社会開発協力部報告書

No. 08

フィリピン共和国
マニラ首都圏北部地区幹線道路網
計画事前調査報告書

昭和57年２月

国際協力事業団

フィリピン共和国
マニラ首都圏北部地区幹線道路網
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はしがき

日本国政府は、フィリピン共和国政府の要請に応え、マニラ首都圏北部地区幹線道路網の建設、整備に関する調査を国際協力事業団により実施することを決定した。

事業団は、建設省都市局都市計画課都市交通室長、小川裕章氏を団長とする4名からなる事前調査団を昭和57年2月7日から同年2月13日まで現地へ派遣した。

今回の事前調査は、本格調査の対象となるマニラ北部地域の道路網の現況を把握し、プロジェクトの内容について概略の検討を行い本格調査に際しての必要な情報を得ると同時に、調査のImplementing Arrangementについてフィリピン政府と協議を行うことを目的としたものである。

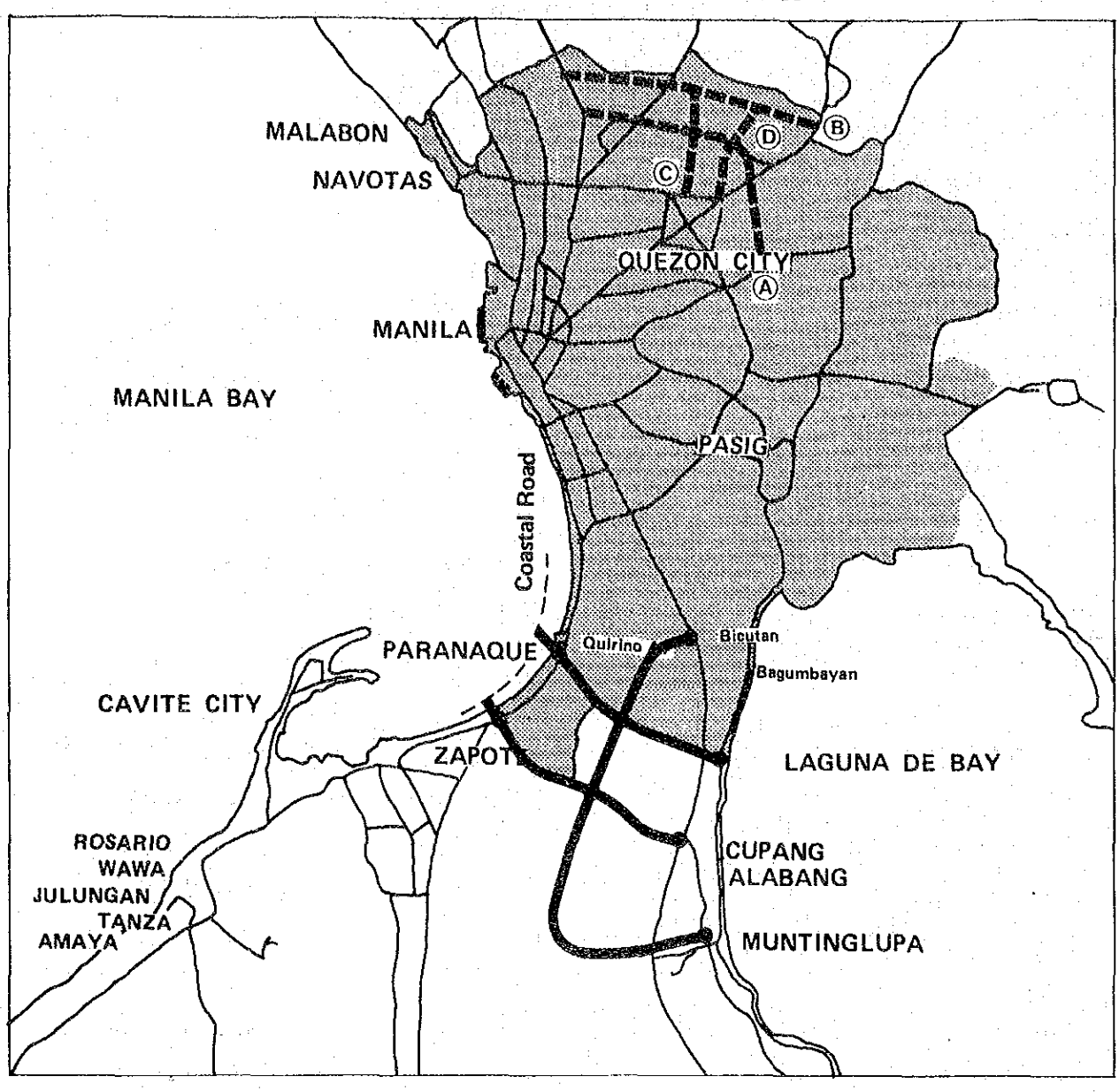
本調査報告書が、今後の本格調査の立案、実施に際して参考となることを期待するとともに、調査にあたり多大の御協力をいただいたフィリピン政府、在マニラ日本大使館ならびに関係機関に厚くお礼申し上げる次第である。

昭和57年2月

国際協力事業団
理事　中沢弐仁

プロジェクト位置図

PROJECT LOCATION MAP



0 5 10 km

Scale : 1/250,000

N

METRO' MANILA

Southern Package

A C-5 (North Expressway から Aurora Blvd.)

B C-6 (North Expressway から Don Mariano Marcos Avenue)

C Mindanao Avenue (North Avenue から C-6)

D Visagas Avenue (Elliptical Road からC-6)

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Ⅰ　プロジェクトの背景

1. 現　　況

マニラ大都市圏の面積は約７００㎢、人口は現在約６００万人と推定される（マニラ市のみは約５００万人）。フィリピン全人口が４２００万であるから約１４％がこの地域に集中していることになる。１９７７年に作成された首都圏交通のマスタープラン Metro Manila Transport、Land Use and Development Planning Project（MMETROPLAN）によれば１９９０年までにさらに４００万人が増加して1,０００万に達すると予測している。そして増加分４００万人のうちの約４０％が既存の市街地に住みつき、６０％は新たな市街地拡大が起こるとみている。

現在のところ通勤電車のようなマストランジットは存在しない。そのためにバス、ジプニー、乗用車によるピーク時の混雑はジャカルタ、クアラルンプールよりもひどくなっている。自動車保有台数は１９６０年約９万台であったものが、１９７０年に３１万台に増加し、１９８０年現在約４５万台と推定される。人の移動は６０％がジプニー（１７０００台）、２０％がバス、鉄道１％、残りを乗用車に依存している。

2. 都市交通計画

これまで、この深刻な都市交通問題を解決するための調査が多数行われており、その主なものをあげると次のとおりである。

① Urban Transportation Study in Manila Metropolitan Area（通称UTSMMA）、ＪＩＣＡ 前身のOTCAとDPWTC、１９７３年。

② Manila Bay Metropolitan Region Strategic Plan、PPDO、DPWTC、１９７５年。

③ Metro Manila Transport、Land Use and Development Planning Project、通称MMETROPLAN、Freeman Fox コンサルタンツ、DPWTC。

日本政府によって行われたUTSMMAは６本の環状道路、１０本の放射状道路、６本の高架高速道路、南北通勤用電車、５本の地下鉄のネットワークが提言されている。これに対し、世銀の行ったMMETROPLANはUTSMMAに種々の提案を加えて集体成したものであり、このマスタープランが現在のマニラの都市交通計画の基本となっている。

3. プロジェクトの概要

以上のような状況を背景に日本の技術協力によって

① マニラＲ－１０道路　フィージビリティ調査（１９７３～１９７４）

② マニラ地下鉄１号線調査（１９７５～１９７６）

③　マニラＣ－３、Ｒ－４道路フィージビリティ調査（１９７７～１９７８）

④　マニラバターン道路フィージビリティ調査（１９７８～１９８０）

⑤　マニラ首都圏南部地区幹線道路網フィージビリティ調査（１９８１～１９８２）

の調査を行っている。また日本の借かん等によって建設も進捗している。さらにフィリピン政府は今後幹線道路網整備の重点を郊外道路網に置きＣ－５、Ｃ－６の未完成部分の調査を日本政府に要請してきた。それに対し日本政府は、住宅開発、工業開発のポテンシャルが高く人口の伸びが大きい南部地区の道路網整備のフィージビリティ調査を５６年度に実施しそれに引き継き北部地区の道路網整備のフィージビリティ調査を今回実施するものである。

Ⅱ　事前調査の目的

本件調査は、マニラ首都圏北部地区の３本の道路（新設のCircumferential Road 5, North Expressway－Aurora Boulevord 及び既存のUisagas Avenue－Elliptical Road, Mindanao Avenue－North Avenue）の建設と整備にかかるフィージビリティ・スタディを実施するのに先立ち、本格調査の実施に必要な相手国政府との協議及び資料、情報を収集することを目的としたもので、具体的には次のとおりである。

(1) 先方政府よりの調査要請内容（Ｔ／Ｒ）について先方政府の考え方を確認する。

(2) 日本側の調査範囲（Ｉ／Ａ案）について先方政府と協議し、了解をとりつける。

(3) 本調査に必要な資料の有無、入手可能性について調査する。

(4) 計画路線及びその周辺地域の現地踏査を行う。

(5) 以上を総合し、本格調査の調査仕様の概要を詰める。

Ⅲ　事前調査団の構成

団　　長　小川裕章　建設省都市局都市計画課都市交通調査室長
（総　括）

団　　員　松原重昭　建設省都市局都市再開発課課長補佐
（交通需要）

団　　員　辻　勝成　建設省道路局企画課課長補佐
（道路計画）

団　　員　西部　剛　国際協力事業団社会開発協力部開発調査第一課
（業務調整）

Ⅳ　調　査　行　程

日順	月日	曜日	行　　程	調　査　内　容
1	57年 2月7日	日	東京8:30→マニラ13:30 JAL－747	
2	8	月		日本大使館、JICA事務所、表敬 MOTC表敬
3	9	火		MPWH表敬及び会議（I／A、S／W案について説明、協議） MMCにて打合わせ
4	10	水		現地調査
5	11	木		MPWHと会議（I／A、S／W案について説明、協議） I／A、S／W、R／Dの作成及び調印
6	12	金		日本大使館、JICA事務所へ報告 関連資料収集
7	13	土	マニラ10:30→東京15:10 NW－002	

V　Implementing　Arrangement（I. A）についての打合わせ要約

1.　I／Aの内容の追加、変更

(1)　計画対象道路網について

比側の当初のT／R（５５年度）では、計画対象道路網は図５－１－(A）に示すようなC－５（１５Km）、Visayas　Avenue（４８Km）、Mindanao　Avenue（３５Km)の３路線２３.３Kmであった。しかし、５６年度の年次協議では、図５－１－（B）に示すようにC－５（１５Km）、C－６（２１Km）Mindanao　Avenue（８Km）、Visayas　Avenue(８Km）の４路線５２Kmを計画対象とすることを要請していた。

しかし、I.A　の案を作成するうえでは、C－６自体の位置付けが明確でないこと及びC－６周辺の開発を抑制すべきとの意見が出されていることとの理由からC－６を計画対象道路とはしないこととし５５年度当初の案（図５－１－（A））を提示した。

事前調査団がI／Aの案を提示し、その理由を説明したところ比側は図５－１－Cに示す案（B案にRepublic　Avenueの延伸を追加した案）を考えておりC－６を追加することを強く要望した。

そこで、事前調査団は、C－６計画について見直しを主張していると聞いていたM.M.C.（Metro　Manila　Commission)からヒヤリングをしたところ以下のとおりであった。

i　Northern　Package がカバーしている地域はMetro　Manilaの発展軸の１つとして位置付けられており、C－５については３年以内に、C－６については、マリキナ川までは６年以内に必要と考えている。

ii　M.M.C.が土地利用計画の策定のために用いている幹線道路網計画は MPWH が提案しているものであり今回の計画対象道路網との矛盾はない。

また、事前調査団による現地踏査によっても、本地域の開発状況はめざましくC－６についても早急に調査をする必要性が明らかとなった。

そこで、現地大使館を通じ外務省と打合わせをしたうえでC－６を計画対象道路網として加えることとした。ただしC－６のDon　Mariano　Marcos　Avenue　の東側については調査の緊急性に差のあること、ルートの大略が確定していないことから今回は計画対象路線とはしないこととした。

また、Republic　Avenue の Extension については Secondary Road であることから対象路線とはしないこととしたが、交通量解析には配慮することとした。

最終的に合意された計画対象道路網は、図５－１－（D）に示すようにC－５（１５Km）C－６（１２Km）、Mindanao　Avenue（９Km）、Visayas　Avenue（８Km)の４路線４４Kmとなった。

なお、M.M.C.のCommissionerは事前調査団の帰国後 MPWH　の Director Cutay

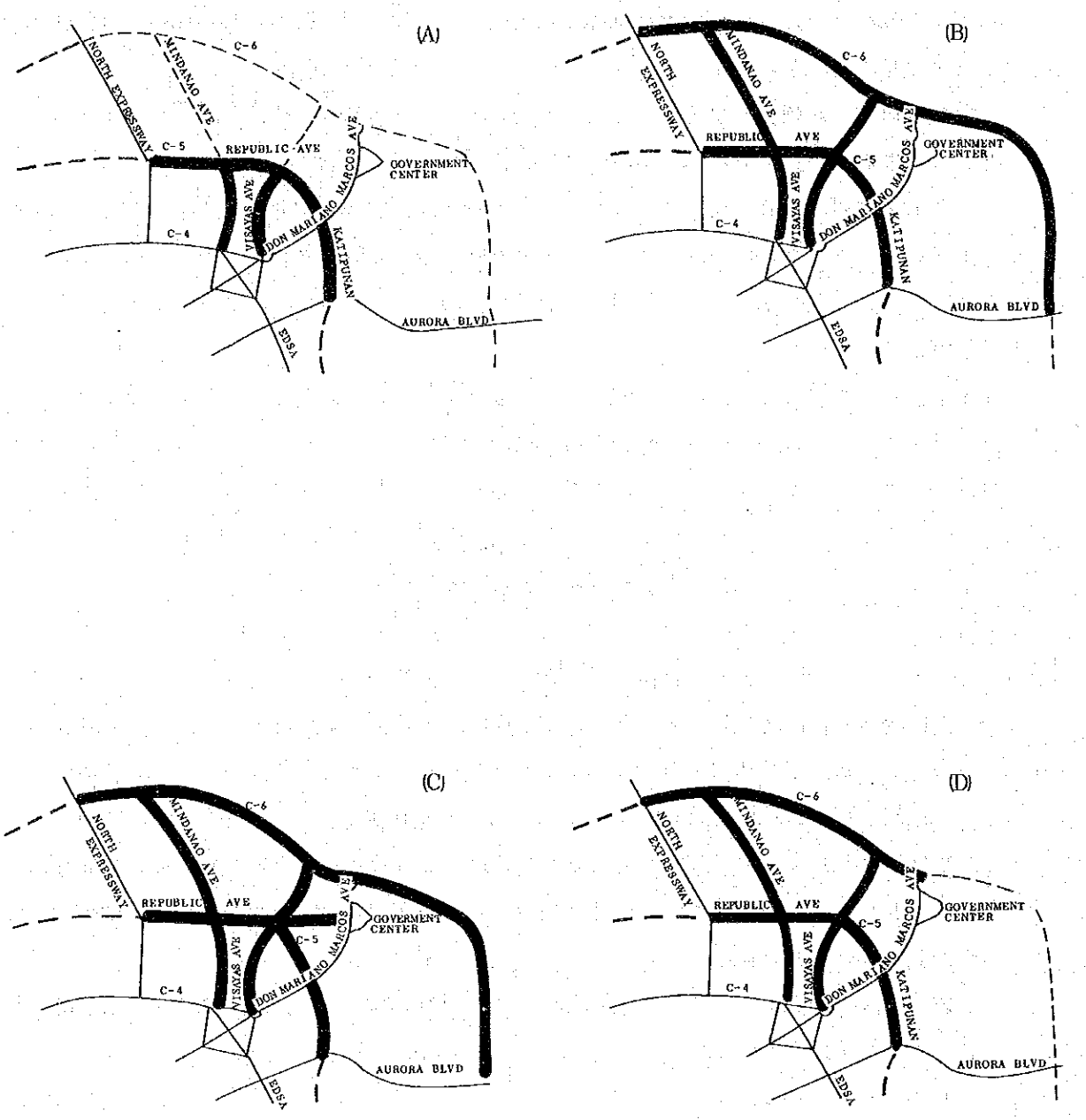
(A)
NORTH EXPRESSWAY
MINDANAO AVE
C-6
C-5
REPUBLIC AVE
VISAYAS AVE
DON MARIANO MARCOS AVE
GOVERNMENT CENTER
C-4
KATIPUNAN
AURORA BLVD
EDSA
(B)
NORTH EXPRESSWAY
MINDANAO AVE
C-6
REPUBLIC AVE
C-5
VISAYAS AVE
DON MARIANO MARCOS AVE
GOVERNMENT CENTER
C-4
KATIPUNAN
AURORA BLVD
EDSA
(C)
NORTH EXPRESSWAY
MINDANAO AVE
C-6
REPUBLIC AVE
C-5
VISAYAS AVE
DON MARIANO MARCOS AVE
GOVERMENT CENTER
C-4
AURORA BLVD
EDSA
(D)
NORTH EXPRESSWAY
MINDANAO AVE
C-6
REPUBLIC AVE
C-5
VISAYAS AVE
DON MARIANO MARCOS AVE
GOVERNMENT CENTER
C-4
KATIPUNAN
AURORA BLVD
EDSA

図５－１　計画対象道路網

氏に対し本調査がC－6を対象路線とすることに対し、全く依存のない旨のレターを送ってきている。

(2) ボーリング、データについて

当該地域についての既存ボーリングデータの確認を行ったところNorth Erpressway Quirino Highway, Don Mariano Marcos Avenue についてのみボーリングデータがあることであった。しかし実際の位置、深さ、調査内容等の詳細については把握することができなかった。

比側の担当者は調査対象地域の西側（North Expressway 付近）には多少地盤が悪いところがあるとのことであったが概して地盤は良好と言える。

そこで調査対象地域の地質調査については、地質図及び既在ボーリングデータの確認を行ったうえで、ボーリングの行われていない区域及び立体交差等の構造物の予定される地点に限ってボーリングを行うとともに河川、ガケ等の観察による概査を行うことが望ましい。

(3) 車の提供について

日本側は、調査に必要な車とドライバーを提供することを比側に要請したが予算の獲得が大変困難であるとのことであった。事前調査団が現地で確認したところ比国での同種調査において必ずしも車の提供を比側の責務としていないことが判った。また、フィージビリティのないことを比側の責務としておいた場合、調査が円滑に進渉しないことも懸念された。そこで、車及びドライバーの費用は日本側で負担することとした。

(4) 調査スケジュールについて

比側は、調査期間の短縮を要請したがSouthern Package での経験からこれ以上の短縮は困難であると説明し了解された。ただし各種レポートの提出時期についてはSouthern Package での以下の経験を踏え変更することとした。すなわちSouthern Package ではInterim Report と Draft Final Reportの提出時期に2ケ月しかずれがなかったために、両レポートに内容的な差がなく作成の意味が薄かったと言える。そこでReportの名称はともかくとして調査の進展に合わせて内容のあるReport を作成し、確認することとし以下のように改めた。

i Progress Reportの提出を2回行うこととし、第1回は、57年9月半ば、第2回は57年11月末とする。

ii Interim Reportは作成しない。

2. 調査の詳細

(1) 土地利用計画について

現在M. M. CがMetro Manilaの土地利用計画を立案中であり、57年2月中にも概案が示されるとのことである。どの程度の内容のものであるかは不明であるが基本的にはこれ

を受けていくべきである。

人口予測は、Southern Package の際に Metro Manila 全体をブロック別に予測したものがありNEDA とも確認済みなので大枠としては変更の必要はないものと言える。もちろん調査で用いるZone 単位へのブレイク・ダウンは行わねばならない。

(2) 交通量予測について

M. O. T. C.が１９８０年に行ったHome Interview によるP. T. 調査により1980年O. D 表（Metro Manila内２０２Zone）が作成されており将来予測のベースとして利用できる。

もちろん計画対象道路網に合わせたZone への組み変えが必要である。

(3) 環境影響評価について

環境影響評価はSouthern Packageと同様 National Environmental Protection Council のガイドラインに従って行うこと。

(4) 路線計画について

Mindanao Aveneu, Visayas Aveneu, Katepunan Road（C－５）の一部にはRight of Way が確保されており当該部分については多少の線形修正にとどめざるを得ない。

C－６については、C. D. C. Pの行った高速道路のFeasibility Studyがあり、比側はC－６を当該高速道路の側道として通すことを考えている。本調査でもその可能性をチェックすべきである。

路線計画はSouthern Package と同様１９７８年の１／5,０００の空中写真をベースとして行うこととし、写真はC. C. P（Cultural Center of the Philippines）から購入できる。また、１９８０年の１／６0,０００の空中写真も購入可能であり、参考的に利用できる代替路線の比較評価の際には、個々の比較路線について工費、環境、社会インパクト等を明らかにしたうえでBest Route を選定すること。

(5) 設計基準及び縮尺について

設計基準については、Southern Package の際に用いたものを使用すること。設計縮尺は、経済評価の誤差を１５％以内に抑えるべくSouthern Package と同様、平面１／2,５００、縦断図１／２００等とすること。

(6) 設計対象交差点について

設計対象とすべき交差点は図５－２に示す１４交差点（C－５、Quirino Highway, Mindanao Avenueの６支交差点を４支交差点３箇所に分ければ１６交差点）であり、Traffic Study の結果により適宜立体交差としなければならない。

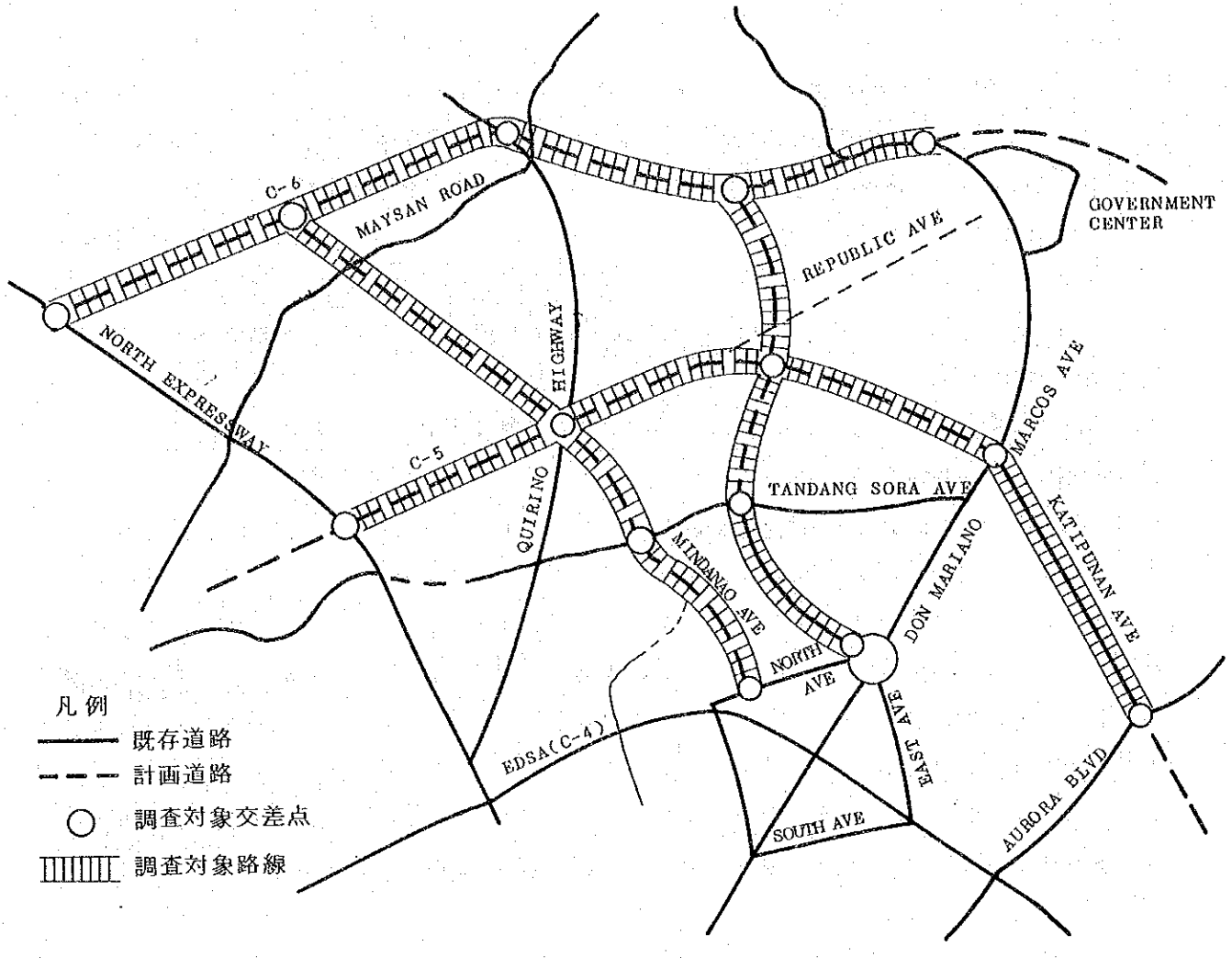

図５－２　調査対象交差点

(7) 経済評価について

経済評価に用いる基礎的指標（走行便益、費用等）は、Southern Package で用いたものと同様のものを用いることとするが、実際の便益計算の前に比側に確認する必要がある。

(8) 調査チームの滞在期間について

今回の調査では、Interim Report の作成段階においてDraft Final Reportを作成することになるので、調査チームはDraft Final Report の作成まで、現地に滞在することが望ましい。

(9) カウンターパートについて

比側のカウンターパートの人数、専門分野については、日本側の調査チームの体制が明らかになるInception Report の提出の段階で確定することとする。

(10) カウンターパートの教育について

比側は、調査チームから定期的なレクチャーを受けることを望んでいる。また、カウンターパートのみならず、できるだけ多くの関係者に日本での研修のチャンスを与えられること

を望んでいる。

(11) 比側のSteering Committeeについて

M. P. W. Hは組織変更の最中でもありSteering Committeeの構成について云々できる段階ではなかった。Inception Report の提出の段階までには確定されるであろう。

(12) そ の 他

本調査で配慮すべき関連プロジェクトとして比側から以下のリストが示された。しかし、個々のプロジェクトについての詳細は、M. P. W. Hには情報がなく、本格調査の際にヒヤリングにより内容を調査する必要がある。また、リストにあがっていない関連プロジェクトにも留意しなければならない。

a) Urban Transport Study for the Metropolitan Manila Area (UTSMMA);

b) Radial Road 10 (R-10) and Its Related Roads Project;

c) Metro Manila Transport Cum Land Use and Development Plan (MMETROPLAN);

d) Circumferential Road 3 (C-3) Project;

e) Metro Manila Eastern Major Roads Project;

f) EDSA (C-4) Upgrading Project;

g) Existing and planned circumferential and radial roads;

h) Metro Manila Urban Development Projects;

i) Manila-Bataan Coastal Road and Its Related Roads (C-5 and C-6) Project;

j) Metro Manila Expressway;

k) Feasibility Study for the Metro Manila Outer Major Roads Projects, Southern Package;

l) Metro Manila Urban Transport Improvement Project (MMUTIP);

m) Lungsod Silangan;

n) National Housing Authority (NHA) Resettlement Projects;

o) Government Center (Batasang Pambansa);

p) Bulacan Provincial Development Plans.

3. ANNEX

ANNEX - 1	Implementing Arrangement
ANNEX - 2	Record of Discussions
ANNEX - 3	Draft of Implementing Arrangement
ANNEX - 4	Terms of Reference
ANNEX - 5	56年度年次協議資料
ANNEX - 6	MMC よりのレター

ANNEX - 1

IMPLEMENTING ARRANGEMENT ON THE TECHNICAL COOPERATION BETWEEN THE JAPAN INTERNATIONAL COOPERATION AGENCY AND THE MINISTRY OF PUBLIC WORKS AND HIGHWAYS FOR THE FEASIBILITY STUDY OF THE METRO MANILA OUTER MAJOR ROADS PROJECT NORTHERN PACKAGE

AGREED

BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY

AND

MINISTRY OF PUBLIC WORKS AND HIGHWAYS

DATED: FEBRUARY 11, 1982

Hiroaki Ogawa

HIROAKI OGAWA
Leader
Japanese Preliminary
Survey Team

JESUS S. HIPOLITO
Minister
Ministry of Public Works
and Highways

IMPLEMENTING ARRANGEMENT
ON THE TECHNICAL COOPERATION
BETWEEN THE
JAPAN INTERNATIONAL COOPERATION AGENCY
AND THE
MINISTRY OF PUBLIC WORKS AND HIGHWAYS
FOR THE FEASIBILITY STUDY
OF THE
METRO MANILA OUTER MAJOR ROADS PROJECT
NORTHERN PACKAGE

I. INTRODUCTION

In response to the request of the GOVERNMENT OF THE REPUBLIC OF THE PHILIPPINES (GOP), the GOVERNMENT OF JAPAN (GOJ) dispatched a PRELIMINARY SURVEY TEAM to the Philippines in February 1982 prior to a feasibility study of the METRO MANILA OUTER MAJOR ROADS PROJECT, NORTHERN PACKAGE, hereinafter to be referred to as "The Study".

Based on the report of the above SURVEY TEAM, the GOJ decided to undertake the Study in accordance with laws and regulations in force in Japan with regard to the technical assistance programs, and exchanged the Note Verbales on the Study with the GOP.

The Japan International Cooperation Agency, hereinafter to be referred as "JICA", the official agency responsible for the implementation of the technical cooperation programs as the GOJ, will carry out the works necessary for the Study.

The Ministry of Public Works and Highways, hereinafter to be referred as "MPWH", is the coordinating agency of the GOP who would provide counterparts to Japanese Study Teams in order to ensure smooth implementation of the Study.

The present document sets forth the Implementing Arrangement agreed between JICA and MPWH for the Study which is to be implemented by JICA in close collaboration with MPWH and other agencies concerned.

II. IMPLEMENTATION OF THE STUDY

1. The JICA shall provide technical cooperation to the MPWH for the implementation of the Study.

2. The Study shall be implemented in accordance with the Scope of Work (APPENDIX I).

3. The Study shall be undertaken in accordance with the Study Schedule (APPENDIX II) which is formulated on the basis of the Scope of Work.

III. DISPATCH OF JAPANESE STUDY TEAM

The JICA shall, at its own expense, dispatch Japanese study teams in accordance with the schedule mutually agreed upon between JICA and MPWH.

IV. PROVISION OF EQUIPMENT AND MATERIALS

The JICA shall, at its own expense, provide equipment and materials which are necessary for the implementation of the Study.

V. TRAINING OF PHILIPPINE COUNTERPARTS

1. The Study is also aimed at assiting the Philippine counterpart personnel to further their skills in the course of the Study.

2. The JICA shall, at its own expense, receive Philippine Government personnel for technical training in Japan in connection with the Study in accordance with the normal procedures under the Colombo Plan Technical Cooperation Scheme.

VI. MEASURES TO BE UNDERTAKEN BY THE GOVERNMENT OF THE PHILIPPINES

1. The GOP, in accordance with the Note Verbales, exchanged between the GOP and the GOJ, shall be responsible for dealing with claims which may be brought by third parties against Japanese study team members and shall hold them harmless in respect of claims or liabilities arising in the course of or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims or liabilities arise from the gross negligence or willful misconduct of the above-mentioned members.

2. The MPWH shall, at its own expense, provide the following:

   1) Available data and information related to the Study.

   2) A preliminary inventory survey of existing land uses within the study area.

   3) A counterpart team necessary for the Study.

4) Credentials or Identification Cards (ID) to the members of the Study Team who shall be working in the Philippines for the implementation of the Study.

5) Suitable office space in the MPWH office.

3. The MPWH shall make the necessary arrangements for the following:

1) Secure permission for entry into private properties and restricted areas.

2) Hiring of laborers as needed, but wages shall be chargeable against JICA funds alloted for the Study.

3) Availability of medical facilities when needed but medical expenses shall be chargeable to JICA funds alloted for the Study.

4. The MPWH shall make the necessary arrangements with proper agencies concerned:

1) To ensure the safety of the Study Team.

2) To provide the necessary facilities to the Japanese Study Team for the remittances as well as utilization of funds introduced into the Philippines from Japan in connection with the implementation of the Study.

3) To exempt the Japanese Study Team members from taxes, duties, fees and other charges of machinery, equipment and other materials brought into the Philippines for the conduct of the Study.

4) To secure clearance for the release of the aerial photography necessary for the Study.

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(APPENDIX I)

SCOPE OF WORK FOR THE FEASIBILITY STUDY OF THE METRO MANILA OUTER MAJOR ROADS PROJECT NORTHERN PACKAGE

I. OBJECTIVE OF THE STUDY

The Study will assess the technical and economic viability for the improvement and development of the identified Project.

II. PROJECT ROADS

The Project will cover the following roads:

1. Circumferential Road 5 (C-5) from the Manila North Expressway in Torres Bugallon, Valenzuela to Aurora Blvd. (R-6) in Quezon City via Republic Avenue and Katipunan Avenue, about 15 km. in length.

2. Circumferential Road 6 (C-6) from the Manila North Expressway in Meycauayan, Bulacan to the Don Mariano Marcos Avenue (R-7), in Quezon City, about 12 km. in length.

3. Mindanao Avenue from North Avenue in Quezon City to Circumferential Road 6 (C-6), about 9 km. in length.

4. Visayas Avenue from Elliptical Road in Quezon City to Circumferential Road 6 (C-6), about 8 km. in length.

Please refer to Location Map.

III. SCOPE OF THE STUDY

The Study shall include but not limited to the following aspects:

1. Data collection and analysis

   a) traffic data

   b) social condition data

   c) economic data

   d) financial data

   e) institutional data

f) administrative and managerial data

g) engineering data (i.e. topographical, geological, hydrological, etc.)

h) other data necessary for the study

2. Traffic studies

a) review of population distribution

b) review of land use plan

c) supplementary traffic survey

d) analysis and estimation of the traffic demands

e) traffic assignment

f) traffic impact of project to other major roads in the area

3. Environmental and social impact studies in accordance with the National Environmental Protection Council (NEPC) Guidelines of GOP

a) environmental impact

b) social impact

c) economic impact

d) other related impacts

4. Selection of the route

An alignment study will be undertaken for the purpose of selecting the best route among competitive routes on the basis of cost, functionality, social impact and environmental impact, among others.

5. Design standards and preliminary engineering

a) design standards

b) preliminary design

c) construction methods

6. Cost estimation

a) engineering cost

b) right-of-way acquisition cost

c) construction cost

d) maintenance cost

7. Economic evaluation

a) estimation of benefits

b) N.P.V., IRR, B/C

c) sensitivity analysis

8. Implementation program

An implementation program will be prepared based on the construction program and the financial studies.

IV. REPORTS

JICA will prepare and submit the following reports to the GOP.

1. Twenty (20) copies of the inception report shall be submitted at the beginning of the Study.

2. Twenty (20) copies of first progress report shall be submitted three (3) months after the beginning of the Study.

3. Twenty (20) copies of the second progress report shall be submitted about six (6) months after the beginning of the Study.

4. Twenty (20) copies of the draft final report shall be submitted not later than four (4) months after the submittal of the second progress report. The GOP will submit to the JICA its comments within one (1) month after the receipt of the draft final report.

5. Fifty (50) copies of the final report shall be submitted within two (2) months after the receipt of the GOP's comments on the draft final report.

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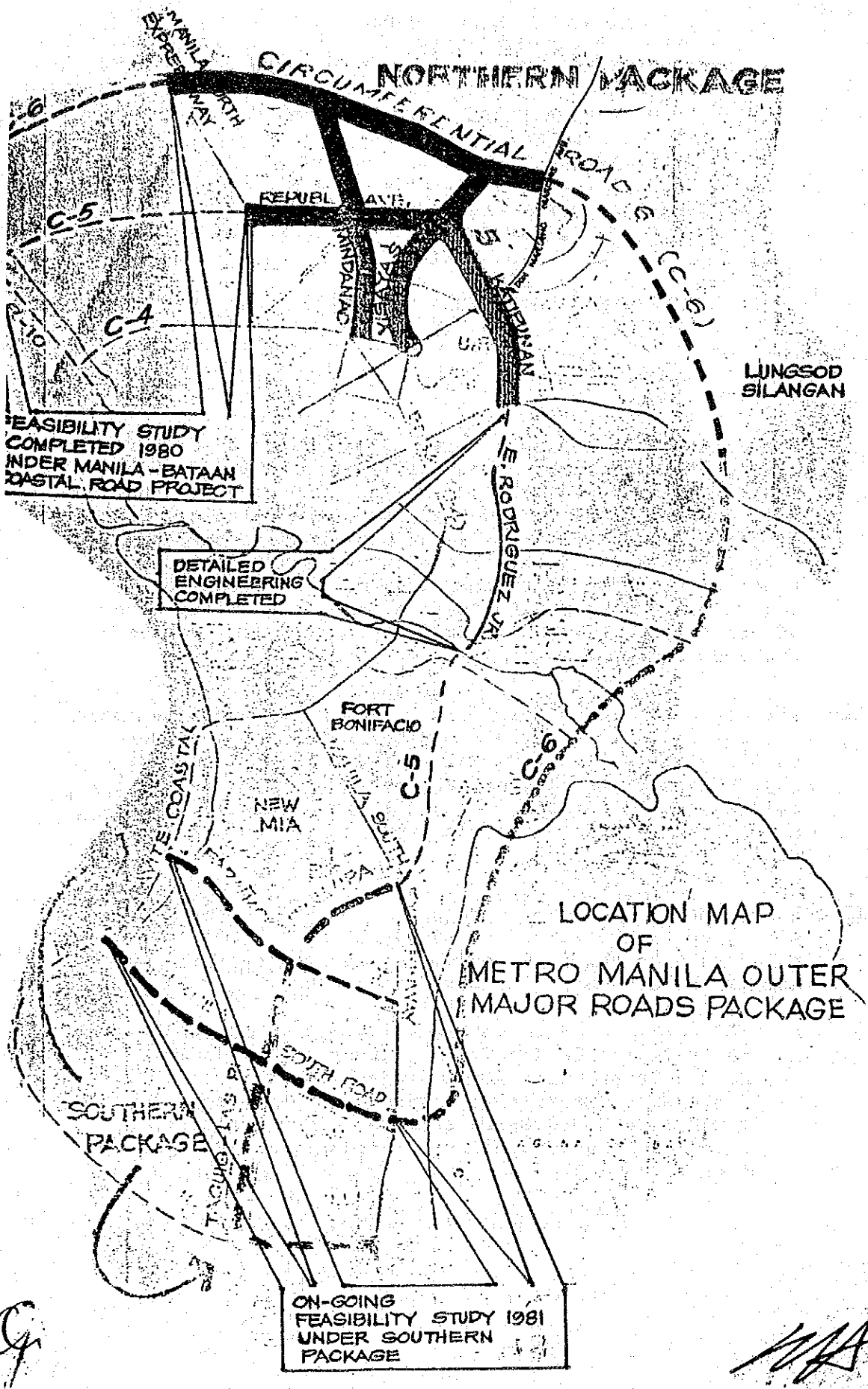
TENTATIVE SCHEDULE

ACTIVITIES	1982									1983					
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
1. Preparation															
2. Inception report			⊕												
3. Field work & analysis			▨	▨	▨	▨	▨	▨	▨	▨	▨	▨			
4. First progress report						⊕									
5. Second progress report								⊕							
6. Draft final report												⊕			
7. Comments by GOP													▨		
8. Preparation of final report														▨	▨
9. Final report															⊕



LOCATION MAP
OF
METRO MANILA OUTER
MAJOR ROADS PACKAGE

ANNEX - 2

RECORD OF DISCUSSIONS BETWEEN THE PHILIPPINE AND THE JAPANESE SURVEY TEAM ON THE TECHNICAL ASSISTANCE FOR THE FEASIBILITY STUDY OF THE METRO MANILA OUTER MAJOR ROADS PROJECT NORTHERN PACKAGE IN METRO MANILA FROM FEBRUARY 8 TO FEBRUARY 11, 1982

I. The Japanese Preliminary Survey Team headed by Mr. Hiroaki Ogawa, Director, Urban Transportation Planning Section, City Planning Division, City Bureau, Ministry of Construction and Mr. Juanito F. Cutay, Executive Director, Special Projects Office, in a series of conference from February 8 to February 11, 1982, discussed the technical assistance to be extended by the Government of Japan to the Government of the Philippines for the feasibility study of the Metro Manila Outer Major Roads Project, Northern Package.

II. The Japanese Preliminary Survey Team stated that the main purpose of their visit is to discuss the scope of work of the study with the Ministry of Public Works and Highways. They would also gather information on the availability of data necessary for the study as well as conduct field inspection on the project site during their visit.

III. Using the scope of work prepared by the Japanese Preliminary Survey Team for the study which is hereto attached as Annex 1 as the basic document, the following is the summary of discussions and understanding:

A. The Japanese Preliminary Survey Team's proposal is to limit the feasibility study of the Metro Manila Outer Major Roads Project, Northern Package to Circumferential Road 5 (C-5) from the Manila North Expressway to Aurora Boulevard (R-6) and the extensions of Mindanao and Visayas Avenues to C-5.

The Philippine side proposed the expansion of the Northern Package to include Circumferential Road 6 (C-6) from the Manila North Expressway to Marcos Highway in Antipolo; extension of Republic Avenue to Batasang Pambansa in Quezon City; and further extensions of Mindanao and Visayas Avenue to C-6 in view of its importance not only in the improvement of the traffic condition in Metro Manila Area but also to provide the much needed accesses to on-going development projects such as the Lungsod Silangan.

After evaluating the urgency of the project, the Japanese Preliminary Survey Team agreed to expand the project study to cover the following roads:

a) Circumferential Road 6 (C-6) from the Manila North Expressway in Meycauayan, Bulacan to the Don Mariano Marcos Avenue (R-7), in Quezon City, about 12 km. in length.

b) Circumferential Road 5 (C-5) from the Manila North Expressway to Aurora Boulevard (R-6), about 15 km. in length.

c) Mindanao Avenue from North Avenue, in Quezon City to C-6, about 9 km. in length.

d) Visayas Avenue from Elliptical Road in Quezon City to C-6, about 8 km. in length.

The remaining segment of C-6 will be included in the Metro Manila Outer Major Roads Project, Eastern Package, for possible inclusion in the next JICA technical assistance.

B. The Study shall consider the following relevant development projects and studies:

a) Urban Transport Study for the Metropolitan Manila Area (UTSMMA);

b) Radial Road 10 (R-10) and Its Related Roads Project;

c) Metro Manila Transport Cum Land Use and Development Plan (MMETROPLAN);

d) Circumferential Road 3 (C-3) Project;

e) Metro Manila Eastern Major Roads Project;

f) EDSA (C-4) Upgrading Project;

g) Existing and planned circumferential and radial roads;

h) Metro Manila Urban Development Projects;

i) Manila-Bataan Coastal Road and Its Related Roads (C-5 and C-6) Project;

j) Metro Manila Expressway;

k) Feasibility Study for the Metro Manila Outer Major Roads Project, Southern Package;

l) Metro Manila Urban Transport Improvement Project (MMUTIP);

m) Lungsod Silangan;

n) National Housing Authority (NHA) Resettlement Projects;

o) Government Center (Batasang Pambansa); and

p) Bulacan Provincial Development Plans.

C. Intersection improvement will include the following:

1. Along Circumferential Road 6 (C-6)

a) Manila North Expressway

b) Mindanao Avenue

c) Quirino Avenue

d) Visayas Avenue

e) Don Mariano Marcos Avenue

2. Along Circumferential Road 5 (C-5)

a) Manila North Expressway

b) Quirino Avenue

c) Mindanao Avenue

d) Visayas Avenue

e) Don Mariano Marcos Avenue

f) Aurora Boulevard

3. Along Mindanao Avenue

a) West Avenue

b) Tandang Sora

D. The Japanese Preliminary Survey Team submitted a questionnaire regarding the availability of data necessary for the Study. MPWH's reply was summarized in the attachment.

IV. The scope of undertakings of both Governments, as discussed in the Scope of Work, is agreeable in principle to both sides.

V. The Philippine side expressed appreciation to the Japanese Government in the dispatch of the Survey Team to the Philippines and for the friendly and cooperative attitude of the members of the Survey Team. It also expressed its optimism for the technical assistance to become a reality and looks forward to receiving the Study Team that would be dispatched to conduct the actual Study and the Eastern Package to be subject of technical assistance in the JICA's next program.

VI. The Japanese side expressed its appreciation for the cooperation and hospitality extended to them during their stay in the Philippines.

Done at Manila, February 11, 1982.

Hiroaki Ogawa

HIROAKI OGAWA
Leader
Japanese Preliminary
Survey Team
(Director
Urban Transportation
Planning Section, City
Planning Division, City
Bureau, Ministry of
Construction, GOJ)

JUANITO F. CUTAY
MPWH Advisory Committee
(Executive Director
Special Projects Office
Ministry of Public Works
and Highways, GOP)

QUESTIONAIRES

I. MAPS

1) Topographical maps

Source: BCGS

Scale : 1:50,000 - - - nationwide
1:25,000 - - - Metro Manila
1:10,000 - - - -do-

2) Aerial photographs

Source: PICC

Year : 1978

Scale : 1:8000

3) Geological Map

Source: BCGS

II. SURVEY

1) Existence of Aerial photograph company

a) F. F. Cruz & Co., Inc.

b) Certeza & Co.

2) Necessity of permission for aero-photo taking

Yes, from the Military (MPWH will secure clearance from the Military before the start of the study)

III. TRAFFIC

1) Number of Vehicles - Bureau of Land Transportation (BLT)

2) Freight and passenger traffic - from previous O-D survey

3) Traffic volume - MPWH control station count

4) Existence of traffic survey

a) Traffic survey from Manila-Bataan Feasibility Study

b) CDCP Feasibility Study

c) Eastern Major Roads Project (MPWH will furnish a copy of the traffic study to Study Team)

d) Southern Package

e) MMETROPLAN

f) MUTP (MOTC)(MPWH will request MOTC a copy of the study)

g) UTSMMA

IV. DESIGN

1) Design standards for roads and bridges

- Please see Southern Project Study

2) Road Inventory

- MPWH, Region IV) Bureau of Maintenance

V. ORGANIZATION

(MPWH organization will be available before the start of the study)

VI. ECONOMY

1) Annual and quarterly economic and statistic bulletin - NEDA

2) National and regional population statistics and trend - NEDA and Bureau of Census and Statistics

3) Economic reports issued by the Central Bank or commercial bank - Central Bank

VII. OTHERS

1) Local construction firms --- with list of their machineries (MPWH)

2) Local consultant for survey and boring

   a) Overseas Development and Trade

   b) Certeza & Co.

   c) F. F. Cruz & Co., Inc.

3) Construction materials of local portion or foreign portion:

   Cement, Aggregate, Asphalt, Steel bar etc. (Southern Package)

4) Existence of other projects concerned (included in the record of discussion)

5) Development plan of land in Manila (MMC)

6) Existence of boring-data concerned (MPWH) (Available boring-data and typical cross-sections of major roads will be submitted to Mr. Ashimi)

ANNEX - 3

DRAFT OF

IMPLEMENTING ARRANGEMENT ON THE TECHNICAL COOPERATION BETWEEN THE JAPAN INTERNATIONAL COOPERATION AGENCY AND THE MINISTRY OF PUBLIC WORKS AND HIGHWAYS FOR THE FEASIBILITY STUDY OF THE METRO MANILA OUTER MAJOR ROADS PROJECT
(NORTHERN PACHAGE)

AGREED

BETWEEN

JAPAN INTERNATIONAL COOPERATION AGENCY

AND

MINISTRY OF PUBLIC WORKS AND HIGHWAYS

DATED:

HIROAKI OGAWA

Leader

Japanese preliminary Survey Team

IMPLEMENTING ARRANGEMENT ON THE TECHNICAL COOPERATION BETWEEN THE JAPAN INTERNATIONAL COOPERATION AGENCY AND THE MINISTRY OF PUBLIC WORKS AND HIGHWAYS FOR THE FEASIBILITY STUDY OF THE METRO MANILA OUTER MAJOR ROADS PROJECT
(Northern Package)

I. INTRODUCTION

In response to the request of the Government of the Republic of the Philippines, the Government of Japan dispatched a preliminary survey team to the Philippines in February 1982 prior to a feasibility study of the METRO MANILA OUTER MAJOR ROADS PROJECT (NORTHERN PACKAGE) (hereinafter to be referred to "The Study").

Based on the report of the above survey team, the Government of Japan decided to undertake the Study in accordance with laws and regulations in force in Japan with regard to the technical assistance programs, and exchanged the Note Verbales on the Study with the Government of the Republic of the Philippines.

The Japan International Cooperation Agency (hereinafter to be referred as "JICA), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will carry out the works necessary for the Study.

The Ministry of Public Works and Highways (hereinafter to be referred as "MPWH") shall serve as counterpart to the Japanese study teams and also as coordinating body to other related governmental and non-governmental organizations for the smooth implementation of the Study.

The present document sets forth the Implementing Arrangment agreed between JICA and MPWH for the Study which is to be implemented by JICA in close collaboration with MPWH and other agencies concerned.

II. IMPLEMENTATION OF THE STUDY

1. The JICA shall provide technical cooperation to the MPWH for the implementation of the Study.
2. The Study shall be implemented in accordance with the Scope of Work (APPENDIX I).
3. The Study shall be undertaken in accordance with the Study Schedule (APPENDIX II) which is formulated on the basis of the Scope of Work.

III. DISPATCH OF JAPANESE STUDY TEAMS

The JICA shall, at its own expense, dispatch Japanese study teams in accordance with the schedule mutually agreed upon between JICA and MPWH.

IV. PROVISION OF MACHINERY EQUIPMENT AND OTHER MATERIALS

The JICA shall, at its own expense, provide machinery equipments and other materials which are necessary for the implementation of the Study.

V. TRAINING OF PHILIPPINE COUNTERPARTS

1. The Study is also aimed at assisting the Philippine counterpart personnel to further their skills to the extent possible through Japanese professionals in the course of the study.
2. The JICA shall, at its own expenses, receive Philippine Government personnel for technical training in Japan in connection with the Study in accordance with the normal procedures under the Colombo Plan Technical Cooperation Scheme.

VI. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE PHILIPPINES

1. The Government of the Philippines, in accordance with the Note Verbals exchanged between the Government of the Philippines and the Government of Japan, shall be responsible for dealing with claims which may be brought by third parties against the Japanese surey team members, and shall hold them harmless in respect of claims or liabilities arising in the ocurse of or other-wise connected with the discharge of their duties in the implementation of the Study, except when such claims or liabilities arise from the gross negligence or wilful misconduct of the above-mentioned individuals.

   Should any question arise in connection with the foregoing, both Governments shall immediately consult with each other.
2. The MPWH shall, at its own expenses, provide the following:
   1) Available data and information related to the Study.
   2) A Preliminary inventory survey of existing land uses within the study area.
   3) Counterparts of the Government of the Philippines consisting of a

coordinator, Engineers, Economists and other Supporting Staff necessary for the Study.

4) Credentials or Identification (ID) cards to the members of the Study team who shall be working in the Philippines for the execution of the Study.

5) Suitable office space in the MPWH office.

6) Appropirate number of vehicles with drivers.

3. The MPWH shall make the necessary arrangements for the following:

1) Secure permission for entry into private properties and restrictd areas.

2) Hiring of laborers as needed, but wages shall be chargeable against JICA funds alloted for the Study.

3) Availability of medical facilities when needed but medical expenses shall be chargeable to JICA funds alloted for the Study.

4. The MPWH shall make the necessary arrangements with proper agencies concerned:

1) To ensure the safety of the study team.

2) To provide the necessary facilities to the Japanese study teams for the remittances as well as utilization of funds introduced into the Philippines from Japan in connection with the implementation of the Study.

3) To exempt the Japanese study team members from taxes, duties, fees and other charges on machinery, equipment and other materials brough into the Philippines for the conduct of the Study.

4) To secure clearance for the release of the aerial photography.

(APPENDXI I)

SCOPE OF WORK

FOR

THE FEASIBILITY STUDY OF THE METRO MANILA OUTER MAJOR ROADS PROJECT, NORTHERN PACKAGE

I. OBJECTIVE OF THE STUDY

This study will assess the technical and economic viability of the Project.

II. PROJECT ROADS

2.1 The Project will cover the following roads:

2.1.1 Northern segment of Road 5(C-5) from the Manila North Expressway to Aurora Boulevard (R-6), about 15 Kilometers in length.

2.1.2 Major secondary roads, Visayas Avenue from the Elliptical Road to Road 5 (C-5), about 4.8 Kilometers in length.

2.1.3 Major secondary road, Mindanao Avenue from North Avenue to Road 5 (C-5), about 3.5 Kilometers in length.

III. SCOPE OF THE STUDY

The study includes the following components:

3-1 Data collection and analysis

a) traffic data

b) social condition data

c) economic data

d) financial data

e) institutional data

f) administrative and managerial data

g) engineering data (ex. topographical, geological, hydrological, etc.)

h) other data necessary for the study

3-2 Traffic studies

a) review of population distribution and land use plan

b) supplementary traffic survey

c) analysis and estimation of the traffic demands

d) traffic assignment

e) traffic impact of project to other major roads in the area

3-3 Environmental and social impact studies in accordance with the National Environmental Protection Council (NEPC) guidelines.

a) environmental impacts

b) social impacts

c) economic impacts

d) other related impacts

3-4 Selection of the route

An alignment study will be undertaken for the purpose of selecting the best route among competitive routes on the basis of cost, functionality, social impact and environmental impact, among others.

3-5 Design standards and preliminary engineering

a) design standards

b) preliminary design

c) construction methods

3-6 Cost estimation

a) right-of-way acquisition cost

b) construction cost

c) mechanized maintenance cost

3-7 Economic evaluation

a) estimation of benefits

b) N.P.V., IRR, B/C

c) sensitivity analysis

3-8 Implementation program

An implementation program will be prepared based on the construction program and the financial studies.

IV. STUDY SCHEDULE

The study will be executed in accordance with the attached tentative schedule.

V. REPORT

JICA will prepare and submit the following reports to the GOP.

5.1 Twenty (20) copies of the inception report shall be submitted at the beginning of the study.

5.2 Twenty (20) copies of the interim report shall be submitted seven (7) months after the study.

5.3 Twenty (20) copies of the draft final report shall be submitted not later than two(2) months after the submittal of the interim report. The GOP will submit to the JICA its comments within one (1) month after the receipt of the draft final report.

5.4 Fifth (50) copies of the final report shall be submitted within two (2) months after the receipt of the GOP's comments on the draft final report.

(APPENDIX II)

TENTATIVE SCHEDULE

ACTIVITIES	1982									1983					
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
1. Preparation															
2. Inception report			●												
3. Field work & analysis			▨	▨	▨	▨	▨	▨	▨	▨	▨	▨			
4. Progress report							●								
5. Interim report										●					
6. Draft final report												●			
7. Comments by GOP													▨		
8. Preparation of final report														▨	▨
9. Final report															●

ANNEX - 4
TERMS of REFERENCE

METRO MANILA OUTER MAJOR ROADS PACKAGE

I. PROJECT BACKGROUND

1.1 The choice of Metropolitan Manila as an area for intensive development activities, including transport, follows from the role of the area as the leading center of growth in the national economy. For Metropolitan Manila has been, and will continue to be, the main focus of human activities, generating social and economic benefits that have important multiplier effects over the rest of the country.

1.2 Metropolitan Manila is presently plagued by various environmental ills which might pose as a bottleneck in the continuance of its significant function. Among these problems are shortages in land and housing, employment, water supply and other utilities and traffic congestion.

1.3 The transport network that presently exist in Metro Manila is dominated by the major thoroughfares system which consist of nine (9) radial and three (3) loop roads characterized by non-homogenous sections. Complementing the road network is the PNR commuter train system which generally run along a north-south direction.

1.4 The present transport demand generated in Metro Manila amounts to about 11.4 million person trips per day. Over 99 percent of the daily public transport passenger trips are by means of buses and jeepneys, but rail services, taxis and tricycles are also significant passenger carriers.

1.5 The road development in Metro Manila were mainly based on the recommendations of the Urban Transport Study for Metro Manila Area (UTSMMA) 1973, which established a multi-modal transport system. The recommended major thoroughfare system is composed of ten (10) radials and six (6) loop roads (C-1 to C-6).

1.6 Due to the limited Government resources, the major thoroughfares plan are being implemented in stages, based on the recommendations of the World Bank-assisted Metro Manila Transport cum Land Use Planning Project (MMETROPLAN 1977) which established the short and long term development programs (up to year 1990) to respond the transport requirements of the metropolis within the context of a rational land use pattern.

1.7 The major roads within C-4 (or EDSA) are either completed, under construction or being programmed already for implementation.

1.8 A vital component not yet included in any program are various major roads outside C-4.

1.9 The major roads outside C-4 identified by MMETROPLAN for early implementation were consolidated for feasibility study.

1.10 The Government of the Philippines (GOP) has requested the Government of Japan (GOJ) for technical assistance for the conduct of the Feasibility Study for the said major roads under the "Metro Manila Outer Major Roads Package".

II. METRO MANILA OUTER MAJOR ROADS PACKAGE FEASIBILITY STUDY

2.1 Introduction

2.1.1 The Project (see attached Location Map) calls for the conduct of a feasibility study (hereinafter referred to as the Study) of the following segments of Metro Manila Major Roads network.

A. Nothern Package

a. Segment of C-5 from Manila North Expressway to Aurora Blvd. (R-6), about 15.00 kilometers in length.

b. Segment of Visayas Avenue from Elliptical Road to its proposed intersection with C-5, about 4.80 kilometers in length.

c. Segment of Mindanao Avenue from North Avenue to its proposed intersection with C-5, about 3.50 kilometers in length.

B. Sourthern Package

a. Segment of Dr. A. Santos Avenue (also known as Parañaque-Sucat Road) from the Manila South Expressway to Quirino Avenue, about 7.70 kilometers in length.

b. Segment of Manila South Road (also known as Alabang-Zapote Road) from Alabang Interchange of the Manila South Expressway to Zapote Junction, about 10.50 kilometers in length.

c. Taguig-Las Piñas-Muntinlupa Loop Road from Bicutan Interchange of the Manila South Expressway, then cutting across the Parañaque-Sucat Road and Zapote-

Alabang Road with a total length of about 20 kilometers.

2.1.2 The Project (part of the Metro Manila's conceptual major road network) is intended to provide the much needed accesses to fast-developing urban areas outside C-4 and to attract a portion of the traffic along existing roads in the area, which already have traffic congestions especially during peak hours. The major roads that are expected to be greatly improved after the construction phase of the Project are Quirino Highway and EDSA between Balintawak and Cubao in the north, and Quirino Avenue and the service roads of the Manila South Expressway in the south.

2.1.3 The effectiveness of the development projects in the outer area that has great dependence on the completion of the project roads are the Government Center, and the New Manila International Airport (MIA) Complex and the Manila-Cavite Coastal Road and Reclamation Project.

2.1.4 The project section of C-5 will have a total length of 15.00 kilometers and involve new construction of 10.80 kilometers and improvements/widening of the existing Katipunan Avenue from Balara to Aurora Blvd. (R-6). Part of the right-of-way of the northern section of C-5 had already been acquired by the Government since it will utilize the same alignment of Republic Avenue leading to the new Government Center from the west. It will be a multi-lane divided highway with four (4) major intersections.

2.1.5 The missing segments of C-5 south of Aurora Blvd. is presently the subject of detailed engineering as part of the Eastern Major Roads Package in the program to alleviate the traffic situation now prevailing in the eastern sector of the metropolis.

2.1.6 The inclusion of Mindanao and Visayas Avenues in the Northern Package is to provide main north-south routes between Don Mariano Marcos Avenue (R-8) and the North Expressway. The project section of Mindanao Avenue will have a total length of 3.40 kilometers starting from its intersection with North Avenue in Quezon City and runs northward until it joins the proposed C-5. The project section of Visayas Avenue will have a total length of 3.40 kilometers starting from Elliptical Road and runs northward until it intersects the proposed C-5.

2.1.7 The project section of Parañaque-Sucat Road will have a total length of 7.70 kilometers starting from Quirino Avenue in Parañaque and follows Dr. A. Santos Avenue until it connects with the Manila South Expressway at the Sucat Interchange.

2.1.8 The project section of Alabang-Zapote Road will have a total length of 10.50 kilometers starting from Zapote Junction in Las Piñas to its intersection with the South Expressway in Alabang.

2.1.9 The project section of the Taguig-Las Piñas-Muntinlupa Loop Road from the Bicutan Interchange of the Manila South Expressway, then southward across Parañaque-Sucat and Zapote-Alabang Roads, then turns left to connect with the proposed Susana Heights Interchange of the South Expressway.

III. PURPOSE

3.1 The primary purpose of the Study is to determine the types of improvement, including the alignment and required number of lanes that would yield the most economic return, and based on the findings, to prepare pre-investment reports.

3.2 The Study is intended to be presented by GOP to international financing institutions for loan applications to finance the foreign construction costs of the project.

IV. SCOPE OF WORK

4.1 General

4.1.1 To attain the objectives, the Study shall undertake all components of a feasibility study such as traffic forecast, preliminary engineering, environmental impact, economic analysis and implementation schemes for possible financial assistance from international financing institutions.

4.1.2 The Study shall undertake all incidental works, including field surveys, computer work, map plotting and drafting if necessary.

4.1.3 The Study shall investigate:

a. Alternate locations, alignments road types, road cross-sections (number of lanes), structures, etc.

b. Possibility of stage construction of road segments, road types, road cross-sections and structures.

4.2 Relationship to Other Development Plans

a. Urban Transport Study of the Metropolitan Manila Area (UTSMMA, 1973)

b. R-10 Feasibility Study (1974)

c. Metro Manila Transport Cum Land Use Strategies (MMETROPLAN, 1977)

d. C-3, R-4 and Related Roads Feasibility Study (1978)

e. Manila-Bataan Coastal Road and Development Project (1980)

f. Lungsod Silangan Project

g. New Manila International Airport Complex

h. Manila Urban Development Projects

i. Existing and planned national and local highway programs

j. Manila-Cavite Coastal Road and Reclamation Project

4.3 Traffic Study

4.3.1 The Study shall be comprehensive and sufficient to meet all requirements of a feasibility study. It shall take into account the implications of the transport system of Metropolitan Manila on the Project Roads.

4.3.2 All available traffic data related to the Project Roads shall be reviewed and additional traffic surveys necessary to supplement available data shall be conducted.

4.3.3 The traffic forecast shall adopt the methodology used for the normal comprehensive detailed projection, consisting of the trip production, the trip generation and attraction, trip distribution, the modal split and the trip assignment. The specific models to be applied shall be determined upon recommendation of the consultant and the approval of the Ministry of Public Highways (MPH).

4.3.4 The Study shall include compilation and gathering of the necessary input data, forecast of the traffic demand and analysis of the traffic flow.

4.3.5 The report on the traffic study shall cover assumptions, methodologies, outcomes, findings, and recommendations, including maps, figures and illustrations.

4.4 Preliminary Engineering

4.4.1 The Study shall undertake all necessary field investigations, including topographic and subsurface soil exploration surveys for the preparation of preliminary engineering designs and determination of the principal quantities of work.

4.4.2 The Study shall conduct preliminary engineering works of all alternative plans and construction stages as deemed necessary.

4.4.3 The Study shall submit plans, alignments, profiles and cross-sections (including right-of-way limits) of the proposed constructions with the character and standard of the roads taking into consideration such factors as traffic, function and economics.

4.4.4 The Study shall undertake a survey of the land and improvements affected by the right-of-way of each alternative plans and shall estimate the cost of acquisition thereof.

4.4.5 The Study shall estimate construction cost and build up a contractor-type estimate for each major items of the construction cost.

4.4.6 The Study shall separately identify the components of foreign and local currencies (with taxes shown separately) for the proposed construction works. The foreign currency component shall include such items as equipment depreciation, materials and supplies with the Philippines as the net importer, wages of foreign personnel, overhead and profit of foreign firms, and interest and other financial charges payable abroad. The local currency components shall include right-of-way acquisition costs, local materials and supplies, local wages, taxes, etc. The cost estimates shall include identifiable contingency allowances for (i) quantities and (ii) price escalation from the date of the estimate to the completion of the works.

4.4.7 Preliminary engineering for these studies shall be carried out to a degree that will permit estimates of principal quantities of construction with an accuracy of plus or minus 20 percent of final quantities.

4.5 Environmental and Social Impact

Since the proposed roads will pass mostly through sections where there are already existing developments, a comprehensive environmental impact analysis must be undertaken as part of the Study incorporating therewith corresponding mitigation measures that are called for. The analysis shall consider the following factors:

4.5.1 The impact of the project, adverse as well as beneficial, on the residents of the surrounding areas with respect to traffic conditions, land values, employment, etc.

4.5.2 The consequences of having to relocate the various families affected in the acquisition of right-of-way.

4.5.3 The possible adverse effects and/or benefits during the construction period, and the effect on present activities in the vicinity of the project roads after completion.

4.5.4 The problems the surronding communities might be exposed due to expected increased of vehicular movement along the project roads.

4.6 Economic Analysis

An economic analysis shall conclude the Study, from which shall be drawn the recommendations on the viability of the project; on the most appropriate location, alignment, types of structures, construction methods, etc. to be adopted. The preceeding components of the Study shall be the basis in the preparation of the economic analysis which shall consider the following factors, among others:

4.6.1 Project Cost - All costs incidental to the construction, maintenance, administration, interest, etc. of the project roads shall be estimated. The same for the alternatives.

4.6.2 Benefits - To be quantified are benefits to be derived from the project due to reduction in vehicle operation costs and savings in travel time for both users and non-users of the project roads. Other benefits, such as reduction of traffic accidents, opportunity cost for vehicles and drivers and other indirect benefits need not be quantified but merely stated.

4.6.3 Benefit and Cost Comparison shall be made indidating the net present worth, benefit/cost ratio of the first year and the whole period of the economic life.

4.6.4 Sensitivity Analysis shall also be made relative to the traffic volume, project cost, discount rate and other development projects affecting the project roads.

4.6.5 The economic analysis shall be based on the timetable for the implementation proposed in the Study, including the investment and reimbursement programs for the project roads.

V. STUDY SCHEDULE

5.1 The attached tentative schedule shows the different activities and duration of the Study.

VI. REPORTS

6.1 Twenty (20) copies of the inception report shall be submitted at the beginning of the study.

6.2 Twenty (20) copies of the tentative draft final report shall be submitted five (5) months after the start of the Study.

6.3 Twenty (20) copies of the draft final report shall be submitted not later than two (2) months after the submission of the tentative draft final report. The GOP will submit to the Japanese International Cooperation Agency (JICA) its comments within one (1) month after the receipt of the draft final report.

6.4 Fifty (50) copies of the final report shall be submitted within two (2) months after the receipt of GOP's comments on the draft final report.

VII. UNDERTAKING OF THE GOVERNMENT OF THE PHILIPPINES

7.1 Coordination for the Study will be provided by the Special Project Service (SPS) of the Ministry of Public Highways (MPH). MPH will provide counterpart personnel.

7.2 MPH will secure all available relevant studies and data for the use of the study team.

7.3 MPH will provide local counterpart fund for the execution of the Study

7.4 Equipment and materials necessary for the Study to be brought into the Philippines by the study team shall

be exempted from taxes and duties in accordance with the applicable laws and regulations of the Philippine Government.

7.6 The Government will exempt the expatriate members of the Study team from income tax and charges of any kind imposed on living allowances remitted from abroad, and will exempt the import and export duties imposed on their personal effects.

7.7 The Government will secure the necessary entry permits for equipment and materials needed for the conduct of the field surveys by the study team.

7.8 The Government will assure the security of the study team members to the extent possible.

7.9 The Government will provide the study team the following:

a) appropriate number of local personnel as counterparts to the expatriate team members.

b) non-technical support personnel.

c) office space, equipment and supplies for both local and expatriate team members.

d) vehicles with drivers for the study team.

VIII. UNDERTAKING OF THE GOVERNMENT OF JAPAN (GOJ)

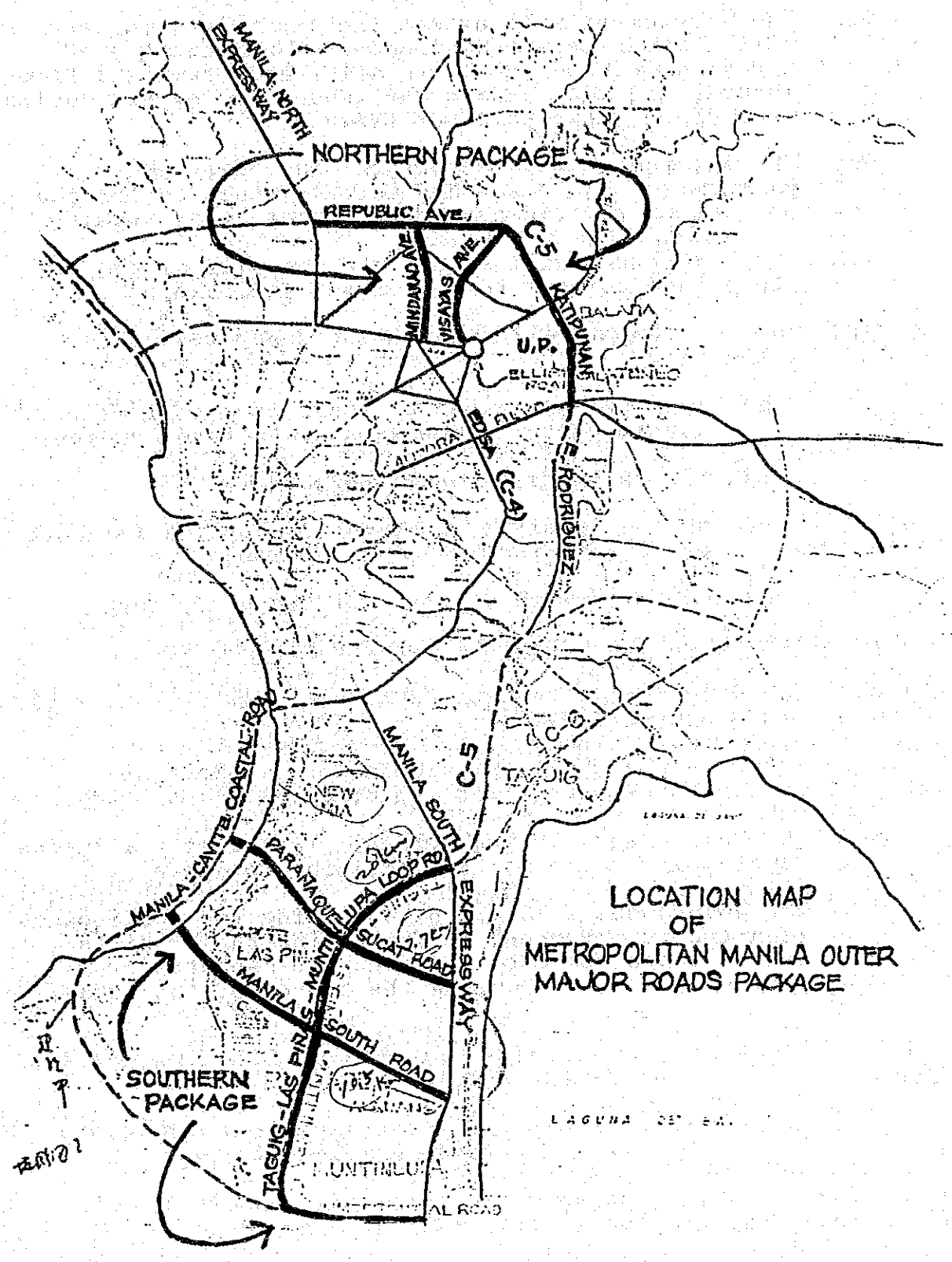
8.1 The Government, through JICA, will select a team of professional staff.

8.2 The Government will provide some equipment and materials necessary for the conduct of the Study.

8.3 The Government, through JICA, will accept Philippine counterpart personnel for training in Japan.

8.4 The Government will aim at assisting the Philippines counterpart personnel in furthering their skills to the extent possible through the Japanese professional staff during the course of the Study.

GZG/dmc


MANILA NORTH EXPRESSWAY
NORTHERN PACKAGE
REPUBLIC AVE.
C-5
MINDANAO AVE.
VISAYAS AVE.
KATIPUNAN
U.P.
EDSA (C-4)
E. RODRIGUEZ
MANILA SOUTH
C-5
TAGUIG
MANILA-CAVITE COASTAL ROAD
PARAÑAQUE-UPA LOOP RD
SUCAT ROAD
EXPRESSWAY
MANILA SOUTH ROAD
TAGUIG-LAS PIÑAS
SOUTHERN PACKAGE
LOCATION MAP
OF
METROPOLITAN MANILA OUTER
MAJOR ROADS PACKAGE

PENTATIVE SCHEDULE

	1	2	3	4	5	6	7	8	9	10	11
1. Preparation for intensive field work	▬										
2. Submission of inception report		●									
3. Intensive field work & date analysis for the preparation of tentative draft final report by the Study Team		▬	▬	▬	▬	▬	▬	▬			
4. Submission of progress report					●						
5. Submission of tentative draft final report							●				
6. Finalization and printing of draft final report in Japan							▬	▬			
7. Submission of draft final report										●	
8. Discussion of draft final report between two Gov'ts.										▬	
9. Comments on draft final report by the Government of the Philippines										▬	
10. Printing of final report in Japan										▬	▬
11. Submission of final report											●

N O T E : Possible supplementary study after discussion of the tentative final report.

ANNEX - 5

METRO MANILA OUTER MAJOR ROADS NORTHERN PACKAGE

Metro Manila is an area of intensive developmental activities, due to its role as the leading center of growth, that generates enormous social amd economic benefits for the rest of the country. The metropolitan area, however, is plagued by environmental problems, such as shortages in land and housing, unemployment, limited water supply, lack of proper drainage, as well as traffic congestion. An effective transport system to cater to future demands must be provided, hand in hand to the determined effort to improve traffic management at present.

The Urban Transport Study for Metropolitan Area (UTSMMA) conducted in 1971-1973 by the Japanese International Cooperation Agency (JICA) recommended a masterplan network of six (6) circumferential roads (C-1 to C-6) and ten (10) radial roads (R-1 to R-10) to meet both present and future transport demands in Metro Manila.

The succeeding transport - involved Metro Manila Transport, Land Use and Development Planning Project (MMETROPLAN) in 1977 developed a program to guide transport investments and operation within a rational land use pattern. MMETROPLAN recommended certain outer portions of the metropolis for immediate coordinated and planned developments on account of favorable prevailing factors.

During discussions between the Philippine and Japanese panels in 1980, the Northern Major Roads Package was one of the projects agreed to be considered by JICA in their 1982 technical assistance program. The feasibility study of the Southern component of the Metro Manila Outer Major Roads Project having been included in the JICA 1981 program and is progressing well to scheduled completion by the end of the calendar year.

The revised and enlarged scope of the proposed feasibility study for the Outer Northern Package includes the following project roads: (see attached map)

- Circumferential Road 5 (C-5)
  This road project has a total length of 15 kilometers, involving the new construction of 11 kilometers and improvement/widening of Katipunan Avenue of 4 kilometers. It will be a multi-lane highway with four (4) major intersections.

- Circumferential Road 6 (C-6)
  This road project involves a total length of 21 kilometers of new construction for a combined limited access and general purpose highway facility for the completion of the outermost ring of the planned circumferential roads. It will have five (5) major intersections.

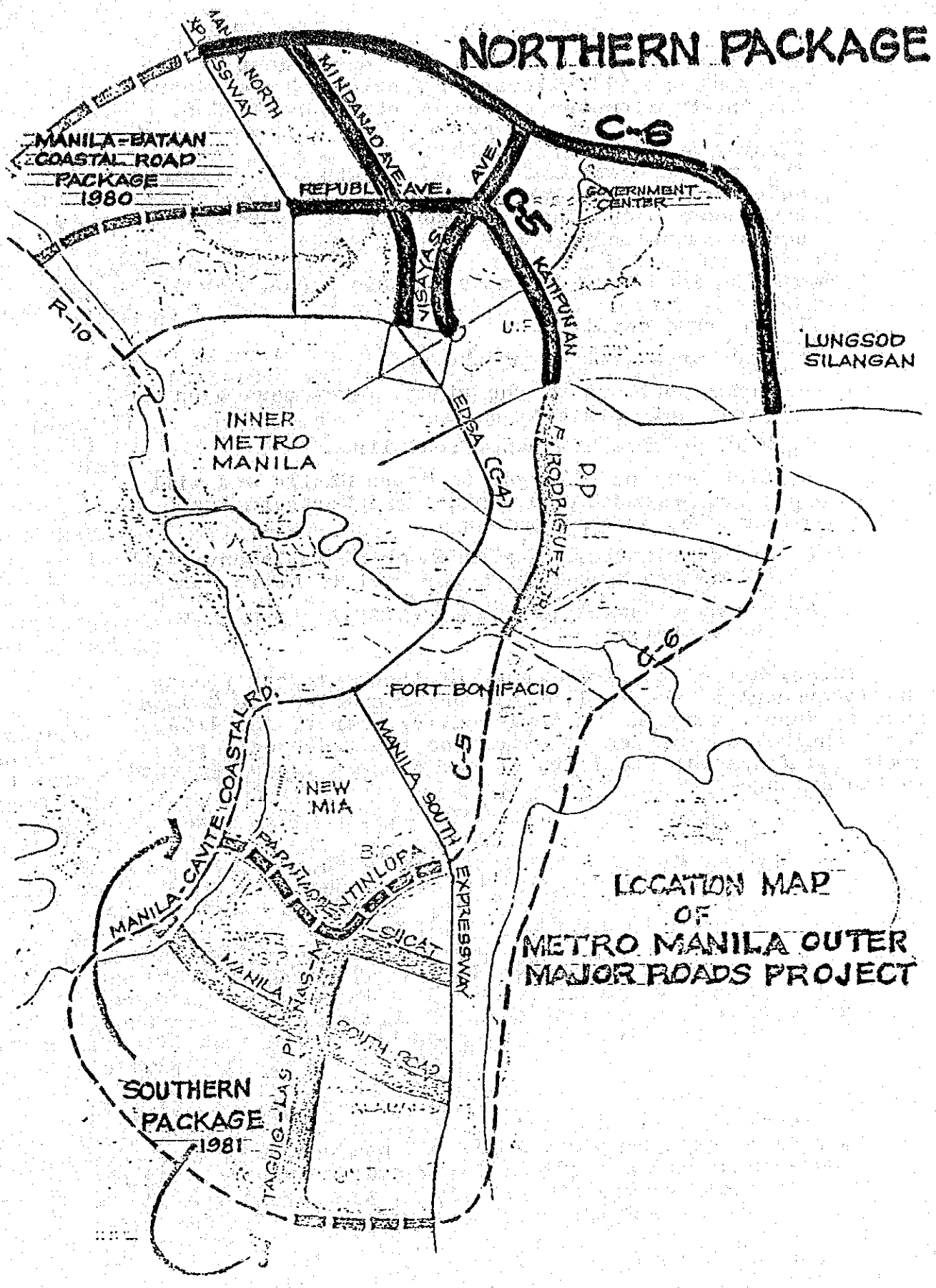
- Mindanao Avenue
  This road project includes the improvement of the existing one (1) kilometers section of the avenue and the 8-kilometer extension northward to C-6.

- Visayas Avenue
  This road project has a total length of 8 kilometers and involves the improvement of a 2-kilometer existing section and the construction of the 6-kilometer north extension to C-6.

Among the important features of this package are;

1. Low road density
2. Fast urbanization of the area
3. Major portions of the right-of-way have been previously delineated
4. Will provide new major road links
5. Link Lungsod Silangan to Metro Manila and will serve as access to Central and Northern Luzon thru the North Expressway
6. Maximize investments on on-going implementation of highway projects in the rest of Metro Manila
7. Decongest existing heavily-traveled roads in the vicinity

Cognizant of the importance of these project roads, the Government of the Philippines has requested the Government of Japan, through its implementing agency, the JICA, for technical assistance to determine the technical, economic and financial viability of the project roads included in the Package.


NORTHERN PACKAGE
MANILA-BATAAN COASTAL ROAD PACKAGE 1980
NORTH SSWAY
MINDANAO AVE.
REPUBLIC AVE.
C-6
C-5
GOVERNMENT CENTER
VISAYAS AVE.
KATIPUNAN
R-10
U.P.
LUNGSOD SILANGAN
INNER METRO MANILA
EDSA (C-4)
F. RODRIGUEZ SR.
D.D.
C-6
FORT BONIFACIO
MANILA-CAVITE COASTAL RD.
NEW MIA
MANILA SOUTH EXPRESSWAY
C-5
PARAÑAQUE
BICUTAN
SUCAT
MANILA-LAS PIÑAS-ALABANG SOUTH ROAD
TAGUIG-LAS PIÑAS
SOUTHERN PACKAGE 1981
LOCATION MAP OF METRO MANILA OUTER MAJOR ROADS PROJECT

METROPOLITAN MANILA COMMISSION
OFFICE OF THE COMMISSIONER FOR PLANNING

DATE: 2-26-82
Lenya M.

24 February 1982

Engr. Juanito F. Cutay
Executive Director
Special Projects Office
Ministry of Public Works and Highways
2nd Street Port Area, Manila

Dear Director Cutay :

This is in connection with your letter of 12 February 1982 to this Commission informing us on the technical cooperation agreed between the JICA and MPWH for the feasibility study of the Metro Manila Outer Major Roads Project, Northern Package. And requesting at the same time for a confirmation that we do not have any objection as to the inclusion of Circumferential Road No. 6 in the feasibility study.

We would like to inform you that this Commission interposes no objection in the inclusion of Circumferential Road No. 6 in the feasibility study.

We appreciate very much the close coordination existing between our Offices for in this manner we may together plan out mutually beneficial undertakings.

Very truly yours,

NATHANIEL von EINSIEDEL
Commissioner