2004	• Presentation of Draft Final Report	• Same as Third Workshop

Issues raised during consultation meetings and the Government's policies on such issues are as follows:

Issues Raised During Consultation Meetings	Government's Policies
Relocation site shall be provided. Relocation site shall: • be near to the city • be accessible to market, church and school • have water and electric supply • have paved access road	• Relocation site with appropriate amenities will be provided by corresponding local governments to affected residents who are financially incapable to resettle by themselves. • Relocation site will be provided with basic facilities including water and electric supply and paved access road. • A certain amount of monthly amortization set by the local government will be collected from residents relocating to the Resettlement Site.
Affected houses and trees shall be properly compensated.	• Affected structures will be compensated with replacement cost method. • Trees with commercial values will be compensated based on appraisal value of DENR/provincial assessor's office.
Affected land shall be properly compensated.	• Affected land will be compensated with cash payment to legal owners. • Compensation amount is BIR zonal value or market value (RA 8974). • Agricultural tenants/lessees without title will receive financial assistance (RA 6389). • Land owners acquired land through CA 141 will receive financial assistance (EO 1035).
Livelihood Program shall be given to affected residents.	• Affected residents who will be obliged to change their source of income due to relocation will be able to receive income restoration training (Livelihood Program) through local government unit.
Compensation for land acquired by previous project shall be settled prior to implementation of the project.	• Compensation for the land affected by previous project is not included in the compensation packages of this project. • Claims for unpaid compensation of previous project will be entertained by right-of-way agent in District Office and Regional Office of DPWH.
Affected residents shall be given priority to employment by contractors during construction.	• DPWH will guide contractors to employ affected residents as many as possible. • Normally DENR will include such preferential employment clause in ECC conditions of the project. ECC conditions will be part of condition of contract between DPWH and contractors.

Number of Project-Affected Persons (PAPs)

	C-1	Iloilo-Sta.Barbara	R-4 Bypass
a) No. of Families affected			
- Severely affected	61	368*1/	18
- Marginally affected	8	134	5
- Total	69	502	23
b) Average family size	4.90	5.03	4.89
c) No. of Project- affected Persons			
- Severely affected	299	1,851	88
- Marginally affected	40	674	25
- Total	339	2,525	113

Note: Based on Final Alignment
* 1/ Informal settlers = 105 (or 528 persons)

ACCEPTABILITY OF THE PROJECT

	C-1	Iloilo-Sta.Barbara	R-4 Bypass
a) No. of Respondents			
- Directly affected	98	344	20
- Indirectly affected	550	933	280
b) Is in favor of the Project?			
Directly affected			
- Yes	72.5%	84.9%	95.0%
- No	12.2%	14.0%	5.0%
- No answer	15.3%	1.2%	0%
Indirectly affected			
- Yes	87.8%	81.5%	86.8%
- No	11.8%	18.0	13.2%
- No answer	0.4%	0.5%	0%
c) Why no?			
Directly affected			
- Family, houses, properties affected	16.8%	60.4%	0%
- Reduction of farm land	0%	2.1%	0%
- Livelihood, source of income affected	0%	16.7%	0%
- No answer	83.3%	20.8%	100%
Indirectly affected			
- Family, houses, properties affected	27.7%	49.4%	43.2%
- Reduction of farm land	4.6%	1.2%	2.7%
- Livelihood	35.4%	18.5%	10.8%
- No answer	32.3%	31.0%	43.2%

Note: Based on Preliminary Alignment

MONTHLY FAMILY INCOME

	C-1	Iloilo-Sta.Barbara	R-4 Bypass
Below 10,000 Pesos	78.4%	58.3%	73.9%
10,000~20,000 Pesos	5.9%	13.2%	8.7%
20,000~40,000 Pesos	5.9%	4.2%	0
Above 40,000 Pesos	2.0%	1.1%	0
No answer	7.8%	23.2%	17.4%
No. of Respondents	98	344	20

Note: Based on Preliminary Alignment

When did you hear about the project?

	C-1	Iloilo-Sta.Barbara	R-4 Bypass
• Today, this week, months ago	61.2%	20.3%	75.0%
• 1 to 2 years ago	24.5%	57.0%	15.0%
• More than 2 years ago	5.1%	21.2%	5.0%
• No answer	9.2%	1.5%	5.0%
No. of Answers	98	344	20

Note: Based on Preliminary Alignment

What are the good things you see about the project?

	C-1	Iloilo-Sta.Barbara	R-4 Bypass
• Easy and fast access	43.9%	29.9%	65.0%
• City, barangay developed	6.1%	25.6%	10.0%
• Less traffic congestion	7.1%	27.0%	15.0%
• Chances for new business	14.3%	11.9%	10.0%
• Don't know	1.0%	0.3%	0%
• No answer	27.5%	5.2%	0%
No. of Answers	98	344	20

Note: Based on Preliminary Alignment

What are the bad things you see about the project?

	C-1	Iloilo-Sta.Barbara	R-4 Bypass
• Increase of traffic accidents	1.0%	4.1%	30.0%
• Increase of air and noise pollution	1.0%	6.8%	5.0%
• Increase of strangers	0%	0.3%	0%
• Disruption of regular activities of barangay folks	1.0%	6.4%	0%
• Increase of crime rate	0%	0%	0%
• Loss of livelihood and relocation	62.2%	51.5%	60.0%
• None	17.3%	16.0%	5.0%
• Don't know/no answer	11.2%	6.4%	0%
• Others	6.1%	9.6%	0%
No. of Answers	98	344	20

Note: Based on Preliminary Alignment

What problems do you foresee for the community?

	C-1	Iloilo-Sta.Barbara	R-4 Bypass
• Loss of properties, livelihood	9.2%	13.1%	5.0%
• Flooding, erosion, landslide	2.0%	11.0%	5.0%
• Corruption in government	0%	0.9%	0%
• Accidents, crimes	1.0%	7.6%	5.0%
• Unemployment	0%	1.2%	0%
• None	59.2%	39.5%	75.0%
• Don't know, no answer	23.5%	11.6%	5.0%
• Others	5.1%	15.1%	5.0%
No. of Answers	98	344	20

Note: Based on Preliminary Alignment

B17. IMPLEMENTATION SCHEDULE OF PROJECTS SELECTED FOR F/S

Implementation schedule was planned within the financial framework as follows:

Project	Detailed Design	ROW Acquisition	Construction
C-1	2007	2008-2009	2010-2012
Iloilo-Sta.Barbara	2007	2008-2009	2010-2011
R-4 Bypass	2011	2012-2013	2014-2016

B18. RECOMMENDATIONS

DPWH

- The proposed Road Network Plan should be authorized by agencies concerned as well as LGUs concerned.
- Priority projects should be included in the DPWH Medium-Term Public Investment Program.
- Funding of C-1 and Iloilo-Sta.Barbara Road needs to be sourced from international agency or bi-lateral aid. Negotiation with one of the agencies or countries should start immediately and concluded within 2005.
- ECC of priority projects should be secured as early as possible.
- DPWH should determine an implementing office of Regional Growth Center Projects as soon as possible.
- Memorandum of Agreement between DPWH and concerned LGUs should be exchanged concerning the securing of the proposed road ROW.
- For smooth implementation of priority projects, DPWH should start coordination with LGUs concerned with regard to ROW acquisition and relocation of project-affected persons.
- Road re-classification should be discussed with LGUs. Some roads should be reclassified from Provincial Road to National Road or vis-à-vis.
- DPWH should review and update proposed Road Network Plan periodically or at least every 6 years. This Plan was prepared under the present tight financial situation. When the financial situation improves, some of projects could be implemented ahead of the proposed schedule.

Concerned LGUs

- The proposed road network should be reflected in the land use plan as soon as possible. If necessary, land use along the proposed roads should be amended.
- Development within the proposed road ROW should be strictly controlled. City / municipal ordinance to control such development should be enacted as soon as possible.
- Maintenance of local roads should be intensified. Regular amount should be allocated yearly to road maintenance.
- Iloilo City Government should implement the proposed traffic management plan in the city proper area and its adjoining areas.
- Resettlement site for the project-affected persons should be secured as early as possible.

IMPLEMENTATION SCHEDULE OF PROJECT SELECTED FOR F/S

Project	Activities	Cost (Million P)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
C-1	Fund Preparation	-	■■■■											
	Consultant Selection	-		■■■■										
	Detailed Design	58.1			58.1									
	ROW / Resettlement	250.2				125.1	125.1							
	Contractor Selector	-					■■■■							
	Construction	661.3						220.4	220.4	220.5				
	Const. Supervision	52.9						17.6	17.6	17.7				
	Total	**1,022.5**	**-**	**-**	**58.1**	**125.1**	**125.1**	**238**	**238**	**238.2**				
Iloilo-Sta. Barbara	Fund Preparation	-	■■■■											
	Consultant Selection	-		■■■■										
	Detailed Design	17.7			17.7									
	ROW / Resettlement	73.2				36.6	36.6							
	Contractor Selector	-					■■■■							
	Construction	441.9						220.9	221.0					
	Const. Supervision	35.4						17.7	17.7					
	Total	**568.2**	**-**	**-**	**17.7**	**36.6**	**36.6**	**238.6**	**238.7**					
R-4 Bypass	Fund Preparation	-					■■■■							
	Consultant Selection	-						■■■■						
	Detailed Design	20.9							20.9					
	ROW / Resettlement	126.9								63.5	63.4			
	Contractor Selector	-									■■■■			
	Construction	523.5										174.5	174.5	174.5
	Const. Supervision	41.9										13.9	14.0	14.0
	Total	**713.2**	**-**	**-**	**-**	**-**	**-**	**-**	**20.9**	**63.5**	**63.4**	**188.4**	**188.5**	**188.5**