-TERMS OF REFERENCE-

CONSULTING SERVICES FOR THE CONDUCT OF FEASIBILITY STUDIES/PRELIMINARY AND DETAILED ENGINEERING/ECONOMIC ANALYSIS/TECHNICAL STUDIES/TRAFFIC IMPACT ASSESSMENT – TRAFFIC CONDITION ASSESSMENT OF POBLACION – BARRAS ROAD, MABINAY, NEGROS ORIENTAL

I. INTRODUCTION

The Department of Public Works and Highways (DPWH) is seeking to develop its pipeline of road transport projects nationwide for implementation and/or possible external financial assistance in their implementation. As part of the initial stage in the project development cycle, feasibility studies assessing the technical, economic and traffic condition assessment of the project are required.

The proposed conduct of traffic condition assessment for the study of this project is envisaged to be undertaken by a local consultant to be outsourced by the Department of Public Works and Highways, Negros Oriental 2nd District Engineering Office, with the assistance of the Project Preparation Division - Planning Service (PPD, PS), DPWH – Central Office. The output of this consulting service are intended for use by the DPWH for readiness of conversion of road to national road if determined to be qualified based on the criteria.

The road project is a diversion road which has a total project length of 9.40 km with total estimated project cost of P368.6 million. The project involves Road Upgrading (gravel to concrete)/Reconstruction/Improvement of 9.40 km road and construction of 2 Concrete Bridges (60 & 130 L.M).

II. OBJECTIVES

The main objective of the proposal under this TOR is to determine the viability of the constructed bypass road considering the requirements from Traffic Condition Assessment (TCA) to be able convert the said local road to national road according to the Department Order No.112, series of 2024.

By the end of the consulting period, the Consultant is expected to produce a compiled traffic survey data in each of the following projects in traceable files:

Project	Location	DEO
Poblacion – Barras Road	Mabinay Negros Oreintal	Negros Oriental 2nd DEO

III. SCOPE OF CONSULTING SERVICES

The Consultant shall carry out the conduct of traffic condition assessment of Poblacion – Barras Road located in Mabinay, Negros Oriental. In carrying out this traffic condition assessment, the Consultant shall coordinate with LGUs, NGAs and other relevant offices through the Department of Public Works and Highways Negros Oriental 2nd District Engineering Office and shall ensure that the traffic team collaborate closely throughout the entire process, particularly during field investigation in the development of the study.

The scope of works of the Consultant under this TOR shall include, but not necessarily limited to, traffic data gathering.

Traffic Survey

3.1 The consultant shall undertake the following traffic data gathering:

- 12 – hour (at least two days) / 24 – hour (at least 1 day) manual counts at identified traffic stations consolidated every hour (see Annex 1)
- 12 – hour origin – destination survey at identified stations for at least two (2) days consolidated every hour (see Annex 1)
- 12 – hour intersection traffic count survey at identified stations for at least two (2) days consolidated every 15 minutes (see Annex 1)

3.2 The Consultant shall analyze and process all traffic data collected and prepare the required data inputs using the prescribed format in Annex 3;

3.3 The consultant shall utilize survey forms provided in Annex 4;

3.4 Provision of Vehicle, Meals and Accommodation for Implementing Office (including Central Office)

3.4.1 The Consultant shall provide transportation services or vehicle (under rental basis), meals, and accommodation during the conduct of activities for the Implementing Office/Central Office during the period of the study.

IV. REPORTING

4.1 During the contract period, coordination meetings with the District Engineering office (DEO) concerned must be conducted to: (a) initiate

agreements, (b) discuss progress of work and preliminary output, (c) make comments and suggestions on a timely basis, and (d) resolve problems and issues that may be encountered. Issues and concerns that cannot be resolved within DEO or RO may be raised and call the attention of the Planning Service thru PPD.

4.2 The consultant shall also accommodate up to five (5) on-the-job observers who shall be detailed to the project for the purpose of capacity-building and technology transfer. The Consultant shall include representatives from the Implementing Office during, but not limited to, the following:

4.2.1 Reconnaissance Survey
4.2.2 Traffic Survey

4.3 The Consultant shall present to the Implementing Office the Draft Final Report for deliberation and comment where all the key experts of the Consultant shall be present and the focal staff and head of the PPD shall be invited, subject to their availability.

V. EXPECTED MAJOR OUTPUTS OF THE CONSULTING SERVICE

5.1 All deliverables shall be submitted in the following manner:

5.1.1 Electronic Copy of the Complete Report consolidated in one PDF file*
5.1.2 Excel File of the Traffic Data Processing in traceable format*
5.1.3 Electronic Copy of the zones used in OD Data Processing, if applicable*

5.2 Other data/documents to be submitted shall include but not limited to:

5.2.1 Geo-tagged Photographs
5.2.2 Raw and Processed Data of Traffic Survey (Manual Count, Origin – Destination, and Intersection Count)
5.2.3 Overall Accomplishment Reports

5.3 Final Report/Revised Final Report shall be submitted to DPWH in three (3) copies stored in a document storage box. Electronic file formats (i.e. Microsoft Office, Adobe PDF, AutoCAD, transport input and output files, etc.) of all reports and documents systematically organized in a traceable and auditable format shall be prepared in a DVD and/or CD (3 copies each) and in a USB Flash Drive (1 copy only).

VI. STUDY SCHEDULE

The Study shall be completed within a period of **ten (10) days**, commencing from the date of receipt of the Notice to Proceed (NTP). Contract Extensions shall be granted upon request and must be supported with a revised work schedule.

VII. Professional Qualifications (Key Personnel)

7.1 Bidders should identify personnel who will be responsible for implementing and managing contract activities and provide information on personnel proposed for the subject contract.

7.2 Bidders should demonstrate their total strength of key disciplines and availability of such resource (i.e., current workload, etc.)

7.3 Firms may subcontract and/or associate to enhance their qualifications

7.4 Following are the key positions/ areas of expertise anticipated to be required under the contract:

KEY STAFF	Min. No. of Years of Experience in Proposed Position	Required Qualification
Civil Engineer	5	Registered/Licensed Civil Engineer or equivalent, with experienced in the conduct of traffic survey works.

7.5 For each key position proposed, responses should include a description of the professional and technical qualifications and licenses necessary for satisfactory performance of required services under this task order; on-going and completed projects, specialized experience and technical competence in the type of work outlined in the Scope of Services.

7.6 Replacement of Consultant's Key Personnel is subject to the provision of Department Order No. 21 series of 2015 and RA 9184 and its IRR.

Firm's Experience and Technical Competence

7.7 Bidders should provide information on firm's competence in the areas as required in the Scope of Services. The information should clearly summarize the nature of the services offered and the types of tasks performed.

Capacity to Mobilize Required Personnel and Accomplish Work in the Required Time

7.8 Bidders should note capacity to mobilize the appropriate skills needed and accomplish the work in the required time, citing previous contracting experiences and availability of proposed staff, among other appropriate evidence.

Past Performance

7.9 Bidder has completed work assignments similar in nature, or directly related to the technical requirements of the Scope of Services.

VIII. CONTRACT IMPLEMENTATION

Study Schedule

8.1 The undertaking shall be carried out for a period of 10 days.

MANPOWER REQUIREMENTS			
STAFF	**No. of Personnel**	**Days**	**No. of Person-Day**
KEY STAFF			
Civil Engineer	***4***	***10***	***40***

IX. INSTITUTIONAL ARRANGEMENT

9.1 Implementing Office (District Office)

9.1.1 Disburse the fund for the conduct of the F/S once the contract is executed;

9.1.2 Implement and manage the contract, including ensuring the quality of output, the monitoring and evaluation of the progress of the study and approval of reports to ensure delivery of outputs as specified in this TOR;

9.1.3 Provide reasonable technical assistance to personnel of the Consultant with respect to incidents related to the conduct of the study;

9.1.4 Provide, upon the request of the Consultant, available information/data and also if available, copies of previous related studies subject to the execution of the Confidentiality and Non-Disclosure Agreement (CNDA), if necessary.

9.1.5 Coordinate with the Project Preparation Division – Planning Service of the DPWH regarding all the activities relating to the conduct of the study, included but not limited to the implementation timelines, submission of deliverables, notice of meetings, etc. Should the need arise, consult with the PPD-PS in the implementation of the study.

9.2 Planning Service – Central Office

9.2.1 Provide technical assistance to the Implementing Office
9.2.2 Process the gathered Traffic Survey Data and report to the Implementing Office if approved for conversion of road through Traffic Condition Assessment
9.2.3 Ensure quality of output, and monitor and evaluate progress of the study and approval of reports to ensure delivery of outputs as specified in this TOR;

9.3 Consultant

9.3.1 Conduct the study and delivery **ON TIME** the results/outputs as indicated in this TOR;
9.3.2 Provide the necessary office equipment (i.e., computer, printers, office supplies, etc.) for the conduct of the study. All equipment procured for the development of the project shall be transferred to the Government by the end of the project.
9.3.3 Carry out the services in accordance with the accepted theories and practices to ensure that the final works will provide the most economical and feasible development for the study;
9.3.4 Accept full responsibility for the consulting services to be performed under this TOR for which the Consultant is liable to DPWH;
9.3.5 Perform the work in an efficient and diligent manner and shall adhere to the agreed schedule and deliverables; and
9.3.6 Provide on-the-job capacity building/technology transfer to the Implementing Office.

X. TERMS OF PAYMENT

Payment shall be based on the approved and accepted deliveries and percent (%) accomplishment of the Consultant.

Billing shall be in accordance with the above stated conditions and subject to the usual Government accounting and auditing requirements.

Furthermore, personnel and staff under the Contract shall be paid based on the person-month rendered and required by the TOR.

The contingency which takes 5% of the Contract Amount exclusive of local taxes or VAT shall be used only through an approved additional works issued by the Implementing Office due to unforeseen difference in the actual length of road alignment. It shall not be used as payment due to suspension and time extension.

XI. OWNERSHIP OF THE OUTPUTS/REPORTS/DOCUMENTS

All submitted outputs/reports/documents under this contract, including but not limited to tracing/as-built drawings, estimates, digital information, computer model and data, specifications, investigations, and studies completed or partially completed, inspection logs, and photographs shall be the property of DPWH and the use of these data for other purpose shall require written consent from the Department. Copyrights will be governed by existing laws, rules, and regulations.

Prepared by:

MERRILLINEN B. CALUNOD
Engineer II

Submitted by:

MA. ERA S. BATUIGAS
Chief, Planning and Design Section

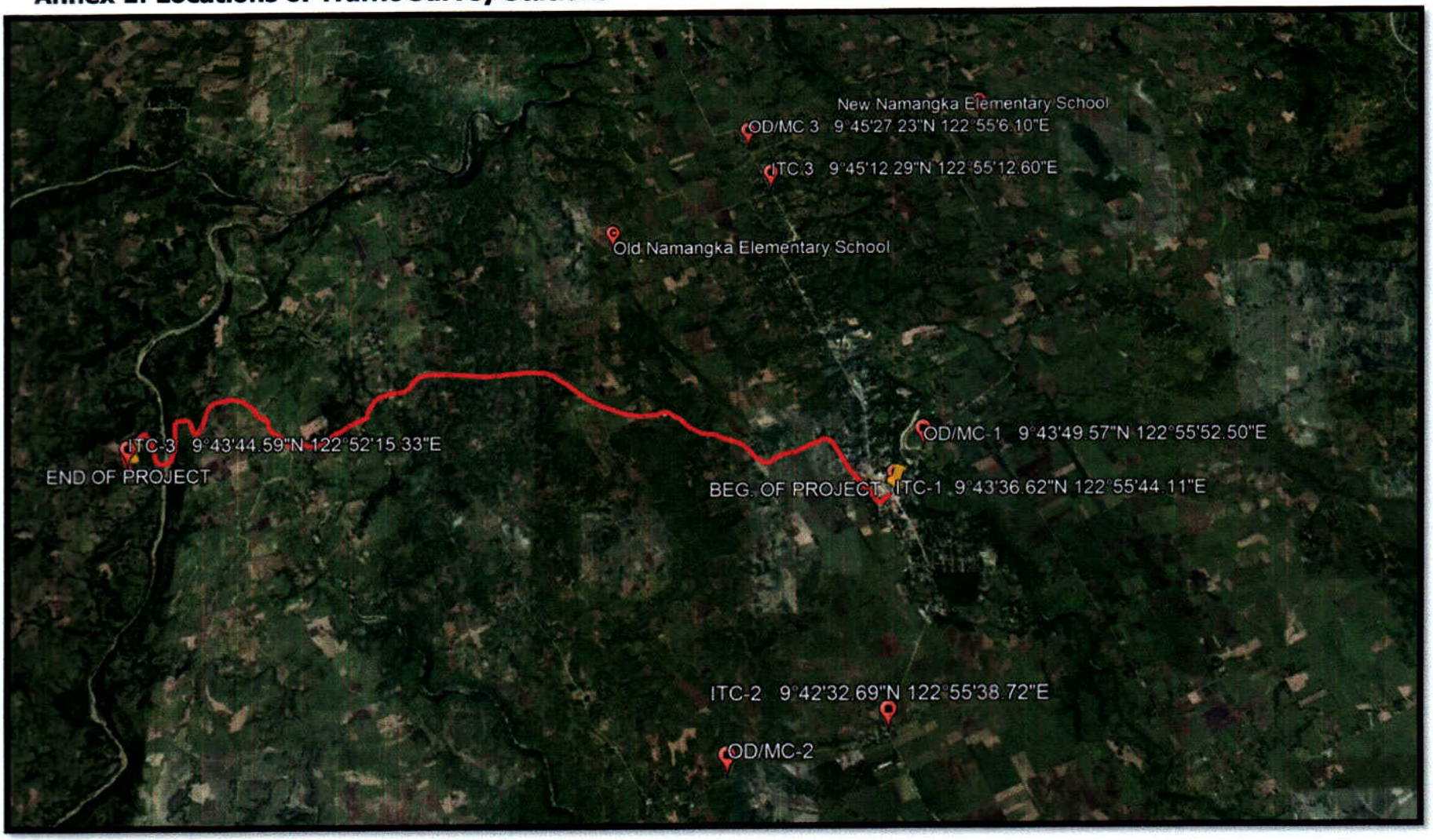
Approved:

NOLI M. ALCANTARA
District Engineer

Republic of the Philippines
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
NEGROS ORIENTAL 2ND DISTRICT ENGINEERING OFFICE
Sibulan, Negros Oriental

BAGONG PILIPINAS

Annex 1: Locations of Traffic Survey Stations



Annex 3: Summarized/Processed Traffic Survey Data Sheets

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
PLANNING SERVICE
PROJECT PREPARATION DIVISION

PPD_SF-004

O/D TRAFFIC SURVEY SHEET

STATION NAME	PROJECT	LOCATION (Road/ Municipality/ Region)	SKETCH

DIRECTION		TIME		DATE	INTERVIEWER
FROM	TO	FROM	TO		

Record No.	VEHICLE TYPE															ORIGIN	CODE	DESTINATION	CODE	TRIP PURPOSE							
	1a. Motor - Tricycle	1b. Motorcycle	2. Passenger Car	3. Passenger Utility	4. Goods Utility	5. Small Buses (13-30 seats)	6. Large Bus (>30 seats)	7. Rigid Truck 2-axles	8. Rigid Truck (3-axles)	9. Truck Semi-Trailer (3&4 axles)	10. Truck Semi-Trailer (5 axles)	11. Truck Trailer (4 axles)	12. Truck Trailer (5 axles)	CODE						1. Work	2. School	3. Business	4. Private Matter	5. Leisure	6. Others	CODE

VERSION 00

Annex 3: Summarized/Processed Traffic Survey Data Sheets

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PLANNING SERVICE

PROJECT PREPARATION DIVISION

MANUAL COUNT

Station:									Date:					
From (Approach):									Weather:					
Direction of Traffic:									Prepared by:					
Time	Motor-Tricycle	Motorcycle	Passenger Car	Passenger Utility	Goods Utility	Small Bus	Large Bus	Rigid Truck (2 Axles)	Rigid Truck (3+ Axles)	Semi-Trailer Truck (1/4 Axles)	Semi-Trailer Trucks (5+ Axles)	Trailer Trucks (4 Axles)	Trailer Trucks (5+ Axles)	Total
6:00 - 7:00														
7:00 - 8:00														
8:00 - 9:00														
9:00 - 10:00														
10:00 - 11:00														
11:00 - 12:00														
12:00 - 13:00														
13:00 - 14:00														
14:00 - 15:00														
15:00 - 16:00														
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18:00 - 19:00														
19:00 - 20:00														
20:00 - 21:00														
21:00 - 22:00														
22:00 - 23:00														
23:00 - 0:00														
0:00 - 1:00														
1:00 - 2:00														
2:00 - 3:00														
3:00 - 4:00														
4:00 - 5:00														
5:00 - 6:00														

Annex 3: Summarized/Processed Traffic Survey Data Sheets

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PLANNING SERVICE

PROJECT PREPARATION DIVISION

INTERSECTION TRAFFIC COUNT

Station:									Date:							
From (Approach):									Weather:							
Direction of Traffic:									Prepared by:							
Time	Motor-Tricycle	Motorcycle	Passenger Car	Passenger Utility	Goods Utility	Small Bus	Large Bus	Rigid Truck (2 Axles)	Rigid Truck (3+ Axles)	Semi-Trailer Truck (1/4 Axles)	Semi-Trailer Trucks (5+ Axles)	Trailer Trucks (4 Axles)	Trailer Trucks (5+ Axles)	Total (per 15 mins)	Total (per hour)	
6:00 - 6:15																
6:15 - 6:30																
6:30 - 6:45																
6:45 - 7:00																
7:00 - 7:15																
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9:00 - 9:15																
9:15 - 9:30																
9:30 - 9:45																
9:45 - 10:00																

Annex 4: Traffic Survey Data Sheets/Forms

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PLANNING SERVICE

PROJECT PREPARATION DIVISION

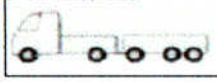
MANUAL CLASSIFIED TRAFFIC COUNT

Single Direction and Lane Count Form

PPD_SF - 001

SITE ID:	REGION:	DISTRICT:	SKETCH
ROAD SECTION ID:	ROAD NAME:		
KM. (STATION):	SITE DESCRIPTION:		
DIRECTION:			

DAY OF THE WEEK	DATE (MM / DD / YYYY)	WEATHER	TIME	
			START	END

1a. MOTOR - TRICYCLE 																			
1b. MOTORCYCLE 																			
2. PASSENGER CAR 																			
3. PASSENGER UTILITY 																			
4. GOODS UTILITY 																			
5. SMALL BUS 																			
6. LARGE BUS 																			
7. RIGID TRUCK (2 AXLES) 																			
8. RIGID TRUCK (3+ AXLES) 																			
9. SEMI - TRAILER TRUCK (3/4 AXLES) 																			
10. SEMI - TRAILER TRUCKS (5+ AXLES) 																			
11. TRAILER TRUCKS (4 AXLES) 																			
12. TRAILER TRUCKS (5+ AXLES) 																			

VERSION 04

Annex 4: Traffic Survey Data Sheets/Forms

OD INTERVIEW FIELD SHEET

STA. NO.	DATE:	INTERVIEWER:	
LOCATION:		WEATHER:	
ROAD NAME :		TIME: FROM:	TO
DIRECTION:	FROM:	TO:	

I. VEHICLE TYPE	☐ 1a. MOTOR-TRICYCLE	☐ 5. SMALL BUS *(13-30 seats)*	☐ 10. TRUCK SEMI-TRAILER 5+ axles *(12-2)*	
	☐ 1b. MOTORCYCLE	☐ 6. LARGE BUS *(more than 30 seats)*	☐ 11. TRUCK TRAILERS 4 axles *(11-11)*	
	☐ 2. PASSENGER CAR	☐ 7. RIGID TRUCK 2 axles *(1-1)*	☐ 12. TRUCK TRAILER 5+ axles *(11-12)*	
	☐ 3. PASSENGER UTILITY	☐ 8. RIGID TRUCK 3+ axles *(1-2, 2-2 or 1-3)*		
	☐ 4. GOODS UTILITY	☐ 9. TRUCK SEMI-TRAILER 3 & 4 axles *(11-1, 12-1)*		☐
II. TYPE OF FUEL	☐ 1. GASOLINE	☐ 2. DIESEL	☐ 3. LPG	☐
III. ORIGIN	PROVINCE			
	CITY/MUNICIPALITY			
	BARANGAY			☐☐
IV. DESTINATION	PROVINCE			
	CITY/MUNICIPALITY			
	BARANGAY			☐☐
V. TRIP PURPOSE *(only for passenger car)*	☐ 1. TO/FROM WORK	☐ 3. BUSINESS	☐ 5. LEASURE/TOURISM	
	☐ 2. TO/FROM SCHOOL	☐ 4. PRIVATE	☐ 6. OTHERS *(pls. specify)*	☐
VI. NUMBER OF PERSONS		(INCLUDING DRIVER AND CONDUCTOR/S)		☐☐
VII. SEAT CAPACITY		(ONLY FOR BUS AND JEEPNEY)		☐☐
IX. COMMODITY TYPE/QUALITY	TYPE I		KGS	
	TYPE II		KGS	
	TYPE III		KGS	☐☐
X. COMMODITY WEIGHT	TYPE I		KGS	
	TYPE II		KGS	☐☐☐☐☐
	TYPE III		KGS	
XI. TOTAL COMMODITY WEIGHT				☐☐☐☐☐
XII. NET LOAD CAPACITY				☐☐☐☐☐

Annex 5: Traffic Survey Methodologies

A. Intersection Traffic Counts

1. OBJECTIVES

(1) Necessary traffic data acquisition for traffic impact study at intersections

2. OUTLINE OF WORKS

The following four (4) types of survey will be carried out by the Consultant in accordance with the methodology set forth by the Project Preparation Division (PPD), Planning Service which will be commissioned purposely for this study.

1) Traffic Condition Survey
- Intersection Traffic Flow Counts
- Intersection Queuing Length Survey
- Traffic Speed Survey
- Traffic Signal and Signal Phasing Observation (including manual traffic control)

3. SCOPE OF WORKS AND SPECIFICATIONS

Surveys shall be conducted in following manners:

3.1) Intersection Traffic Flow Counts

a) At the intersections (locations shown in Annex 1 and Annex 2), in a period of 14 hours from 6:00 AM to 8:00 PM on two consecutive week days excluding Friday, Saturday and Sunday.

b) Vehicles crossing the survey points will be counted according to mode classification and direction.

c) Traffic volume shall be counted and aggregated for each 15 minute period.

d) Mode classifications will be; pedestrian including bicycle, motorcycle, tricycle, passenger car including taxi, passenger jeepney, goods utilities including pick-up and vans, medium bus(less than 50 passengers) and large bus (50 passengers or more), small truck (2 axles), large truck (3 axles or more) and semi-trailer trucks (see Attached sample format of Intersection Traffic Count Survey Sheet).

e) Some intersections are large and complicated with many legs. So traffic survey shall be designed carefully to get accurate traffic data to/from the intersections.

3.2) Travel Time and Delay Survey

a) At major roads corridors during the following time periods: AM Peak, Inter-Peak and PM Peak, on two week days excluding Friday, Saturday and Sunday.

b) Travel time shall be surveyed by floating car method for each route and in both directions. A minimum of two runs in each direction shall be conducted. Measurement shall be carried out on board passenger car (test vehicle) and public utility vehicles at each time period.

3.3) Pedestrian Survey

a) At intersections (locations shown in Annex 1 and Annex 2), during the following time periods: AM Peak, Inter-Peak and PM Peak, on two week days excluding Friday, Saturday and Sunday.

b) The purpose of a pedestrian count is to determine the volume of pedestrian crossing the approaches of the intersection since pedestrian affects the vehicular traffic flow in the intersection and the demand of the pedestrian traffic would require amount of green time for the pedestrians to cross the approach of the intersection safely. (see attached sample format of Pedestrian Crossing Count)

4. SURVEY RESULTS

4.1) Coding and data entry

a) Coding: The data collected in the surveys will be coded after the field survey in accordance with the method shown in the survey manual.

b) Data: The survey results will be input to computers using Microsoft Excel customized for each survey data. However, the final data will be input to traffic modelling software.

4.2) Submission of a brief report

Results of the surveys will be summarized briefly using figures and tables and the details will be compiled in a report.

Annex 5: Traffic Survey Methodologies

B. Manual Counts and Origin Destination Survey

Vehicle types are classified into the following categories:

i. passenger car including taxi
ii. passenger utility (PUV)/public utility jeepney
iii. goods utility (pick-up and delivery van)
iv. small buses
v. large buses
vi. rigid truck, 2 axle
vii. rigid truck, 3+ axle
viii. truck semi-trailer, 3& 4 axles
ix. truck semi-trailer, 5+ axles
x. truck trailers, 4 axles
xi. truck trailers, 5+ axles
xii. motor-tricycle, and
xiii. motorcycle

Traffic surveys shall be conducted following procedures enumerated below. The specific location of the different survey stations, are presented in Annex 1 and Annex 2

Manual Count (MC) Surveys

a. At specific locations in Annex 1 and Annex 2, traffic counts by directional flow in a period of twelve (12) hours from 6:00AM to 6:00PM in two (2) days preferably on Tuesdays, Wednesdays or Thursdays.

b. Vehicles crossing the survey points will be counted according to mode classification and direction.

c. Traffic volume shall be counted and aggregated in every one (1) hour time interval.

Origin/Destination (OD) Survey

a. At stations close to the intersection, roadside interview by directional flow in a period of twelve (12) hours from 6:00AM to 6:00PM in two (2) days preferably on Tuesdays, Wednesdays or Thursdays.

b. Vehicle crossing the survey points according to mode classification and direction will be interviewed to determine its origin and destination and other pertinent information required for the study.

c. Data of interviewed vehicle shall be collected, validated and aggregated in every one (1) hour time interval. Validated samples are samples compared with the actual count for the particular hour.

d. Establishment of the OD survey station will be located in a section where safety and sight distances is of primordial concern. Such undertaking will be coordinated with the Local Government Units (LGUs) and police in the area. Proper signage shall be considered.

TRAFFIC SURVEY DATA PROCESSING

Coding and data entry

a) Coding: The data collected in the surveys will be summarized and coded after the field survey in accordance with the standard method to be provided by the PPD.

b) Data: The survey results will be inputted to computers using Excel Spreadsheet application using prescribed format.