



PROVINCIAL GOVERNOR'S OFFICE

MESSAGE

Public transportation is a very important component of development and growth. Efficient transport systems provide socio-economic opportunities that benefit our people. The economic cost is great if they are not made reliable, which may even result to lower quality of life.

Hence, in pursuit of our development strategy, known as K.U.Y.A. G.O.B., the Provincial Government of Davao del Norte has intensified its effort to improve the road network of the province. They are vital to our agenda of providing better access to gainful employment, improved social, health and education services, as well as more investments, among other goals.

Yet, our efforts must be matched by vital mechanisms that would ensure the favorable conditions of efficient travel time, safer thoroughfare and healthier environment, if we are to really move forward. For this reason, we welcome the formulation of our Local Public Transport Route Plan (LPTRP) of the Province of Davao del Norte. The plan will provide a strong groundwork to our aim of improving road safety and public transport quality; reducing traffic congestion and air pollution, and, enhancing transport equity.

This is our guidepost in achieving a well-managed and environmentallysustainable transport sector, which ensures that our commuters reach their destinations in a fast, comfortable, reliable and safe fashion, while upholding the stable, sufficient and dignified livelihoods of our drivers and operators. All these are geared towards the improved well-being of our people.

I, therefore, call upon our Dabaonon people to take conscious and concerted efforts with us in carrying out this Plan. Kudos to the Technical Working Group (TWG) for your judicious effort in crafting this important document.

Duyog kita sa pagpatunhay sa kabag-ohan alang sa tinuod nga kalamboan sa Davao del Norte

One Team. One DayNor!

Governor





Republic of the Philippines Province of Davao del Norte

OFFICE OF THE VICE GOVERNOR



MESSAGE

On behalf of the Sangguniang Panlalawigan of Davao del Norte for Term 2019-2022, allow me to congratulate and express my admiration to the women and men behind the research, facts compilation, data analysis and formulation of the Local Public Transport and Route Plan CY 2019-2023, a plan for the provision of accessibility and mobility to people through public transport service.

Per my first-hand experience in the transport sector, I can readily confirm that a blueprint for a reliable public transport network is useful and indispensable for the economic progress of any local government unit not to mention the safety and comfort that said grid can offer to our journeying public. However, it is a must that all the appertaining variables are meticulously considered to enable coherence with the overall transport system. Let not this document be a fixture in the shelves of not implemented measures given the present threat inimical to public transport welfare.

Allow me to assure the framers and beneficiaries of this Plan that the Sangguniang Panlalawigan under my stewardship would be supportive by way of coming up with appropriate and applicable legislations to ensure the accessibility, reliability, safety and environment-friendly transport scheme in our locality. We will provide legislative mechanisms through our oversight function to extinguish traffic woes being experienced by other regions in the country.

This is our commitment.

REY T. UY Vice-Govern**o**่า

EXCERPTS FROM THE MINUTES OF THE PROVINCIAL DEVELOPMENT COUNCIL (PDC) MEETING HELD LAST NOVEMBER 13, 2018 AT THE DNSTC PAVILION, PROVINCIAL GOVERNMENT CENTER, MANKILAM, TAGUM CITY, DAVAO DEL NORTE

PRESENT:

Provincial Governor Hon. Antonio Rafael G. del Rosario

Rep. by Mr. Samson J. Sanchez

Provincial Administrator/

OIC. Governor (Presiding Officer)

Provincial Director, DILG Mr. Abito D. Bernasor, CESO V For, Victor T. Billones

OIC. PENR Officer, Dept. of Environment

and Natural Resources (DENR)

Prov'l Science & Tech. Officer, Dept. of

Science & Technology (DOST)

Provincial Officer, Nat'l. Commission on

Muslim Filipinos (NCMF)

President, Provincial Tourism Council

Managing Director, DPRDII

President, Davao del Norte Fed. of Day

· Care Workers

President, Tagum City Chamber of Mr. Virgilio F. Agunod, CPA

Commerce & Industry

OIC-PPDC/PDC Secretary

WITH REPRESENTATIVE:

Mr. Nelson F. Plata, EnP, MPA

Hon. Rodolfo G. del Rosario, Jr

Hon. Dindo C. Parangan

Hon. Eufracio P. Dayaday

Hon, Virginia J. Perandos

Hon, Rhodora S, Alcoran

Hon. James G. Gamao

Hon, Leah Marie M. Romano

Hon, Maria Theresa R. Timbol

Engr. Judy Donna Nueva Ecija

Sultan Gumobra A. Pamlian

Ms. Araceli L. Ayuste

Mr. Perfecto P. Urdaneta

Ms. Ma. Gelita R. Olaer

Congressman, Dist. II/PDC Member Hon. Antonio Floirendo, Jr. Rep. by Mr. Jonathan Zafra Tavale, Political

Officer

SP Member/Chairman Committee on

Budget, Finance & Appropriation

Rep. by Mr. Eduardo del Rosario Jr., EA I

SP/Member/Pre., Fed., Asso. of Brgy.

Council (FABC)

Rep. by Ms. Eienie E. Doble, PS II

Municipal Mayor, Asuncion

Rep. by Jojo F. Castroverde, Liaison Officer

Municipal Mayor, Braulio E. Dujali

Rep. by Mr. Norbelito B. Juriana, PS II

Municipal Mayor Carmen

Rep. by Engr. Jeffrey E. Recaña, MPDC

Staff

Municipal Mayor, Kapalong

Rep. by Mr. Arthur R. Sison II, AA III

Municipal Mayor, New Corella

Rep. by Mr. Alex Marino Paña, Mun. Admin

City Mayor, Panabo City

Rep. by Ms. Cièlo Miano, PDO III

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Hon, Allan L. Rellon City Mayor, Tagum City Rep. by Mr. Ahrt Dela Cruz, CPDO-Staff Hon. Basilio A, Libayao Municipal Mayor, Talaingod Rep. by Ms. Christine O. Siervo, AAIV Mr. Romeo L. Castanaga Provincial Director, DTI Rep. by Atty. Zerline T. Balleque - Chief, Trade & Dev't Specialist Ms. Josephine Fadul, Ed.D Schs. Div. Superintendent, Department of Education (DepEd) Division of DDN Rep. Engr. Lolita P. Andamon, SGOD Chief-DepEd DDN Ms. Angelina P. Talingting Provincial Head, DOLE Rep. by Ms. Jennylyn M. Rosalinda, LEO III Ms. Jocelyn C. Seno OIC, Prov'l. Agrarian Reform Officer, DAR Rep. by Mr. Dindo Tabudlong, ARO I Mr. Emmanuel A. Cacal Provincial Officer, NAt'l Commission on Indigenous Peole (NCIP) Rep. by Ms. Rhodora T. Braganza, FPIC Ms. Karina Anna C. Del Rosario President, Davao del Norte Province Council of Women Rep. by Ms. Clarita P. Galagal, VP, DNPCW Mr. Rande C. Bayate Executive Diretor, SILDAP Southeastern Mindanao, Inc. Rep. by Loreto Balao, SILDAP Staff ABSENT: Hon, Pantaleon D. Alvarez Congressman, 1st Congressional District Hon. Alan R. Dujali Vice Governor/ PDC Vice Chairperson Hon. Al David T. Uv City Mayor, Island Garden City of Samal Hon. Arnel H. Sitoy Municipal Mayor, San Isidro Hon. Daniel S.Batosalem, Jr. Municipal Mayor, Sto. Tomas Engr. Daniel A. Jaravata OIC- District Engineer, Dept. of Public Works and Highways (DPWH) Mr. Remegias G. Timonio, Ed.D., CEO VI Prov'l Director, Technical Education Skills Dev't Authority (TESDA). Ms. Arlene L. Morpus Member, Association of Friends of the Home for the Aged, Inc. Ms. Nenita R. Malbas, CPA Past President, Phil. Institute of Certified Public Accountant (PICPA) Ms. Zenaida R. Serrano Executive Director, SPES Pauperum

Center Mr. Epifanio Loyola President, Prov'l. Agriculture & Fisheries

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Council (PAFC)

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President, Rural Improvement Club (RIC)

CEO, Tribal Educ. On Ecological System (TREES) Community School and Learning



Ms. Eva E. Estabillo

Mr. Critito M. Calig-onan





OTHERS PRESENT:

Hon. Raymond Joey Millan Engr. Raul G. Mabanglo

Dr. Anastacia G. Notarte, RA, Ph.D

Ms. Ma. Eliza Andin, CPA Atty. Edd Mark Wakan

Ms. Norma A. Lumain, CPA, MPA Ms. Regina C. Ricafort, CPA, MBA Ms. Serlinda C. Atake, CPA, MBA

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Engr. Hazel C. Zafra, EnP Maria Florencia B. Cadagdagon

Odilon Juntilla, EnP Lorelie Dela Torre Mary Joy P. Olavides

Government Center, Mankilam,

SP Member

PG-Department Head, PEOPG-Department Head, PAGRO .

PG-Department Head, PEEDO
 PG-Department Head, PGSO
 PG-Department Head, PBO

PG-Department Head, PBO PG-Department Head, PTO

PG-Department Head, PACCO
Asst. PG Dept. Head, PEO
Asst. PG Dept. Head, PASSO

Asst. PG Dept. Head, PENRO-LGU

- PTO, PADO- Tourism

- Internal Auditor V, PGO-IASD

- MPDC, B.E. Dujali - Engineer II, PEO

Facilitator, LPTRP & SFMP

SAO, PEEDO PENRO, LGU

SCMS, PENRO-LGU
 AO IV, PENRO-LGU

- PLO III, DENR - PMO II, DENR - LTOO III, PTO

Engineer I, PEO

STOO, PADO- Tourism

PDO IV, PPDO
PEO IV, PPDO
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PDC RESOLUTION NO. 15 SERIES OF 2018

A RESOLUTION APPROVING AND ENDORSING THE LOCAL PUBLIC TRANSPORT ROUTE PLAN (LPTRP) OF THE PROVINCE OF DAVAO DEL NORTE TO THE DEPARTMENT OF TRANSPORTATION (DOT,) THROUGH THE LAND TRANSPORTATION FRANCHISING AND REGULATORY BOARD (LTFRB) XI AND SANGGUNIANG PANLALAWIGAN FOR APPROPRIATE ACTION

WHEREAS, the Provincial Government's Local Public Transport Route Plan-Technical Working Group (LPTRP-TWG) through the technical assistance of the Department of Transportation (DOTr) and the Land Transportation Franchising and Regulatory Board XI has formulated the Local Public Transport Route Plan (LPTRP) of Davao del Norte;

WHEREAS, pursuant to Joint Memorandum Circular No. 001, Series of 2017 of the Department of Transportation (DOTr) and the Department of Interior and Local Government (DILG), otherwise known as the "Omnibus Guidelines on Planning and Identification of Public Road Transportation Services and Franchise Issuances", Local Government Units (LGUs) are directed to prepare their respective LPTRP. Cities and Municipalities will focus on the intra-city and intra-municipality routes while on the second level, the LPTRP of the province will emphasize on the inter-city/inter-municipality as well as intra-provincial trips;

WHEREAS, this Joint Memorandum Circular clearly specifies that LGUs are responsible in collecting data, analyzing public transport supply and demand, and identifying specific public transport supply gaps for travel within territories;

WHEREAS, The LPTRP of the province illustrates in detail the route network, mode and required number of units per mode for delivering public land transport services and shall be the minimum requirement prescribed for the issuance of Public Utility Vehicle (PUV) franchises;

WHEREAS, this august body, found and acknowledge the importance of the LPTRP's role in the proper planning and management of the transport route network towards a reliable, safe, accessible, comfortable and environmentally sound public transport service delivery;

WHEREAS, in the full council meeting of the Provincial Development Council all components of the LPTRP were thoroughly deliberated and considered;

WHEREFORE, upon the motion of Mr. Perfecto P. Urdaneta, Managing Director of the Davao Provinces Rural Development Institute, Inc. and duly seconded by Ms. Araceli L. Ayuste, President of the Provincial Tourism Council, be it;

RESOLVED as it is hereby resolved to approve and endorse the Local Public Transport Route Plan of Davao del Norte to the DOTr through the LTFRB XI for their consideration and appropriate action and upon issuance of the Notice of Compliance by the latter, the LPTRP be endorsed to the Sangguniang Panlalawigan for appropriate action.



gop_ddn@yahoo.com.ph (084)655-9896 / Hon. Anthony G. del Rosario

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RESOLVED FURTHER, that copies of this resolution be forwarded to the Department of Transportation, the LTFRB XI and the Department of Interior and Local Government XI, copy furnished to Hon. Antonio Rafael del Rosario, Governor and PDC chair and to Mr. Nelson F. Plata, OIC-PPDC/ PDC Secretary for their information and guidance;

CARRIED UNANIMOUSLY.

I HEREBY CERTIFY to the correctness of the above-quoted resolution.

NELSON F. PLATA, EnP, MPA OIC-PPDC/PDC Secretary

Approved:

SAMSON J. SANCHEZ, WIPA, CSEE

(Provincial Administrator)

OIC-Governor

PDC Presiding Officer



Hon. Anthony G. del Rosario Governor, Davao del Norte

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List of Acronyms

ACLC AMA Computer Learning Center
AFCS Automated Fare Collection System
APGR Average Population Growth Rate

B Billion

CCTV Closed Circuit Television
CLUP Comprehensive Land Use Plan

C/MPDC City/Municipality Planning and Development Coordinator
C/MPDO City/Municipality Planning and Development Office

C/MEO City/Municipal Engineer's Office

DA Department of Agriculture

DepEd Department of Education

DILG Department of the Interior and Local Government

DOTC Department of Transportation and Communication

DOTr Department of Transportation

DPWH Department of Public works and Highways

DRR-CCA Disaster Risk Reduction- Climate Change AdaptationFABC Federation of Associations of Barangay Captains

FGD Focused Group Discussion
GPS Global Positioning System

Ha. Hectare

HPG Highway Patrol Group
IGaCos Island Garden City of Samal
IT Information Technology
JAO Joint Administrative Order
JMC Joint Memorandum Order
KII Key Informant Interviews

KPH Kilometer per hour
LGC Local Government Code
LGU Local Government Unit

LPTRP Land Public Transport Route Plan
LPTN Local Public Transport Network

LRNDP Local Road Network Development Plan

LTFRB Land Transportation Franchising Regulatory Board

LTO Land Transportation Office

MSME Micro Small Medium Enterprises

M Million

MT/Ha Metric Ton per hectare

NGO Non-Government Organization

NIPAS National Integrated Protected Area System
NPAAD Network of Protected Areas for Agricultural

TWG Technical Working Group

OFG Omnibus Franchising Guidelines

PAGO Provincial Administrator's Office
PAGRO Provincial Agriculturist's Office

PENRO Provincial Environment and Natural Resources Office

PEO Provincial Engineer's Office

PESO Public Employment Service Office

PDPFP Provincial Development and Physical Framework Plan

Php Philippine Peso

PLO Provincial Legal Office
PNP Philippine National Police

PPDO Provincial Planning and Development Office

PPDC Provincial Planning and Development Coordinator

PPHPD Passenger per Hour per Direction
PSA Philippine Statistics Authority

PUB Public Utility Bus
PT Public Transport
PUJ Public Utility Jeepney
PUV Public Utility Vehicle
PWD Person with Disability

RA Republic Act

SAFDZ Strategic Agriculture and Fisheries Development Zone

SLRF Special Local Road Fund

SQ. KM. Square Kilometer

SUCs State Universities and Colleges

TESDA Technical Education and Skills Development Authority

TMG Traffic Management Group

TVET Technical Vocational Education and Training

TVI Technical Vocation Institutions

UM University of Mindanao (Tagum College, Panabo, College, Penaplata College)

UN-DESA United Nations- Department of Economic and Social Affairs

UV Express Utility Van Express
VOC-TECH Vocational-Technical

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Along this line, we would like to make special mention to the following agencies:

- a) Department of Transportation
- b) Land Transportation Franchising and Regulatory Board-Davao Region
- c) Land Transportation Office- Davao Region
- d) Department of Public Works and Highways
- e) Philippine National Police Traffic Management Group
- f) Davao del Norte State College
- f) Provincial Governor's Office
- g) Provincial Engineer's Office
- h) Provincial Agriculturist and Cooperative Office
- i) Provincial Legal Office
- i) PENRO-LGU
- k) Sangguniang Panlalawigan Office
- I) Office of the Secretary to the Sanggunian
- m) Municipality of Asuncion
- n) Municipality of Braulio E. Dujali
- o) Municipality of Carmen
- p) Municipality of Kapalong
- q) Municipality of San Isidro
- r) Municipality of Sto. Tomas
- s) Municipality of Talaingod
- t) Island Garden City of Samal
- u) City of Panabo
- v) City of Tagum

CHAPTER 1 INTRODUCTION



CHAPTER I

INTRODUCTION

1.1 Rationale

a. Overall Objectives of PUV Modernization Program

Department of Transportation Department Order 2017-11, otherwise known as the "Omnibus Franchising Guidelines" (OFG) stipulates the new Local Transport Franchising Regulatory Board (LTFRB) guidelines on issuing franchises to road based public transportation services. In addition, this Department Order endeavors to rationalize local public transport route planning as a participatory undertaking that involves the local government units (LGUs). This route plan shall take into consideration the implementation of the Public Utility Vehicle (PUV) Modernization, which is compliant with safety and environmental laws/standards; and the fleet industry consolidation for a more efficient land transport operations.

The PUV Modernization Program is a transformational large-scale and flagship project of President Duterte. It envisions a restructured, modern, well-managed, and environmentally sustainable transport sector where drivers and operators have stable, sufficient and dignified livelihoods, while commuters get to their destinations quickly, safely and comfortably. It deems to realize that "Starting 2018, Filipinos will have a pleasant commuting experience".

b. Local Public Transportation Route Plan Objectives

In line with the decentralization thrust of the Republic Act No. 7160 or the Local Government Code of the Philippines, the LGUs are mandated to formulate a local-level public transport plan that is deemed to provide access and mobility to people through public transport services enabling them to utilize and participate in the different socio-economic activities and amenities of LGUs as cited in the Comprehensive Land Use Plan.

Goal:

By 2023, the Province of Davao del Norte shall have a Local Public Transport Network that will serve the passenger demands in terms of coverage and level of supply, economically and sustainably viable to Dabaonons and financially feasible to operators, environmentally sustainable, socially acceptable and compatible with the overall transport system.

Objectives:

That the Local Public Transport Network shall be able to be:

- accessible within a reasonable access time to public transport mode;
- reliable in a sense that waiting time is predictable at stops and terminals;
- safe in compliance to travel speed regulations while providing passengers security of travel; providing sufficient and efficient passenger space with utmost compliance to load capacity and accessibility law;
- environment-friendly, viable and affordable public transport

c. Coverage of the Plan

The Local Public Transportation Route Plan (LPTRP) will cover the whole Province of Davao del Norte transport system, which includes the intra-province (inter-municipal) routes. Incorporated in the said plan are the intra-city and intra municipality transport routes provided by the province's component cities and municipalities, except the Island Garden City of Samal.

1.2 Legal Framework and Composition of LTPRP Team

Executive Order No. 24, Series of 2018 which was issued by Governor Antonio Rafael G. del Rosario, is an order establishing the LPTRP Core Team and Technical Working Group to formulate the Local Public Transport Route Plan (LPTRP) 2019-2023 of the Province of Davao del Norte. The LPTRP Core Team is composed of:

Chairperson: Governor

Vice-Chairpersons: Sangguniang Panlalawigan Member

Chairperson - Committee on Public Works and

Infrastructures and Public Utilities

Provincial Administrator

Members: FABC President

Municipal and City Mayors

The composition of the LPTRP Technical Working Group:

Team Leader Provincial Planning and Development Coordinator, PPDO

Co-Team Leader **Provincial Engineer, PEO**Members: Technical Staff from:

Provincial Engineer's Office

Provincial Planning and Development Office
Provincial Administrator's Office-Tourism Division
Provincial Environment and Natural Resources Office

Provincial Legal Office

Provincial Agriculturist's Office

Office of the Secretary to the Sanggunian

Representatives from the following:

City/Municipal Planning & Development Office

City/Municipal Engineer's Office

Representatives from the following:

DPWH

PNP Traffic Management Group

LTFRB Regional Office LTO Regional Office

NGOs Academe

Transport/Business Sector

The Provincial Planning and Development Office serves as the Secretariat of the TWG.

1.3 Brief History

Davao del Norte was created together with Davao del Sur and Davao Oriental from the original mother province of Davao on May 8, 1967 by virtue of Republic Act No. 4867. All three provinces celebrate their founding anniversary every July 1.

When it was created, Davao Province was composed of thirteen (13) municipalities, namely: Asuncion, Babak, Compostela, Kapalong, Mabini, Mawab, Monkayo, Nabunturan, Panabo, Pantukan, Samal, Sto. Tomas and Six Tagum. additional municipalities were created as of May 6. 1970. These were Carmen. Kaputian, Maco, Montevista, New Bataan and New Corella. As of 1996, the province had a total of twenty-two (22) municipalities with the creation of San Vicente (now Laak) in 1979, Maragusan in 1988 and Talaingod in 1990. On June 17, 1972, Davao del Norte was renamed Davao Province by virtue of Republic Act No. 6430.

On January 30, 1998, President Fidel V. Ramos signed Republic Act No.8470 creating the Province of Compostela Valley out of Davao Province, which in turn was renamed back to Davao del Norte.

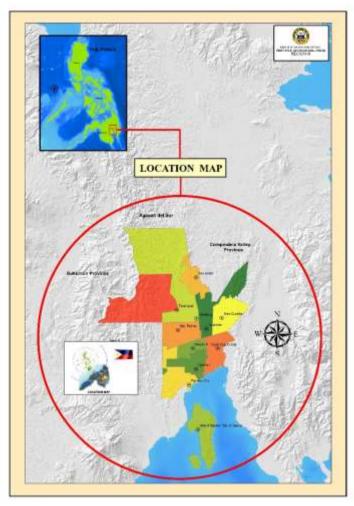


Figure 1.1: Map of Davao del Norte

Other historical events that transpired in Davao del Norte together with the creation of Compostela Valley were: the enactment of Republic Act No. 8471, creating the Island Garden City of Samal, which comprises the former municipalities of Babak, Samal and Kaputian; Republic Act No. 8472 converting Tagum municipality into Tagum City, the seat of the provincial government of Davao del Norte Province; and Republic Act 8473 creating the municipality of Braulio E. Dujali from the municipalities of Carmen and Panabo. Subsequently, on March 31, 2001 the Municipality of Panabo was converted into a city by virtue of Republic Act 1015, which bill was sponsored by Congressman Antonio R. Floirendo, Jr.

The Municipality of San Isidro is the youngest municipality which was created on March 15, 2004 pursuant to Republic Act 9265.At present, the province had a political composition of eight municipalities and three cities with 223 barangays, subdivided into 2 congressional districts.

The governors who served Davao del Norte were: Governor Veriulo C. Boiser (1967-1977); Governor Gregorio R. Dujali (1977-1986); Governor Prospero S. Amatong (1986-1998); Governor Gelacio P.

Gementiza (2004-2007) and Governor Rodolfo P. del Rosario (1998-2004 and 2007-2016). The present administration is headed by Governor Antonio Rafael G. del Rosario.

1.4 Geographical Location, Land Area and Political Subdivision

Davao del Norte is strategically located at the southeastern part of Region XI, bounded by Agusan del Sur on the North, Bukidnon on the Northwest, Davao City on the West, Davao Gulf on the South and the Province of Compostela Valley on the East (See Provincial Map 1, Figure 1.1).

Table No. 1.1 Land Area and Number of Barangays,
By City/Municipality Davao del Norte, 2015

Land Avec No. of						
	Land Area	No. of				
City/Municipality	(Sq. Km.)	Barangays				
District I						
Asuncion	293.47	20				
Kapalong	945.86	14				
New Corella	321.48	21				
San Isidro	152.49	13				
Tagum City	182.54	23				
Talaingod	454.96	3				
District II						
Braulio E. Dujali	91.00	5				
Carmen	166.25	20				
Island Garden City of Samal	280.71	46				
Panabo City	253.63	39				
Sto. Tomas	320.41	19				
DAVAO DEL NORTE	3,462.80	223				

Source: DENR XI

Note: Land area is not authoritative, for planning purposes only.

CHAPTER 2 STUDY/CORRIDOR



CHAPTER 2

STUDY AREA/CORRIDOR

2.1 Population Trends

The 2015 Census of Population and Housing shows that the population of Davao del Norte rose to 1,016,318 with an annual growth rate of 1.38%. The increase indicates that over a period of 5 years there was an increase of 70,554 persons or 14,111 persons every year. (PSA 2016).

If population will continue to increase at the recent growth rate of 1.38%, by the year 2020, the population of the province is expected to reach 1,088,423. From 2015, it is estimated that some 28,836 persons will be added to the population every year until 2020. It is also expected that population size will double in 51 years.

Table 2.1: Population, Average Population Growth Rate and Density, by City and Municipality
Province of Davao delNorte: Census 2015

City/Municipality	Population 2015	APGR 2010- 2015	Density 2015	
District I				
Asuncion	59,322	1.16	202	
Kapalong	76,334	2.15	81	
New Corella	54,844	1.51	171	
San Isidro	26,651	0.81	175	
Tagum City	259,444	1.27	1421	
Talaingod	27,482	1.39	61	
District II				
Braulio E. Dujali	30,104	1.16	331	
Carmen	74,679	1.46	271	
IGACOS	104,123	1.58	371	
Panabo City	184,599	1.09	728	
Sto. Tomas	118,750	1.6	371	
DAVAO DEL NORTE	1,016,332	1.38	294	

Source: Philippine Statistics Authority

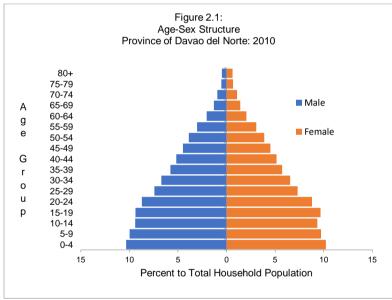
Between 2010-2015 censuses, the Municipality of Kapalong showed the highest annual population growth rate (APGR) of 2.15% among all LGUs of Davao del Norte. The growth can be attributed to new roads that offer accessibility for more economic activities. On the other hand, the Municipality of San Isidro had the least growth of only 0.81%. With the given annual growth rates of LGUs, the population will continue to grow, although at a slower but varied pace.

The province has a total land area of 3,462.80 square kilometers. As of 2015, its population density is 294 persons in every square kilometer. It increased by 21 persons (7.12%) from the 273 persons per square kilometer density in 2010. The cities have more persons living in a square kilometer area namely, Tagum City with 1,421, Panabo City with 728 and the Island

Garden City of Samal 342. Likewise, the municipality of Sto. Tomas, which is an emerging growth center because of its booming banana industry, had a population density of 341. The least densely populated municipalities are Kapalong (81) and Talaingod (61) due to their large land area (PSA 2016).

a. Age Structure

The age structure of a population is the distribution of the population in different age groups. Looking at the age structure of Davao del Norte, it can be gleaned that it has a very young population because about 61.49% of its household population is younger than age 30 (Madsen, Daumerie and Hardee 2010). Moreover, 32.90% of the total household population belongs to the0-14 age group. Children in the 0-4 age group have the biggest proportion of the population with 11.47%, followed by those in the 5-9 age group with 10.99% and those in the 15-19 age group with 10.61% (NSO 2013). The population distribution in these age groups suggests that fertility had started to decline. A youthful population structure is also referred as a progressive population typical of a less developed country like the Philippines. It is characterized by a very high birth rate, slowly decreasing death rate and slow rises in life expectancy. Thus, the population pyramid is really a pyramid as shown in Figure 2-1.



Source: National Statistics Office: 2010 Census of Population and Housing

The positive implication for a youthful population is that Davao del Norte will have an abundant supply of workers in the future and it is a matter of harnessing these potential workers to enable them to be economically gainful. On the other hand, a young population requires high investment in basic education and health care which burden shall fall on the economically active population. In addition, a population explosion will likely occur when this youthful population reaches maturity and form their respective families (UN-DESA 2004).

b. Sex Structure

Sex composition is one of the basic demographic characteristics of the population. Any changes in the male-female composition can be attributed to the prevailing socioeconomic and cultural situations. Normally, the overall sex ratio of a population is 100. A sex ratio above 100 indicates an excess of males while an excess below 100 indicates a surplus of females. For Davao del Norte in 2010, the males (480,932 or 51.3%) outnumbered the females (456,853 or 48.7%) hence, a sex ratio of 105 males for every 100 females. The difference in the sex ratio shows the equality between men and women towards attaining a better quality of life (Riyaza 2000). It can be noted that between the ages of 0-49 years old, there are more males than females, but, at the top of the pyramid, there are more females than males. The predominance of females over males at older ages suggests an increased overall survival of women due to better health care (UN-DESA 2004).

2.2 Economy

The potentials of the Province in agriculture are reflected through its vast area devoted to agricultural activities. Agricultural land use accounts for 47.30% (163,983.65 hectares) of the total land area of Davao del Norte.

Davao del Norte's geographic location is strategic to agriculture being surrounded by mountain ranges of the neighboring provinces. Although it is within the typhoon path, but lesser damage was reported particularly during the onslaught of Typhoon Pablo compared with other provinces. Climate is generally of Type IV with rainfall more or less evenly distributed throughout the year. However, occasional flooding is experienced in some areas caused by river overflows and runoff accumulation from higher elevations. Flooding is sometimes intense and lasts for a week in plains near major river courses. Dry spell, particularly during El Nino, is also experienced and affects agricultural productivity mostly in the uplands and elevated production areas where gravity irrigation is intermittent.

The soil characteristics of the province can support cultivation of most agricultural crops. Soil resources are dominantly clayey in texture that originates from alluvium washed from the uplands and from materials originating from igneous and sedimentary rocks. These soils exhibit medium to high fertility, except in some places where nutrient supplementation is required for optimum yields.

Table No. 2-2 indicates the major crops grown in the province. These include paddy rice, corn, coconut, banana for export and local consumption, fruit trees, and some high valued commercial and industrial crops. Vegetables, root crops and other temporary and perennial crops are also grown, although mostly not in commercial (or plantation type) scale.

Paddy rice cultivation is undertaken in 19,145 hectares, of which 82.35% (15,765.51 hectares) is irrigated. Rice is grown in all municipalities and cities of the Province with six (6) municipalities contributing most of the production areas. These are the municipalities of New Corella, Asuncion, Sto. Tomas, Kapalong, Carmen, and BE Dujali. Sto. Tomas and Carmen contribute the largest rice production areas at 4,595 and 3,671 hectares, respectively.

Mono-crop cultivation of corn is around 7,683 hectares which are usually planted with the white variety. Corn is produced in sizable areas in six municipalities/city; New Corella, Asuncion, Talaingod and Sto. Tomas. There are also areas grown with corn and being inter-cropped with other commodities like local banana and under coconut.

Coconut is one of the dominant crops grown in the province. Some 38,789 hectares are devoted to coconut production. The Island Garden City of Samal devotes the largest area for coconut production at 17,038 hectares, contributing 44% of the total area planted to coconut in the Province.

Banana is also one of the major crops grown in the province. Around 45,821 hectares are devoted to the cultivation of banana, both for local consumption and export market. There are two kinds of banana grown for local consumption, the table and the cooking banana. Table banana includes the Lakatan, Latundan and Bungulan varieties, while the cooking varieties are Cardaba and Saba. Cavendish banana, which is for export, is most popular and extensively grown in plantation scale in most municipalities and cities except on the island of Samal. Production of this commodity contributes considerably to the income of the Province.

Fruit tree growing is also feasible in the province. Two banner fruit tree crops with export potentials are being promoted for commercial and orchard production because of strong tendencies of income generation. These are the durian and mango. Durian is highly suitable for production in the Province because of its terrain and climatic condition. Mango is highly suitable in some areas with soil type of corraline limestone origin (Bolinao clay) as typically found in the Island Garden City of Samal, some parts of PanaboCity and some upland areas in the mainland. Mango and durian are grown in 4,785.86 and 1,070.25 hectares, respectively.

Table No. 2.2: Agriculture Profile
Province of Davao del Norte
As of CY 2015
(Areas in Hectares)

				•								
Commo	Municipalities/ Cities											
-dities	District I District II					Totals						
(has.)	Tagum	New Corella	Asuncion	Kapalong	San Isidro	Tala- ingod	Sto. Tomas	Panabo	Carmen	BE Dujali	IGaCoS	Iotais
Paddy rice	406.6	2,486.56	3,319.52	1,841.40	270.80	199.15	4,595.98	516.67	2,974.75	2,427.47	106.56	19,145.46
Irrigated Rain fed	249.8 156.8	2,126.31 360.25	2,059.20 1,260.32	1,119.91 721.49	27.10 243.70	62.40 136.75	4,211.79 384.19	446.02 70.65	2,974.75	2,427.47	60.76 45.80	15,765.51 3,379.95
Com	21.00	1,437.00	1,310.00	938.00	1,341.00	1,757.00	786.00	48.00	15.00	-	30.00	7,683.00
Coconut	5,532.23	2,356.04	1,800.15	634.74	1,928.72	328.72	643.90	4,772.00	3,671.90	91.78	17,038.55	38,788.73
Banana Cavendish Local	3,631.30 3,430.00 201.30	3,165.50 1,409.50 1,756.00	2,857.80 2,257.80 600.00	5,922.40 4,273.00 1,649.40	2,934.00 2,934.00	1,001.80 150.55 851.25	10,514.71 10,180.00 334.71	9,710.00 8,801.00 909.00	3,505.76 3,079.00 426.76	2,202.60 2,202.60 90.50	375.60 375.60	45,821.47 35,692.95 10,128.52
Mango	21.00	90.00	34.00	254.00	308.00	10.00	357.87	876.00	80.00	29.00	2,725.99	4,785.86
Durian	255.00	232.00	20.00	70.00	207.00	110.25	15.00	109.00	31.00	16.00	5.00	1,070.25
Coffee	29.00	130.00	-	60.30	-	357.50	83.00	64.50	-	1.50	47.37	773.17
Cacao	95.22	370.00	97.50	505.00	4,072.92	155.10	330.04	113.20	7.00	3.00	45.57	5,794.55
Vegetables & Spices	5.30	12.20	23.50	25.50	9.90	7.60	6.00	5.00	3.80	3.70	1.90	104.40
Root crops	6.10	12.20	14.40	15.40	3.20	5.30	3.00	12.00	1.00	1.00	1.00	74.60
Others: Rubber Oil Palm	5.00	280.50	24.50	243.85	306.85	2,268.50	458.00	160.35	-	10.00	-	3,757.60

Source : Provincial Agriculturist's Office

With regards to production as presented in Table 2-3, rice production for CY 2015 totaled 115,793.00 metric tons (dry basis) harvested from a total area of 31,446.00 hectares. Irrigated rice comprises 92.53% of the production areas, and where most of the production of paddy rice (palay) came from. The average yield was around 3.68 metric tons (dry basis), or at an average of 73.65 bags of 50 kilograms in a hectare. Paddy rice production is estimated to value annually at P 2,403.79 Million at farm gate prices.

Fruit tree growing both for commercial and orchard production is also feasible in the Province. Fruit trees are considered as banner crops which has high export potentials. Durian is highly suitable for production in the Province because of its terrain and climatic condition. Mango is likewise suitable in some areas of the Province with soil type of coralline limestone origin (Bolinao clay) as typical in the Island Garden City of Samal and some areas of Panabo City.

Temporary crops like vegetables, spices and, root crops are also grown in the Province. Around 104.40 hectares are planted with vegetables and spices, and 74.60 hectares are cultivated for various root crops. Practically all municipalities produce these commodities either at backyard or commercial levels. Production of vegetables averages 53.10 metric tons in a hectare while root crops yield about 27.16 metric tons per hectare. These commodities are either used for home consumption or sold at the market.

Table No. 2.3: Crop Area, Production, Average Yield, and Value of Production, By Crop, Davao del Norte, 2015

	,,	Averages				
Crops	Area Harvested (Has.)	Production (MT)	Ave. Yield (MT/Ha.)	Value per Kilo	Estimated value (2015 farm gate price, Php, M)	
Rice	28,526.00	125,919.00			2,403.79	
Irrigated	26,250.00	118,745.00	4.52	19.09	2,266.84	
Rain fed	2,276.00	7,174.00	3.15	19.09	136.95	
Corn	14,568.00	20,135.00			240.21	
White	10,400.00	10,694.00	1.03	11.93	127.58	
Yellow	4,168.00	9,441.00	2.27	11.93	112.63	
Coconuts	39,063.00	233,921.61	5.99	30.00	7,017.65	
Banana	34,991.00	1,585,521.21			24,862.13	
Cavendish	28,846.00	1,523,102.83	52.80	16.00	24,369.65	
Lakatan	1,584.00	13,505.32	8.53	16.80	226.89	
Saba/Cardaba	4,561.00	48,913.06	10.72	5.43	265.60	
Mango	1,553.00	2,816.03	1.81	20.00	56.32	
Durian	2,469.00	13,141.12	5.32	20.10	264.14	
Papaya	71.00	1,568.84	22.10	10.00	15.69	
Coffee	1,157.00	1,154.42	1.00	63.10	72.84	
Cacao	1,850.00	829.65	0.45	93.79	77.81	
Rubber	615.00	1,137.74	1.85	28.43	32.35	
Rootcrops Camote	1,246.00 722.00	7,251.32 3,577.60	27.16 4.96	14.50	82.24 51.88	
Cassava	475.00	3,253.14	7.12	5.45	17.73	
Gabi	42.00	378.03	9.00	30.00	11.34	
Ubi	7.00	42.55	6.08	30.5	1.30	
TOTAL CROPS	7.00	12.55	0.00	30.3	35,247.83	

Source: Philippine Statistics Authority for the raw data
Provincial Agriculturist's Office for the estimation of values

2.3 Educational Facilities and Enrolment

a. Facilities

Davao del Norte has a total of 425 elementary schools, where 323 are public schools and 102 are private schools. As expected the cities have more schools since they are highly urbanized. On the other hand, the secondary level has a total of 136 schools, of which 82 are public while 54

are private. This suggests that basic education both in elementary and high school has become more accessible in Davao del Norte. The breakdown of the number of schools can be gleaned at the table below.

Table No. 2.4: Education Facilities, by level,
By City and Municipality
Davao del Norte, SY 2016-17

City/	Elementary Secondary					
Municipality	Public	Private	Total	Public	Private	Total
Asuncion	27	1	28	3	1	4
BE Dujali	11	2	13	3	1	4
Carmen	21	4	25	7	-	7
Kapalong	47	6	53	7	5	12
New Corella	27	3	30	4	3	7
San Isidro	15	-	15	4	-	4
Sto. Tomas	26	12	38	7	6	13
Talaingod	24	10	34	4	2	6
Panabo City	45	16	61	12	10	22
Tagum City	29	35	64	11	21	32
IGACOS	51	13	64	20	5	25
Davao del Norte	323	102	425	82	54	136

Source: DepEd – Divisions of Davao del Norte, Tagum City, Panabo City and IGaCos

As of 2016 there are 20 registered tertiary institutions in Davao del Norte, which offer various courses/degrees. There are two State Universities and Colleges (SUCs) and there are also 19 private institutions. Twelve of these institutions locate in Tagum City, while the rest are distributed in other urban centers in the province. Please see the following table:

Table No. 2.5:Educational Facilities, Tertiary

Davao del Norte, 2016

	INSTITUTION	LOCATION
1.	ACES Polytechnic College	Panabo City
2.	ACES Tagum College	Tagum City
3.	ACLC College of Tagum City	Tagum City
4.	Arriesgado College Foundation	Tagum City
5.	Davao del Norte State College	Panabo City
6.	Davao Winchester Colleges, Inc.	Sto. Tomas
7.	Kapalong College of Agriculture, Sciences & Technology	Kapalong
8.	Liceo de Davao	Tagum City
9.	North Davao Colleges	Panabo City
10.	NDC- TAGUM Foundation	Tagum City
11.	North Davao Colleges, Inc.	Panabo City

12.	Northlink Technological College,Inc.	Panabo City
13.	Queen of Apostles College Seminary	Tagum City
14.	Saint Mary's College of Tagum, Inc.	Tagum City
15.	St. Thomas More School of Law and Business	Tagum City
16.	Tagum City College of Science and Technology Foundation.	Tagum City
17.	Tagum Doctors College, Inc.	Tagum City
18.	UM Panabo College	Panabo City
19.	UM Peñaplata College	IGACOS
20.	UM Tagum College	Tagum City
	University of Southeastern Philippines- College of Agriculture	Tagum City

Source: Commission on Higher Education

For SY 2015-2016, a total of 36 public and private technical vocational institutions (TVIs) were registered with the Technical Education and Skills Development Authority (TESDA). These provided post-secondary technical vocational education and training (TVET) programs. Tagum City, the economic hub and capital city of the province has the most number of TVIs, followed by Panabo City. The Island Garden City of Samal had registered programs along tourism sector, being a tourism destination in the region. The increasing enrolment trend of TVIs can be attributed to the growing demand of skilled workers in local and international labor market.

Table No. 2.6:**Technical Vocational Institutions**Davao del Norte, SY 2015-2016

City/Municipality	No. of Technical Vocational Institutions
Kapalong	1
Tagum City	22
Sto. Tomas	2
Panabo City	8
IGaCOS	3
Davao del Norte	36

Source: TESDA

b. Enrolment

Public school enrolment for school year 2016-2017 totaled 156,385 for all schools divisions in the province. The Davao del Norte Division has the most enrolment since the division covers 8 component municipalities of Davao del Norte. Among cities, Tagum City had the biggest enrolment population while Samal City got the smallest number. More males (57.66%) than females are enrolled during the school year. Enrolment data for public elementary is presented in the following table:

Table No. 2.7: Enrolment, by Division
Public Elementary Schools
Davao del Norte, SY 2016-2017

Division	Public Elementary					
DIVISION	Male i		Total			
Davao del Norte	38,789	35,544	74,333			
Tagum City	19,338	17,749	37,087			
Panabo City	14,614	13,558	28,172			
Samal City	8,829	7,964	16,793			
Total	81,570	74,815	156,385			

Source: DepEd Divisions: Davao del Norte, Tagum City, Panabo City and Samal City

Enrolment for public secondary schools for SY 2016-2017 totaled 71,382 where 38,079 (53%) are males and 39,094 (47%) are females. The Davao del Norte topped the number of enrollees among the 4 schools divisions since it has more schools compared to the cities. The table below presents the enrolment data by division.

Table No. 2.8: Enrolment, by Division
Public Secondary Schools
Davao del Norte, SY 2016-2017

Division	Public Secondary					
DIVISION	Male	Female	Total			
Davao del Norte	18,323	18,775	31,313			
Tagum City	9,661	10,044	19,699			
Panabo City	5,820	6,057	11,877			
Samal City	4,275	4,218	8,493			
Total	38,079	39,094	71,382			

Source: DepEd Divisions: Davao del Norte, Tagum City, Panabo City and Samal City

As reported by the schools divisions, enrolment in private elementary and secondary schools are lesser than the enrolment in public schools. In elementary schools, enrolment was 12,017, while in secondary schools, enrolment was 17,499.

Table No. 2.9: Enrolment, by Division
Private Elementary and Secondary Schools
Davao del Norte, SY 2016-2017

	Enrolment in Private Schools						
Division	Elementary		Secondary				
	Male	Female	Total	Male	Female	Total	
Davao del Norte	1,775	1,458	3,232	2,323	2,118	4,441	
Tagum City	2,606	2,320	4,926	3,895	4,417	8,312	
Panabo City	1,822	1,593	3,415	1,844	1,846	3,690	
Samal City	231	213	444	537	519	1,056	
Total	6,434	5,584	12,017	8,599	8,900	17,499	

Source: DepEd Divisions: Davao del Norte, Tagum City, Panabo City and Samal City

As of SY 2016-2017, a total of 26,005 students were enrolled in various colleges and universities in the province. The biggest number are enrolled in UM Tagum College with 8,887, where 3,862 were males and 5,015 were females. In the over-all there were more female college students (15,336 or 59%) than male students (10,220 or 39%) as reflected in the table below. The enrolment data however, do not solely represent the students who are residents of Davao del Norte, but also those who came from neighboring provinces.

Table No. 2.10: Tertiary Education Enrolment, by Sex Davao del Norte, SY 2016-2017

Higher Education Institution	Male	%	Female	%	Total
ACES Polytechnic College	280	61	182	39	462
Aces Tagum College	223	38	358	62	581
ACLC College of Tagum	217	53	192	47	409
Arriesgado College Foundation	151	21	574	79	725
Davao del Norte State College	548	36	970	64	1,518
Davao Winchester Colleges	280	44	351	56	631
Kapalong College of Arts, Sciences and					
Technology	798	39	1,266	61	2,064
Liceo De Davao	204	32	426	68	630
North Davao Colleges-Panabo	299	25	889	75	1,188
North Davao College-Tagum Foundation	218	33	444	67	662
Northlink Technological College	54	50	55	50	109
Queen of Apostles College Seminary	110	45	1	0	244
St. Mary's College of Tagum	678	39	739	43	1,724
St. Thomas More School of Law and Business	251	40	371	60	622
Tagum City College of Science and Technology					
Foundation	145	49	153	51	298
Tagum Doctors College	70	22	254	78	324
UM Panabo College	481	34	914	66	1,395
UM Peñaplata College	146	34	288	66	434
UM Tagum College	3,862	43	5,025	57	8,887
University of Southeastern Philippines-College					
of Agriculture-Tagum.Mabini	1,214	39	1,884	61	3,098
Grand Total	10,229	39	15,336	59	26,005

Source: Commission on Higher Education

Table No. 2.11: Tertiary Education Enrolment, by Discipline and Gender Davao del Norte, SY 2016-2017

Dissimilias Graves	Male	0/	Female	%	Takal
Discipline Group	iviale	%	remaie	%	Total
Agriculture, Forestry, Fisheries	1,213	53	1,083	47	2,296
Business Administration and Related	2,967	35	5,374	64	8,367
Criminology	1,940	74	687	26	2,627
Education Science and Teacher Training	2,164	25	6,144	72	8,589
Engineering and Technology	513	75	171	25	684
General	292	43	390	57	682

IT-Related Disciplines	938	56	752	44	1,690
Law and Jurisprudence	102	52	95	48	197
Maritime	-	0	-	0	-
Mathematics	-	0		0	-
Medical and Allied	94	13	630	87	724
Natural Science	6	38	10	63	16
Religion and Theology	133	100	-	0	133
Grand Total	10,229	39	15,336	59	26,005

Source: Commission on Higher Education

The potential clientele of TVET includes primarily the high school graduates, secondary school leavers, college undergraduates and graduates who want to acquire competencies in different occupational fields. Other potential clientele of TVET are the unemployed persons who are actively looking for work. These include the displaced workers who lost their jobs because of closure of establishments, retrenchment or laying-off of workers due to economic and other related reasons. Returning overseas Filipino workers who decide to discontinue working abroad are also clients of TVET as well as those currently employed who want to upgrade their skills or acquire new skills. For SY 2016-2017, a total of 4,488 students were enrolled in various vocational and technical courses shown in Table No. 5-27, where1,780 were males (40%) and 2,628 (60%) were females.

Table No. 2.12: Vocational-Technical (Voc-Tech) Enrolment
Davao del Norte: 2016-2017

	Enrolment						
Course/Degree Program		Fen	nale	Male			
	Total	No	%	No	%		
Automotive Servicing NC I	503	9	2%	494	98%		
Automotive Servicing NC II	279	7	3%	272	97%		
Bartending NC II	88	33	38%	50	57%		
BEAUTY CARE (NAIL CARE) NC II	27	26	96%	1	4%		
Bookkeeping NC III	107	84	79%	23	21%		
Caregiving NC II	6	6	100%	0	0%		
Computer Hardware Servicing NC II	11	5	45%	6	55%		
Computer Systems Servicing NC II	16	6	38%	10	63%		
Contact Center Services NC II	75	52	69%	23	31%		
Cookery NC II	359	218	61%	141	39%		
Driving NC II	159	10	6%	149	94%		
Electrical Installation and Maintenance NC II	42	0	0%	42	100%		
Food and Beverage Services NC II	447	309	69%	138	31%		
Food Processing NC II	135	87	64%	48	36%		
Foreign Language (Nihongo)-NTR	40	27	68%	13	33%		
Front Office Services NC II	182	137	75%	45	25%		
Hairdressing NC II	11	9	82%	2	18%		
Health Care Services NC II	48	33	69%	15	31%		
HEO (Forklift) NC II	20	2	10%	18	90%		
HEO (Hydraulic Excavator) NC II	15		0%	15	100%		
HEO (Wheel Loader) NC II	15		0%	15	100%		

Housekeeping NC II	170	132	78%	38	22%
Local Guiding Services NC II	63	51	81%	12	19%
Massage Therapy NC II	19	10	53%	9	47%
Organic Agriculture Production NC II	80	53	66%	27	34%
Pharmacy Services NC II	2	1	50%	1	50%
Programming NC IV	23	14	61%	9	39%
Security Service NC I	137	18	13%	119	87%
Shielded Metal Arc Welding (SMAW) NC II	140	22	16%	118	84%
Standard American English	76	24	32%	52	68%
Technical Drafting NC II	1		0%	1	100%
Trainers Methodology Level I	155	83	54%	72	46%
Visual Graphic Design NC III	52	32	62%	20	38%
Total	4,488	1,790	40%	2,628	60%

Source: TESDA

2.4 Employment

The table below shows that in July 2016, Davao del Norte had a projected population 15 years old and over of 835,571 of which 428,648 (51.3%) are males and 406,923 (48.7%) are females. About 529,836 joined the labor force giving a labor force participation rate (LFPR) of 63.41%. Out from those who joined the labor force, 507,212 are employed providing an employment rate of 95.73%, while unemployment rate was 4.27% for the 22,624 persons who are still looking for work. The population who are not in the labor force are those who are confined in institutions, students, persons with disabilities, housewives and those who chose not to get employed. About 36.50% (305,735) belonged to this category.

The existence of the agriculture industry and the growth of the services sector has created job opportunities for women. Over the years gender equality is evident in education, which gave women adequate qualification and opportunities for career advancement. About 48.7% of the population 15 years old and over in 2015 are women out of which 35.7% have joined the labor force. Likewise, 180,060 (35.5%) are gainfully employed.

Table No. 2.13: **Labor Force**Province of Davao del Norte, 2015

	Total	%	Male	%	Female	%
15 yrs. old & above	835,571	<u> </u>	428,648	51.3	406,923	48.7
In the labor force	529,836	63.41	340,684	64.3	189,151	35.7
Employed	507,212	95.73	327,151	64.5	180,060	35.5
Unemployed	22,624	4.27	13,371	59.1	9,253	40.9
Not in the labor force	305,735	36.59	88,052	28.8	217,684	71.2

Source: Philippine Statistical Agency

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The Public Employment Service Office or PESO is a non- fee charging multi- employment service facility or entity established or accredited pursuant to Republic Act 8759 otherwise known as the PESO Act of 1999. The main purpose is to strengthen and expand the existing employment facilitation service machinery of the government particularly at the capital towns of provinces, key cities, and other strategic areas a Public Employment Service Office.

The PESO functions as a venue for people to explore employment options and other related assistance as well as provide information on the services and programs of the Department of Labor and Employment and its allied agencies.

As of 2016 the data on employment generation facilitated by PESO in the province of Davao del Norte are shown in the following table:

Table No. 2.14: Employment Generation by the PESO Davao del Norte, 2016

Particular	Number	
Job Vacancies	82,798	
Applicants Registered	39,431	
Applicants Referred	31,167	
Applicants Placed	28,107	
Jobs Fair Conducted	36	
Applicants Registered	6,045	
Applicants Hired on the Spot	1,187	

Source: PESO, Davao del Norte

2.5 Housing

In the Province of Davao del Norte, housingunits occupied has increased significantly from 147,427 in 2000 to 207,179 in 2010 with an average rate of 4.38% annually this can be attributed to increased number of population.

<u>Table No. 2.15:Housing Units, Occupied and Vacant by Census Years:</u>
1970, 1980, 1990, 2000 and 2010, Davao del Norte

<u>Year</u>	No. of Housing	No. of Occupied	% Occupied
	<u>units</u>	<u>Units</u>	
<u>1970</u>	42,595	41,827	<u>98.20</u>
<u>1980</u>	<u>75,565</u>	72,443	<u>95.20</u>
<u>1990</u>	109,765	105,442	96.10
2000	147,989	<u>147,427</u>	<u>99.60</u>
<u>2010</u>		<u>207,179</u>	

Source: National Statistics Office, 2000-2010

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As per NSO Report in 2010 demand of housing units had more than doubled between year 2000 and 1970 due to increases in populations with an average rate of 4.38%, almost all housing units in 2000 were occupied at 99.6% rate(please see <u>Table No.</u>5-49)

Table No. 2.16: Comparison of Occupied Units, Households and Household Populations, by type of Building, 2000 and 2010, Davao del Norte

Type of Building	Occupied Ur	Ū	Numb House		Household Population		
	2000	2010	2000	2010	2000	2010	
Single House	<u>147,427</u>	207,179	<u>150,844</u>	211,099	<u>742,206</u>	937,785	
<u>Duplex</u>	137,809	193,076	140,465	196,590	694,880	881,309	
Multi Residential	2,907	<u>5,884</u>	3,055	5,991	14,263	24,086	
Comm./Industrial/Agri.	4,644	6,937	5,222	7,211	22,431	27,247	
Institutional Living Qts	421	827	444	841	<u>1,865</u>	3,334	
Other Housing Units	<u>20</u>	<u>6</u>	<u>20</u>	<u>6</u>	<u>58</u>	20	
Not reported	1,589	<u>358</u>	1,601	<u>361</u>	<u>8,578</u>	<u>1,396</u>	

Source: National Statistics Office, 2010.

Table 2-14 shows Total Occupied housing units increased by 38.50% between 2000 and 2010.Duplex housing units increased by 102% between 2000-2010 more than single houses at 40%. There were 3,514 households in 2010 shared shelter with other households, occupying single houses (196,590-193,076). The household population in all types of housing unit ranges between 4 to 5 persons per unit.

2.6 Commercial Establishments and Total Employment

Among the business enterprises locating in Davao del Norte, the most number are those categorized under micro enterprise with a total of 8,898 taking a share of 92.40% of the total enterprises in the province. It can be noted that only a few number of medium and large establishments, which also locate preferably in the cities. Correspondingly, jobs opportunities are under micro enterprises with 23,492 or 38. 28% of total MSMEs employed. Although the number of large enterprises are minimal but manpower requirement is seen to be considerably large.

Table No. 2.17: Number of Establishments and Total Employment and MSMEs Employment Groupings
Province of Davao del Norte: CY 2016

	No of	No of Establishments by Employment					Total Employment by Employment				
LGU	Grouping				Grouping						
	Micro	Small	Medium	Large	Total	Micro	Small	Medium	Large	Total	
Asuncion	359	13	-	-	372	939	279	-	-	1,218	
Braulio E. Dujali	131	7	-	-	138	332	101	-	•	433	
Carmen	555	30	2	-	587	1,556	537	329	-	2,422	

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Local Public Transport Route Plan 2019-2023: Province of Davao del Norte

Kapalong	490	24	1	1	516	1,163	623	120	203	2,109
New Corella	220	13	-	1	234	642	194	-	260	1,096
San Isidro	75	6	-	-	81	206	93	-	-	299
Sto. Tomas	744	61	•	2	807	1,960	1,210	-	2,317	5,487
Talaingod	48	2	•	-	50	170	33	-	-	203
Panabo City	1724	168	9	10	1,911	4,677	4,270	1,346	10,173	20,466
Samal City	784	44	2	-	830	1,996	879	245	-	3,120
Tagum City	3,768	303	19	14	4,104	9,852	6,490	2,823	5,420	24,584
Davao del Norte	8,898	671	33	28	9,630	23,492	14,709	4,863	18,373	61,437

Source: Philippine Statistics Authority

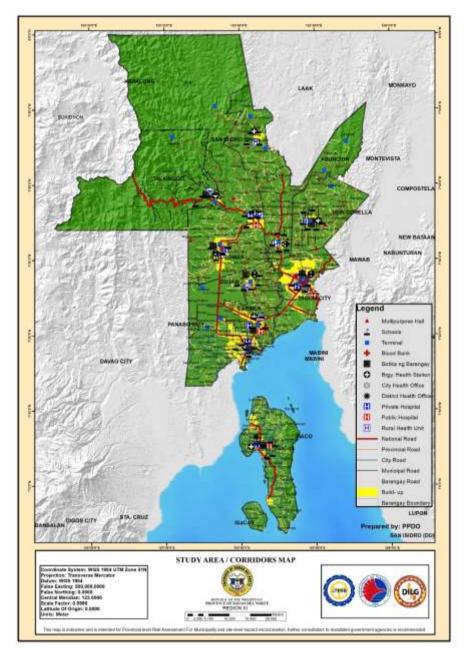


Figure 2.2: Province of Davao del Norte Study Area / Corridors Map

2.7 Spatial Development Framework

a. Existing Land Use

Existing land use is the way that an area of land is actually being put to use, namely: to grow rice, to build houses on, to put up industry; this is the impact of people and structure upon land resources. Existing land use in the province is categorized as production areas, protection areas, built-up/settlement areas, and infrastructure (including road networks) and utilities.

The Province is basically an agriculture province endowed with rich and fertile soil, and favorable climate suited for agriculture production. About 56.46 percent or 195,511.55 hectares are devoted to agriculture and aquaculture production. Major crops planted in the province are rice, coconut, cavendish and local banana, corn, mango and cacao.

Davao del Norte has an approximate production forestland area of 74,944.36 hectares. Out of the total area classified for production forest, approximately 3,631.22 hectares or 4.85 percent are residual forest or those that have been logged-over. Residual forest areas are prominently seen in the municipalities of Kapalong, San Isidro and Talaingod. Tree plantation is about 42,717.49 hectares or 57.00 percent of the total production forest. These areas were covered under the Integrated Social Forestry Program which were devolved to the LGU, and the Community-Based Forest Management Program of the DENR. Production forest are those areas where harvesting is allowed

Grassland and open areas comprise about 14,975.50 hectares or 19.98 percent, while brushland is about 6,007.47 hectares or 8.02 percent. These areas are available for plantation development. Cultivated or areas utilized for crop production comprise 7,612.68 hectares or 10.16 percent of the total production forest areas. These areas are mostly planted with agro-forestry products.

Brush and grasses dominate the landscape of the production forest areas in the municipalities of Kapalong, San Isidro and Talaingod. Open access areas are also found in the mountain ridges of New Corella, Asuncion, Sto. Tomas, and Island Garden City of Samal. Forestland in these areas is partly encroached upon by upland dwellers/communities.

Areas with potential for tourism development are found in the Island Garden City of Samal as well as in the mainland. Samal boasts of its white sand beaches and islets that are excellent for scuba diving and snorkeling, while the mainland boosts of notable attractions such as springs, caves and other inland resorts. Tourism potential in the mainland includes the vast banana plantations and highland journey in nature and culture particularly in the municipalities of Kapalong, New Corella, Talaingod and San Isidro. Mariculture parks located in the Island Garden City of Samal and Panabo City arealso being promoted as agri-tourism sites in the province. An area of 670.56 hectares is devoted for tourism.

With regard to protection land use, itembraces a concept of protection that enhances not only those that have to be protected from human occupation. It recognizes the destructive effect that such occupation will have on the resource, as well as the hazard posed bythe area to its human occupants. Hence, it has a dual objective of maintaining protection land to protect sensitive and critical ecosystem from human intrusion so as to preserve their integrity, while allowing at the same time degraded areas to regenerate and to protect human population from environmental hazards.

Davao del Norte's protection lands include the Mangrove Swamp Forest Reserve in Babak, Non-NIPAS, network of Protected Areas for Agricultural Development/Strategic Agriculture and Fisheries Development Zone (NPAAD/SAFDZ), Flood Prone areas and areas affected by severe erosion.

Table 2.18:**Existing Land Use (in hectares)**Province of Davao del Norte, 2014

Land Use	Area, in Hectares	Percent to Total (%)
Agriculture	195,511.55	56.46
Fishpond	2,021.56	0.58
Production Forest	74,944.36	21.64
Residual Forest	3,631.22	4.85
Brushland	6,007.47	8.02
Grassland	14,975.50	19.98
Tree Plantation	42,717.49	57.00
Cultivated area (within forestland)	7,612.68	10.16
Protection Forest	60,773.52	17.55
Industrial Area	225.50	0.07
Tourism	670.56	0.19
Built-up, Infra and Utilities	8,624.45	2.49
Residential	3508.6	1.01
Total	346,280.10	100.00

Source: Davao del Norte Provincial Development and Physical Framework Plan: 2014-2022

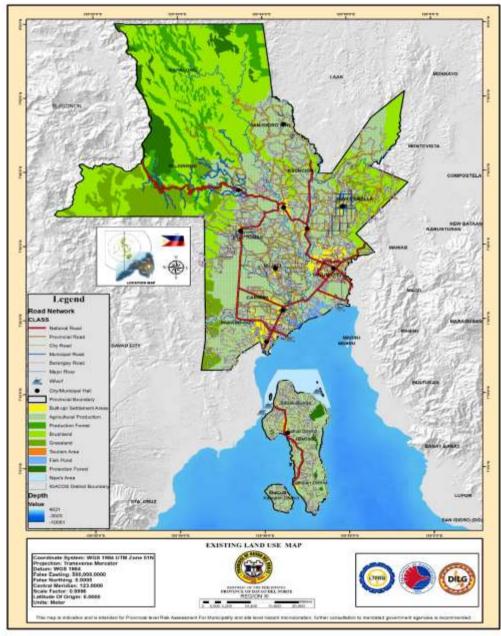


Figure 2.3: Existing Land Use Map of Davao del Norte

b. Physical Framework

Demand

The population of the province will increase from 1,016,332 in 2010 to 1,118,837 in 2022 by 1.38% annually. Tagum City will be the most populated at 1.561 persons per square kilometer. Kapalong and Talaingod will be the least dense municipalities by 2023 at 95 persons/sq.km. and 67 persons/sq.m. By 2023, the province will have an average population density of 331 persons/ sq.km.

The increasing population and the growing economic activities in the province will trigger the additional requirement for built-up areas including the need for residential and settlement spaces, infrastructure and transport facilities. Requirement of areas for built-up, infrastructures and other utilities will increase from 8,624.45 hectares to 12,899.95 hectares. Considering the standard of 150 populations per hectare (low dense) and 250 populations per hectare (medium dense) residential spatial requirements, residential and settlement areas will require an increase from 3,508.60 hectares in 2007 to 5,248.40 hectares by 2023.

c. Integration of demand with supply

Population and settlements

The population of Davao del Norte increased by an average growth rate of 2.43 percent between 2000 and 2010. This is slightly higher than the 2.34 percent/growth between the census years 1990-2000. In the 2015 census, the APG of the province dropped to 1.36% but the figure does not suggest that the population of Davao del Norte have correspondingly decreased. The population continues to grow given its very large population base.

Major growth centers will have substantial contribution in the increase of population at the end of the planning period. By 2023, Tagum City will have a projected population of 288,902, Panabo City with 202,142, Sto. Tomas at 134,690 and Samal City with 117,692.

Between 2000 and 2007, Davao del Norte's population was growing at an average growth rate of 1.81% annually. This growth rate is higher than the regional growth rate of 1.71% in the same period. In Region XI, the province ranks second after Davao City which has an average growth rate of 2.41%. Between 2000- 2010, the population growth rate of Davao del Norte was at 2.43% and population is projected to reach 1,147,210 by 2023.

The increasing population coupled with the increasing economic activity in major growth and emerging growth centers requires an additional area for basic social services and infrastructure facilities. Major growth centers like Tagum City and Panabo City and emerging centers like the Island Garden City of Samal, Sto. Tomas and Kapalong need to have substantial area allocated for urban expansions, as indicated in their respective comprehensive development plans.

In view of these projected condition in Davao del Norte for the next 15 years, the land use plan has to address population pressure challenges particularly in the urban centers. Thus, provision of proper infrastructure facilities in the rural areas has to be laid down in advance to minimize pressure of the urban areas.

d. Integration with other land use requirements

Infrastructure/Utilities Areas

Areas devoted to infrastructure development will increase by about 12.9 percent from the existing level of 4,978.76 hectares to 5,623.16 hectares. A national road density standard of 1.0 kilometer road length per square kilometer of alienable and disposable area will require to additional road infrastructure in some municipalities. Kapalong needs an additional road length of 941.850 kilometers, 454.960 kilometers for Talaingod, and 91.00 kilometers is needed for B.E Dujali. Better accessibility within these areas increases the chance of attracting developers and investors for industries development and providing better services to the populace.

The opening of Kapalong-Talaingod-Bukidnon Road occupies 250 hectares within the production forest. This particular road section will provide better access and linkage between Davao del Norte and the Province of Bukidnon. Asuncion-Laak provincial road with an area of 126 has. is already approved at third reading at Congress for conversion from provincial to national road. The improvement of this road section will increase the economic activities of the neighboring provinces of Compostela Valley and Agusan del Sur with Davao del Norte as the gateway.

Production land use

Davao del Norte is primarily an agriculture province. About 187,137.21hectares will be devoted for agricultural production. Majority of its population are engaged in agriculture and agriculture-based enterprises. Production of crops may utilize brush land and grasslands in production forest, provide appropriate farming practices are observed to reduce the risk of soil loss and erosion.

Social and utility/infrastructure services

The developments of these sectors are inseparable to a well-meaning growth. These are basic human needs for decent and comfortable existence. Thus, allocating spatial requirements is a must. The needs of these sectors are part of the built-up, infrastructure and other utilities land requirements which are increased from 8,624.45 hectares to 12,899.95 hectares. All of the LGUs must allocate the land requirements, especially the major growth centers like Tagum City, Panabo, IGCS and Sto. Tomas, which are the most populated ones.

Table No. 2.19:**Proposed Land Use (in hectares)**Province of Davao del Norte, 2014

Land Use	Area, in Hectares	Percent to Total (%)
Agriculture	185,811.21	54.04
Fishpond	2,021.56	0.58
Production Forest	74,944.65	21.64
Residual Forest	3,601.22	1.04
Brushland	5,666.45	1.64
Grassland	11,494.25	3.32
Tree Plantation	43,951.22	12.69

Local Public Transport Route Plan 2019-2023: Province of Davao del Norte

Cultivated area (within forestland)	10,231.51	2.95
Protection Forest	60,773.52	17.55
Industrial Area	2,142.00	0.62
Tourism	1,112.71	0.32
Built-up, Infra and Utilities	14,225.95	3.73
Residential	5,248.40	1.52
Total	346,280.00	100.00

Source: Davao del Norte Provincial Development and Physical Framework Plan: 2014-2022

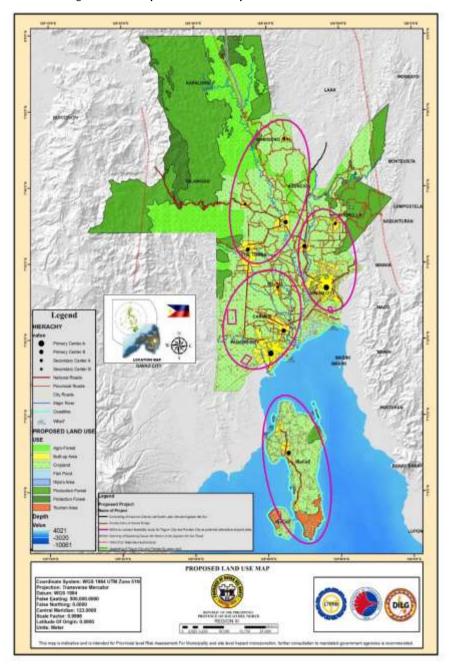


Figure No. 2.4: Proposed Land Use Map of Davao del Norte

e. Existing and Proposed Settlement Pattern

Based on the 2015 census of population, a histogram was formulated to illustrate the hierarchy of settlements among the cities and municipalities in the province. The categories are: for small/medium city (primary urban center A) with population more than 100,000; large town (primary urban center B) with a population of 100,000 to 400,000; a medium town with a population more than 50,000; and small town with a population below 50,000.

As reflected in the 2015 histogram, the three component cities, namely, Tagum City, Panabo City and the Island Garden City of Samal are categorized as Small/Medium City or Primary Urban Center A. Tagum City, being the capital town is the seat of the Provincial Government and a center for trade and commerce of Davao del Norte. It is just 55 kilometers from Davao City and 1 hour travel by bus to and from Davao City. Aside from being economically competitive, it has a fast growing population accounted at 259,444 as of the 2015 census. It is not only Tagum City but other municipalities and provinces that benefit from the facilities and services found in the city, namely, complete education at all levels, including vocational and technical, sports and recreation, communication, tertiary hospitals and clinics, churches of various denominations, shopping malls, public market and overland transport terminal. Categorized as the big brother of Cluster 1, it serves as the marketing link and distributor of prime agricultural products.

Panabo City, on the other hand is known as the Secondary Urban Center A, which has a growing population of 184,599. It is only 23 kilometers away from Tagum City, and is just 30 minutes travel by bus from Tagum City and 35 minutes travel to Davao City, thus, making this city a preferred residential area of those working in Davao City and those who find employment opportunities in Panabo City. Like Tagum City, Panabo is also a booming city with the existence of service and business facilities. It is taking the lead in the development of Cluster 3, as the big brother of the said cluster. With its proximity to Davao City, and with its seaport facility, the city is deemed as an alternate site for industrial development in the province of Davao del Norte.

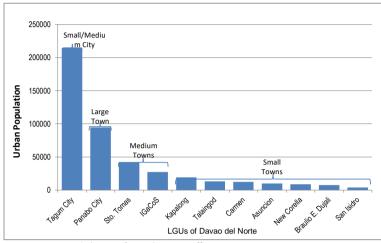
The Island Garden City of Samal has emerged from a Large Town or Primary Urban Center B to a Medium/Small City or Secondary Urban Center B with the growth of its population to 104,123 in 2015. Its growth in population can be attributed to its idyllic settlement location and the booming tourism industry.

The municipality of Sto. Tomas has a population of 118,750 as of the 2015 census of population. It is categorized as a Large Town or Primary Urban Center B. The denominator for its settlement growth is employment opportunities brought about by a progressive expansion of the banana industry.

Medium Towns or Secondary Urban Center B are towns that are serving correspondingly the smaller local markets in their vicinity. This comprises the municipalities of Kapalong, Carmen, Asuncion and New Corella.

The Small Towns category is given to those municipalities which has a population below 50,000. In Davao del Norte, Small Town category is given to the municipalities of Braulio E. Dujali, Talaingod and San Isidro.

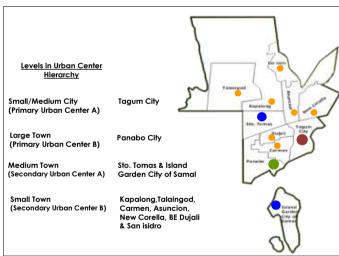
Figure 2.5: Histogram of Settlements by City/Municipality,
Province of Davao del Norte: 2015



Source: Provincial Planning & Development Office

Based on the histogram presented above, Figure 2-5 further illustrates the distribution of population and the distinct role of cities and municipalities in the map.

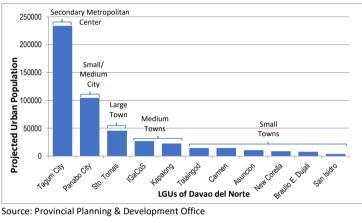
Figure No. 2.6: **2015 Hierarchy of Urban Centers**Province of Davao del Norte



Source: Provincial Planning & Development Office

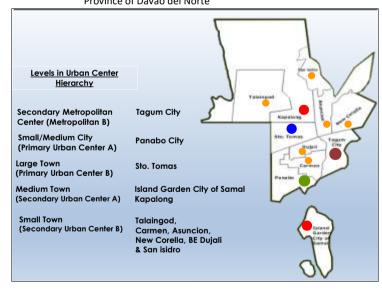
Projecting the growth of the population in 2023 using the APGR of 1.38 of Davao del Norte will show that population distribution and settlement pattern will still be similar to the 2015 population. However, it can be observed that there is an increase in population size in every LGU.

Figure No. 2.7: 2023Projected Histogram of Urban Centers Province of Davao del Norte



Source: Provincial Planning & Development Office

Figure No. 2.8: 2023Projected Hierarchy of Urban Centers Province of Davao del Norte



Source: Provincial Planning & Development Office

EXISTING ROAD CONDITIONS AND NETWORK AND PUBLIC TRANSPORT ROUTES



CHAPTER 3

EXISTING ROAD CONDITIONS AND PUBLIC TRANSPORT ROUTES

3.1. Existing Road Network

a. Road kilometerage by type of roads

The Province of Davao del Norte has a total road network of 3,924.37 kilometers with almost one-fourth of these classified as provincial roads (839.96 kilometers). National roads are about 6.07 %, while city and municipal roads accounts for 13.00 % and 7.62% respectively. Barangay roads that serve as access to the 223 barangays of the province are accounted at 51.91%. The municipality of New Corella has the longest provincial road at 187.07 km., while Municipality of Talaingod accounted for the shortest length at 52.45 km.

Table 3.1:**Road Length by Type of Roads,**Province of Davao del Norte
As of CY 2017

Road Category	Road Length (in km)	Share (in %)
National Roads	238.38	6.07%
Provincial Roads	839.96	21.40%
City Roads	509.89	13.00%
Municipal Roads	298.89	7.62%
Barangay Roads	2,037.25	51.91%
TOTAL	3,924.37	100%

Source: Local Road Network Development Plan 2018-2022

The Provincial Government sealed 64.36 kilometers of provincial roads out of 839.96 kilometers of the total provincial road length while the national roads' total length is paved 100% with concrete. Most of the local roads are gravel paved with surface conditions that ranges from fair to bad. Graveled roads comprise the majority under this classification with 66.58%. Road inventory by administrative function is presented in Table 3-2.

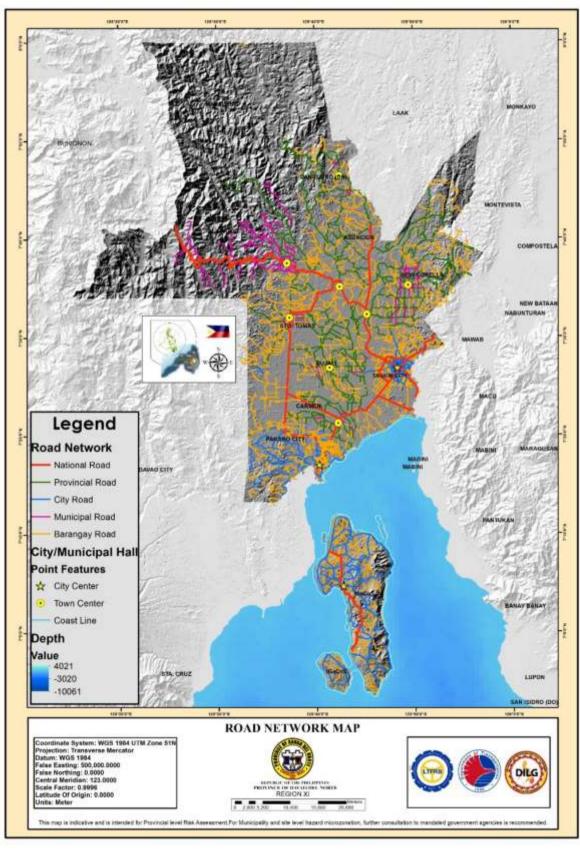


Figure 3.1: Road Network Map of Davao del Norte

Table No. 3.2: Road Inventory by Administrative Function

Province of Davao del Norte: CY 2017

Administrative Level	Concrete (kms)	Asphalt (kms.)	Gravel (kms.)	Earth (kms.)	Total (kms.)
National Road	238.38				238.38
Provincial Road	64.36	0	765.20	10.4	839.96
Municipal Road	24.68	0.75	94.73	178.73	298.89
City Road	192.44	48.73	137.94	130.79	509.89
Barangay Road	141.87	65.36	1,615.00	215.02	2,037.25
Total	661.73	114.84	2,612.87	534.94	3,924.37
% Distribution	16.86%	2.92%	66.58%	13.64%	100%

Source: Local Road Network Development Plan 2018-2022

b. Local Roads Condition

Based on the criteria stipulated in the Special Local Roads Fund (SLRF)-Local Roads Inventory of the Department of the Interior and Local Government (DILG) "Good" means smooth riding, "Fair" means the road is smooth riding even if there are visible potholes and cracks. On the other, hand "Poor" means uneven riding, large percentage patching or potholes, cracking and edge damage, while "Bad" means very rough riding, extensive damage and potholes, badly broken edges, poor drainage Improvement and rehabilitation of road sections with poor and bad surface condition shall be given priority to enhance accessibility and mobility.

Provincial Roads

Data generated from the Provincial Engineers Office indicates that of the 839.96kms. of provincial roads, 237.10kms or 28.28% are in good condition, 587.82kms.or 69.92% are fair, 15.04kms. or 1.8% is in poor condition. There is no record of bad road condition on the provincial road of the province.

Table No. 3.3: Road Conditions of Provincial Roads

Province of Davao del Norte: CY 2017

	Municipality	Surf	Length			
	Municipality	Good	Fair	Poor	Bad	(km.)
	Asuncion	22.08	97.36	0	0	119.44
H	Kapalong	16.96	76.35	0	0	93.31
<u>:</u>	New Corella	26.16	160.92	0	0	187.07
District	San Isidro	25.73	47.29	0	0	73.02
۵	Talaingod	11.94	31.61	8.90	0	52.45
7	Carmen	46.78	77.24	3.18	0	127.20
	B.E. Dujali	26.40	27.72	0.25	0	54.37
District	Sto. Tomas	61.05	69.33	2.71	0	133.10
□	TOTAL	237.10	587.82	15.04	0	839.96
	% Distribution	28.28%	69.92%	1.80%	-	100%

City/Municipal Roads

Road Condition survey results of city and municipal road indicates that of the 808.78 kms. of these local roads, 97.94kms or 12.11% are in good condition, 437.53kms.or 54.09% are fair, 99.18kms. or12.26% are in poor condition while 21.54% or 174.13 kilometers are in bad condition.

Table 3.4: Road Conditions of City/Municipal Roads

Province of Davao del Norte: CY 2017

	Cities /Numicinality	Surface Road Condition Length (km.)				Length
	Cities/Municipality	Good	Fair	Poor	Bad	(km.)
	Asuncion	3.38	3.15	1.16	-	7.69
	Kapalong	0.57	3.57	1.35	-	5.49
⊣	New Corella	8.00	21.12	4.67	15.02	48.81
	San Isidro	-	0.98	2.46	0.40	3.87
District	Talaingod	-	43.20	0.40	129.00	172.53
۵	Tagum City	5.09	133.29	3.44	-	141.82
	Carmen	6.00	22.27	1.84	-	30.09
	B.E. Dujali	-	-	10.23	4.05	14.28
7	Sto. Tomas	-	16.13	-	-	16.13
	IgaCos	66.38	44.54	63.61	25.66	200.19
District	Panabo City	8.40	149.16	9.90	-	167.49
۵	TOTAL	97.94	437.53	99.18	174.13	808.78
	% Distribution	12.11%	54.09%	12.26%	21.54%	100%

Source: Local Road Network Development Plan 2018-2022

Barangay Roads

Barangay Roads comprise the longest in road length in the entire road network of the province. Road Condition survey result of barangay roads indicates that out of the 2,037.25kms. Of barangay roads, 115.79kms or 5.68% are in good condition, 1,219.33kms.or 59.85 % are fair, 404.51 kms. or19.86% are in poor condition while 14.61% or 297.62kms are in bad condition.

Table No. 3.5: Road Conditions of Barangay Roads per LGU
Province of Davao del Norte: CY 2017

	Cities / Normalista	Surf	Length			
	Cities/Municipality		Fair	Poor	Bad	(km.)
	Asuncion	15.9	22.10	75.50	28.50	137.01
	Kapalong	5.74	89.42	51.50	12.96	159.62
4	New Corella	1.61	89.21	71.57	48.49	210.90
<u>:</u>	San Isidro	4.84	20.55	88.43	6.42	120.25
District	Talaingod	1	3.90	-	0.50	4.37
	Tagum City	0.51	432.60	4.76	0.39	437.52
	Carmen	3.12	97.00	10.00	ı	110.23
	B.E. Dujali	1.68	6.46	7.20	48.80	64.11
7	Sto. Tomas	3.80	194.71	51.40	6.61	256.44
	IgaCos	78.77	5.02	44.33	145.14	273.26
District	Panabo City	-	258.54	-	-	258.54
□	TOTAL	115.79	1,219.33	404.51	297.62	2,037.25
	% Distribution	5.68%	59.85%	19.86%	14.61%	100%

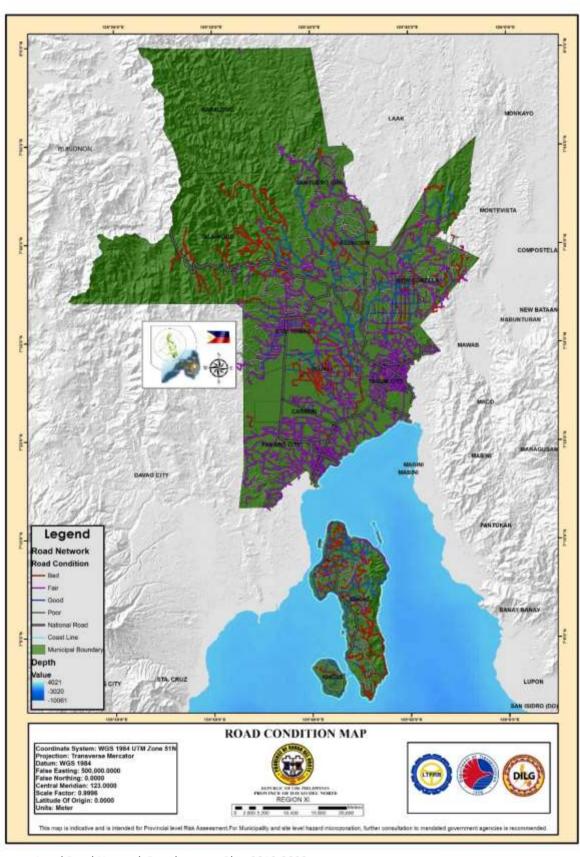


Figure 3.2: Road Condition Map of Davao del Norte

3.2 Existing Public Transport Routes and Operators

Below are the lists of existing public transport route per mode of service plying with in the province of Davao del Norte. The list is limited to public transport with authorized routes which are bus, UV and jeepney/Filcab. The primary reference for the data is the franchise list of the Land Transportation Franchising and Regulatory Board (LTFRB) and operators of PUB, PUJ/Filcab and UV Express public transport services.

The existing public transport service in the province is further divided into two categories: those within LGU and touching LGU. Those operating with routes within the province, across its component cities and municipalities are presented in section 3.2.1 as public transport services within the LGU. On the other hand, those which are coming from outside of the province passing through the cities and municipalities and catering commuters to and from the province are listed as existing public transport services touching LGU and are presented in Section 3.2.2.

LIST OF AUTHORIZED ROUTES AND NUMBER OF UNITS PER MODE TYPE

3.2.1 Existing Public Transport Services within the LGU

Mode: Public Utility Bus (PUB)

Table No. 3.6: Existing Fixed Route PUB Services within the LGU

Province of Davao del Norte: CY 2018

Route Name		Route Description	No. of Authorized Units (NAU)	No. of Units in Operation (NUO)	Operators
1.	Tagum – Asuncion- Kapalong- Talaingod	Tagum-Panabo Circumferential and the Kapalong- Talaingod Road	2	2	Bernardo Inocando
2.	Tagum-San Isidro	Tagum - Sawata, San Isidro	1	1	Pepe Francisco
3.	Tagum - New Corella	Tagum - Baca - Mesaoy - Del Pillar - New Corella	6	4	AlmarioJoJo; Formentera, Ruel; Claudio Jala; Yonque, Richelle

Source: LTFRB XI and LGUs



Figure 3.3: Tagum City-Talaingod Bus Route Map

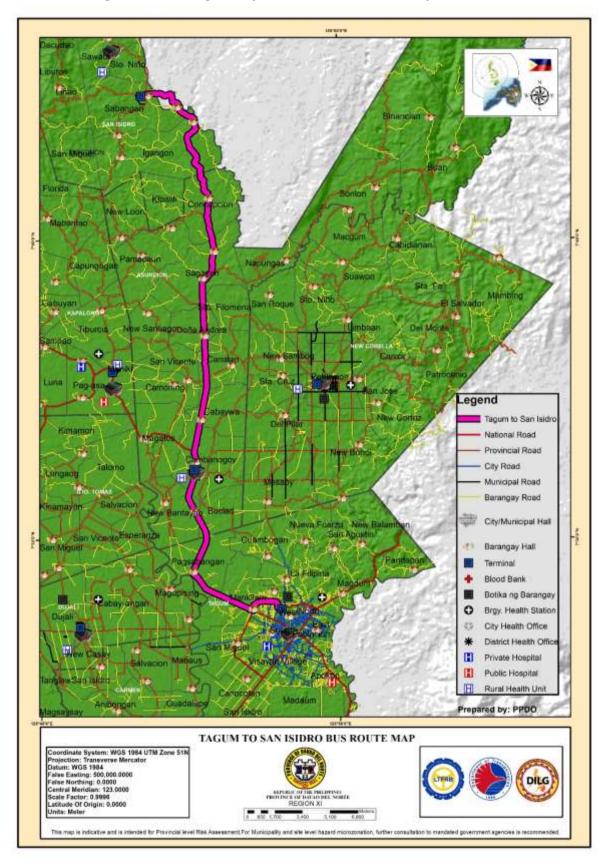


Figure 3.4: Tagum City to San Isidro Bus Route Map

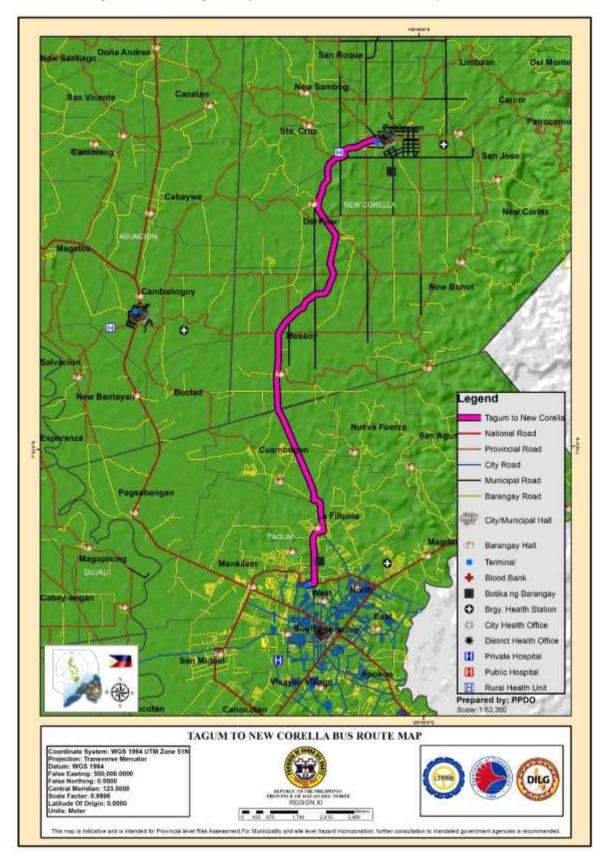


Figure 3.5: **Tagum City to New Corella Bus Route Map**

Mode: Public Utility Jeepney (PUJ)/FilCab

Table No. 3.7: Existing Fixed Route PUJ/FilCab Services within the LGU Province of Davao del Norte: CY 2018

Route Name	Route Description	No. of Authorized Units (NAU)	No. of Units in Operation (NUO)	Operators
1.Tagum - Sonlon, Asuncion	Tagum - New Corella - Sonlon, Asuncion	3	3	Adolfo Bienvenido, Danilo Ancajas, Cael Plympia
2. Tagum- Asuncion	Tagum- Asuncion- Cabaywa- Canatan-Dona Andrea-Sagayen- Napungas	28	24	Arsonillo, Barliso, Baterbornia, Calibuso, Candelario, Carig, Constatino, De Dios, Estosos, Garcia, Labunog, Lanticse, Legaspi, Matao, Matildo, Pinano, Porras, Quimosing, Ranis, Rodriguez, Tagupa, Tapic, Toccaceli, Valdez
3. Tagum - New Corella	Tagum - Baca - Mesaoy - Del Pillar - New Corella	42	36	Ancajas, Aninon, Batingal, Bonghanoy, Bustamante, Cael, Canillaza, Deparine, Durang, Estampa,Formentera, Grodias, Jala, Jumawan, Lapidez, Lingatong, Malinao,Mellanes, Asterio, Oracion, Ramos, Rentuza, Sambere, Tanduyan,Yngque
4. Tagum - Kapalong	Tagum - Asuncion - Kapalong	19	57	ArochaVicenta, Balmera Charity, BunalLoida, Castulo Rogelio, Cajes Samuel, EstellosoJojie, Flores Erlinda, LagangHaidee, MadaliFlorante, Malones Loreto, Mahipus Arlene, MaslogMaximina, RabinaLeoncio, Rebuta Gabriel, Surdilla Enrique, Uyanguren Emilia, Vicada Edgar, VillarinJillwen
5. Tagum- Kapalong	Tagum – Florida, Kapalong	13	4	Achivida, Cejas, Garpao, Malones, Plale, Ramos Eddie, Ramos, Jomar, Reyes, Saludo, Vicada

	Route Name	Route Description	No. of Authorized Units (NAU)	No. of Units in Operation (NUO)	Operators
6.	Tagum - Talaingod	Tagum - Asuncion - Kapalong - Talaingod	33	4	Banay-banay, Cawasin, Doria, Esparagoza, Gallo, Inocando, Lagang, Mahipus, Manos, Marcelino, Morem, Melendres, Navarossa, Paalisbo, Paguyo, Plale, Rabino, Rafael, Rebuta, Sayaang, Saludo, Seprado, Uyanguren, Villaen
7.	Tagum-San Isidro	Tagum- Monte Dujali, San Isidro	4	2	AlinsonorinMellani, De Guzman Remegio, EstellosoCandido, Palestina Rey
8.	Tagum – San Isidro	Tagum- Asuncion-San Isidro	14	1	Alinsonorin, Bernil, Bibera, Cueme, Juntilla, Labustro, Lamsin, Luana, Monte de Ramos, Pacatang
9.	Tagum - Sto. Tomas	Tagum - Magupising, BE Dujali - Kinamayan – Sto. Tomas	40	30	Sto Tomas Multi-Purpose Trans Svc Coop, Alamillo, Antonio,Carbajosa, Estanique, Felicilda, Felipe, Gallarde, Moreno, Paclibar, Sumbi
). Panabo– Dujali	Panabo-Carmen- Tuganay-BE Dujali	12	2-PUJs and 7-Multicabs	Albacite, Bedeniza, Conde, Enriquez, Espanola, Fermentera, Lim, Muyco, Quigta, Talaman,Tranquellero, Valeriano

Source: PEO

egend xisting PUJ Route Name Tagum to New Corella National Road Provincial Road City Road Municipal Road Barangay Road Botka ng Barangay Brgy. Health Station City Health Office District Health Office Private Hospital Public Hospital Rural Health Unit City/Municipal Hall Barangay Hall Prepared by: PPDO TAGUM TO SONLON, ASUNCION PUJ ROUTE MAP Coordinate System: WGS 1984 UTM Zone 61N Projection: Transverse Mercator latum: WGS 1984 alae Easting: 500,000,0000 alae Easting: 500,000,0000 alae Easting: 5,0000 leale Factor: 9,996 settled: 60 Grigin: 0,0000 J

Figure 3.6: Tagum City to Sonlon, Asuncion PUJ Route Map

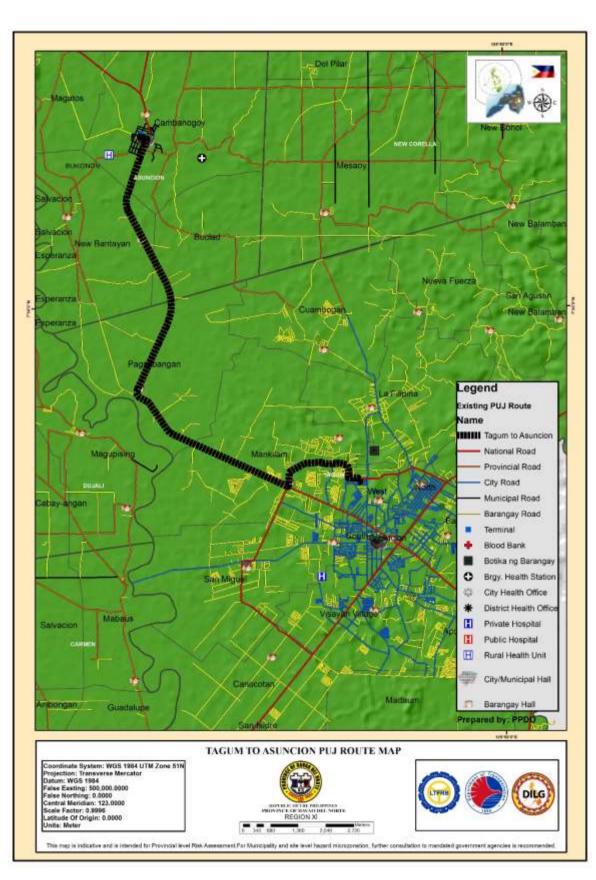


Figure 3.7: Tagum City to Asuncion PUJ Route Map

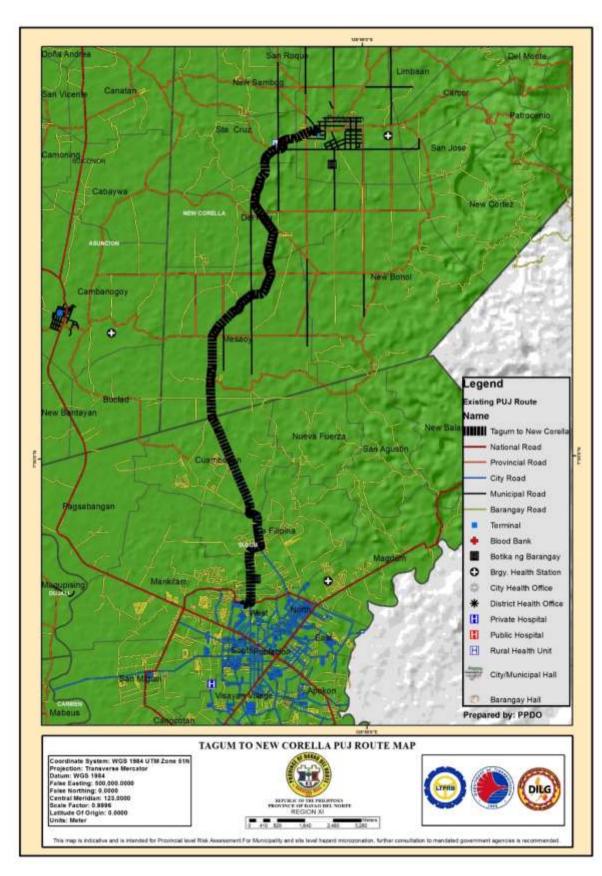


Figure 3.8: Tagum City to New Corella PUJ Route Map

Legend Salvacion xisting PUJ Route Name Tagum Kapalong National Road Provincial Road ian Vicente City Road Municipal Road Barangay Road Terminal Blood Bank Botika ng Barangay Brgy. Health Station City Health Office Private Hospital Public Hospital H Rural Health Unit. City/Municipal Half Barangay Hall epared by RPDO TAGUM TO KAPALONG PUJ ROUTE MAP Coordinate System: WGS 1984 UTM Zone 51N Projection: Transverse Mercator Latom: WGS 1984 dake Easting: 500,000.0000 alse Northing: 0.0000 central Merdiam: 123,0000 icale Factor: 0.9996 acticulation of Chigin: 0.0000 Units: Moter

Figure 3.9: **Tagum City to Kapalong PUJ Route Map** (Tagum-Asuncion, Kapalong)



Figure 3.10: **Tagum City to Kapalong PUJ Route Map** (Tagum City-Florida, Kapalong)

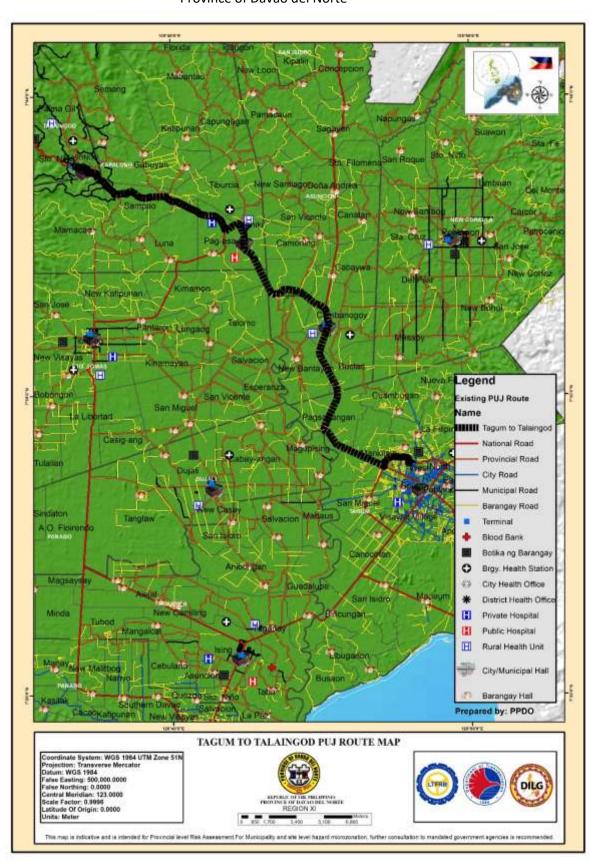


Figure 3.11: Tagum City to Talaingod PUJ Route Map
Province of Davao del Norte

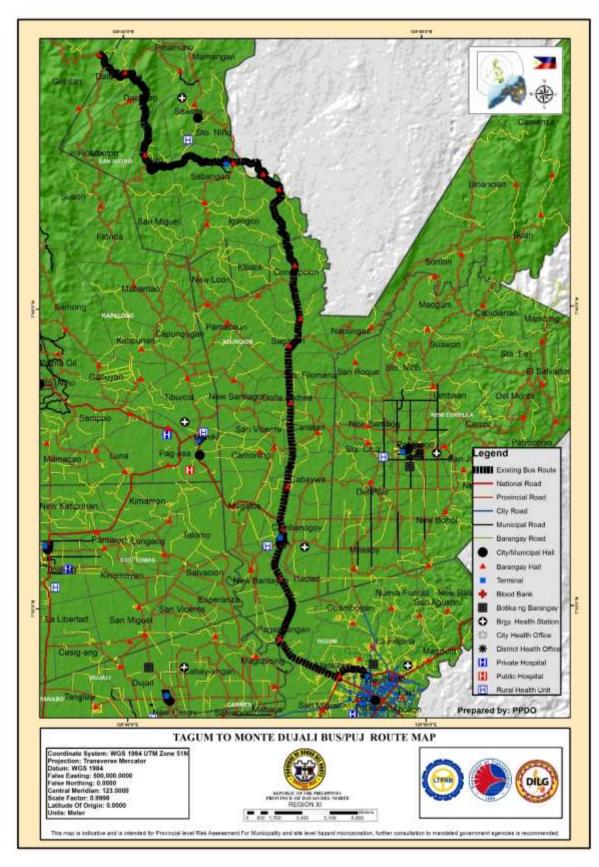


Figure 3.12: Tagum City-Monte Dujali, San Isidro Bus/PUJ Route Map

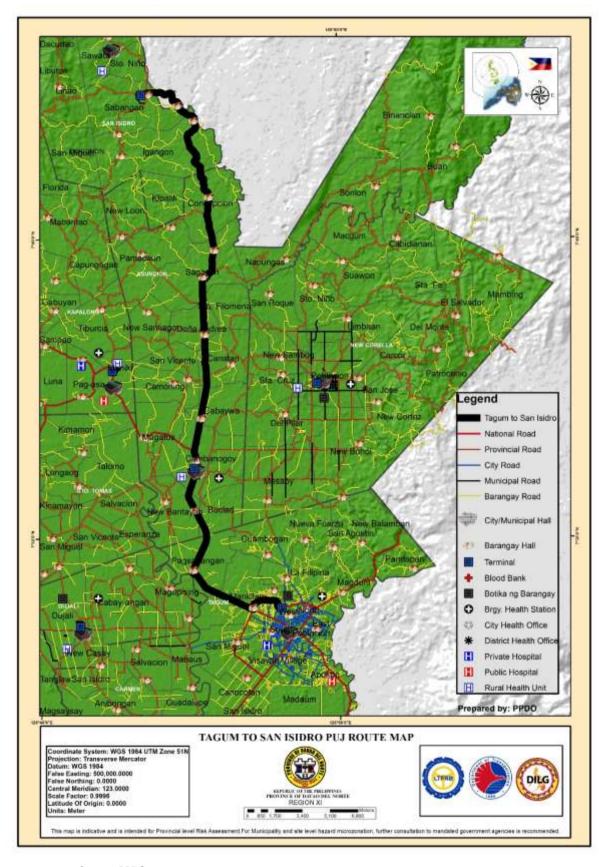


Figure 3.13: Tagum City-San Isidro (via Asuncion) PUJ Route Map

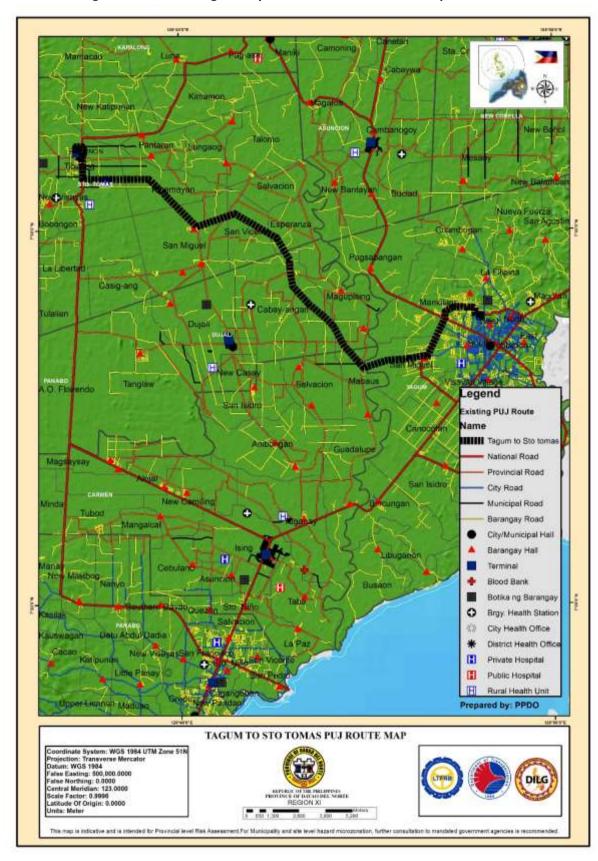


Figure No. 3.14: Tagum City to Sto. Tomas PUJ Route Map

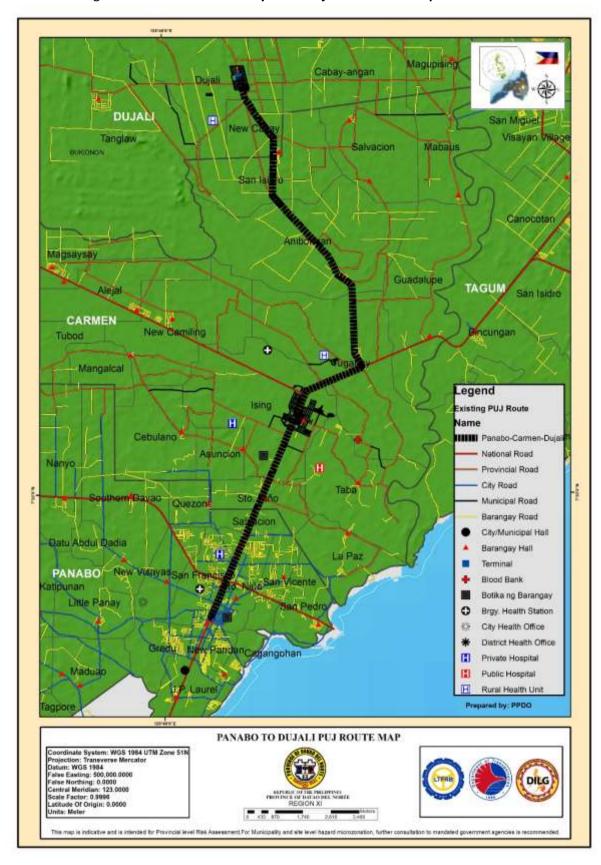


Figure 3.15: PanaboCity to BE Dujali PUJ Route Map

Mode: UV Express

Table No. 3.8: Existing Fixed Route UV Express Service within the LGU Province of Davao del Norte: CY 2018

Route Name	Route Description	No. of Authorized Units (NAU)	No. of Units in Operation (NUO)	Operators
1.Tagum - San	Tagum -	2	14	Abinar Rodolfo, De la Ram
Isidro	Sawata, San			Glen, Bayoneta Rey,
	Isidro			Quetoras Alvin, Quetoras
				Grace, Magsayo Victoria

Source: LTFRB XI and LGUs



Figure 3.16: Tagum City to San Isidro UV Express Route Map

3.2.2 Non-Fixed Routes

a. Taxi and Tourist Bus Routes

Taxi and tourist bus routes operate through a "pakyawan" system from Davao City. No existing units are in operation in the province.

b. School Service

Only Tagum city has schools with existing school bus service, namely: Assumpta School of Tagum, University of Mindanao Tagum College and St. Mary's College of Tagum. Both UMTC and SMCT have one school bus for their use in various events of the school, but are not used for daiy pick-up of students. On the other hand, AST have 4 units that are used to pick up students within Tagum City only.

c. Horse-drawn, Trisikad and Padyak

Horse-drawn, Trisikad and Padyak are modes of public transportation that are non-existent within the province. Although some people are still using these modes of transport within their respective municipalities, the utility is more of transporting goods but not for public transportation due to traffic concerns in the LGU.

d. Tricycle and Habal-habal

Tricyle and habal-habal routes are operating but mostly within the cities or municipalities only. Some units are transporting passengers across LGUs but only during night time through moonlighting system. Drivers usually pick up passengers at night along their way home or to their assigned garages.

3.2.3 Existing Public Transport Services Touching LGU

Davao del Norte's geographic location puts it at the center of all provinces in the region, with Agusan del Sur on the North, Bukidnon on the Northwest, Davao City on the West and the Province of Compostela Valley on the East. With the current external linkages of the province being land-based and given adequate roads supporting inter-provincial connectivity such as the the Agusan-Davao Road, Surigao-Davao Coastal Road, Kapalong-Talaingod-Valencia, Bukidnon Road and Asuncion-Laak-Veruela, Agusan del Sur Road, Davao del Norte is traversed by a significant number of public transport services. Authorized public transport routes passing through the major and minor convergence points in the province is presented in this Section as route services touching LGU.

Fixed Route Services Touching LGU

Mode: Public Utility Bus (PUB)

Table No. 3.9: Existing Fixed Route PUB Services Touching LGU
Province of Dayao del Norte: CY 2018

Route Name in Davao del Norte Route Description (Inter Provincial and Inter Regional Routes)		No. of Authorized Units(NAU)	No. of Units in Operation (NUO)	Operators	
1. Panabo-Carmen-	Davao-Tagum City (112);	501	420	Bachelor Express	
Tagum	Davao-Maragusan (16);			Inc., Davao Metro	

Route Name in Davao del Norte	Route Description (Inter Provincial and Inter Regional Routes)	No. of Authorized Units(NAU)	No. of Units in Operation (NUO)	Operators
	Davao-Awao, Monkayo (1); Davao-Monkayo (10); Davao-Mati (108); Davao-Caraga (5); Davao-Baganga (6); Davao-Boston (1); Davao-Cateel via Mati (40); Davao-Cateel via ComVal (5); Davao-Compostela (6); Davao-New Bataan (45); Davao-New Bataan (45); Davao-Sta. Josefa (3); Davao-Veruela (15) Davao-Butland (41); Davao-Butland (41); Davao-Surigao City (8); Davao-Tandag (2); Davao-Cagayan de Oro (53); Davao-Tacloban (24)			Shuttle, Land Car Inc., Mencidor Liner, JoeffreyNuenay, Adolfo Ang
2. Tagum – Panabo via Kinamayan	Davao City -Tagum - Magupising, Dujali - Kinamayan - Sto. Tomas- Carmen-Panabo	27	7	Bachelor Express Inc.
3. Tagum –San Isidro via Igangon	Tagum – Asuncion- Igangon, San Isidro- Laak, Compostela Valley Province	9	5	Davao Metro Shuttle, Bibera Ramon, Castro Hernan, Hernando Romeo, Lamsin Gloria, Monte de Ramos, Oflear Elsie
4. Panabo-Carmen- Sto. Tomas	Davao City-Panabo City- Carmen – Sto. Tomas	25	43	Bachelor Express Inc.
5. Panabo-Talaingod	Davao City-Panabo- Carmen-Tagum-Asuncion- Kapalong -Talaingod	10	10 (only 2 units are operating the Kapalong- Talaingod section)	Bachelor Express Inc.
6. Panabo- San Isidro via Sto Tomas-San Isidro	Davao City -Laak via Panabo-Carmen-Sto Tomas- Kapalong- Asuncion-San Isidro extends to Laak, Compostela Valley Province	12	2	Bachelor Express Inc.
7. Panabo-San Isidro Via Tagum	Davao City - Panabo- Carmen-Tagum-Asuncion- San Isidro	20	4	Davao Metro Shuttle, Castro Hernan, Hernando

Route Name in Davao del Norte	Route Description (Inter Provincial and Inter Regional Routes)	No. of Authorized Units(NAU)	No. of Units in Operation (NUO)	Operators
	extends to			Rogelio,
	Laak (San Vicente),			ManliguezGeverlin
	Compostela Valley			e, Millan Norma,
	Province			Monte de Ramos,
				Oflear Elsie, Pepe
				Francisco, Playda
				Marion,
				SaraumLuisito

Source: LTFRB XI and LGUs

Legend ROUTE National Road Provincial Road City Road Municipal Road Barangay Road City/Municipal Hall Barangay Hall Private Hospital Public Hospital Rural Health Unit Prepared by: PPDO PANABO TO CARMEN TO TAGUM BUS ROUTE MAP PAN
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Meter

Figure No. 3.17: Panabo City-Carmen-Tagum CityBus Route Map (Existing Fixed Route)

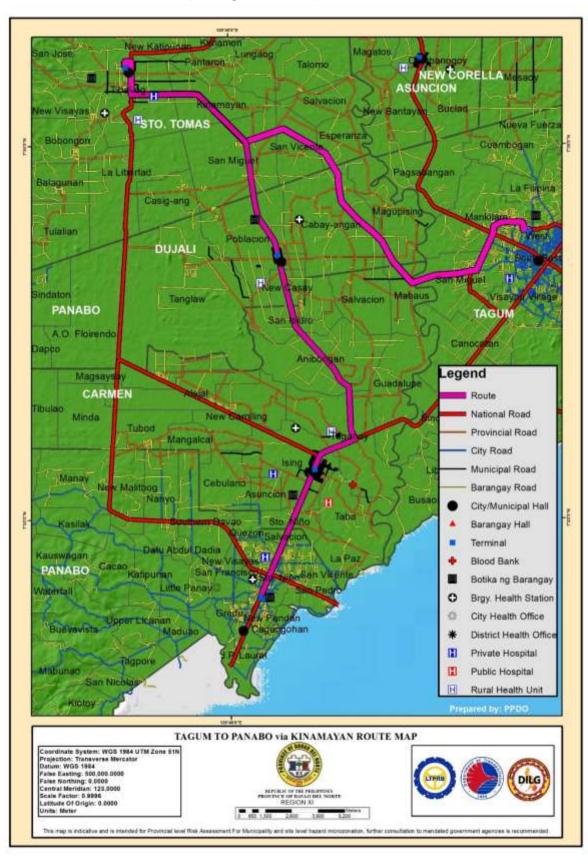


Figure 3.18: Tagum City-Panabo City via Kinamayan Bus Route Map (Existing-Fixed Route)

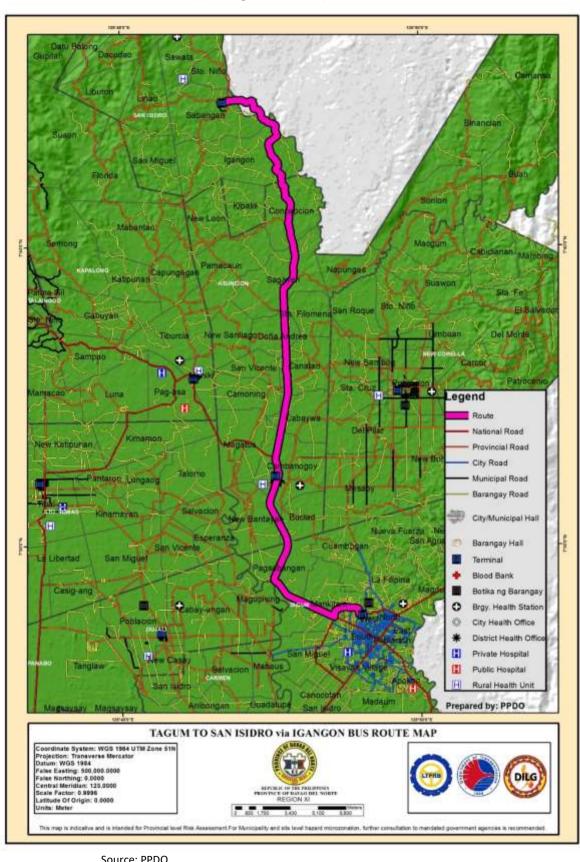


Figure 3.19: Tagum City-San Isidro via Igangon Bus Route Map (Existing-Fixed Route)

Del Pilar New Katipunan ASUNCIONS NEW CORELLA New Visayas STO TOMAS Sabongon San Vicente Cuambogan San Miguel Balagunan LaFiliping Casig-ang Magupising Cabay-angan Tulelian DUJALI Sindaton TAGUM San lastro A.O. Floirendo egend Anibongan Route Magsays National Road Provincial Road Tibuleo CARMEN Minda City Road lisay Mangalcal Municipal Road Barangay Road City/Municipal Hall Barangay Hall Terminal Kasilak Blood Bank Botika ng Barangay PANABO 0 Brgy. Health Station City Health Office Waterfall District Health Office Private Hospital Public Hospital Rural Health Unit Mabunao San Nicolas PANABO TO CARMEN TO STO TOMAS ROUTE MAP Coordinate System: WOS 1984 UTM Zone 61N Projection: Transverse Mercator Datum: WGS 1984 False Easting: 500,000,000 False Northing: 6,000 Central Meridian: 123,000 Scale Factor: 0,996 Latitude Of Origin: 0,000 Units: Meter

Figure 3.20: Panabo City-Carmen-Sto. Tomas Bus Route Map (Existing-Fixed Route)

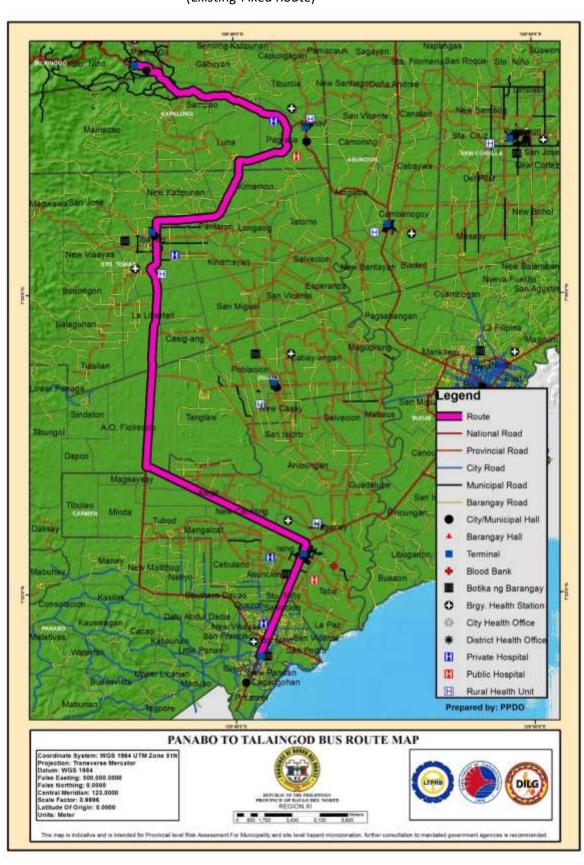


Figure 3.21: Panabo City-Talaingod Bus Route Map (Existing-Fixed Route)

Datu Balong SAN ISIDRO Binancian KAPALONG San Miguel Igangon Napunga ian Roque Sto Minn lamon Pantaron egend Kınamıyan New Bertayar National Road Provincial Road TOMAS San Vicente Espera City Road San Miguel Municipal Road Barangay Road City/Municipal Hall Barangay Hall A.O. FI Terminal CARMEN Guadalupe Blood Bank Botika ng Barangay Brgy. Health Station City Health Office District Health Office Private Hospital Public Hospital Pandan Rural Health Uni elCagangohan San Room PANABO TO SAN ISIDRO via STO TOMAS ROUTE MAP Coordinate System: WGS 1984 UTM Zone 518 Projection: Transverse Mercator Jatum: WGS 1984 Jaine Easting: 500,000.0000 Jaine Northing: 9,0000 Central Meridian: 123,000 Seals Factor: 0.9906 Jathoule Of Origin: 0.0000 Jantoule Of Origin: 0.0000

Figure No. 3.22: Panabo City-San Isidro via Sto. Tomas, Kapalong-Asuncion and extends to Laak, Compostela Valley Province

egend Route National Road Provincial Road City Road Municipal Road Barangay Road City/Municipal Hall Barangay Hall Terminal Blood Bank Botika ng Barangay Brgy. Health Station City Health Office District Health Office Private Hospital Public Hospital Rural Health Unit Prepared by: PPDO PANABO TO SAN ISIDRO via TAGUM ROUTE MAP System: WGS 1984 UTM Zone 517

Figure 3.23: Panabo City-San Isidro via Tagum City Bus Route Map (Existing, Fixed)

Mode: UV Express

Table No. 3.10 :Existing Fixed Route UV Express Services Touching LGU Province of Davao del Norte: CY 2018

Route Name in Davao del Norte	Route Description (Inter Provincial and Inter Regional Routes)	No. of Authorized Units (NAU)	No. of Units in Operation (NUO)	Operators
1. Panabo-	Davao City-Banganga (151);	660	300	106 Individuals
Carmen-	Davao City-Boston (1);			
Tagum	Davao City – Butuan City (15);			
	Davao City- Cateel			
	via Comval (2);			
	Davao City – Cateel			
	via Mati (142);			
	Davao City – Gov.			
	Generoso (4);			
	Davao City – Laak (35);			
	Davao City – Manay,			
	DavOr (1)			
	Davao City- Mangagoy (12);			
	Davao City- Maragusan (46);			
	Davao City – Mati (29);			
	Davao City – Monkayo (178);			
	Davao City-Nasipit (16)			
	Davao City – San Francisco (7);			
	Davao City- Sigaboy (21);			
2. Panabo-Sto.	Davao City - Panabo - Carmen –	1	30	Andy Q. Pobre
Tomas	Sto. Tomas- Talaingod			

Source: LTFRB XI and LGUs

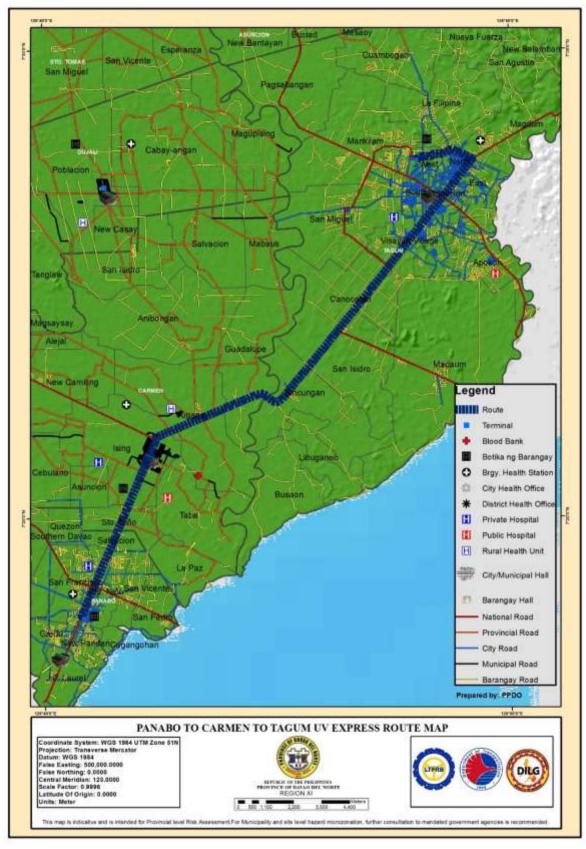


Figure 3.24: Panabo City-Carmen-Tagum City UV Route Map

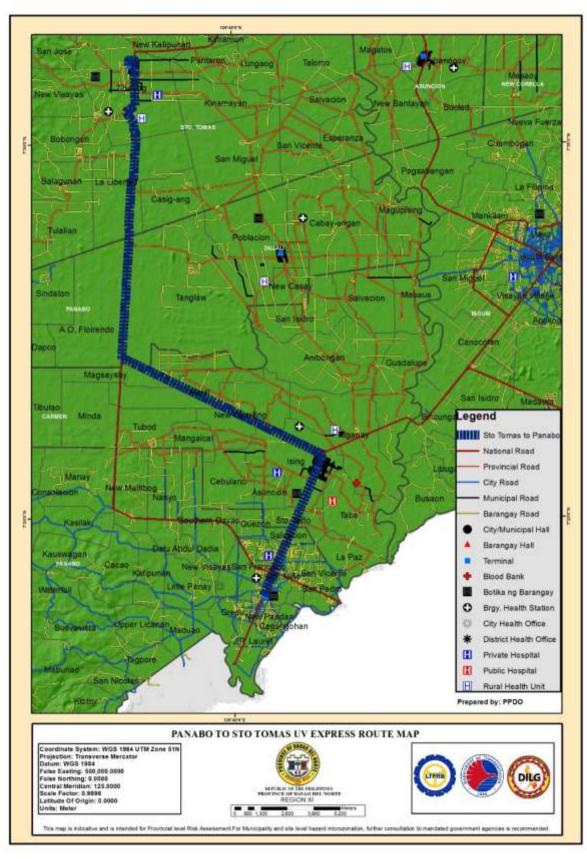


Figure 3.25: Panabo City to Sto. Tomas UV Route Map

Mode: Filcab

Based on the study, only jeepney mode of transportation are existent in touching LGU routes. Filcab mode of transportation are not in operation as of date the study was conducted.

Mode: Horse-drawn, Trisikad, Padyak and Pedicab

Horse-drawn, Trisikad, Padyak and Pedicab are modes of public transportation that have very limited area of operation at the LGU level; they are not touching LGUs and definitely are not in operation at the provincial level. The people who are still using any of these mode of transportation within their respective municipalities for purposes of moving goods that for public transportation due to traffic concerns in the LGU and also for practicality of time and speed.

3.3 Inactive Authorized Units

Noted during the data gathering conducted by the assigned members of the technical working group are the existing routes with authorized units by the LTFRB but are currently inactive. Details are shown below;

Table 3.11: Existing Routes with Inactive Authorized Units of Public Transport
Province of Davao del Norte, CY 2008

Mode	Route Name	Authorized Operator
PUB	Panabo – New Corella	Bachelor Express Inc.
	Tagum – BrgyGupitan, Kapalong	Davao Metro Shuttle inc.
PUJ	Tagum-San Miguel, Kapalong	Pardilanan, Playda
	Tagum- Mabantao, Kapalong	Aliado, Tiongco
	Tagum-Semong, Kapalong	De los Reyes, Formentera
	Tagum-Panabo City	13 authorized Operators
	Panabo- Carmen	7 Authorized Operators
	Tagum – New Corella Luana, Edgar	
	Tagum – San Isidro	Masiga, Anacleto
	Tagum- Pinamuno, San Isidro	Cuerme, Rabino

Source: LTFRB XI and LGUs

3.4 Transport Corridors and Facilities

a. Inter-Provincial Public Transport Facilities

Transportation corridor is defined as a geographic area between two points, linking multiple centers, and moving people and freight. There are 4 inter provincial transport corridors in the province, namely: (a) Tagum-Kapalong-Talaingod-Bukidnon Road; (b) Asuncion-Laak-Veruela, Agusan del Sur Road; (c) Davao-Agusan Road; and (d) Surigao-Davao Coastal Road.

Along the Tagum-Kapalong-Talaingod-Bukidnon Road, there are 3 terminals for dropping and collecting passengers, namely: Tagum City, Kapalong and Talaingod, while the Asuncion-Laak-Veruela, Agusan del Sur Road uses the Tagum City and Asuncion public terminals. On the other hand, the Agusan-Davao and the Surigao-Davao trunkline have three land transport terminals that

serve as collecting points for inter-provincial passenger traffic across Davao del Norte. These are the public terminals in Tagum City, Carmen and Panabo City.

With Davao City as the key destination, inter-provincial public utility buses also avail of these terminals as main stop over points in the province. Routes plying to Compostela Valley, Davao Oriental, Surigao del Sur, Agusan del Sur and Misamis Oriental, as well as, inter-island buses to Manila pass by these terminals.

The Tagum City public terminal has 24 bays capacity for inter-provincial buses. The terminal is adjacent to the public market with amenities like commercial spaces and restrooms that serve the needs of the traveling passengers.

The Panabo City public terminal has 10 bays capacity for both north bound and south bound buses. Commercial spaces and passengers' lounge that caters the needs of the passengers are also located at the terminal.

The public terminal in Carmen has two bays for south and north bound buses. Like the Panabo public terminal, it is located adjacent to the national highway at the poblacion center.

The public terminal in Sto. Tomas also provides inter-provincial routes to Davao City via Carmen and Panabo City.

b. Land Transport Terminals for Intra Provincial Circulation

The central bus and jeepney terminal in the province is located in Tagum City. Aside from the interprovincial public transport, the terminal also caters to intra-provincial routes. The jeepney terminal in Tagum City is located adjacent to the bus terminal. It has a capacity of 10 bays and can accommodate 1,024 jeepneys in 16 hours. At present, the bus and jeepney terminal is being operated by the City Government of Tagum. In other municipalities, bus and jeepney terminals also exist and are being managed by the local government units.

Aside from the government operated terminal, there are also privately operated terminals for jeepneys and small buses in Tagum City. These are the two buildings opposite to the public terminal, which can accommodate a total of 17 jeepneys simultaneously.

The jeepney terminal in Panabo City has an 18bay capacity. The key destinations include: Davao City, Carmen, B.E. Dujali and some hinter barangays of Panabo City such as Dapco and Dalisay.

In the Island Garden City of Samal, bus terminals are located in Babak and Peňaplata with destination to Davao City. Public utility buses transported by private ferries, travels from Davao City up to BrgyPoblacion,Kaputian and vice versa.

Table No. 3.12: **Status of Terminal Buildings**By City and Municipality

Province of Davao del Norte: CY 2018

LGU	CONDITION
Asuncion	 With comfortable rest room; with cctv and television set no space for babies' diaper change and suggestion box

BE. Dujali	 With existing terminal facility which is not yet gender responsive, without cctv 						
Carmen	 Old and new terminal building has provision for PWDs and breastfeeding room for lactating mothers Need for expansion 						
Kapalong	Terminal building is not gender responsive and needs improvement.						
New Corella	 Not enough to house transport vehicles Management of the terminal is under a cooperative No provision for PWD ramps and breastfeeding space. 						
Panabo City	 Existing bus stop signages locations are used as terminals for tricycles and motorcycles thereby blocking the signages and its use. CCTVs, rest rooms and benches are present in the facility 						
San Isidro	 Ramps for PWDs and rest rooms are available but no table for changing diapers Budget proposal for CCTV installation is for implementation Implementing Off-street terminal policy 						
Sto. Tomas	 Existing terminal is not designed as a terminal facility Terminal facility is not yet gender responsive Terminal bays are not enough to accommodate all transport vehicles. 						
Tagum City	 Presence of ambulant vendors selling inside the buses Need for expansion of terminal buildings. 						
Talaingod	 New terminal building is yet to operationalize Facility includes rest room for PWD. To purchase CCTV 						

Source: LGUs

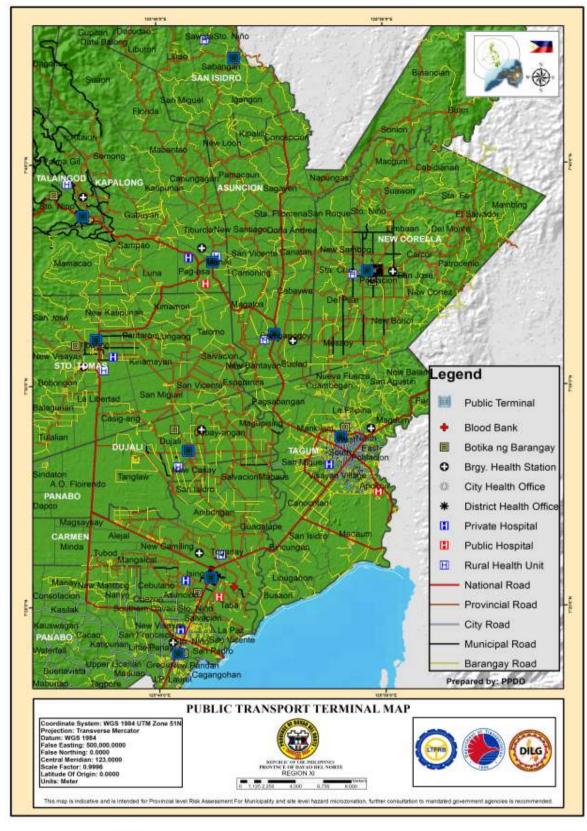


Figure 3.26: Public Transport Terminal Map

3.5Traffic Incidents and Reckless Imprudence

The right of a person using public streets and highways for travel in relation to other motorists is mutual, coordinate and reciprocal. One is bound to anticipate the presence of other persons whose rights on the street or highway are equal to his own. Although he is not an insurer against injury to persons or property, it is nevertheless his duty to operate his motor vehicle with due and reasonable care and caution under the circumstances for the safety of others as well as for his own.

Imprudence connotes a deficiency of action. It implies a failure in precaution or a failure to take the necessary precaution once the danger or peril becomes foreseen.

Based on the data from the Davao del Norte Philippine National Police (PNP) -Provincial Office, traffic incident or reckless imprudence resulting to homicide, physical injury and damage to property was recorded at 1,470 in 2016. Fortunately it narrowed down to 1,297 in 2017, but said statistics still represent a significant figure to note. This number involves incidents of both public and private transport vehicles. Data also shows that Panabo City and Tagum City Police Station have recorded the most number of traffic incidents.

Table No.3.13 : Comparative Data on Reported Homicide, Physical Injury

Damage to Property due to Reckless Imprudence

Province of Davao del Norte: CYs 2016 and 2017

STATION	НОМ	ICIDE	PHYSICA	L INJURY	DAMA PROF	GE TO PERTY	TO	ΓAL
31/11/61	2016	2017	2016	2017	2016	2017	2016	2017
Asuncion PS	5	12	25	44	4	2	34	58
B.E Dujali PS	3	3	2	0	1	0	6	3
Carmen PS	10	1	23	0	12	0	45	1
IgaCos CPS	12	3	14	7	9	2	35	12
Kapalong PS	1	0	62	0	14	0	77	0
New Corella PS	1	4	24	25	7	4	32	33
Panabo CPS	21	12	45	50	105	138	171	200
San Isidro PS	0	0	1	0	0	0	1	0
Sto. Tomas PS	2	0	18	0	6	0	26	0
Tagum CPS	37	40	632	465	369	483	1038	988
Talaingod PS	0	1	3	1	2	0	5	2
GRAND TOTAL	92	76	849	592	529	629	1470	1297

Source: PNP Provincial Office

CHAPTER 4 ASSESSMENT OF EXISTING PUBLIC TRANSPORT OPERATIONS



CHAPTER 4

RESULTS OF TRANSPORT SURVEYS AND OTHER DATA COLLECTION

4.1 Survey Types and Methodologies

The existing and active transport routes along the local road network of the Province of Davao del Norte are found to be the main distributor of passengers throughout the province. Some transport routes are found inactive. Furthermore, "habal-habal" provides transport services to passengers in far-flung areas of the cities and municipalities. The existing routes passing along the Davao – Agusan Road (Daang Maharlika) have established a large number of passengers per day in and out of the province. To determine the actual operating conditions of the existing routes

4.1.1 License Plate Survey

License Plate Surveys were conducted at public terminals and specific points of existing routes. The following were the data collected from the survey:

- Frequency of public transportation units by mode and route per direction
- Number of round trips
- Average load / passenger profile (shown in Chapter 5.2)

4.1.2 Boarding and Alighting Survey

In this survey, entering and leaving passengers from the transport unit are recorded every stop it makes. The following are acquired from the survey:

- Location of recognized stop
- Time of Travel
- No. of passengers entering the vehicle
- No. of passengers leaving the vehicle

4.1.3 Passenger and Traffic Count Survey

Passenger and Traffic Count Surveys were conducted at specific points at each route. The objective of the surveys is to determine the number of vehicles passing on a given point according to predetermined vehicle classifications along with the number of passengers in each vehicle.

4.1.4Tricycle and Habal-Habal Driver and Operator Interviews

Aside from Focus Group Discussions, drivers and operators of tricycles and Habal – habal were interviewed for more relevant data. The average number of round trips per day, average seating capacity, and the number of hours in operation were collected from the interviews.

4.2 Survey Results Summary

The 4 types of surveys conducted in the planning period have provided the necessary information, which is the bases to proceed with the plan formulation. The succeeding sub-topics are the summary results of the said surveys:

4.2.1. License Plate Survey Results

The license plate survey is a feasible survey method, wherein license plates are recorded as vehicles pass the bus stations. The purpose of this survey is to find out and discuss the accuracy of manual plate matching method for vehicle tracking and time travel data collection. In this survey, the frequency or schedule of trips, the number of roundtrips made per day and the seating capacity are the collected information for various modes of transportation. Trip frequency may be limited due to limited bus fleet size and fluctuating traffic conditions throughout the day.

a. Within LGU

a.1 Public Utility Bus

There are 5 routes for public utility buses within the LGU, which are listed in Table No. 4.1. All buses have a seating capacity of 50 and are observed to make 1 roundtrip per day with an average trip frequency of once a day.

Table No. 4.1: **Public Utility Bus Routes Within LGU**Province of Davao del Norte

Route Name	Route Description	No. of Roundtrips per Day (NRT)	Frequency	Average Seating Capacity
Tagum –Asuncion- Kapalong-Talaingod	Tagum-Panabo Circumferential and the Kapalong- Talaingod Road	1	1	50
2. Tagum-San Isidro	Tagum – Sawata, San Isidro	1	0.08	50
3. Tagum –San Isidro	Tagum - Mamangan – Pinamuno, San Isidro	1	0.08	50
4. Tagum-San Isidro	Tagum-Kimataan, San Isidro	1	0.08	50
5. Tagum - New Corella	Tagum - Baca - Mesaoy - Del Pilar - New Corella	1	1	50

Source : PEO

a.2UV Express

There is only 1 utility van express known route in the province, the Tagum City to San Isidro route, which makes 2 round trips in a day. One trip in the morning and another in the afternoon. The average seating capacity is 18 passengers with only 1 trip frequency.

Table No. 4.2: **UV Express Route Within LGU**Province of Davao del Norte

Route Name	Route Description	No. of Roundtrips per Day (NRT)	Frequency	Average Seating Capacity
Tagum – San Isidro	Tagum – Sawata, San Isidro	2	1	18

Source: PEO

a.3Jeepney/Filcab

There are 10 jeepney routes within Davao del Norte where the Tagum-Sonlon, Asuncion and Tagum-New Corella routes make 2 roundtrips per day, while the rest make only 1 roundtrip per day. Trip frequency per day vary since the Tagum-Sonlon, Asuncion route shows lest than 1 trip. The Tagum-Kapalong and Tagum-New Corella routes have 4 trips per day.

Table No. 4.3: **Jeepney/Filcab Routes Within LGU**Province of Davao del Norte

	Route Name	Route Description	No. of Roundtrips per Day (NRT)	Frequency	Average Seating Capacity
1.	Tagum - Sonlon, Asuncion	Tagum - New Corella - Sonlon, Asuncion	2	0.50	18
2.	Tagum- Asuncion	Tagum-Asuncion- Cabaywa-Canatan- Dona Andrea-Sagayen- Napungas	1	1	18
3.	Tagum - New Corella	Tagum - Baca - Mesaoy - Del Pillar - New Corella	2	4	18
4.	Tagum - Kapalong	Tagum - Asuncion - Kapalong	1	4	18
5.	Tagum- Kapalong	Tagum – Florida, Kapalong	1	1	18
6.	Tagum - Talaingod	Tagum - Asuncion - Kapalong - Talaingod	1	1	18
7.	Tagum-San Isidro	Tagum- Monte Dujali, San Isidro	1	1	18
8.	Tagum – San Isidro	Tagum-Asuncion-San Isidro	1	1	18
9.	Tagum - Sto. Tomas	Tagum - Magupising, BE Dujali - Kinamayan –Sto. Tomas	2	1	18

10. Panabo - Dujali	Panabo-Carmen- Tuganay-BE Dujali	2	1	18
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Source: PEO

b. Routes Touching LGU

b.1Public Utility Bus

The public utility buses (PUBs) are passing through Davao del Norte have longer trips hence, 1 bus can make only 1 roundtrip per day. Due to the prevailing traffic volume there are more schedule trips per day particularly PUBs plying along the National Highway (Panabo-Carmen-Tagum route). There are PUBs however, that cannot complete a trip in a day as shown in the table below.

Table No. 4.4: **Public Utility Bus Routes Touching LGU**Province of Davao del Norte

	Route Name	Route Description	No. of Roundtrips per Day (NRT)	Frequency	Average Seating Capacity
1.	Panabo – Carmen – Tagum	Along Nat'l Highway	1	20	50
2.	Tagum – Panabo via Kinamayan	Davao City – Tagum – Magupising, BE Dujali – Kinamayan – Sto.Tomas – Carmen – Panabo	1	1	50
3.	Tagum – San Isidro via Igangon	Tagum – Asuncion – Igangon, San Isidro – Laak, ComVal	1	0.50	50
4.	Panabo – Carmen – Sto. Tomas	Davao City – Panabo City – Carmen – Sto. Tomas	1	8	50
5.	Panabo – Talaingod	Davao City – Panabo – Carmen – Tagum – Asuncion – Kapalong – Talaingod	1	0.50	50
6.	Panabo – San Isidro via Sto. Tomas – San Isidro	Davao City- Laak, ComVal via Panabo- Carmen – Sto. Tomas – Kapalong – Asuncion – San Isidro	1	0.50	50
7.	Panabo – San Isidro via Tagum City	Davao City – Laak, ComVal via Panabo – Carmen – Tagum – Asuncion – San Isidro	1	0.50	50

Source: PEO

b.2UV Express

Being a support public transport to PUBs, the public utility van express also provides transport services to routes served by PUBs. The PUVs make as many trips as PUBs, all making at least 1 round trip per day due to the huge number of commuters along the Panabo-Carmen-Tagum route.

Table No. 4.5: **UV Express Route Touching LGU**Province of Davao del Norte: CY 2018

Route Name	Route Description	No. of Roundtrips per Day (NRT)*	Frequency	Average Seating Capacity
Panabo – Carmen – Tagum	Davao City – ComVal and Davao City – Davao Oriental	1	20	18

Source: PEO

b.3Jeepney/Filcab

The public utility jeepneys (PUJs) passing through Davao del Norte all make 1 roundtrips per day at a seating capacity of 18 passengers (please see table below).

Table No. 4.6: **Jeepney/Filcab Routes Touching LGU**Province of Davao del Norte: CY 2018

Route Name	Route Description	No. of Roundtrips per Day (NRT)	Average Seating Capacity
 Panabo City – Paquibato / Mapula, Davao City 	Panabo City - Davao City via Mabuhay, Carmen	1	18
2. Panabo City – Davao City via Lasang	Panabo City – Davao City	1	18
3. Panabo City – Malabug, Davao City	Panabo City – Malabug, Davao City	1	18

Source: PEO

4.2.2. Boarding and Alighting Survey Results

Another survey conducted during the study is the boarding and alighting count. This type of survey helps determine the number of passengers and which locations in the route have the greatest transport demand. The survey was conducted for PUBs at each stop in 3 areas, namely:

1. from Tagum City to Davao City with stops at Carmen and Panabo City (Table No. 4.7);

^{*} Round Trips by UV Express are sometimes dependent on peak and lean hours.

- 2. from Davao City to Laak, Compostela Valley Province with stops at Tagum City and Asuncion (Table No. 4.8); and
- 3. from Tagum City to Laak, Compostela Valley Province with stops at Asuncion and Sawata, San Isidro (Table No. 4.9)

The passenger boarding and alighting survey was a complete count of bus passengers for trips starting at 3:00 am up to 12:00 midnight for the origin/destination of Tagum City to Davao City; and 5:00 am to 9:00 pm for both Davao City and Tagum City to Laak, Compostela Valley Province.

Results of the survey shows that the Tagum City to Davao City origin/destination has the biggest bulk of passengers, particularly during these time intervals: 3:10 to 8:00 am; 8:01 to 11:00 and 3:01 to 6:00 pm. It suggests that the passengers are residents of and around Tagum City who commute to Davao City for either employment, school and business related purposes.

Table No. 4.7: **Boarding and Alighting Survey of Local Bus Operator from Tagum City to Davao City**Province of Davao del Norte: CY 2018

 : 6, 1,;	Tagur	n City	Carı	men	Panabo City		Davao City	
Time of travel time from origin to destination	No of passengers pick up	No of passengers drop off	No of passengers pick up	No of passengers drop off	No of passengers pick up	No of passengers drop off	No of passengers pick up	No of passengers drop off
3:00 AM TO 8:00 AM	21,241	523	842	1,648	7,344	5,914	826	21,865
8:01 AM TO 11:00 AM	17,720	408	602	1,329	5,088	5,564	607	16,517
11:01 AM TO 1:00 PM	10,836	354	356	1,059	2,981	3,938	470	9,176
1:01 PM TO 3:00 PM	11,985	407	360	1,341	2,577	4,729	410	8,852
3:01 PM TO 6:00 PM	19,918	790	636	2,425	4,077	8,661	644	13,545
6:01PM TO 9:00 PM	12,918	518	322	1,468	2,684	5,812	406	8,644
9:01 PM TO 12:00 MN	1,057	49	45	94	263	597	23	674

Source: Davao Metro Shuttle

Time of travel time from origin to

destination

5:00 AM TO

8:00 AM

Likewise, for the tables below the volume of passenger boarding and alighting is observed to have similar pattern as to Table No. 4.7 where the purpose of travel of passengers coincides with the time for students to attend and go home from school; and for passengers with business and work related activities.

Table 4.8: **Boarding and Alighting Survey of Local Bus Operator from Davao City to Laak, Compostela Valley Province**

Tagum City Asuncion Laak No of No of No of No of No of No of passengers passengers passengers passengers passengers passengers drop off drop off drop off pick up pick up pick up

375

898

652

Province of Davao del Norte

0

3,069

2,615

8:01 AM TO 11:00 AM	2,849	0	489	229	674	1,692
11:01 AM TO 1:00 PM	2,630	0	448	208	730	1,692
1:01 PM TO 3:00 PM	5,261	0	1,019	458	1,235	3,692
3:01 PM TO 6:00 PM	5,918	0	1,059	583	1,460	4,308
6:01 PM TO 9:00 PM	2,192	0	407	229	618	1,385

Source: Davao Metro Shuttle

Table No. 4.9: **Boarding and Alighting Survey of Local Bus Operator from Tagum City to Laak, Compostela Valley Province**

Province of Davao del Norte

	Tagum city		Asuncion		Sawata	
Time of travel time from origin to destination	No of passengers pick up	No of passengers drop off	No of passengers pick up	No of passengers drop off	No of passengers pick up	No of passengers drop off
5:00 AM TO 8:00 AM	507	0	470	124	56	483
8:01 AM TO 11:00 AM	338	0	359	99	35	295
11:01 AM TO 1:00 PM	282	0	304	107	49	349
1:01 PM TO 3:00 PM	620	0	581	190	80	617
3:01 PM TO 6:00 PM	732	0	691	206	87	617
6:01 PM TO 9:00 PM	338	0	359	99	42	322

Source: Davao Metro Shuttle

4.2.3. Passenger Load Count Results at specific locations around Davao del Norte

The passenger load count survey measures the passenger load at any route to find out at what point or route have issues on overcrowding. The survey findings can help determine when and where additional capacity may be provided to reduce overcrowding. Passenger load count in Table No. 4.10 is presented on per hour basis at specified locations in Davao del Norte. The result of the said survey conducted indicates that there is a significant number of passengers in more urbanized areas than in rural areas. This suggests that with more traffic volume there can be expected choke points and the need for extra capacity to transport services to avoid overcrowding.

Table No. 4.10: Passenger Load Count Results at Specific Locations Around
Province of Davao del Norte

City / Municipality	Location	Passenger Load Count/ Hour
TAGUM CITY	Bincungan, Tagum City	1,845
TAGUM CITY	Magdum, Tagum City	1705
TAGUM CITY	San Miguel, Tagum City	390

Mankilam, Tagum City	1,291
	908
	52
	199
	48
	6
Sto. Nino to San Pedro	442
Cabili	193
Tadeco Rd	806
New Malitbog	471
BagongSilang	179
Sindaton	191
Buclad to Cuambogan	45
Highway Buclad	544
New Bantayan - Pagsabangan	37
Ilog - New Bantayan	158
Mahayahay to Mesaoy	69
New Talisay to San Juan	46
Mahayahay to Monte Carlo	94
Highway to Kapalong	282
Highway to Dona Andrea	365
San Vicente to Canatan	173
San Vicente to New Santiago	231
Dona Andrea to Mahayag	93
Canatan - StaFilomena	30
StaFilomena to San Roque	26
Camoning to Maniki	49
Pamacaun to San Miguel	21
Pamacaun to Lasang	52
Napungas	364
Saug to Sonlon	39
New Visayas to Camansa	98
Sonlon to Longanapan	160
New Bohol	23
Mesaoy to El Unido	24
Mesaoy to Mahayahay	20
San Juan to New Talisay	22
Paton, Mesaoy to Poblacion	463
Monte Carlo to Del Pilar	23
El Unido to Poblacion	28
Carcor to New Cortez	62
New Sambog	38
San Roque to StaFilomena	30
Limbaan to Suawon	204
Sto. Nino to Macgum	355
Mamacao to New Katipunan	372
Mamacao to Narra	241
Highway Kapalong to Asuncion	944
Maniki to Camoning	192
Gabuyan to Semong	389
Semong to Palma Gil	85
	Pagsabangan, Tagum City Cuambogan to Buclad, Tagum City Cuambogan to New Corella San Agustin, Tagum City Nueva Fuerza, Tagum City Sto. Nino to San Pedro Cabili Tadeco Rd New Malitbog BagongSilang Sindaton Buclad to Cuambogan Highway Buclad New Bantayan - Pagsabangan Ilog - New Bantayan Mahayahay to Mesaoy New Talisay to San Juan Mahayahay to Kapalong Highway to Kapalong Highway to Lona Andrea San Vicente to Canatan San Vicente to New Santiago Dona Andrea to Mahayag Canatan - StaFilomena StaFilomena to San Roque Camoning to Maniki Pamacaun to San Miguel Pamacaun to Lasang Napungas Saug to Sonlon New Visayas to Camansa Sonlon to Longanapan New Bohol Mesaoy to El Unido Mesaoy to El Unido Mesaoy to Del Pilar El Unido to Poblacion Carcor to New Cortez New Sambog San Roque to StaFilomena Limbaan to Suawon Sto. Nino to Macgum Mamacao to New Katipunan

KAPALONG	Capungagan - Mabuhay	129
KAPALONG	Pandulian - San Miguel	28
KAPALONG	New Boholano to San Miguel	12
KAPALONG	Florida to Suaon	488
KAPALONG	Semong to Dagohoy	320
KAPALONG	Suaon to Libuton	140
KAPALONG	Suaon to Gupitan	148
KAPALONG	Monte Dujali to Gupitan	43
TALAINGOD	Highway Kapalong to Sto. Nino	212
TALAINGOD	Palma Gil to Semong	118
TALAINGOD	Daligdigon	12
TALAINGOD	Dagohoy	36
TALAINGOD	Paiton	12
SAN ISIDRO	Kipalili	17
SAN ISIDRO	Igangon to Sawata	252
SAN ISIDRO	Sawata Proper	176
SAN ISIDRO	San Miguel to Sawata	59
SAN ISIDRO	Mamangan to Pinamuno	115
SAN ISIDRO	Libuton to Monte Dujali	179
SAN ISIDRO	Dacudao to Mabuhay	22
CARMEN	Highway Tuganay	2,032
CARMEN	Tuganay to Taba	45
CARMEN	La Paz	87
CARMEN	San Vicente	60
CARMEN	Highway Sto Nino	2,504
CARMEN	Tubod	165
CARMEN	Alejal Rd	1,264
CARMEN	San Isidro	192
STO. TOMAS	Highway Libertad	800
STO. TOMAS	Bobongon	198
STO. TOMAS	Tulalian	281
STO. TOMAS	San Miguel - Libertad	119
STO. TOMAS	San Miguel - Crossing Kinamayan	366
STO. TOMAS	Kinamayan	424
STO. TOMAS	Kimamon - Lungaog - Talomo	174
STO. TOMAS	Sto. Tomas - New Katipunan	404
STO. TOMAS	Highway Sto. Tomas to Kapalong	536
BE DUJALI	DAPECOL	606
BE DUJALI	Tanglaw	128
BE DUJALI	Jct Highway - Tanglaw	114
BE DUJALI	Dujali - Balisong - Magupising	173
BE DUJALI	Magupising	338
BE DUJALI	Magupising to Kinamayan	172
BE DUJALI	Dujali - San Miguel	229
BE DUJALI	Bacali - Casig-ang - Libertad	141

Source: PEO

Figure 4.1 below presents passenger load count at strategic points where the survey was conducted. It indicates that there is an overcrowding of passengers on routes situated along the National Highway and even those that are connected to it. Looking at the figure will immediately direct the

viewer to areas that are considered as traffic choke points. Other routes also show a build-up of passengers, while there are also routes particularly those leading to remote areas that have lesser passenger volumes.

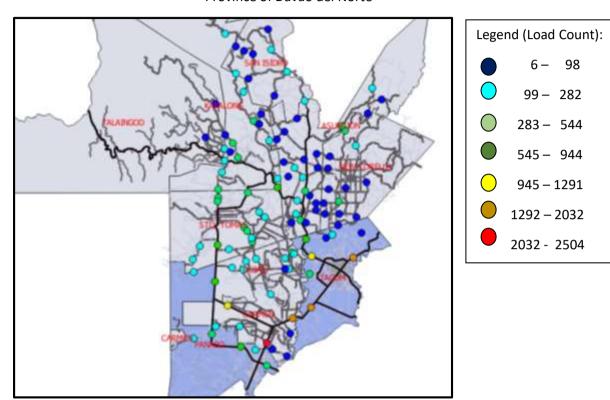


Figure 4.1: Strategic Survey Point Locations for Passenger Load Count
Province of Davao del Norte

Source: PEO

4.2.4. Driver and Operator Interview Summary

Roadside interviews with drivers and operators were conducted to find out the number of operating hours and roundtrips that they can make in a day and the average seating capacity of passengers of their units, which will in turn provide information on the volume of passengers that their transport services can cater.

a. Tricycles within LGU

The interviews from the tricycle drivers and operators provided that the tricycle routes within the LGU with a seating capacity of 7 and ten passengers operate for 16 hours a day. Long distance routes could only make 1 to 2 roundtrips per day.

Table No. 4.11: **Tricycle Drivers and Operators Interview Summary**Province of Davao del Norte

Route Name			No. of Roundtrips per Day (NRT)	Average Seating Capacity
1. Kapalong – Talaingod	Kapalong Terminal – Talaingod Terminal	16	1	10

2. Asuncion – Kapalong	Asuncion – Kapalong	16	1	10
3. Carmen – Panabo	Panabo – Ising – Tubod, Carmen	16	2	7
4. BE Dujali – Tagum City	Dujali – Magupising – San Miguel	3	2	7

Source: PEO

b. Habal-habal within LGU

According to interviewed drivers and operators of habal-habal within the LGU, average capacity is 2 persons per trip and their operation lasts for 16 hours in a day, while their roundtrips are mostly indefinite depending on the demand of passengers.

Table No. 4.12: **Habal-habal Within LGU Interview Summary**Province of Davao del Norte

Route Name	Route Description	No. of Hrs. in Operation	No. of Roundtrips per Day (NRT)*	Average Seating Capacity
1. Kapalong – Talaingod	Kapalong Terminal – Talaingod Terminal	16	Indefinite	2
2. Asuncion – Kapalong	Asuncion – Kapalong	16	Indefinite	2
3. Tagum – Carcor, New Corella via New Cortez	Tagum – Mesaoy – San Juan – Kauswagan – New Cortez - Carcor	12	Indefinite	2

Source: PEO

c. Tricycles touching LGU

Tricycles serving the Tagum to Salvacion, Mawab route operate for 16 hours catering commuters along the national highway at short stop points. On the other hand, tricycles plying the Tagum to Maco, Comval route operate only at night when there are no more multicabs or jeepneys operating.

Table No. 4.13: **Tricylces Touching LGU Interview Summary**Province of Dayao del Norte

Route Name	Route Description	No. of Hrs. in Operation	No. of Roundtrips per Day (NRT)	Average Seating Capacity
1. Tagum – Salvacion, Mawab	Along National Highway	16	1	7
2. Tagum – Maco, ComVal	Along Apokon Rd. to Maco, ComVal	4	1	7

^{*} Average Round Trips are dependent on the exact destination of the passenger, causing early turnaround for the driver.

d. Habal-habal touching LGU

The habal-habal operation is sometimes referred as special trip since habal-habal serves commuters in difficult roads not covered by other modes of transportation. As shown in the table below, routes for habal-habal are the mountain barangays of New Corella connecting to the Muncipality of Nabunturan, Compostela Valley Province. While the other route serves the barangays of Magwawa and Upper Panaga which are situated at the boundary of Davao City where other modes of transportation are scarce and infrequent.

Table No. 4.14: **Habal-habal Touching LGU Interview Summary**Province of Davao del Norte

Route Name	Route Description	No. of Hrs. in Operation	No. of Roundtrips per Day (NRT)*	Average Seating Capacity
1. New Corella – Nabunturan	New Corella – Nabunturan via Mambing, New Corella	16	Indefinite	2
2. Sto. Tomas – Magwawa – Upper Panaga, Davao City	Sto. Tomas – Magwawa – Upper Panaga, Davao City	16	Indefinite	2

Table No. 4.15: Passenger Count Survey Results on Proposed Routes

Province of Davao del Norte

ROUTE MARK	ROUTE NAME	LENGTH	PASSENGER COUNT/ HOUR/ DIRECTION (PPHPD)	PASSENGER DEMAND	MODE OF TRANSPORT
ROUTE 1	TAGUM CITY-SITIO PATEL, KAPALONG via Igangon-Sawata- Libuton-DatuBalong-Monte Dujali	69.05	103	412	Standard Bus
ROUTE 2	TAGUM CITY-ASUNCION-SAN ISIDROvia Km.9 Sagayen- Pamacaun-San Miguel	43.52	40	160	Standard Bus
ROUTE 3	TAGUM CITY -SITIO PATEL, KAPALONG via Florida-Suaon-Gupitan	65.92	124	496	Standard Bus
ROUTE 4	TAGUM CITY-ASUNCION - KAPALONG - TALAINGOD	33.11	681	2,724	Standard Bus
ROUTE 5	TAGUM CITY-CARMEN-PANABO	27.58	3,003	12,012	Standard Bus
ROUTE 6	PANABO-CARMEN-STO. TOMAS- KAPALONG-TALAINGOD	54.47	1450	5800	Standard Bus
ROUTE 7	TAGUM CITY -B.E. DUJALI-STO. TOMAS via Salvacion - Kinamayan	27.75	332	1,328	Standard Bus

^{*} Average Round Trips are dependent on the exact destination of the passenger, causing early turnaround for the driver.

ROUTE MARK	ROUTE NAME	LENGTH	PASSENGER COUNT/ HOUR/ DIRECTION (PPHPD)	PASSENGER DEMAND	MODE OF TRANSPORT
ROUTE 8	KAPALONG-SAN ISIDRO via Mabantao-Florida-Suaon- Sambayon-Libuton-Sawata	32.47	215	860	Jeepney
ROUTE 9	KAPALONG-SAN ISIDRO via Capungagan-Mabantao-New Boholano-San Miguel	23.8	33	132	Jeepney
ROUTE 10	TAGUM-NEW CORELLA	17.01	331	1,324	Standard Bus
ROUTE 11	NEW CORELLA-CAMANSA via San Roque-Macgum	27.71	164	656	Jeepney
ROUTE 12	TAGUM CITY-NEW CORELLA- SONLON, ASUNCION viaLimbaan-Crossing Sto. Nino- Macgum	33.76	122	488	Jeepney
ROUTE 13	TAGUM CITY-NEW CORELLA via Magdum-San Agustin-New Bohol-New Cortez-Carcor	26.57	328	1,312	Jeepney
ROUTE 14	ASUNCION-NEW CORELLA via Mahayahay-Paton	15.09	36	144	Jeepney
ROUTE 15	KAPALONG-ASUNCION-NEW CORELLA via Capungagan-Dona Andrea- Canatan-Sta. Filomena-San Roque	27.56	21	84	Jeepney
ROUTE 16	KAPALONG-ASUNCION-NEW CORELLA viaCamoningBrgy. Road-San Vicente-Canatan-Silangan-New Sambog	17.19	97	388	Jeepney
ROUTE 17	ASUNCION-NEW CORELLA via Monte Carlo-Del Pilar	15.05	59	236	Jeepney
ROUTE 18	TAGUM CITY-ASUNCION via Cuambogan-Buclad	13.49	49	196	Jeepney
ROUTE 19	TAGUM CITY-ASUNCION- CAMANSA via Sagayen-Napungas-Sonlon	48.26	231	924	Jeepney
ROUTE 20	TAGUM CITY-ASUNCION- KAPALONG via Pagsabangan-New Bantayan- Ilog-National Highway	25.19	98	392	Jeepney
ROUTE 21	ASUNCION-KAPALONG via Canatan-San Vicente-Butay	16.99	231	924	Jeepney

ROUTE MARK	ROUTE NAME	LENGTH	PASSENGER COUNT/ HOUR/ DIRECTION (PPHPD)	PASSENGER DEMAND	MODE OF TRANSPORT
ROUTE 22	STO. TOMAS-TALAINGOD via Mamacao-Narra	16.58	320	1,280	Jeepney
ROUTE 23	KAPALONG-PAITON, TALAINGOD via Gabuyan-Semong-Dagohoy- Angelo	19.68	190	760	Jeepney
ROUTE 24	PANABO CITY-STO. TOMAS via Minda-New Malitbog	32.58	639	2,556	Jeepney
ROUTE 25	STO. TOMAS-SINDATON, PANABO CITY via Tulalian	13.64	224	896	Jeepney
ROUTE 26	PANABO CITY-MABUHAY, CARMEN	17.42	152	608	Jeepney
ROUTE 27	PANABO CITY-TUBOD, CARMEN	14.01	179	716	Jeepney
ROUTE 28	CARMEN-PANABO CITYvia La Paz	17.39	183	732	Jeepney
ROUTE 29	PANABO CITY-CARMEN-B.E. DUJALI-STO. TOMAS via Tuganay-Crossing San Miguel- Kinamayan	33.54	250	1,000	Jeepney
ROUTE 30	TAGUM CITY-B.E. DUJALI via Magupising-Balisong	15.01	214	856	Jeepney
ROUTE 31	STO. TOMAS- B.E. DUJALI ViaLa Libertad -Casig-ang	16.06	130	520	Jeepney
ROUTE 32	TAGUM CITY-B.E. DUJALI-STO. TOMAS via Magupising-Talomo- Casig-ang	32.35	213	852	Jeepney
ROUTE 33	TAGUM CITY-CABIDIANAN, NEW CORELLA via Limbaan-Macgum	32.76	22	88	Jeepney
ROUTE 34	TAGUM CITY-ASUNCION-SAN ISIDRO via Igangon	41.05	20	80	UV
ROUTE 35	SAWATA, SAN ISIDRO - SITIO PATEL, KAPALONG via Libuton-DatuBalong-Monte Dujali	28.33	10	40	UV
ROUTE 36	TAGUM CITY - KAPALONG	25.19	50	200	UV
ROUTE 37	TAGUM CITY - STO. TOMAS	27.75	15	60	UV
ROUTE 38	PANABO CITY - STO. TOMAS	33.08	45	180	UV
ROUTE 39	TAGUM CITY - PANABO CITY	27.58	450	1,800	UV
ROUTE 40	TAGUM CITY - NEW CORELLA	17.01	50	200	UV

The traffic count data from DPWH Davao del Norte District shows that the busiest National Road Section in the province is Babak – Samal – Kaputian Road with an Annual Average Daily Traffic (AADT) of 11,132 followed by Daang Maharlika Road with an AADT of 10,065.

Table No. 4.16: Traffic Count on Davao del Norte National Roads

Road Name	Survey Station ID	Survey Type	Annual Average Daily Traffic
Tagum City Diversion Road	SV11009MN_AC	Once every 3 years	8,039
Tagum-PanaboCircum Road	SV11011MN_AC	Once a year	915
Kapalong-Talaingod-Valencia (Bukidnon) Road	SV11013MN_MC	Once every 3years	1,296
Davao-Agusan Rd-DAPECOL Compound Rd (Channelization)	SV11015MN_AC	Twice a year	6,849
Carmen-DAPECOL Compound Road	SV11015MN_AC	Twice a year	6,849
DaangMaharlika (MN)	SV11017MN_MC	Once a year	10,065
Babak-Samal-Kaputian Road	SV11021MN_MC	4 times a year	11,321

Source: DPWH Davao del Norte District

4.2.5 Focus Group Discussion Summary

The Davao del Norte LPTRP Technical Working Group conducted a focus group discussion (FGD) to all municipalities and the cities of Panabo and Tagum during the conduct of plan formulation to generate information from all stakeholders of the public transport system. The identified stakeholders for the FGDs were the operators and drivers of bus, jeepney, tricycle and UV express; representatives from the civil society, namely: academe, farmers' group, senior citizens and business sector; and law enforcers. The FGD activity was able to generate the following information from the participants.

a. Passenger Perception Survey

- PUBs operating in some areas are limited and do not serve areas that have difficult terrain and bad road conditions.
- Single motorcycles are serving the routes to and from remote areas on a "pakyaw" basis.
- Top and back-loading of passengers are practiced on last trips
- Top loading is observed in routes to far flung and interior routes
- The dwell time at terminals for PUJs is long
- PUJs in Tagum City terminal is observing "alas puno"
- Lack of passenger space and overcrowding
- PUJs practice "sibog-sibog" by conductors to accommodate more passengers
- Driver discipline: there is a need to improve personal grooming and hygiene while driving
- Conductor discipline: conductors asking payments through the window making passengers feel uncomfortable
- Travel time takes longer due to frequent stops along the way to pick up and/or unload passengers and cargo
- Delay in travel time is due to the bus stopping every now and then
- Longer bus/jeepney dispatch during lean hours
- Metro Shuttle buses have not regular trips for Tagum City-San Isidro route

- "Kabit" system are often practiced by passengers for short distance rides
- During peak hours, PUJs make passengers sit on extension seats
- Transport units are outmoded and ageing; needs to be replaced
- PUJs and buses are racing against each other in order to pick up passengers
- Seasonal passengers affect the time interval of PUJs and PUBs
- No rest rooms available along highways
- The ramp in Tagum City terminal is too high, no traffic lights along major roads and intersections
- High fare rates

b. Public Transport Drivers Interview

- There is tight competition for passengers due to the operation of single motorcycles and tricycles;
- Seasonal passengers affect the time interval of PUJs and PUBs;
- PUJ operation is slowing down and not earning much;
- Lesser income for PUJs and small buses due to big buses plying the routes;
- Gasoline price increase;
- Need for a fare rate adjustment; need for a fixed fare rate;
- For infrastructure support: bad road condition; poor road maintenance particularly the provincial roads; narrow roads; slippery road sections (asphalt roads); congested roads delay the travel time:
- Inadequate road facilities: no street lights, no railings no ramps, no signage and warning signs to guide drivers
- · Ageing and outmoded PUJs- more than 15 years and still operating

c. Tricycle Operation Survey

- Normal operating hours is from 6:00 am to 6:00 pm; or 12 hours a day;
- Passengers are hard to come by and there is a lot of competition that is just as eager to pick up passengers;
- The physical build of the tricycle is small and may not be seen by bigger vehicles or hidden by a driver's blind spot; a tricycle is more vulnerable to collision;
- Exposure to changing weather condition and pollution;
- Rising cost of fuel; high maintenance cost;
- Competing with single motorcycles

d. Habal-habal Operation Survey

- Habal-habal operators have already designated pick up points or terminals; have organized associations; and have even determine specific routes;
- Passengers are seasonal; other operators more around to pick up passengers, while others
 just wait at designated pick up points;
- Some habal-habal operators have regular customers/passengers who will text them when they need to travel
- It's a more convenient and preferred ride in very congested roads;
- The only transport service in highly elevated and difficult terrains and in bad road conditions where PUJs cannot access
- Low cost of maintenance and gas
- Risky to operate during night time

- High risks of car nap and hold up
- Cannot operate during rainy days
- Need to operate with driver's license, vehicle registration papers and gears (helmet)
- Need to abide by traffic rules

4.2.6 Passenger Origin-Destination Survey

The Passenger Origin-Destination (OD) Survey is conducted to determine the current travel patterns of a population, which could be either of the following purposes: work, business, studies, shopping, or social commitments. Considering land use and travel time data, the information derived can create a gravity model of an area i.e. an employment opportunity attracts the labor force residing from various points in the province. This also applies to facilities and services. To establish travel patterns and their relationship with household characteristics would require the conduct of a household-level survey to fully discern future transport demand. A household survey, however, is deemed extremely expensive and time consuming on the part of the local government units that are constrained by limited resources. The OD Survey was even treated optional during the training of the LPTRP Team as well as in the evaluation checklist; and was not included in the LPTRP Manual. Hence, travel patterns and future transport demand were derived from the following surveys conducted by the LPTRP Team.

- a. License Plate Survey
- b. Boarding and Alighting Survey
- c. The Focus Group Discussion conducted in all cities and municipalities (included in the stakeholders are housewives, students, employees, senior citizens, persons with disabilities in addition to operators and drivers)
- d. The Multi-Stakeholders' Consultation that was undertaken at the Provincial level to validate and prioritize the identified proposed routes of Davao del Norte

4.3 Transport and Traffic Data from other sources

Secondary data were collected and considered in the preparation of the plan. These include public transport franchise data in Davao Del Norte, traffic count of National Highway, and passenger profile from local bus companies as reflected in previous tables.

Franchised PUBs that traverse and touched the province mostly originate from Davao City. The Davao City – Panabo City – Tagum City route has the largest number of units plying. This is followed by the Davao City – Mati City route with more than 100 units.

The PUJ routes with franchised units in operation are the Tagum City – Asuncion; Tagum City – New Corella; Tagum City – Talaingod; and Panabo City – Sto Tomas.

UV routes with franchise have the largest number of operating units as compared to PUBs and PUJs. The UV route are mostly from Davao City. There is only one UV route franchise that originate from Tagum City which is Tagum City – San Isidro Route with two (2) operating units.

CHAPTER 5 PUBLIC TRANSPORT ISSUES AND PROBLEMS



CHAPTER 5

ASSESSMENT OF EXISTING PUBLIC TRANSPORT OPERATIONS

5. 1 Public Transport Performance by Route

Public transport (also known as public transportation, public transit, or mass transit) is a system of transport for passengers by either group or individual travel services available for use by the general public. This is typically managed on a schedule, operated on established routes and charges a posted fee for each trip. Population growth and improvements in infrastructure and economic activities increase the demand for transport services. It is important to assess the performance of existing public transport routes in order to identify underlying problems and work on solutions that can help enhance the delivery of public transport services. Assessment of route performance was based on the following measures:

- 1. Number of units in operation (NOU)
- 2. Number of hours in operation
- 3. Average travel speed
- 4. Terminal waiting time
- 5. Number of roundtrips per day (NRT)
- 6. Average daily load factor
- 7. Average seating capacity

The public transport service in the province of Davao del Norte is categorized into a) Within the LGU and b) Touching LGU. Covered by each category are the different modes of transportation such as the public utility bus, jeepney, public utility vehicle, tricycle and habal-habal.

5.1.1 Within LGU

a. Public Utility Bus

There are 5 existing routes for PUB in the province, which are operating from 12 to 15 hours a day. Each unit makes an average of 1 roundtrip every day and has an average seating capacity of 50 passengers. The route that has more units in operation is the Tagum – New Corella route (Please see Table 5.1 below).

Table 5.1: **Public Utility Bus Performance by Route**Province of Davao del Norte: CY 2018

Route Name	Route Description	No. of Units in Operation (NUO)	No. of Hrs. in Opera- tion	Average Travel Speed	Terminal Waiting Time*	No. of Roundtrips per Day (NRT)	Ave. Daily Load Factor	Average Seating Capacity
Tagum –Asuncion- Kapalong-Talaingod	Tagum-Panabo Circumferential and the Kapalong-Talaingod Road	2	12	60	1 hr	1	1.3	50
2. Tagum-San Isidro	Tagum –Sawata, San Isidro	1	12	60	1hr	1	1.3	50
3. Tagum –San Isidro	Tagum - Mamangan – Pinamuno, San Isidro	1	13	60	1hr	1	1.3	50
4. Tagum-San Isidro	Tagum-Kimataan, San Isidro	1	13	60	1hr	1	1.3	50
5. Tagum - New Corella	Tagum - Baca - Mesaoy - Del Pillar - New Corella	4	15	60	1 hr	1	1.3	50

^{*}Terminal Waiting TimPe of units are dependent on peak and lean hours.



Figure 5.1: **Public Utility Bus Route Map**

b.UV Express

Within LGU, only the Tagum – San Isidro Route is existing. It has a total of 14 operating units, which are operating for 15 hours per day. Please see Table below.

Table 5.2: **UV Express Performance by Route**Province of Davao del Norte: CY 2018

Route Name	Route Description	No. of Units in Operation (NUO)	No. of Hrs. in Operation	Average Travel Speed	Terminal Waiting Time*	No. of Roundtrips per Day (NRT)	Ave. Daily Load Factor	Average Seating Capacity
Tagum – San Isidro	Tagum – Sawata, San Isidro	14	16	80	34mins	2	1	18

^{*}Terminal Waiting Time of units are dependent on peak and lean hours.



Figure 5.2: Utility Vehicle (UV) Express Route Map

c. Jeepney/Filcab

The jeepney is a very unique public transport mode not only as a vehicle but also in the ways it is operated and utilized by passengers. In Davao del Norte, there are a total of 10 jeepney routes within the LGU with an overall total of 170 units in operation. All units operate for 16 hours per day as they have a smaller seating capacity than a PUB.

Table 5.3: **Jeepney/Filcab Performance by Route**Province of Davao del Norte: CY 2018

Route Name	Route Description	No. of Units in Operation (NUO)	No. of Hrs. in Operation	Average Travel Speed	Terminal Waiting Time*	No. of Round- trips per Day (NRT)	Ave. Daily Load Factor	Average Seating Capacity
1. Tagum - Sonlon, Asuncion	Tagum - New Corella - Sonlon, Asuncion	3	16	40	3 hrs	2	1	18
2. Tagum- Asuncion	Tagum-Asuncion- Cabaywa-Canatan- Dona Andrea- Sagayen-Napungas	24	16	40	30 mins	1	1	18
3. Tagum - New Corella	Tagum - Baca - Mesaoy - Del Pillar - New Corella	36	16	40	26 mins	2	1	18
4. Tagum - Kapalong	Tagum - Asuncion - Kapalong	57	16	40	15 mins	1	1	18
5. Tagum- Kapalong	Tagum – Florida, Kapalong	4	16	40	3hrs	1	1	18
6. Tagum - Talaingod	Tagum - Asuncion - Kapalong - Talaingod	4	16	40	4 hrs	1	1	18
7. Tagum-San Isidro	Tagum- Monte Dujali, San Isidro	2	16	40	3 hrs	1	1	18
8. Tagum – San Isidro	Tagum-Asuncion-San Isidro	1	16	40	2 hrs	1	1	18
9. Tagum - Sto. Tomas	Tagum - Magupising, BE Dujali - Kinamayan – Sto. Tomas	30	16	40	32 mins	2	1	18
10. Panabo - Dujali	Panabo-Carmen- Tuganay-BE Dujali	2-PUJs and 7- Multicabs	16	40	1 hr and 45 mins	2	1	18

 $[\]ensuremath{^{*}}\textsc{Terminal}$ Waiting Time of units are dependent on peak and lean hours.

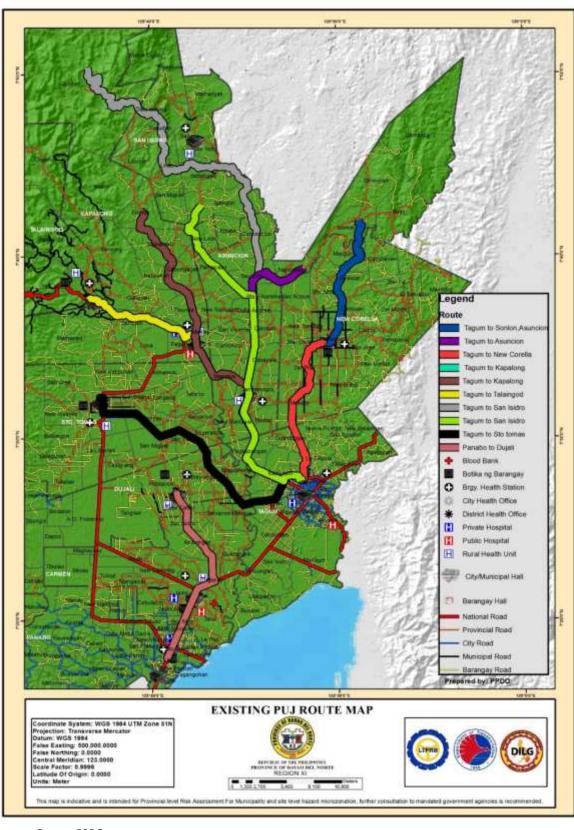


Figure 5.3: Existing PUJ Route Map

d.Tricycles

The tricycle is a smaller type of public transportation in Davao del Norte. They are relatively cheaper to own compared to the jeepney. They generally ply a shorter distance than other modes of transportation, and their size makes them a choice vehicle in urban and rural areas. Aside from those that operate in local municipalities and cities, about 4 tricycle routes operate inter – municipality/city. Having only a 7-10 average seating capacity, there are more units that operate 16 hours per day.

Table 5.4: **Tricycle Performance by Route**Province of Davao del Norte: CY 2018

Route Name	Route Description	No. of Units in Operation (NUO)	No. of Hrs. in Operation	Average Travel Speed	Terminal Waiting Time*	No. of Round trips per Day (NRT)	Ave. Daily Load Factor	Average Seating Capacity
1. Kapalong – Talaingod	Kapalong Terminal – Talaingod Terminal	70 (by schedule from 80 total)	16	30	15 mins	1	1	10
2. Asuncion – Kapalong	Asuncion – Kapalong	50	16	30	20mins	1	1	10
3. Carmen – Panabo	Panabo – Ising – Tubod, Carmen	100	16	30	5mins	2	1	7
4. BE Dujali – Tagum City	Dujali – Magupising – San Miguel	10	3	30	15 mins	2	1	7

^{*}Terminal Waiting Time of units are dependent on peak and lean hours.

^{*}Drivers are widely practicing cutting trips since some commuters don't usually stop at the end of the trip. This can force drivers to turnaround early to save time and fuel.

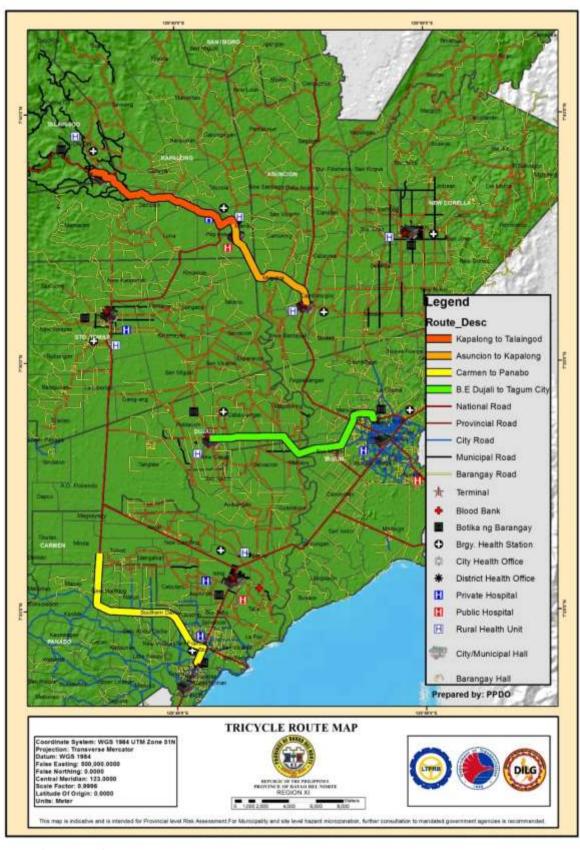


Figure 5.4: Tricycle Route Map

e.Habal-habal

Habal-habal is simply a motorbike with driver for rent. It is an indigenous means of transportation usually used in far-flung barangays where jeepneys and tricycles cannot stand the rough, steep terrain and narrow roads. There are 3 existing within LGU habal-habal routes with a total of 145 units currently in operation.

Table 5.5: Habal-habal Performance by Route
Province of Davao del Norte: CY 2018

Route Name	Route Description	No. of Units in Operation (NUO)	No. of Hrs. in Operation	Average Travel Speed	Terminal Waiting Time*	No. of Round- trips per Day (NRT)**	Ave. Daily Load Factor	Average Seating Capacity
1. Kapalong – Talaingod	Kapalong Terminal – Talaingod Terminal	67	16	30	5 mins	Indefinite	1	2
2. Asuncion – Kapalong	Asuncion – Kapalong	50	16	30	5 mins	Indefinite	1	2
3. Tagum – Carcor, New Corella via New Cortez	Tagum – Mesaoy – San Juan – Kauswagan – New Cortez - Carcor	28	12	30	5 mins	indefinite	1	2

^{*}Terminal Waiting Time of units are dependent on peak and lean hours.

^{**} Average Round Trips are dependent on the exact destination of the passenger, causing early turnaround for the driver.

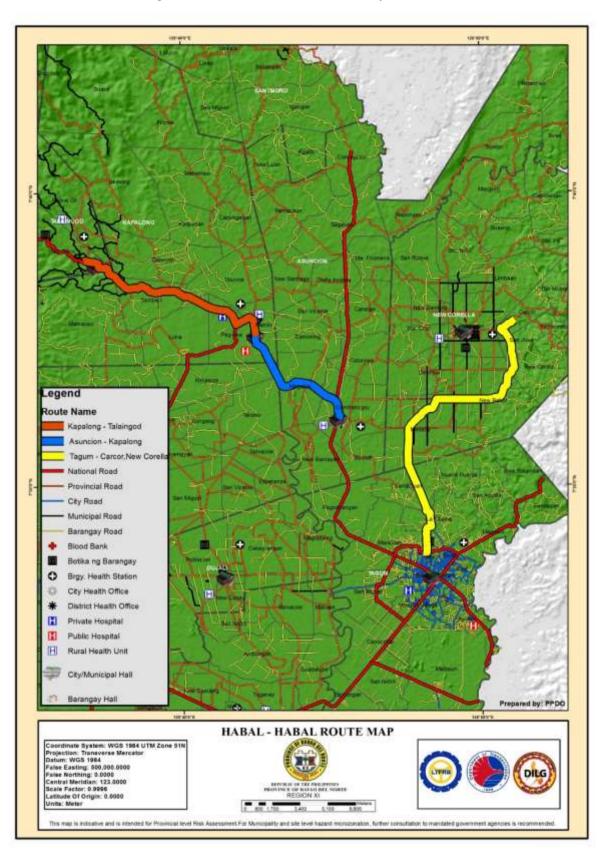
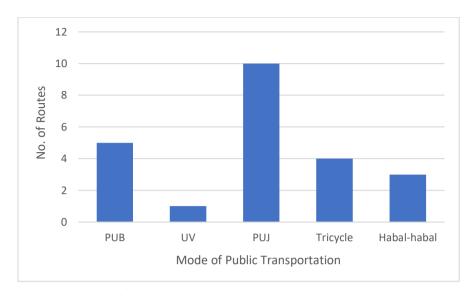


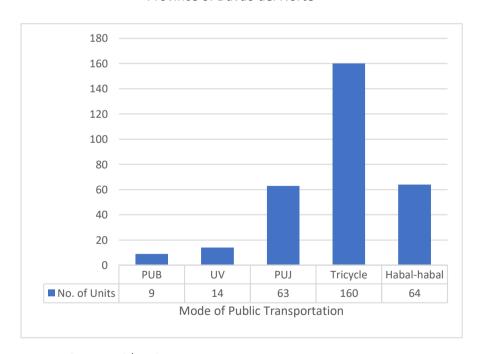
Figure 5.5: Habal-habal Route Map

Figure 5.6 : Number of Public Transport Routes Within LGU
Province of Davao del Norte



Source: PEO/PPDO

Figure 5.7: Number of Operating Units Within LGU, by Mode of Transportation Province of Davao del Norte



Source: PEO/PPDO

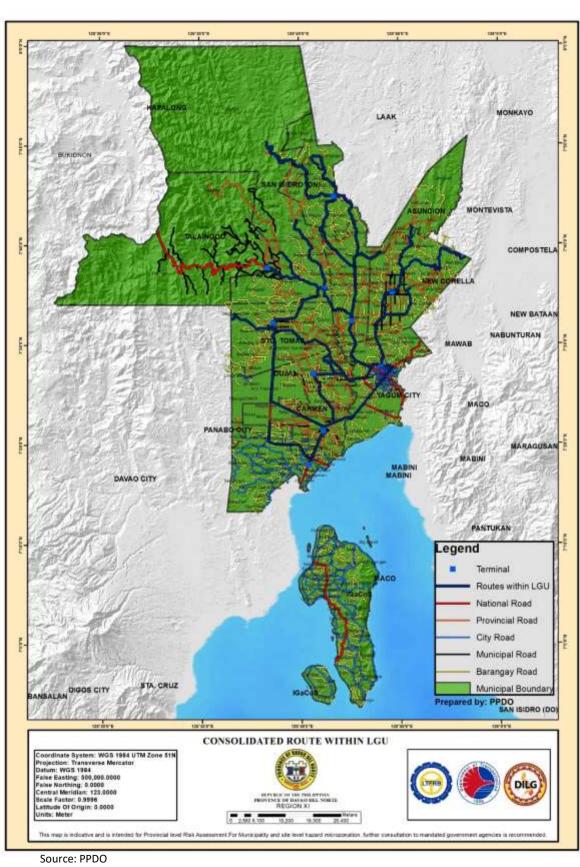


Figure 5.8: Consolidated Map of All Public Transport Routes Within LGU

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5.1.2. ROUTES TOUCHING LGU

While there are existing routes in operation within the LGU, there are also existing routes that connect to other provinces and cities. By passing through the province of Davao del Norte, these routes have also served the commuting population of the province.

a. Public Utility Bus

Table No. 5.6 shows public utility bus routes, which pass through Davao del Norte. It can be gleaned that touching LGU routes are more in number and operating units; longer operating hours; and shorter terminal waiting time compared to routes operating within the LGU.

Table 5.6: **Public Utility Bus Routes Touching LGUs**Province of Davao del Norte

	Route Name	Route Description	No. of Units in Operation (NUO)	No. of Hrs. in Operation	Average Travel Speed	Terminal Waiting Time*	No. of Round- trips per Day (NRT)	Ave. Daily Load Factor	Average Seating Capacity
1.	Panabo – Carmen – Tagum	Along Nat'l Highway	420	24	60	15 mins	1	1.2	50
2.	Tagum – Panabo via Kinamayan	Davao City – Tagum – Magupising, BE Dujali – Kinamayan – Sto.Tomas – Carmen – Panabo	7	13	60	15 mins	1	1.2	50
3.	Tagum – San Isidro via Igangon	Tagum – Asuncion – Igangon, San Isidro – Laak, ComVal	5	13	60	30 mins	1	1.3	50
4.	Panabo – Carmen – Sto. Tomas	Davao City – Panabo City – Carmen – Sto. Tomas	43	13	60	15 mins	1	1.3	50
5.	Panabo – Talaingod	Davao City – Panabo – Carmen – Tagum – Asuncion – Kapalong – Talaingod	10	13	60	15 mins	1	1.3	50
6.	Panabo – San Isidro via Sto. Tomas – San Isidro	Davao City- Laak, ComVal via Panabo- Carmen – Sto. Tomas – Kapalong – Asuncion – San Isidro	2	13	60	15 mins	1	1.3	50
7.	Panabo – San Isidro via Tagum City	Davao City – Laak, ComVal via Panabo – Carmen – Tagum – Asuncion – San Isidro	4	13	60	15 mins	1	1.3	50

^{*}Terminal Waiting Time of units are dependent on peak and lean hours.

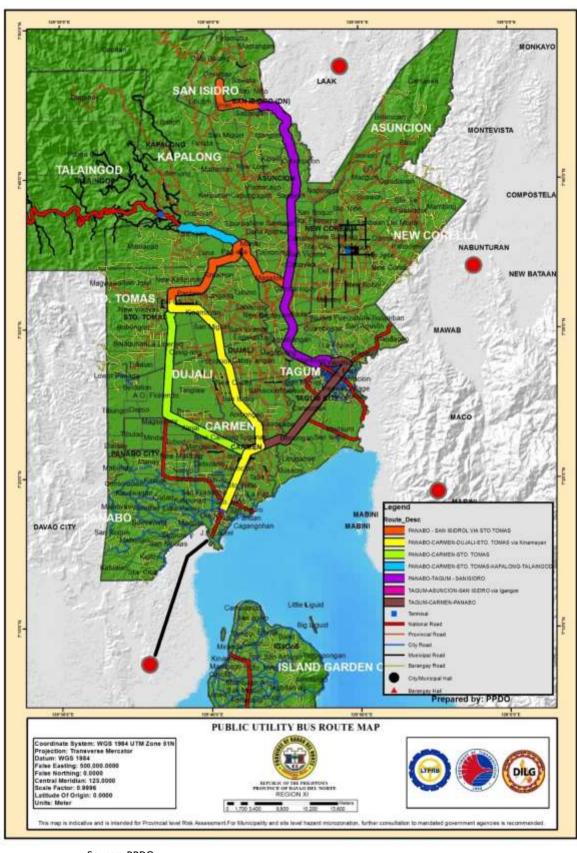


Figure 5.9: **Touching LGU: Public Utility Bus Route**

b. UV Express

The Panabo-Carmen-Tagum route is the only known route passing through Davao del Norte. It is deemed high-volume since this routes have 300 units that are operating round the clock (please see Table No. 5.7)

Table 5.7: **UV Express Routes Touching LGUs**Province of Davao del Norte

ı	Route Name	Route Description	No. of Units in Operation (NUO)	No. of Hrs. in Operation	Average Travel Speed	Terminal Waiting Time*	No. of Round- trips per Day (NRT)**	Ave. Daily Load Factor	Average Seating Capacity
	Panabo – Carmen – Tagum	Davao City – ComVal and Davao City – Davao Oriental	300	24	80	1 hr	1	1	18

^{*}Terminal Waiting Time of units are dependent on peak and lean hours.

^{**} Round Trips by UV Express are sometimes dependent on peak and lean hours.



Figure 5.10: Touching LGU: UV Express Route Map

c. Jeepney/Filcab

Jeepney routes that are passing through Davao del Norte are those that serve the commuting population from and to Davao City, Panabo City and the Municipality of Carmen. About 61 units are operating along this route 13 hours per day with an average seating capacity of 18 passengers.

Table 5.8: **Jeepney Routes Touching LGUs**Province of Davao del Norte

	Route Name	Route Description	No. of Units in Operation (NUO)	No. of Hrs. in Operation	Average Travel Speed	Terminal Waiting Time*	No. of Round- trips per Day (NRT)	Ave. Daily Load Factor	Average Seating Capacity
1.	Panabo City – Paquibato / Mapula, Davao City	Panabo City - Davao City via Mabuhay, Carmen	1	13	40	1 hr	1	1	18
2.	Panabo City – Davao City via Lasang	Panabo City – Davao City	50	13	40	30 mins	1	1	18
3.	Panabo City – Malabug, Davao City	Panabo City – Malabug, Davao City	10	13	40	30 mins	1	1	18

^{*}Terminal Waiting Time of units are dependent on peak and lean hours.

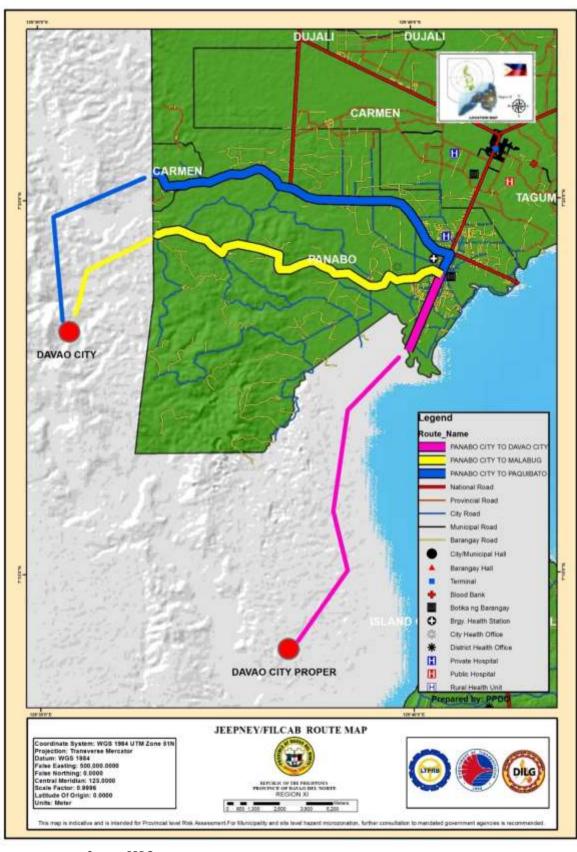


Figure 5.11: Touching LGU: Public Public Jeepney/Filcab Route Map

d. Tricycles

Two tricycle routes operate to and from Davao del Norte: the route that caters Tagum-Salvacion, Mawab and the other route that caters Tagum City to Maco, Comval Province. These tricycle routes are most active during late nights when PUBs and jeepneys have concluded their respective operation for the day.

Table 5.9: **Tricycle Routes Touching LGUs**Province of Davao del Norte

Route Name	Route Description	No. of Units in Operation (NUO)	No. of Hrs. in Operation	Average Travel Speed	Terminal Waiting Time*	No. of Round- trips per Day (NRT)	Ave. Daily Load Factor	Average Seating Capacity
 Tagum – Salvacion, Mawab 	Along National Highway	6	16	30	15 mins	1	1	7
2. Tagum – Maco, ComVal	Along Apokon Rd. to Maco, ComVal	20	4	30	15 mins	1	1	7

^{*}Terminal Waiting Time of units are dependent on peak and lean hours.

^{*}Drivers are widely practicing cutting trips since some commuters don't usually stop at the end of the trip. This can force drivers to turnaround early to save time and fuel.

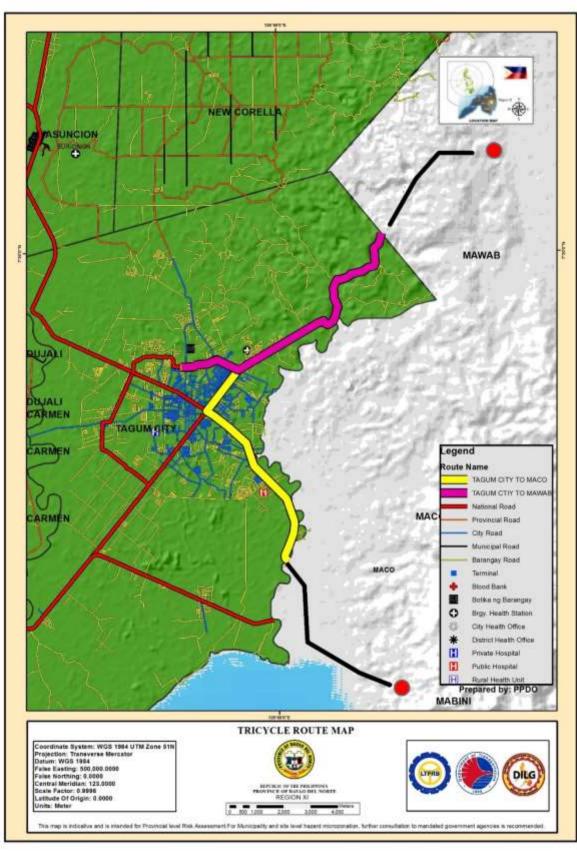


Figure 5.12: **Touching LGU: Public Tricycle Route Map**

e. Habal-habal

Habal-habal routes touching LGUs are those that serve far-flung areas with difficult terrains, such as the New Corella — Nabunturan and the Sto. Tomas-Magwawa-Upper Panaga, Davao City. The need for public transport service is being suggested by the number of units in operation and the length of time that they operate within the day.

Table 5.10: Tricycle Route Touching LGUs
Province of Davao del Norte

Route Name	Route Description	No. of Units in Operation (NUO)	No. of Hrs. in Operation	Average Travel Speed	Terminal Waiting Time*	No. of Round- trips per Day (NRT)**	Load	Average Seating Capacity
1. New Corella – Nabunturan	New Corella – Nabunturan via Mambing, New Corella	20	16	30	5 mins	Indefinite	1	2
2.Sto. Tomas – Magwawa – Upper Panaga, Davao City	Sto. Tomas – Magwawa – Upper Panaga, Davao City	100	16	30	5 mins	Indefinite	1	2

^{*}Terminal Waiting Time of units are dependent on peak and lean hours.

^{**} Average Round Trips are dependent on the exact destination of the passenger, causing early turnaround for the driver.

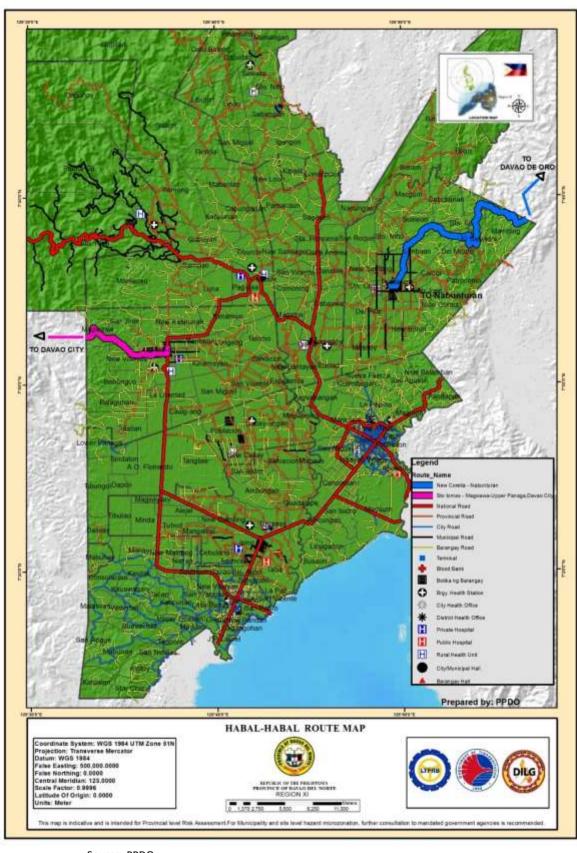


Figure 5.13: **Touching LGU: Public Habal-habal Route Map**

Figure 5.14: Number of Routes of Public Transport Touching LGUs

Province of Davao del Norte

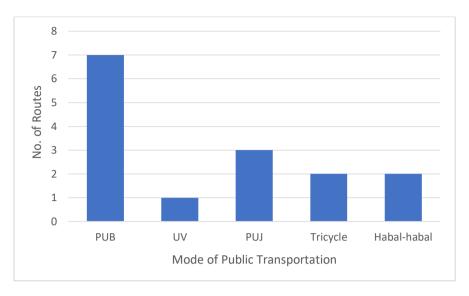
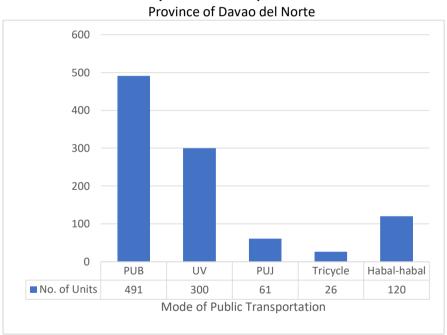


Figure 5.15: Number of Operating Units Touching LGU, by Mode of Transportation



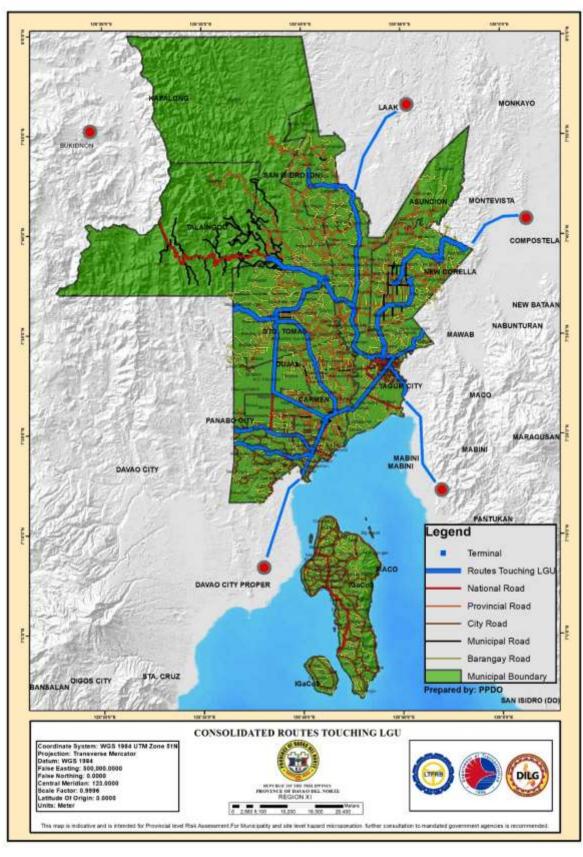


Figure 5.16: Consolidated Map of All Public Transport Routes Touching LGUs

5.2 PASSENGER DEMAND ESTIMATES

The passenger demand estimates are derived from the Passenger Volume and Vehicle Count Survey Data. In addition, the passenger demand estimates also took serious consideration of the socio-economic data of the province, particularly population, pattern of employment, pattern of economic activity, present employment by industry, and total workforce. Figure 5.7 shows the passenger demand estimate diagram. Motorcycle is observed to be the highest utilized mode of transport as shown on Table 5.2.1 shows the estimated passenger demand estimate per mode of transport.

The Tagum – Carmen – Panabo section has the largest estimated passenger demand, which range from 7,000 – 10,000 passenger per day, while the Tagum – Talaingod and Tagum – New Corella section have less than 1,000 passenger demand as shown on Table 5.2.2 Passenger load profile.

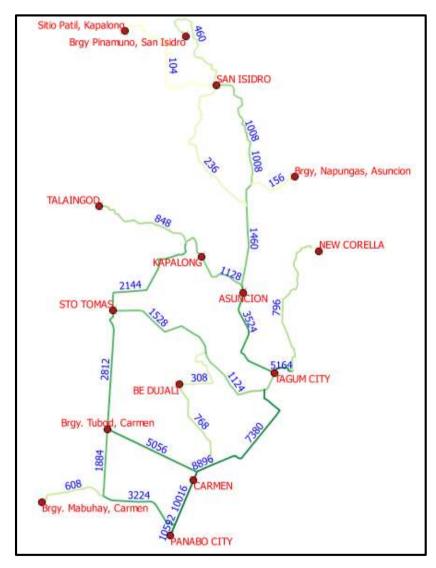


Figure 5.17: Passenger Load Profile using Passenger Demand Estimate Diagram
Province of Davao del Norte

Table 5.11: Passenger Demand Estimate per Mode of Transport

Province of Davao del Norte

			Transpor	t Mode		
Section	Motorcycle	Tricycle	PUJ	PUB	UV	Passenger Car
Tagum – Carmen – Panabo	4,276	1,601	30	118	79	240
Tagum – Dujali – Sto Tomas	737	108	20	8	4	273
Tagum – Asuncion – Kapalong – Talaingod	593	49	2	-	-	149
Tagum – Asuncion – San Isidro	919	76	-	5	3	10
Tagum – New Corella	309	515	56	3	1	169

Source: PEO

Table 5.12: Estimated Passenger Load Profile of Main Inter- Municipal Routes

Province of Davao del Norte

	Origin		Destination												
Section	Tagum	Carmen	Panabo City	B.E Dujali	Sto Tomas	Asuncion	Kapalong	Talaingod	San Isidro	New Corella					
Tagum – Carmen – Panabo	Tagum	7,380	10,592	-	-										
Tagum – Dujali – Sto Tomas	Tagum			1,124	1,528	-	-	-	-	-					
Tagum – Asuncion – Kapalong – Talaingod	Tagum	-	-	-	-	3,524	1,128	848	-	1					
Tagum – Asuncion – San Isidro	Tagum	-	-	-	-	3,524	-	-	1,008	-					
Tagum – New Corella	Tagum	-	-	-	-	-	-	-	-	796					

Source: PEO

The transport operation characteristics of provincial routes in relation to passenger demand are the following:

- 1. Passengers prefer to take the motorcycle mode of transportation for they are available anytime usually "parkway" system;
- 2. Some routes have little passenger demand that cause public transport (PT) units to ply other routes outside its franchise;
- 3. Some routes have little passenger demand that cause PT units to cut their routes leaving passengers unattended; and
- 4. There are also routes suggested that connects to other cities and municipalities outside the province.

5.3 TRAFFIC IMPACT ANALYSIS IN CRITICAL ROAD SECTIONS

A traffic impact analysis (TIA) is a study that determines the potential traffic impacts of a proposed traffic generator. Traffic impacts and their potential need for mitigation are important for any community to consider particularly when there are new development being proposed. It is always essential for all stakeholders either public policy makers, citizens, or developers to understand and respond to the prevailing and additional demands on the transportation system since all share the common interest of a safe and efficient transportation network. A properly developed traffic impact analysis can provide the factual basis for good decision-making and facilitate the timely implementation of effective mitigation measures. This section endeavors to present a traffic impact analysis on identified critical sections in Davao del Norte.

a. Critical Road Section Am Peak Volume by Vehicle Type

The peak hour volume is the volume of traffic that uses the approach, lane, or lane group in question during the hour of the day that observes the highest traffic volumes for that intersection. It is the volume of passenger car units that used the ramps during rush hour and is normally given in terms of passenger car units. The road sections in the Davao del Norte that are observed having Am/Pm peak volume is presented in the following Table Nos. 5.11 and 5.12 below:

Table No. 5.13: **Critical Road Section Am Peak Volume by Vehicle Type**Province of Davao del Norte

								VEH	ICLE TY	/PE							
ROAD SECTION	Bicy- cles	Motor- cycles		Sky- lab	Animal Cart	Tractor	Pas- sen- ger Car	Pas- sen- ger Utility	Goods Utility	Small Bus		Truck 2		Trailer	Truck Semi Trailer 5+ Axles	Truck Trailer 4 Axles	Truck Trailer 5+ Axles
 Florida – Suaon – Jct. Gupitan 	1	85	1	0	0	0	3	1	2	1	0	5	2	0	0	0	0
2. Kapalong – Mabantao – Florida	7	338	16	0	0	0	52	1	3	1	1	12	17	1	1	0	0
3. Igangon – Sawata	1	68	10	0	1	0	40	1	2	1	2	11	3	0	0	0	1
4. Sawata – Mamangan – Pinamuno	1	133	1	0	0	0	2	1	1	0	1	10	1	0	0	0	0
5. Sawata – Libuton – Monte Dujali – Patel	1	204	2	0	0	0	11	3	3	1	2	13	3	1	0	0	1
6. Bdry. Tagum – Baca – New Corella	5	449	24	0	0	1	170	58	10	34	0	23	43	1	1	0	0
7. New Corella – Sto. Nino – Macgum	12	213	21	0	0	0	10	1	9	0	1	16	5	0	0	0	0
8. Saug – Sonlon – Bdry. Longanapan	0	66	1	0	0	0	2	1	1	0	0	4	18	0	0	0	0
9. Mesaoy – Jct. Mahayahay	5	125	29	0	1	0	10	0	1	0	0	6	2	0	0	0	0

0	25	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0
1	39	1	0	0	0	3	0	1	0	0	2	0	0	0	0	0
2	115	16	0	0	0	16	2	1	0	0	17	1	0	0	0	0
16	174	82	1	0	0	6	1	14	1	0	18	4	1	0	0	0
1	72	5	0	0	0	1	0	2	0	0	3	1	0	0	0	0
9	69	4	0	0	1	1	1	2	0	0	4	0	0	0	0	0
6	92	58	0	0	0	11	0	4	0	0	6	6	0	1	0	0
7	45	1	0	0	0	1	0	1	0	0	2	2	0	0	0	0
10	234	15	0	0	0	25	6	6	0	0	8	2	3	0	1	1
3	195	8	0	0	0	10	0	3	0	0	13	1	1	0	0	0
1	48	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1
3	98	27	0	0	0	42	0	2	0	0	12	0	1	0	0	0
3	206	59	0	0	0	14	1	12	0	0	9	4	1	1	0	0
7	77	30	0	0	0	30	5	1	0	0	3	0	0	0	0	0
2	90	8	0	0	0	6	1	5	0	0	5	3	0	1	0	0
1	118	8	0	0	0	9	0	9	0	0	6	2	1	0	0	0
9	148	202	0	0	0	14	0	6	0	0	10	6	1	1	0	0
1	61	1	0	0	0	14	1	1	1	0	4	35	0	0	0	0
2	39	7	0	0	0	8	0	1	0	0	1	0	0	0	0	0
	1 2 16 1 9 6 7 10 3 3 7 2 1 9 1	1 39 2 115 16 174 1 72 9 69 6 92 7 45 10 234 3 195 1 48 3 98 3 206 7 77 2 90 1 118 9 148 1 61	1 39 1 2 115 16 16 174 82 1 72 5 9 69 4 6 92 58 7 45 1 3 195 8 1 48 1 3 98 27 3 206 59 7 77 30 2 90 8 1 118 8 9 148 202 1 61 1	1 39 1 0 2 115 16 0 16 174 82 1 1 72 5 0 9 69 4 0 6 92 58 0 10 234 15 0 3 195 8 0 1 48 1 1 3 98 27 0 3 206 59 0 7 77 30 0 2 90 8 0 1 118 8 0 1 118 8 0 1 148 202 0 1 118 8 0 1 148 202 0 1 148 1 0	1 39 1 0 0 2 115 16 0 0 16 174 82 1 0 1 72 5 0 0 9 69 4 0 0 1 45 1 0 0 1 234 15 0 0 1 48 1 1 1 3 98 27 0 0 3 206 59 0 0 7 77 30 0 0 2 90 8 0 0 1 118 8 0 0 1 118 8 0 0 1 148 202 0 0 1 61 1 0 0	1 39 1 0 0 0 2 115 16 0 0 0 16 174 82 1 0 0 1 72 5 0 0 0 9 69 4 0 0 1 6 92 58 0 0 0 10 234 15 0 0 0 1 48 1 1 1 1 3 195 8 0 0 0 1 48 1 1 1 1 3 98 27 0 0 0 3 206 59 0 0 0 7 77 30 0 0 0 2 90 8 0 0 0 1 118 8 0 0 0 1 148 202 0 0 0 1 148 202	1 39 1 0 0 0 3 2 115 16 0 0 0 16 16 174 82 1 0 0 6 1 72 5 0 0 1 1 9 69 4 0 0 1 1 7 45 1 0 0 0 1 10 234 15 0 0 0 1 3 195 8 0 0 0 10 1 48 1 1 1 1 1 3 98 27 0 0 0 42 3 206 59 0 0 0 14 7 77 30 0 0 0 6 1 118 8 0 0 0 9 9 148 0 0 0 14 1 118 8 0	1 39 1 0 0 0 3 0 2 115 16 0 0 0 16 2 16 174 82 1 0 0 1 0 1 72 5 0 0 1 1 1 9 69 4 0 0 1 1 1 6 92 58 0 0 0 1 1 7 45 1 0 0 0 1 0 10 234 15 0 0 0 10 0 3 195 8 0 0 0 10 0 48 1 1 1 1 1 1 3 98 27 0 0 0 42 0 3 206 59 0 0 0 14 1 7 77 30 0 0 0 6 1	1 39 1 0 0 0 3 0 1 2 115 16 0 0 0 16 2 1 16 174 82 1 0 0 6 1 14 1 72 5 0 0 0 1 0 2 9 69 4 0 0 1 1 1 2 6 92 58 0 0 0 11 0 4 7 45 1 0 0 0 1 0 1 10 234 15 0 0 0 1 0 1 3 195 8 0 0 0 10 0 3 1 48 1 1 1 1 1 1 1 3 98 27 0 0 0 42 0 2 3 206 59 0 0 0	1 39 1 0 0 0 1 0 0 0 1 0 0 0 16 2 1 0 16 174 82 1 0 0 6 1 14 1 1 72 5 0 0 0 1 0 2 0 9 69 4 0 0 1 1 1 2 0 6 92 58 0 0 1 1 1 2 0 7 45 1 0 0 0 1 0 1 0 10 234 15 0 0 0 1 0 1 0 3 195 8 0 0 0 10 0 3 0 1 48 1 1 1 1 1 1 1 1 1 3 206 59 0 0 0 42 0 2	1 39 1 0 0 0 0 3 0 1 0 0 2 115 16 0 0 0 16 2 1 0 0 16 174 82 1 0 0 6 1 14 1 0 1 72 5 0 0 1 1 0 2 0 0 9 69 4 0 0 1 1 1 2 0 0 6 92 58 0 0 1 1 0 4 0 0 7 45 1 0 0 0 1 0 1 0 0 10 234 15 0 0 0 1 0 1 0 0 1 48 1 1 1 1 1 1 1	1 39 1 0 0 0 3 0 1 0 2 2 115 16 0 0 0 16 2 1 0 0 17 16 174 82 1 0 0 6 1 14 1 0 18 1 72 5 0 0 0 1 0 2 0 0 3 9 69 4 0 0 1 1 1 2 0 0 4 6 92 58 0 0 1 0 4 0 0 0 7 45 1 0 0 2 6 6 0 0 2 10 234 15 0 0 0 1 0 1 1 1 1 1 1 1 1 1 1	1 39 1 0 0 0 3 0 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 1 0 1	1 39 1 0 0 0 3 0 1 0 2 0 0 2 115 16 0 0 0 16 2 1 0 0 17 1 0 16 174 82 1 0 0 6 1 14 1 0 18 4 1 1 72 5 0 0 1 1 1 1 1 0 0 3 1 0 9 69 4 0 0 1 1 1 2 0 0 4 0 0 6 92 58 0 0 0 1 0 1 0 0 2 2 0 7 45 1 0 0 25 6 6 0 0 8 2 3 3 195	1 39 1 0 0 0 3 0 1 0	1 39 1 0 0 0 16 2 1 0 0 17 1 0

b. Critical Road Section Pm Peak Volume by Vehicle Type

Table No. 5.14: **Critical Road Section Pm Peak Volume by Vehicle Type**Province of Davao del Norte

	VEHICLE TYPE																
ROAD SECTION	Bicy- cles	Motor- cycles	Tricy- cles	Sky- lab	Ani- mal Cart	Tractor	Pas- sen- ger Car	Pas- sen- ger Utility	Goods Utility	Small Bus	Large Bus		Rigid Truck 3+ Axles	Truck Semi Trailer 3 & 4 Axles	Truck Semi Trailer 5+ Axles	Truck Trailer 4 Axles	Truck Trailer 5+ Axles
 Florida – Suaon – Jct. Gupitan 	1	79	1	0	0	0	3	1	2	1	0	5	2	0	0	0	0
2. Kapalong – Mabantao – Florida	7	317	15	0	0	0	49	1	3	1	1	11	16	1	1	0	0
3. Igangon – Sawata	1	64	9	0	1	0	37	1	2	1	2	11	3	0	0	0	1
4. Sawata – Mamangan – Pinamuno	1	124	1	0	0	0	2	1	1	0	1	10	1	0	0	0	0
5. Sawata – Libuton – Monte Dujali – Patel	1	191	1	0	0	0	10	3	2	1	2	12	3	1	0	0	1
6. Bdry. Tagum – Baca – New Corella	5	421	22	0	0	1	159	54	10	32	0	21	41	1	1	0	0
7. New Corella – Sto. Nino – Macgum	12	199	19	0	0	0	9	1	8	0	1	15	5	0	0	0	0
8. Saug – Sonlon – Bdry. Longanapan	0	61	1	0	0	0	2	1	1	0	0	3	17	0	0	0	0
9. Mesaoy – Jct. Mahayahay	4	117	27	0	1	0	10	0	1	0	0	5	2	0	0	0	0
10. Sta. Filomena – San Roque	0	23	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0
11. New Corella – New Sambog – Silangan	1	36	1	0	0	0	3	0	1	0	0	2	0	0	0	0	0
12. Jct. Sagayen – Sonlon	2	108	15	0	0	0	15	1	1	0	0	16	1	0	0	0	0
13. Asuncion – Monte Carlo – Del Pilar	15	162	77	1	0	0	5	1	13	1	0	17	4	1	0	0	0
14. Jct. Highway Dona Andrea – Capungagan	1	67	4	0	0	0	1	0	2	0	0	3	1	0	0	0	0
15. San Vicente – Butay	9	65	4	0	0	1	1	1	1	0	0	4	0	0	0	0	0
16. Sto. Tomas – Bdry. Mamacao	6	86	54	0	0	0	10	0	4	0	0	6	6	0	1	0	0
17. Jct. Sampao – Bdry. Mamacao	6	43	1	0	0	0	1	0	1	0	0	2	2	0	0	0	0

18. Jct. Highway Luna – Mamacao – Narra	9	219	14	0	0	0	23	6	6	0	0	7	2	3	0	1	1
19. Jct. Highway Gabuyan – Semong – Dagohoy	3	183	7	0	0	0	9	0	3	0	0	12	1	1	0	0	0
20. Sto. Nino – Daligidigon – Paiton	1	45	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1
21. Menzi – Balagunan – Tulalian	2	92	25	0	0	0	39	0	2	0	0	11	0	1	0	0	0
22. Tuganay – Anibongan – San Isidro	3	193	55	0	0	0	13	1	12	0	0	9	4	1	1	0	0
23. Dujali – New Casay	7	72	28	0	0	0	28	5	1	0	0	3	0	0	0	0	0
24. Dujali – San Miguel	2	85	8	0	0	0	6	1	4	0	0	5	3	0	1	0	0
25. San Miguel – Crossing Kinamayan	1	110	7	0	0	0	8	0	8	0	0	6	2	1	0	0	0
26. Fd. Rd 2 Sto. Tomas – Magwawa	8	139	189	0	0	0	13	0	6	0	0	10	5	1	1	0	0
27. Dalisay – Mabuhay	1	57	1	0	0	0	13	1	1	1	0	4	33	0	0	0	0
28. Jct. Bdry. Tagum – Talomo	2	37	6	0	0	0	8	0	1	0	0	1	0	0	0	0	0

f. Road Capacity Concerning Traffic and Road Condition

Road capacity is associated with traffic volume and traffic density. Traffic volume is the number of vehicles passing a given point on a roadway during a specified time period, which is usually expressed as vehicles per hour. On the other hand, traffic density is defined as the number of vehicles occupying a unit length of a lane of a roadway at a given instant of time, expressed in vehicle per kilometer. Hence, traffic volume is a product of traffic density and speed. Capacity is the maximum traffic flow that can be accommodated in a road facility during a given period under prevailing roadway, traffic and control conditions. As traffic volume stands for the actual rate of flow and responds to variations in traffic demand, capacity shows the maximum rate of flow when exposed to a certain level of service characteristics or a number of prevailing roadway and traffic conditions.

There are 4 identified traffic choke points in Davao del Norte. One is at the Tagum City diversion road comprising the intersections at the Capitol circumferential road and at Daang Maharlika at Brgy. Magdum, Tagum City which has a peak hour of 369 passenger car units (PCUs). Then at Daang Maharlika (Tagum City National Highway) at intersection at Pioneer St. and National Highway; and Daang Maharlika (Panabo City National Highway) at intersection of TADECO Road and National Highway. These intersections have 420 PCU during peak hour (please see table below).

Table No. 5.15: Road Capacity Concerning Traffic and Road Condition

Province of Davao del Norte

ROAD NAME	CHOKE POINTS	PEAK HOUR IN PCU	ROAD WIDTH	DIVIDED / UNDIVIDED ROAD	NO. OF LANES PER DIRECTION	LANE WIDTH (m)	VEHICLE CAPACITY RATIO (VCR)
Tagum City Diversion Road	Intersection at Capitol Circumferential Road	369	13.4	Divided	2	3.35	0.41
	Intersection at Daang Maharlika at Brgy. Magdum, Tagum City						
DaangMaharlika (Tagum City Nat'l Highway)	Intersection at Pioneer St. and Nat'l Highway	420	20.1	Divided	3	3.35	0.47
DaangMaharlika (Panabo City Nat'l Highway)	Intersection at Tadeco Rd and Nat'l Highway						

A total of 26 provincial roads were observed to have routes that have traffic bottlenecks both at morning and afternoon peak hours. These routes are presented in detail in the table below.

Table No. 5.16: **Provincial Routes Observed with Traffic Volume Peak Hours**Province of Davao del Norte

PI	ROVINCIAL ROAD NAME	ROUTES AFFECTED	PEAK HOUR VOLUME (AM)	PEAK HOUR IN PCU (AM)	PEAK HOUR VOLUME (PM)	PEAK HOUR IN PCU (PM)	ROAD WIDTH	DIVIDED / UNDIVIDED ROAD	LANE WIDTH (m)	VEHICLE CAPACITY RATIO (AM)	VEHICLE CAPACITY RATIO (PM)
1.	Florida – Suaon – Jct. Gupitan	Tagum – Sitio Patel, Kapalong via Florida – Suaon - Gupitan	101	63	95	59	6	Undivided	3	0.09	0.08
2.	Kapalong – Mabantao – Florida	Tagum – San Isidro via Mabantao – Florida – Suaon, Kapalong – San Isidro via Mabantao – Florida – Suaon	450	302	423	284	7	Divided	3.5	0.34	0.32
3.	Igangon – Sawata	Tagum – Sitio Patel, Kapalong via Igangon – Sawata – Libuton – DatuBalong – Monte Dujali	141	120	133	114	5	Divided	2.5	0.13	0.13
4.	Sawata – Mamangan – Pinamuno	Tagum – Sawata – Pinamuno	151	93	142	87	6	Undivided	3	0.13	0.12
5.	Sawata – Libuton – Monte Dujali – Patel	Tagum – Sitio Patel, Kapalong via Igangon – Sawata – Libuton – DatuBalong – Monte Dujali, Sawata – Sitio Patel, Kapalong via	245	150	228	140	7	Divided	3.5	0.17	0.16

^{*} All roads only have 1 (one) lane per direction.

	lgangon – Sawata – Libuton – DatuBalong – Monte Dujali									
6. Bdry. Tagum – Baca – New Corella	Tagum – New Corella, Tagum – New Corella – Sonlon, Asuncion via Limbaan – Sto. Nino – Macgum, Asuncion – New Corella via Monte Carlo – Del Pilar	819	688	768	646	7.7	Divided	3.85	0.76	0.72
7. New Corella – Sto. Nino – Macgum	New Corella – Camansa, Asuncion via San Roque – Macgum	288	156	269	146	6	Undivided	3	0.22	0.2
8. Saug-Sonlon- Bdry. Longanapan	Tagum-New Corella- Sonlon, Asuncion via Limbaan-Sto. Niño- Macgum, New Corella- Sonlon-Longanapan via Limbaan-Sto. Niñ0- Macgum	93	80	86	74	7	Undivided	3.5	0.11	0.1
9. Mesaoy – Jct. Mahayahay	Asuncion – New Corella via Mahayahay – Paton	179	113	167	106	7	Undivided	3.5	0.16	0.15
10. Sta. Filomena – San Roque	Asuncion – New Corella via Monte Carlo – Sta. Filomena – San Roque	31	23	28	21	6	Undivided	3	0.03	0.03
11. Jct. Sagayen – Sonlon	Tagum – Asuncion – Camansa via Sagayen – Napungas – Sonlon	170	125	159	117	6	Undivided	3	0.17	0.16
12. Asuncion – Monte Carlo – Del Pilar	Asuncion – New Corella via Monte Carlo – Del Pilar, Asuncion – New Corella via Monte Carlo – Sta. Filomena – San Roque	318	229	297	214	6	Undivided	3	0.32	0.3
13. Jct. Highway Dona Andrea – Capungagan	Kapalong – Asuncion – New Corella via Capungagan-Dona Andrea-Canatan- StaFilomena-San Roque	85	51	79	47	6	Undivided	3	0.07	0.07
14. San Vicente – Butay	Asuncion – Kapalong via Canatan – San Vicente – Butay	91	54	86	51	6.1	Undivided	3.05	.008	0.07
15. Sto. Tomas – Bdry. Mamacao	Sto. Tomas – Talaingod via Mamacao – Narra	184	135	173	127	6	Undivided	3	0.19	0.18
16. Jct. Sampao – Bdry. Mamacao	Sto. Tomas – Talaingod via Mamacao – Narra	59	35	56	34	6	Undivided	3	0.05	0.05
17. Jct. Highway Luna – Mamacao – Narra	Sto. Tomas – Talaingod via Mamacao – Narra	311	203	291	190	6	Undivided	3	0.28	0.26
18. Jct. Highway Gabuyan – Semong – Dagohoy	Kapalong – Paiton, Talaingod via Gabuyan – Semong – Dagohoy – Angelo	234	146	219	136	6	Undivided	3	0.2	0.19

19. Sto. Nino – Daligidigon – Paiton	Kapalong – Paiton, Talaingod via Gabuyan – Semong – Dagohoy –	65	39	62	37	6	Undivided	3	0.05	0.05
20. Menzi – Balagunan – Tulalian	Angelo Sto. Tomas – Sindaton, Panabo City via Tulalian	185	141	172	131	6	Undivided	3	0.2	0.18
21. Tuganay – Anibongan – San Isidro	Panabo – Carmen – BE Dujali – Sto. Tomas via Tuganay – New Casay – San Miguel – Kinamayan	310	208	292	196	10	Undivided	5	0.29	0.27
22. Dujali – New Casay	Panabo – Carmen – BE Dujali – Sto. Tomas via Tuganay – New Casay – San Miguel – Kinamayan	153	108	144	101	8	Undivided	4	0.15	0.14
23. Dujali – San Miguel	Panabo – Carmen – BE Dujali – Sto. Tomas via Tuganay – New Casay – San Miguel – Kinamayan	121	85	115	81	10	Undivided	5	0.12	0.11
24. San Miguel – Crossing Kinamayan	Panabo – Carmen – BE Dujali – Sto. Tomas via Tuganay – New Casay – San Miguel – Kinamayan	154	104	143	96	5	Divided	2.5	0.12	0.11
25. Dalisay – Mabuhay	Panabo – Mabuhay, Carmen	119	128	112	120	10	Divided	5	0.4	0.37
26. Jct. Bdry. Tagum – Talomo	Tagum – BE Dujali – Sto. Tomas via Talomo	58	36	55	35	6	Undivided	3	0.14	0.13

CHAPTER 6 PUBLIC TRANSPORT OBJECTIVES AND STRATEGIES



CHAPTER 6

PUBLIC TRANSPORT ISSUES AND PROBLEMS

6.1 Public Transport Issues and Problems

The LPTRP relies heavily on quantitative surveys to predict future decisions for public transport. However, considering the social dimensions of transportation, qualitative data from the grassroots was also considered. The TWG sought the assistance of community-based organizations representing the public at the local level such as the PWDs, the PUV groups and traffic enforcers or regulators in identifying key public transport issues and problems. In a series of focus-group discussions conducted in the 10 LGUs in the province, probing questions were used to facilitate an understanding of the local context, needs and capacities of the public transport sector at the local level.

The following issues and problems were identified:

- Single motorcycles competing with authorized transport operations is common across all LGUs
- There are public transport operating outside their authorized routes.
- There are public transport operating without franchise or are "colorum".
- There is an oversupply of PUJs resulting to alternate day operations.
- Unauthorized public transport such as tricycles, motorcycles and trisikads are operating along the national highway.
- Cost of fuel is high.
- PUJs and motorcycles are smoke belching and aging.
- Public transport reliability is challenged as dwell time takes longer.
- In some areas, roads are narrow, poorly maintained and have steep and difficult slope. Aside from causing passenger discomfort, it raises maintenance costs of PUV.
- Drivers have negative disposition in handling passengers.
- Regulatory signage, precautionary markings and other road facilities to include stops along national highway are inadequate.
- Passenger safety is compromised as public transport race against each other to take in more passengers.
- Passenger overloading is a common practice. This poses road safety issues and creates discomfort for passengers.
- Most of the existing terminals are not gender-responsive and need improvement.
- Mandated privileges for the vulnerable sector particularly persons with disabilities and the elderlies are not observed by some public transport.
- Transport sector governance is weak.
- There are limited capacities to implement and manage transport services.

As part of the planning process, a SWOT Analysis of the public transport of Davao del Norte was conducted. The SWOT analysis is an attempt to understand what the public transport sector can or cannot do and identifies potential opportunities and threats from the perspective of major stakeholders across the province. It informs the decision-making process, so that strategies are identified to maximize strengths, minimize effect of weaknesses, explore opportunities and cope with threats or challenges.

STRENGTHS

- There is a spatial development framework to guide in the formulation of the LPTRP. There
 are also supportive leaders and competent technical personnel and strong support from
 different stakeholders which makes LPTR planning relatively easier.
- Complete land transport system where all national roads are paved.
- Road safety signs are upgraded & precise.
- Roads are well-lit in the urban centers.
- There are terminals in all LGUs where some are already PWD-friendly and genderresponsive.
- Public transport service is available in all LGUs. Some public transport units are already modern PUVs and operate 24 hours.
- Operators are organized.
- There is a Barangay Tourism Council that can be employed for monitoring.
- OPLAN Pukot is conducted by the LTO in partnership with the PNP twice a year which strengthens traffic regulation compliance.

WEAKNESSES

On PT operations:

- Presence of unauthorized units such as habal-habal motorcycles, on public transport routes. "Colorum' or PUV without approved franchise is also prevalent.
- Traffic violations such as illegal parking/loading/unloading, passenger overloading, smoke belching are a common in all areas.
- There are existing routes with few passengers.

On passenger comfort and convenience:

- There is traffic congestion in city/municipality centers.
- Passenger overloading is a common practice.
- Some drivers lack discipline, have poor personal hygiene and are "suplado".
- Some public transports are not PWD and elderly friendly and are not properly providing the mandated benefits.
- "Pakyaw" fare rate for tricycles is a common practice.
- PUVs are dilapidated/out-modeled and smoke belchers.

On Public transport reliability:

- There is long interval between transport as "alas puno" is practiced.
- Some barangays do not have access to public transport and not all PUVs operate round the clock.

On road infrastructure

- Road condition could not fully cater public transport units.
- Terminals lack features based on LTFRB issued guidelines/standards. Other MLGUs have no complete terminal facilities.
- Presence of vendors in terminals causes congestion.
- Roads leading to tourism sites are accessible only by motorcycle.

 Road traffic accidents are prevalent. Road safety furniture such as road signage and road safety devices/markings are lacking or not visible.

On PT Governance structures

- Jurisdiction on franchise-related violations is limited only to LTFRB or LTO.
- Funding capacity of some LGUs to finance the establishment of standard terminal is limited.
- Absence of regular monitoring mechanism for public transport performance indicators. Actions are reactive (complaints-basis).
- Absence of provincial level franchising board.
- Lack of resources for implementation (financial capability of operators and drivers).
- Existing traffic code is not strictly enforced.
- Economic activity on areas where traffic enforcers are checking traffic is reportedly reduced.

OPPORTUNITIES

- Legal basis/framework and guidelines exists through the OFG, PUV Modernization Program and prevailing traffic laws.
- Development of the Mindanao RAILWAY project is on-going.
- Potential routes could be developed from possible road openings.
- There are guidelines for standard requirements of infrastructure facilities.
- Joint enforcement of franchise related violation by LTFRB and PNP.
- There are institutions willing to provide funding assistance in public transport.

CHALLENGES

- Roads are exposed to flooding, landslide and erosion.
- The peace and order condition in some areas is unstable.
- Political issues influence planning and decision-making on public transport.
- The public is resistant to change.
- Driving without license is prevalent.
- High cost of fuels and motor parts.

6.2 Development Constraints

The following are the current and emerging constraints to improving public transport services.

- 1. Inadequate Inter and Intra Road Linkages. There is a need to improve external provincial and regional linkages for further economic development. With a limited road network, potential routes for optimum development cannot be explored.
- 2. Public Transport Inadequacy. There is both an under and over supply of public transport in the province. Appropriate, safe and convenient public transport is insufficient in rural areas. Where public transport is available in the rural areas, it often ends early in the evening and is infrequent or even nonexistent on certain routes. Meanwhile, operators flock in the cities where passenger demand is high
- **3. Roads exposed to hazards.** Geologic and climate-related hazards such as flooding, landslides, liquefaction and erosion hinders transport route development. At present, 82.24 kms. or 9.8 % of the total provincial road network is exposed to earthquake induced

landslide; 377.33 kms. or 45% is exposed to flooding; 530.62 kms or 63.20% is exposed to ground shaking and 574.33 kms. or 68.40% is exposed to liquefaction.

4. Unstable peace and order conditions. There is passenger demand in areas identified as rebel-infested or fraught with violence. Unless this is resolved, no public transport operator will be willing to provide transport services in these areas.

CHAPTER 7 RESULTS OF TRANSPORT SURVEYS AND OTHER DATA COLLECTION



CHAPTER 7

PUBLIC TRANSPORT OBJECTIVES AND STRATEGIES

7.1. Provincial Socio-Economic Development Goals

Vision

"Davao del Norte, a leading, innovative and competitive province with empowered and resilient people"

7.2. Transport Development Plan

A transport development plan is deemed as a comprehensive management concept, which presents the aims and objectives of urban development relative to traffic. It defines future policies, goals, investments and designs that will prepare future needs to move people and goods to destinations. Hence, it is a guideline for responsible authorities in politics and planning, as well as institutions, businesses and residents.

The spatial strategies and program thrusts of Davao del Norte are aligned to the development of transport services in the province even prior to its plan formulation. Such are articulated in the long-term plan, which is the Provincial Development and Physical Framework Plan. It is so because the Provincial Government regards the transport sector as an integral part of local development planning in areas of infrastructure development. The new and present administration gives ample consideration to push farther our local transport undertakings in the capsulized "Kuya Gob" development agenda. "Kuya Gob" expresses the priority areas that this administration would extensively give focus, namely:

Knowledge Management, Education and Sports

Universal Health and Social Services

Wield growth agriculture and sustainable environment

Adequate infrastructure facilities

Greater livelihood and income opportunities

Operational peace and development framework

Broad-based economic growth and investment

The conceived achievements of the province in positioning an efficient transport sector will also push forward and cascade to new developments in settlements, employment and economic growth. On the other hand, the spatial strategies that are relevant to the road sector that can directly contribute to the attainment of the provincial spatial framework and its development thrusts include:

- 1. Maintain and provide new infrastructure facilities in production and settlement areas to facilitate socio-economic activities;
- 2. Upgrade and/or provide new infrastructure facilities in rural areas to facilitate development and encourage investment outside of the major growth centers;
- 3. Enhance inter-provincial and intra-provincial linkage by upgrading the existing transport facilities;

- 4. Improvement of accessibility of going to and within the Island Garden City of Samal should be given priority in support to the development of the tourism industry;
- 5. Mainstreaming of latest engineering and DRR-CCA technology, gender and environment issues and concerns in road network development planning, design and implementation;
- Prioritize rehabilitation and maintenance of alternative routes during disaster;
- 7. Strengthen partnership among National, Provincial and Local agencies and other stakeholders for the implementation of CCA and risk resilient infrastructure facilities and regulation of utilities;
- 8. Prioritize the implementation of the major external and internal access routes that link Davao del Norte to adjacent provinces and cities, and core road network projects that support the economic and social development of the province;
- 9. Prioritize connectivity of municipalities identified with existing road gaps;
- 10. Strengthen linkages and partnership among National agencies and other stakeholders for the Mindanao Railway Project;
- 11. Ensure full implementation of road safety policies and regulations;
- 12. Implement national and local road planning and design guidelines and ensure that cross-cutting themes such as gender and CCA, eco-engineering are considered in the design of local roads, its implementation and monitoring;
- Strengthen inter-agency linkages for the implementation of national/local ordinances/policies in relation to Road Safety and Vehicle Load Weight Regulation; and
- 14. Introduce/Establish wildlife protection measures and infrastructure projects particularly on provision of Wildlife Corridors crossing road sections.

7.3 Proposed Transport Projects

The proposed transport projects considered in the infrastructure and transport plan of the PDPFP (2014-2022), which shall contribute to the attainment of the strategies of the local transport system includes the following:

- 1. Construction of Samal Bridge;
- 2. Opening of Kapalong-Davao del Norte-Loreto Agusan del Sur Road;
- 3. Upgrading of local roads leading to Tourism Destinations;
- 4. Construction of Mindanao Railway System Project;
- 5. Rehabilitation and Improvement of the seven clusters of the Provincial Core Road Network as indicated in the Provincial Road Network Development Plan;
- 6. Repair and maintenance of Provincial Core Roads and Bridges;
- 7. Construction of Diversion Roads (Imprv't of Kiotoy, Sta Cruz-Bunawan, Panabo-Davao);
- 8. Completion of Panabo-Carmen-Tagum Coastal Road;
- 9. Installation of Traffic Lights along strategic areas;
- 10. Installation of Road Traffic Signs/Fixtures;
- 11. Upgrading of Tagum City By-pass Road;
- 12. Upgrading of Panabo City By-pass Road;
- 13. Upgrading of Sto Tomas (Mamacao) By-pass Road;
- 14. Mapping out all the high risk Provincial Roads that are vulnerable to different kinds of hazards;
- 15. Slope Protection Projects at Kapalong Talaingod Valencia, Bukidnon Road; and
- 16. Integration of DRRM and CCA in various plans, programs and projects specifically on road projects.

In addition, the following proposed transport projects are being considered in the newly formulated Local Road Network Development Plan 2018-2022.

- 1. Implementation of the Local Road Network Development Plan's (2018-2022) Investment Program;
- 2. Upgrading /Improvement/ Widening and Repair of National, Provincial, City, Municipal and Barangay Roads in the province;
- 3. Retrofitting of existing Hazard Prone and Critical Road Sections;
- 4. Installation of transport and road safety signage, pavement markings, guardrails and other road safety furniture;
- 5. Establishment of complete traffic controls especially for the three (3) cities in the province;
- 6. Construction of standard terminal buildings, stops and other transport facilities province wide;
- 7. Convene stakeholder' forum and consultation in collaboration with national agencies for information dissemination on road safety, gender sensitive transportation and government programs such as the PUV Modernization and other transport related activities; and
- 8. Conduct skills trainings and seminars on road safety for drivers and mechanics; and on first aid and basic life support for crash responders.

7.4 Public Transport Improvement Goal and Objectives

LPTRP GOAL:

A LOCAL PUBLIC TRANSPORT NETWORK THAT WILL SERVE THE DEMANDS IN TERMS OF COVERAGE LEVEL OF SUPPLY, ECONOMICALLY AND SUSTAINABLY VIABLE TO ALL DABAONONS AND FINANCIALLY FEASIBLE TO OPERATORS, ENVIRONMENTALLY SUSTAINABLE, SOCIALLY ACCEPTABLE AND COMPATIBLE WITH THE OVERALL TRANSPORT SYSTEM

OBJECTIVES:

Local Public Transport Network shall be able to be:

- Accessible within a reasonable access tie to public transport mode;
- > Reliable in a sense that waiting time is predictable at stops and terminals;
- Safe in compliance to travel speed regulations while providing passengers security of travel;
- Providing sufficient and efficient passenger space with utmost compliance to load capacity and accessibility law;
- Environmental friendly, viable and affordable public transport;
- Provide opportunity to foster strong and competitive economy and sustainable economic growth; and
- > Encourage people to travel more on public transport instead of by private vehicle.

7.5 Public Transport Development Strategies

STRATEGIES:

A modernized and reliable local public transport system that will support economic growth shall have the following strategies to implement:

1. Strengthened Public Transport Route System

- 1.1 Strict Enforcement of Traffic Rules and Regulations
- 1.2 Regular and thorough maintenance of roads for transport use
- 1.3 Establishment/provision of proper signage's/warning signage
- 1.4 Gradual phasing out of aged PUJs
- 1.5 Enactment policies/ ordinances on Public Transport
- 1.6 Terminal Operators must monitor PUVs/ PUBs registration and accessories
- 1.7 Regular road side inspection on smoke belching
- 1.8 Extend Public Information Drive in relation to road safety
- 1.9 Include transport facilities in the road improvement projects of LGU's/ National Agencies (DPWH, DA)
- 1.10 Support PUV modernization Program
- 1.11 Presence of traffic regulation and/ or franchise related enforcers to increase compliance
- 1.12 Implement PT upgrading program in support to PT operators/ drivers compliance to LTFRB Franchising guidelines

2. Enhanced inter-provincial and intra-provincial linkage by upgrading the existing transport facilities.

- 2.1 Construction/Upgrading of Terminals, Bus/PT stops
- 2.2 Adequate streetlights
- 2.3 Provision of road furniture and fixtures
- 2.4 Establishment of free Comfort Rooms in terminals
- 2.5 Relocation of Terminal vendors

3. Full implementation of road safety policies and regulations.

- 3.1 Strict imposition of existing laws
- 3.2 Presence of Traffic Enforcers in strategic areas
- 3.3 Strengthen the implementation of existing traffic code
- 3.4 Increase Public awareness on Transport services
- 3.5 Incorporate basic traffic rules to School curriculum and other Government/ Public entities
- 3.6 Strict compliance of UV Express limitations on PT Type Service (P2P only)
- 3.7 Addendum of JAO 1401: LTO deputize PNP/ TMG/ HPG to enforce franchise related Violations
- 3.8 Empower PNP to enforce franchise related violation
- 3.9 Establish mechanisms to encourage vehicle owners/ drivers to have their vehicles registered and the drivers be license

4. Integration of DRRM and CCA in various plans, programs and projects specifically on road projects.

- 4.1 Consider the road design applicable to steep and difficult slope areas
- 4.2 Utilize Adoptable P.T.s for Steep and difficult slope areas

5. Upgrade drivers and conductors skills on transport services

- 5.1 Organize operators and drivers to access financing
- 5.2 Tap alternative fuel types and sources
- 5.3 Accreditation of a driver's (but not limited to motorcycles) as a tourist guide/ PT service to tourists
- 5.4 Assist and conduct periodic training and upgrading of drivers and operators of PUV's
- 5.5 Continuous Learning & Development to operators and drivers including first aid

6. Making Best Use of Public Transport

- 6.1 Strengthen the privileges for the vulnerable sector (senior citizens, PWDs) by means of public transport
- 6.2 Strengthen Linkages with funding agencies for PT Infrastructure improvements (Fund Outsourcing)
- 6.3 Creation of a Provincial Monitoring Group to focus on performance of public transport services and providing funds thereof
- 6.4 Discouraged use of motorcycle as alternative public transport unit
- 6.5 Eradicate colorum vehicle operation

CHAPTER 8 EVALUATION OF PROPOSED ROUTE PLAN



CHAPTER 8

EVALUATION OF PROPOSED ROUTE PLAN

8.1 Planning Considerations for Updated Route Structure

The evaluation of the proposed public transport routes in the Province of Davao del Norte is based on the key objective, which is to assess the performance of the current local public transport system of the province. The information derived from the evaluation has provided inputs necessary to determine the following: (a) the proposed routes, (b) the mode of transportation for each route; and (c) the required number of units for each route. These information are anchored on the Department of Transportation (DOTr) Omnibus Franchising Guidelines (OFG).

8.1.1 Identification of Routes

The proposed routes of the Province of Davao del Norte are identified from the following:

- Existing, Authorized, and Active Routes
- Existing, Unauthorized, and Active Routes
- New or Developmental Routes
- Existing, Authorized, but Inactive Routes

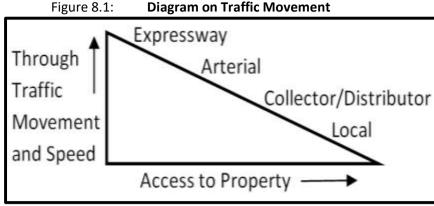
After the conduct of traffic surveys and focus group discussions (FGD) to acquire data from the routes itself, some routes are modified considering passenger demand, road condition, and the existence of other active routes.

8.1.2 Corresponding Road Functions (Road Hierarchy)

According to the OFG, principal arterial roads provide the highest level of service for the longest uninterrupted distance, with some degree of access control. These roads deliver traffic from collector roads and other arterial roads and expressways. Public Utility Buses (PUBs), Mini-Buses, Public Utility Jeepneys (PUJs), and Utility Vehicle (UV) Express service are allowed to traverse in these roads.

Collector roads provide less highly developed level of service at a lower speed for shorter distances. They collect traffic from local roads and connect them to arterial roads. PUBs, Mini-buses, PUJs, UV Express and Filcab are allowed in these roads.

Local roads primarily provide access to land with little or no through movement. They usually connect to areas with low population densities. PUJs and UV Express are considered appropriate as feeder services from local roads to arterial and collector roads. Filcab services can also deliver traffic from local and collector roads.



Source: DOTr

8.1.3 Road Capacities

One of the parameters in the selection of proposed routes is the current road condition of the road networks in the Province of Davao del Norte. Roads with good road condition with greater number of lanes can provide satisfactory operation of larger modes of transportation such as PUBs and PUJs. Roads with ongoing improvements are also considered for the identification of routes since public transport can benefit well from future road developments. Roads prone to unstable flow in peak hours are not considered in the selection of transport routes.

8.1.4 Selection of the mode of transport

To determine the mode of transportation suitable for each route, few considerations are made. The existing road condition is one factor in choosing the mode of transport. Routes connecting to roads with small carriageway width are only fit for smaller mode of transport. Routes leading to mountainous areas are appropriate for vehicles with greater engine power.

The maximum route distance for each mode of transport is another factor in selecting the vehicle for each route. PUBs do not have restrictions in its route distance since buses can deliver traffic from inter-provincial and inter-regional routes. The following are the maximum route distances for PUJs and UV Express:

Table No. 8.1: Maximum distance of PUJ Routes

Route Coverage	Maximum Route Length (km)
Highly urbanized cities, independent component cities and component cities	15
Inter-regional, inter-provincial, provincial and municipal	35

Source: DOTr

Table No. 8.2: Maximum Distance of UV Routes

Route Coverage	Maximum Route Length (km)
Highly urbanized cities, independent component cities and component cities	35
Inter-regional, inter-provincial, provincial and municipal routes originating or terminating in Metro Manila	35
Inter-regional, inter-provincial, provincial and municipal routes not originating or terminating in Metro Manila	60

Source: DOTr

8.1.5 Transportation Mode Characteristics

Each mode of transport has its own advantage in delivering passengers in each route. Larger modes of transport can deliver a greater number of passengers at any given time, but these vehicles are not suitable for roads with small widths. Smaller modes however can easily traverse roads with sharp curves but can only deliver smaller number of passengers, leading to assigning greater number of units in the given route.

Table No. 8.3: Average Seating Capacity by Mode of Transportation

Mode of Transportation	Average Seating Capacity
Articulated Bus/Double decker bus	120 passengers
Standard Bus	50 passengers
Minibus	35 passengers
Jeepneys/UVs	18 passengers
Filcab	12 passengers
Tricycles	3 passengers

Source: DOTr

8.1.6 Principles for Road Public Transport (CARES)

Comfort

Each vehicle should be fitted with comfortable seats where passengers are able to relax during the trip. Wi-Fi access may be provided to passengers for leisure and work purposes.

For buses that permit standing passengers, a limit of five (5) persons per square meter of standing space must be implemented.

Accessibility

Public transport should be accessible to all segments of society, including senior citizens and persons with disabilities. Routes should still provide walking and biking access to pedestrians. Designated locations of stops, pick-up, and drop-off points with adequate facilities shall be provided to facilitate convenient boarding and alighting of passengers.

Reliability

A fully functional public transport must be reliable and predictable in terms of travel time, waiting time and schedule. Each commuter should not wait long during peak or lean hours. Operating hours for a given route shall also be responsive to the needs of visitors, night students, and workers who require late night travel.

Environmental soundness

Public transport vehicles with combustion engines must have low emissions, as proven by compliance with EURO IV emission standards or better (ex. EURO V, EURO VI), as prescribed by the Department of Environment and Natural Resources (DENR). Other preferred public transport vehicles are those using electric drives and/or running on alternative fuels, such as electric and solar.

Safety

The safety of each passenger and the driver itself is of great importance in every trip. Vehicles should conform to national standards to ensure a safe and sound journey. Stops, pick-ups, drop-offs at undesignated stops is fundamentally unsafe for both commuters and pedestrians. Speed limits should be strictly implemented and the presence of safety personnel will benefit the public. Police visibility is one factor to ensure the safety of the riding public to prevent criminal activities to hinder public transport.

8.1.7 Assessment of Overlapping/Redundant Routes

Much that the Provincial LGU wanted to propose public transport routes that do not overlap however, the existing road network of Davao del Norte pushes for the route overlapping. The national and provincial roads are a common passage particularly for transport services that originate from Tagum City but have different points of destination, and vice versa. The LPTRP Technical Working Group (TWG) conducted a focus group discussion (FGD) with stakeholders in all LGUs. The result of which became the basis for proposing the transport routes presented in Table No. 8.9 (Section 8.2.3 of this Chapter). The said table provides explanations and/or justifications for the proposed routes. To address this problem the TWG in Chapter 10 have proposed the designated bus stops per route.

8.2 Demand Forecasts

8.2.1. Normal Growth Passenger Volume Forecast

According to the 2015 Census of Population and Housing, the Province of Davao del Norte has a growth rate of 1.38%. Table 8.2.1 shows the Household population, both sexes, > 4 to 65 years old 2010 and 2015 with projections 2016 - 2018. Applying the said growth rate to the passenger

demand, the estimated no. of passengers will increase from 50,308 passengers per day in 2015 to 51,002 passengers per day in 2020 or an increase of 139 passengers per day per year.

Table 8.4: **Household Population, Both sexes, > 4 to 65 years old**Province of Davao del Norte

LGU	2010	2015	2016	2017	2018
Asuncion	50,743	51,488	52,062	52,207	52,352
BE Dujali	20,626	20,525	20,754	20,734	20,715
Carmen	62,650	65,089	65,815	66,295	66,779
Kapalong	61,503	66,370	67,110	68,091	69,086
New Corella	46,156	47,480	48,009	48,269	48,529
San Isidro	23,259	22,738	22,992	22,893	22,794
Sto. Tomas	98,458	103,582	104,737	105,754	106,781
Talaingod	21,893	23,136	23,394	23,641	23,891
Samal City	87,472	89,054	90,047	90,355	90,664
Panabo City	158,593	161,202	162,999	163,507	164,016
Tagum City	220,364	226,654	229,181	230,413	231,651
Davao del Norte	851,717	877,318	887,099	892,158	897,258

Source: PPDO

Passenger forecast of each route by mode type is computed using the formula:

 $FV=PV*(1+r)^n$

Where PV = present passenger volume

FV = forecast passenger volume

r = annual growth rate in decimal

n = number of years from present.

Table 8.2.2 Shows the Passenger Volume forecast using 1.38% growth rate and n=3 years. Ten (10) routes have more than 1,000 passenger volume forecast.

Generated Passenger Volume forecast is based on a land use development in the future such as residential area, commercial center, industrial area. Traffic generation index (TGI) based on and use type is used in forecasting Passenger Volume. Table 8.5, Table 8.6, Table 8.7, shows the TGI for Residential, Retail/Commercial, Office Area. Residential Floor Area TGI is 27.812. TGI for retail and Office area are 0.7486 and 0.6082.

Table 8.5: **Person-trips per 100 sq.m. of Residential Floor Area**Province of Davao del Norte

Time	Trip Ra	tes (Person Trips/100	sq.m.)
Time	In	Out	Total
06:00 - 07:00	0.30	0.274	0.574
07:00 - 08:00	0.689	0.722	1.411
08:00 - 09:00	0.604	0.743	1.347
09:00 – 10:00	0.844	0.871	1.715
10:00 - 11:00	0.694	0.840	1.534
11:00 – 12:00	1.058	1.091	2.149
12:00 – 13:00	1.293	1.267	2.560
13:00 – 14:00	1.189	1.248	2.427
14:00 – 15:00	0.692	0.930	1.622
15:00 – 16:00	0.975	0.989	1.964
16:00 – 17:00	1.283	1.131	2.414
17:00 – 18:00	1.287	1.399	2.686
18:00 – 19:00	1.355	1.693	3.048
19:00 – 20:00	1.126	1.225	2.351
Total	13.389	14.423	27.812

Table 8.6: **Person-trips per of Retail/Commercial GFA**Province of Davao del Norte

Time	Trip Rates (Person Trips/sq.m.)							
Time	In	Out	Total					
06:00 - 07:00	-	-	-					
07:00 - 08:00	-	-	-					
08:00 - 09:00	-	-	-					
09:00 – 10:00	-	-	-					
10:00 – 11:00	0.0342	0.0083	0.0425					
11:00 – 12:00	0.0421	0.0185	0.0606					
12:00 – 13:00	0.0386	0.0287	0.0673					
13:00 – 14:00	0.0422	0.0332	0.0680					
14:00 – 15:00	0.0348	0.0332	0.0680					

15:00 – 16:00	0.0368	0.0408	0.0843
16:00 – 17:00	0.0435	0.0408	0.0843
17:00 – 18:00	0.0476	0.0521	0.0997
18:00 – 19:00	0.0401	0.0465	0.0866
19:00 – 20:00	0.0341	0.0522	0.0863
Total	0.3940	0.3546	0.7486

Table 8.7: **Person-trips per of Office Area**Province of Davao del Norte

Time	Trip Rates (Person Trips/sq.m.)							
Time	In	Out	Total					
06:00 - 07:00	0.0171	0.0222	0.0538					
07:00 - 08:00	0.0183	0.0244	0.0662					
08:00 - 09:00	0.0194	0.0244	0.0662					
09:00 - 10:00	0.0219	0.0298	0.0825					
10:00 - 11:00	0-11:00 0.0211 0.0281							
11:00 – 12:00	0.0221	0.0302	0.0396					
12:00 – 13:00	0.0248	0.0312	0.0335					
13:00 – 14:00	0.0258	0.0336	0.0239					
14:00 – 15:00	0.0269	0.0336	0.0562					
15:00 – 16:00	0.0269	0.0364	0.0375					
16:00 – 17:00	0.0295	0.0399	0.0211					
17:00 – 18:00	0.0343	0.0468	0.0072					
18:00 – 19:00	0.0375	0.0493	0.0212					
19:00 – 20:00	0.0379	0.0522	0.0643					
Total	0.4251	0.5655	0.6082					

Table 8.8: Passenger Volume forecast of proposed routes using normal growth rate of 1.38% in 5 years.

	Route Name	Transport Mode	Estimated Passenger Volume	Volume forecast normal growth (r=1.38%; n=3 years)
1.	TAGUM CITY – SITIO PATEL, KAPALONG via Igangon – Sawata – Libuton - Datu Balong - Monte Dujali	PUB	412	429
2.	TAGUM CITY – ASUNCION – SAN ISIDRO via Km. 9 Sagayen – Pamacaun – San Miguel	PUB	160	166
3.	TAGUM CITY – SITO PATEL, KAPALONG via Florida – Suaon – Gupitan	PUB	496	516
4.	TAGUM CITY – KAPALONG – ASUNCION – TALAINGOD	PUB	2,724	2,838
5.	TAGUM CITY – CARMEN – PANABO CITY	PUB	12,012	12,516
6.	PANABO CITY – CARMEN – STO. TOMAS – KAPALONG – TALAINGOD	PUB	5,800	6,043
7.	TAGUM CITY – BRAULIO E. DUJALI – STO. TOMAS via Salvacion-Kinamayan	PUB	1,328	1,383
8.	KAPALONG – SAN ISIDRO via Mabantao – Florida – Suaon – Sambayon – Libuton – Sawata	PUB	860	896
9.	KAPALONG – SAN ISIDRO via Capungagan – Mabantao – New Boholano – San Miguel	PUJ	132	137
10.	TAGUM CITY – NEW CORELLA	PUB	1,324	1,379
11.	NEW CORELLA – CAMANSA, ASUNCION via San Roque – Macgum	PUJ	656	683
12.	TAGUM CITY – NEW CORELLA – SONLON, ASUNCION via Limbaan – Crossing Sto. Nino – Macgum	PUJ	488	508
13.	TAGUM CITY – NEW CORELLA via Magdum – San Agustin – New Bohol – New Cortez – Carcor	PUJ	1,312	1,367
14.	ASUNCION – NEW CORELLA via Mahayahay – Paton	PUJ	144	150
15.	KAPALONG – ASUNCION – NEW CORELLA via Capungagan – Dona Andrea – Canatan – Sta Filomena - San Roque	PUJ	84	87
16.	KAPALONG – ASUNCION – NEW CORELLA via Camoning Brgy Road – San Vicente – Canatan – Silangan – New Sambog	PUJ	388	404
17.	ASUNCION – NEW CORELLA via Monte Carlo – Del Pilar	PUJ	236	245

Route Name	Transport Mode	Estimated Passenger Volume	Volume forecast normal growth (r=1.38%; n=3 years)
18. TAGUM CITY – ASUNCION via Cuambogan – Buclad	PUJ	196	204
19. TAGUM CITY – ASUNCION – CAMANSA via Sagayen – Napungas – Sonlon	PUJ	924	962
20. TAGUM CITY – ASUNCION – KAPALONG via Pagsabangan – New Bantayan – Ilog – National Highway	PUJ	392	408
21. ASUNCION – KAPALONG via Canatan – San Vicente – Butay	PUJ	924	962
22. STO. TOMAS – TALAINGOD via Mamacao – Narra	PUJ	1280	1333
23. KAPALONG – PAITON, TALAINGOD via Gabuyan – Semong – Dagohoy – Angelo	PUJ	760	791
24. PANABO CITY – STO. TOMAS via Minda - New Malitbog	PUJ	2556	2663
25. STO. TOMAS – SINDATON, PANABO CITY via Tulalian	PUJ	896	933
26. PANABO CITY – MABUHAY, CARMEN	PUJ	608	633
27. PANABO CITY – TUBOD, CARMEN	PUJ	716	746
28. PANABO CITY – CARMEN via La Paz – Taba	PUJ	732	762
29. PANABO CITY – CARMEN – BRAULIO E. DUJALI – STO. TOMAS via Tuganay – Crossing San Miguel – Kinamayan	PUJ	1000	1042
30. TAGUM CITY – BRAULIO E. DUJALI via Magupising – Balisong	PUJ	856	891
31. STO. TOMAS – BRAULIO E. DUJALI via La Libertad – Casig-ang	PUJ	520	541
32. TAGUM CITY – BRAULIO E. DUJALI – STO. TOMAS via Magupising – Talomo – Lunga-og	PUJ	852	887
33. TAGUM CITY – CABIDIANAN, NEW CORELLA via Limbaan – Macgum	PUJ	88	91
34. TAGUM CITY – ASUNCION – SAN ISIDRO via Igangon	UV	80	83

Route Name	Transport Mode	Estimated Passenger Volume	Volume forecast normal growth (r=1.38%; n=3 years)
35. SAWATA, SAN ISIDRO – SITIO PATEL, KAPALONG via Libuton – Datu Balong – Monte Dujali	UV	40	41
36. TAGUM CITY – KAPALONG	UV	200	208
37. TAGUM CITY – STO. TOMAS	UV	60	62
38. PANABO CITY – STO. TOMAS	UV	180	187
39. TAGUM CITY – PANABO CITY	UV	1800	1875
40. TAGUM CITY - NEW CORELLA	UV	200	208

8.2.3 Total Passenger Volume per Route/day

Table No. 8.9: **Proposed Routes with projected Medium-Term (3-year) Passenger Demand per day**Province of Davao del Norte

ROUTE MARK	ROUTE NAME	LENGTH	PASSENGER DEMAND (Medium Termis 3 years)	MODE OF TRANSPORT	JUSTIFICATION
ROUTE 1	TAGUM CITY-SITIO PATEL, KAPALONG via Igangon-Sawata-Libuton-Datu Balong-Monte Dujali	69.05	429	Standard Bus	Route is created to service passengers from Tagum to Sitio Patel and vice-versa as requested by transport operators and passengers. The existing route and mode of transport ends at Sawata.
ROUTE 2	TAGUM CITY-ASUNCION-SAN ISIDRO via Km.9 Sagayen-Pamacaun-San Miguel	43.52	166	Standard Bus	Route is created to ferry passengers to and from San Isidro in a different road alignment since a segment of the route from Asuncion only would attract lesser passengers.
ROUTE 3	TAGUM CITY-SITIO PATEL, KAPALONG via Florida-Suaon-Gupitan	65.92	516	Standard Bus	Route is created to ferry passengers to and from Sitio Patel in a different road alignment since a segment of route from Asuncion or Kapalong only would attract lesser passengers.
ROUTE 4	TAGUM CITY-ASUNCION - KAPALONG - TALAINGOD	33.11	2838	Standard Bus	Route is created to ferry passengers to and from Sitio Patel in a different road alignment since a segment of route from Asuncion or Kapalong only would attract lesser passengers.

ROUTE MARK	ROUTE NAME	LENGTH	PASSENGER DEMAND (Medium Term)	MODE OF TRANSPORT	JUSTIFICATION
ROUTE 5	TAGUM CITY-CARMEN-PANABO CITY	27.58	12,516	Standard Bus	An existing route with existing mode of transportation
ROUTE 6	PANABO CITY-CARMEN-STO.TOMAS- TALAINGOD	54.47	6043	Standard Bus	An existing route with existing mode of transportation
ROUTE 7	TAGUM CITY-B.E. DUJALI-STO. TOMAS via Salvacion-Kinamayan	27.75	1,383	Standard Bus	An existing route with existing mode of transportation
ROUTE 8	KAPALONG-SAN ISIDRO via Mabantao-Florida-Suaon-Sambayon- Libuton-Sawata	32.47	896	Jeepney	An existing route with existing mode of transportation
ROUTE 9	KAPALONG-SAN ISIDRO via Capungagan-Mabantao-New Boholano-San Miguel	23.8	137	Jeepney	This route would move commuters to and from Kapalong and San Isidro through a different road alignment that also caters to passengers along the way
ROUTE 10	TAGUM CITY-NEW CORELLA	17.01	1,379	Standard Bus	This route would move commuters to and from Kapalong and San Isidro through a different road alignment that also caters to passengers along the way
ROUTE 11	NEW CORELLA-CAMANSA, ASUNCION via San Roque-Macgum	27.71	683	Jeepney	New route that will connect passengers from Poblacion to San Roque up to Camansa, Asuncion and vise versa
ROUTE 12	TAGUM CITY-NEW CORELLA-SONLON, ASUNCION via Limbaan-Crossing Sto. Nino-Macgum	33.76	508	Jeepney	Route is proposed to transport passengers to Sonlon from Tagum and vice-versa

ROUTE MARK	ROUTE NAME	LENGTH	PASSENGER DEMAND (Medium Term)	MODE OF TRANSPORT	JUSTIFICATION
ROUTE 13	TAGUM CITY-NEW CORELLA via Magdum-San Agustin-New Bohol- New Cortez-Carcor	26.57	1,367	Jeepney	This route will cater the passengers from Tagum to New Corella along Magdum, San Agustin, New Bohol and Carcor
ROUTE 14	ASUNCION-NEW CORELLA via Mahayahay-Paton	15.09	150	Jeepney	
ROUTE 15	KAPALONG-ASUNCION-NEW CORELLA via Capungagan-Dona Andrea-Canatan- Sta Filomena-San Roque	27.56	87	Jeepney	Route is proposed to transport passengers to New Corella vice-versa through a different road alignment
ROUTE 16	KAPALONG-ASUNCION-NEW CORELLA via Camoning Brgy. Road-San Vicente- Canatan-Silangan-New Sambog	17.19	404	Jeepney	Route is proposed to transport passengers to New Corella and vice-versa through a different road alignment
ROUTE 17	ASUNCION-NEW CORELLA via Monte Carlo-Del Pilar	15.05	245	Jeepney	
ROUTE 18	TAGUM-ASUNCION via Cuambogan-Buclad	13.49	204	Jeepney	Route is proposed to transport passengers to and from Asuncion through a different road alignment that will cater passengers along the way
ROUTE 19	TAGUM CITY-ASUNCION-CAMANSA via Sagayen-Napungas-Sonlon	48.26	962	Jeepney	
ROUTE 20	TAGUM CITY-ASUNCION-KAPALONG via Pagsabangan-New Bantayan-Ilog- National Highway	25.19	408	Jeepney	Route is proposed to transport passengers to and from Asuncion and Kapalong through a different road alignment

ROUTE MARK	ROUTE NAME	LENGTH	PASSENGER DEMAND (Medium Term)	MODE OF TRANSPORT	JUSTIFICATION
ROUTE 21	ASUNCION-KAPALONG via Canatan-San Vicente-Butay	16.99	962	Jeepney	This route is proposed to transport passengers to and from Kapalong through a different road alignment
ROUTE 22	STO. TOMAS-TALAINGOD via Mamacao-Narra	16.58	1,333	Jeepney	Brgy. Mamacao has a large passenger volume. The route is created to cater the passengers to and from Sto. Tomas and Talaingod
ROUTE 23	KAPALONG-PAITON, TALAINGOD via Gabuyan-Semong-Dagohoy-Angelo	19.68	791	Jeepney	Route is created to cater passengers from Kapalong Proper to Sitio Paiton, Brgy. Dagohoy, Talaingod and vice versa
ROUTE 24	PANABO CITY-STO. TOMAS via Minda-New Malitbog	32.58	2,663	Jeepney	Existing Route
ROUTE 25	STO. TOMAS-SINDATON, PANABO CITY via Tulalian	13.64	933	Jeepney	Highly recommended by both LGUs (Sto. Tomas and Panabo City) for accessibility of residents
ROUTE 26	PANABO CITY-MABUHAY, CARMEN	17.42	633	Jeepney	Upgrading of transportation mode from tricycle to Jeepney for safety and convenience of the riding public
ROUTE 27	PANABO CITY-TUBOD, CARMEN	14.01	746	Jeepney	Upgrading of mode of transport from tricycle to Jeepney for safety and convenience of riding public
ROUTE 28	CARMEN-PANABO CITY Via La Paz-Taba	17.39	762	Jeepney	Upgrading of mode of transport from tricycle to Jeepney for safety and convenience of riding public
ROUTE 29	PANABO CITY-CARMEN-B.E. DUJALI- STO. TOMAS via Tuganay-Crossing San Miguel- Kinamayan	33.54	1,042	Jeepney	Existing Route

ROUTE MARK	ROUTE NAME	LENGTH	PASSENGER DEMAND (Medium Term)	MODE OF TRANSPORT	JUSTIFICATION
ROUTE 30	TAGUM CITY-B.E. DUJALI via Magupising-Balisong	15.01	891	Jeepney	Existing Route
ROUTE 31	STO. TOMAS-B.E. DUJALI Via La Libertad-Casig-ang	16.06	541	Jeepney	Route is proposed to transport passengers to Sto. Tomas vice-versa through different road alignment
ROUTE 32	TAGUM CITY-B.E. DUJALI-STO. TOMAS via Magupising-Talomo-Casig-ang	32.35	887	Jeepney	Route is proposed to transport passengers to Sto. Tomas vice-versa through different road alignment
ROUTE 33	TAGUM CITY-CABIDIANAN, NEW CORELLA via Limbaan-Macgum	32.76	91	Jeepney	Existing route with existing mode of transportation but no franchise
ROUTE 34	TAGUM CITY-ASUNCION-SAN ISIDRO via Igangon	41.05	83	UV	Point-to-point route
ROUTE 35	SAWATA, SAN ISIDRO - SITIO PATEL, KAPALONG via Libuton-Datu Balong-Monte Dujali	28.33	41	UV	Point-to-point route
ROUTE 36	TAGUM CITY - KAPALONG	25.19	208	UV	Point-to-point route
ROUTE 37	TAGUM CITY - STO. TOMAS	27.75	62	UV	Point-to-point route
ROUTE 38	PANABO CITY - STO. TOMAS	33.08	187	UV	Point-to-point route

ROUTE MARK	ROUTE NAME	LENGTH	PASSENGER DEMAND (Medium Term)	MODE OF TRANSPORT	JUSTIFICATION
ROUTE 39	TAGUM CITY - PANABO CITY	27.58	1,875	UV	Point-to-point route
ROUTE 40	TAGUM CITY - NEW CORELLA	17.01	208	UV	Point-to-point route

8.3 Required Number of Units per Route

In the analysis of the demand and supply, the following were acquired to compute for the required no. of units per route:

- Viable Load Factor is the minimum average load factor at which transit operation earns a reasonable or viable profit; considered to be **0.75**.
- Utilization rate is the ratio of the average number of units actually operating per day to the total fleet; considered to be **0.9**.
- Number of Round trips is the average number of round trips made per vehicle per day. It can be computed as follows:

where: Ave. Turnaround time = Average travel time * 1.3

Ave. Travel time = Total length for one round trip / average speed

Average speed = considered to be 35 kph

 Average Seating Capacity –is the average number of available seats offered by transit vehicles in a given route. The following are the Average Seating Capacities used for each public transport mode:

•	Articulated bus or double decker bus	- 120
•	Standard Bus	- 50
•	Minibus	- 35
•	Jeepney/ UV	- 18
•	Filcab	- 12
•	Tricycle	- 3

- Passenger Demand –is the actual volume of passengers along a given section of the route. It
 was derived by Passenger Count Surveys and License Plate Surveys conducted at specific
 points along the route.
- Required No. of Units is the expected number of transport units operating in a route per day.

where:

PD = Passenger Demand

VLF = Viable Load Factor

ASC = Average Seating Capacity

NRT = Number of Round Trips

• Fleet Size - is the total number of transport units operating in a route.

Fleet Size = NU / UR

where:

NU = Number of units

UR = Utilization Rate

Table No. 8.10: Proposed Routes within Davao Del Norte

ROUTE MARK	ROUTE NAME	LENGTH	MODE OF TRANSPORT	REQUIRED NO. OF UNITS (2020)	REQUIRED NO. OF UNITS (MEDIUM TERM- 3 YEARS)
ROUTE 1	ragum city-sitio patel, kapalong via Igangon-Sawata-Libuton-Datu Balong-Monte Dujali	69.05	Standard Bus	11	12
ROUTE 2	TAGUM CITY-ASUNCION-SAN ISIDRO via Km.9 Sagayen-Pamacaun-San Miguel	43.52	Standard Bus	3	3
ROUTE 3	TAGUM CITY-SITIO PATEL, KAPALONG via Florida-Suaon-Gupitan	65.92	Standard Bus	14	15
ROUTE 4	TAGUM CITY-ASUNCION - KAPALONG- TALAINGOD	33.11	Standard Bus	25	26
ROUTE 5	TAGUM CITY-CARMEN-PANABO CITY	27.58	Standard Bus	107	115
ROUTE 6	PANABO CITY-CARMEN-STO.TOMAS- KAPALONG-TALAINGOD	54.47	Standard Bus	34	36
ROUTE 7	TAGUM CITY-B.E. DUJALI-STO. TOMAS via Salvacion-Kinamayan	27.75	Standard Bus	12	13
ROUTE 8	KAPALONG-SAN ISIDRO via Mabantao-Florida-Suaon- Sambayon-Libuton-Sawata	32.47	Jeepney	22	23
ROUTE 9	KAPALONG-SAN ISIDRO via Capungagan-Mabantao-New Boholano-San Miguel	23.8	Jeepney	3	3
ROUTE 10	TAGUM CITY-NEW CORELLA	17.01	Standard Bus	6	7
ROUTE 11	NEW CORELLA-CAMANSA, ASUNCION via San Roque-Macgum	27.71	Jeepney	17	18

ROUTE MARK	ROUTE NAME	LENGTH	MODE OF TRANSPORT	REQUIRED NO. OF UNITS (2020)	REQUIRED NO. OF UNITS (MEDIUM TERM- 3 YEARS)
ROUTE 12	TAGUM CITY-NEW CORELLA-SONLON, ASUNCION via Limbaan-Crossing Sto. Nino- Macgum	33.76	Jeepney	13	13
ROUTE 13	TAGUM CITY-NEW CORELLA via Magdum-San Agustin-New Bohol- New Cortez-Carcor	26.57	Jeepney	25	26
ROUTE 14	ASUNCION-NEW CORELLA via Mahayahay-Paton	15.09	Jeepney	2	2
ROUTE 15	KAPALONG-ASUNCION-NEW CORELLA via Capungagan-Dona Andrea- Canatan-Sta Filomena-San Roque	27.56	Jeepney	3	3
ROUTE 16	KAPALONG-ASUNCION-NEW CORELLA via Camoning Brgy. Road-San Vicente- Canatan-Silangan-New Sambog	17.19	Jeepney	5	6
ROUTE 17	ASUNCION-NEW CORELLA via Monte Carlo-Del Pilar	15.05	Jeepney	3	3
ROUTE 18	TAGUM CITY-ASUNCION via Cuambogan-Buclad	13.49	Jeepney	3	3
ROUTE 19	TAGUM CITY-ASUNCION-CAMANSA via Sagayen-Napungas-Sonlon	48.26	Jeepney	35	37
ROUTE 20	TAGUM CITY-ASUNCION-KAPALONG via Pagsabangan-New Bantayan-Ilog- National Highway	25.19	Jeepney	8	8
ROUTE 21	ASUNCION-KAPALONG via Canatan-San Vicente-Butay	16.99	Jeepney	12	13
ROUTE 22	STO. TOMAS-TALAINGOD via Mamacao-Narra	16.58	Jeepney	16	17
ROUTE 23	KAPALONG-PAITON, TALAINGOD via Gabuyan-Semong-Dagohoy-Angelo	19.68	Jeepney	12	13
ROUTE 24	PANABO CITY-STO. TOMAS via Minda-New Malitbog	32.58	Jeepney	64	68
ROUTE 25	STO. TOMAS-SINDATON, PANABO CITY via Tulalian	13.64	Jeepney	10	11

ROUTE MARK	ROUTE NAME	LENGTH	MODE OF TRANSPORT	REQUIRED NO. OF UNITS (2020)	REQUIRED NO. OF UNITS (MEDIUM TERM- 3 YEARS)
ROUTE 26	PANABO CITY-MABUHAY, CARMEN	17.42	Jeepney	8	9
ROUTE 27	PANABO CITY-TUBOD, CARMEN	14.01	Jeepney	8	9
ROUTE 28	PANABO CITY-CARMEN via La Paz- Taba	17.39	Jeepney	10	10
ROUTE 29	PANABO CITY-CARMEN-B.E. DUJALI- STO. TOMAS via Tuganay-Crossing San Miguel- Kinamayan	33.54	Jeepney	25	27
ROUTE 30	TAGUM CITY-B.E. DUJALI via Magupising-Balisong	15.01	Jeepney	10	10
ROUTE 31	STO. TOMAS -B.E. DUJALI- via La Libertad - Casig-ang -	16.06	Jeepney	7	7
ROUTE 32	TAGUM CITY-B.E. DUJALI-STO. TOMAS Via Magupising-Talomo-Casig-ang	32.35	Jeepney	22	23
ROUTE 33	TAGUM CITY-CABIDIANAN, NEW CORELLA via Limbaan-Macgum	32.76	Jeepney	3	3
ROUTE 34	TAGUM CITY-ASUNCION-SAN ISIDRO via Igangon	41.05	UV	3	3
ROUTE 35	SAWATA, SAN ISIDRO - SITIO PATEL, KAPALONG via Libuton-Datu Balong-Monte Dujali	28.33	UV	1	1
ROUTE 36	TAGUM CITY - KAPALONG	25.19	UV	4	4
ROUTE 37	TAGUM CITY - STO. TOMAS	27.75	UV	2	2
ROUTE 38	PANABO CITY - STO. TOMAS	33.08	UV	4	5
ROUTE 39	TAGUM CITY - PANABO CITY	27.58	UV	40	43
ROUTE 40	TAGUM CITY - NEW CORELLA	17.01	UV	3	4

Source: PEO

Table 8.10 above provides the information on the proposed routes with their respective road length in kilometres, the recommended transport mode, proposed fleet size on the first year of implementation, which is 2020; and the proposed number of units required in three years thereafter. After six months from date of implementation, there shall be an initial assessment to be

conducted to be able to determine the actual and appropriate number of units and transport mode for every public transport route. Based on this assessment, necessary adjustments shall be made on the fleet size to be able to address the need for public transport services. The LPTRP shall be updated at least once every three years.

8.4Proposed Public Transport Routes

There are 42 proposed public transport routes, which are categorized as regular (83.33%) and point to point express service (16.67%). Regular service routes are served by either standard bus or jeepney vehicles while express service is served exclusively by UV vehicles. Figures 8.2 to 8.10 show the route maps and general information of proposed regular service routes served by standard bus. While Figures 8.11 to 8.36 show the route maps and general information of proposed regular service routes served by jeepneys. Finally, Figures 8.37 to 8.432 show the route maps and general information of proposed express service routes served exclusively by UV vehicles.

TAGUM CITY – SITIO PATEL, KAPALONG **Route Description** via Igangon – Sawata – Libuton - Datu **Balong - Monte Dujali** Tagum Terminal-Tagum Diversion Rd-Alignment Nat'l Rd (via Tagum-Panabo Circumferential Road)-Asuncion Terminal-National Road-Igangon Terminal-Sawata Terminal- along Sawata-Libuton-Monte Dujali-Patel Prov'l Road 69.05 km Length **PPHPD** 103 **Passenger Demand** 412 **Population Served** 86, 396 **Average Travel Time** 236.74 min **Existing Public Transport** Bus, Jeepney, Motorcycle Mode **Proposed Public** BUS - 11 units **Transport Mode -Number of Units Fleet Size** 13 units **Route Map Existing Route** Remarks:

Figure 8.2: Proposed Route 1- TAGUM CITY – SITIO PATEL, KAPALONG via Igangon – Sawata – Libuton - Datu Balong - Monte Dujali

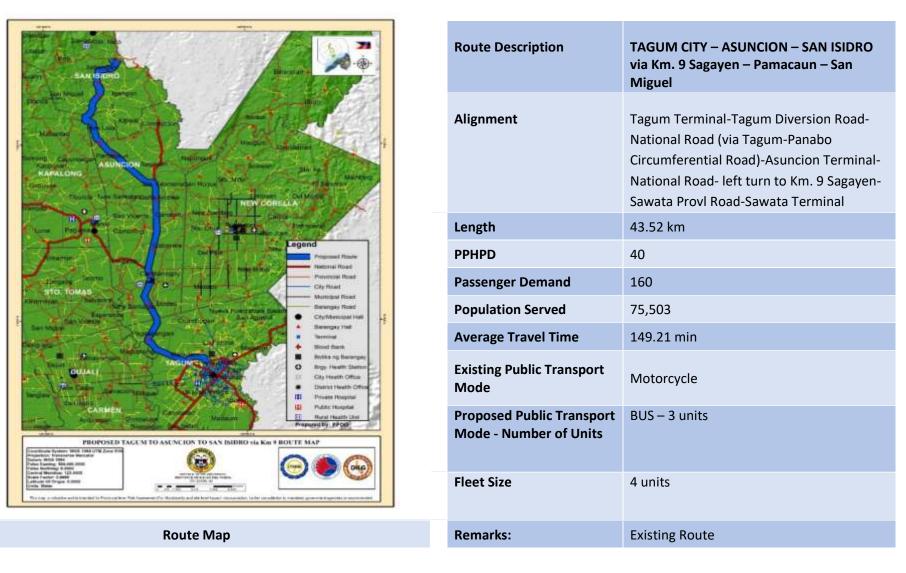


Figure 8.3: Proposed Route 2- TAGUM CITY – ASUNCION – SAN ISIDRO via Km. 9 Sagayen – Pamacaun – San Miguel

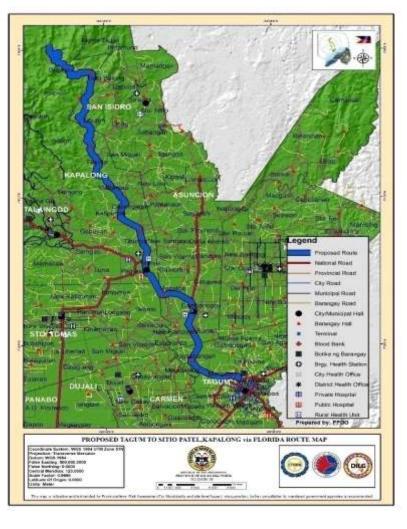


Figure 8.4: Proposed Route 3- TAGUM CITY – SITO PATEL, KAPALONG via Florida – Suaon – Gupitan

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Route Description	TAGUM CITY – SITO PATEL, KAPALONG via Florida – Suaon – Gupitan
Alignment	Tagum Terminal-Tagum Diversion Road- Right turn to National Road (via Tagum-Panabo Circumferential Road)-Asuncion Terminal-National Road- Kapalong Terminal- Prov'l Road(Kapalong-Mabantao-Florida)- Prov'l Road(Florida-Suaon Jct. Gupitan Road)-along Prov'l Road(Gupitan-Monte Dujali)-right turn along Prov'l Road to Patel
Length	65.92 km
PPHPD	124
Passenger Demand	496
Population Served	125,028
Average Travel Time	226.01 mins
Existing Public Transport Mode	Motorcycle
Proposed Public Transport Mode - Number of Units	BUS – 14 units
Fleet Size	16 units
Remarks:	New Route

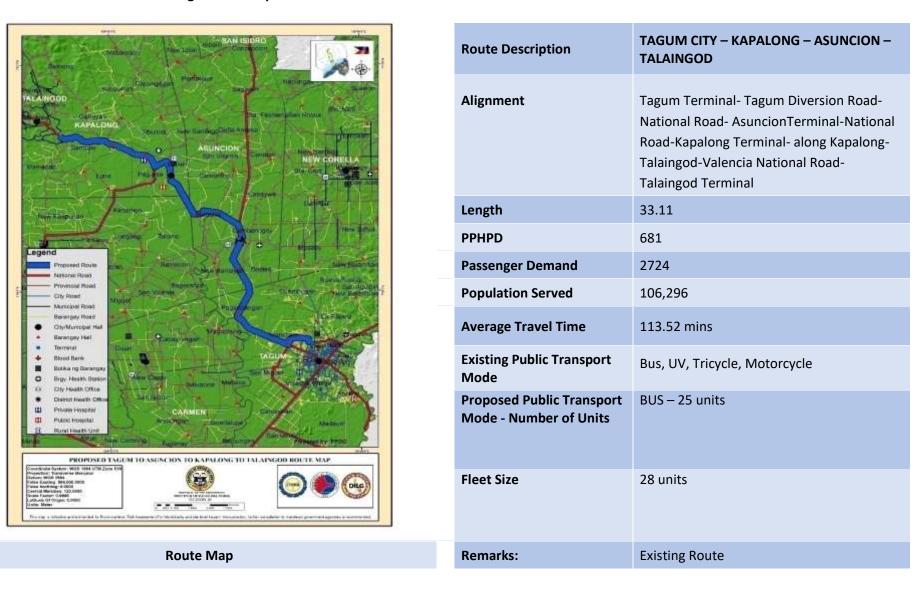


Figure 8.5: Proposed Route 4 - TAGUM CITY - KAPALONG - ASUNCION - TALAINGOD



Figure 8.6: Proposed Route 5-TAGUM CITY – CARMEN – PANABO CITY

Route Description	TAGUM CITY – CARMEN – PANABO CITY
Alignment	Tagum City Terminal -Tagum Diversion Road- along Davao-Agusan (Daang Maharlika) National Highway- Carmen Terminal-Panabo City Terminal
Length	27. 58 km
PPHPD	3,003
Passenger Demand	12,012
Population Served	152,326
Average Travel Time	94.56 min
Existing Public Transport Mode	Bus, UV, Tricycle, Motorcycle
Proposed Public Transport Mode - Number of Units	Bus - 107 units
Fleet Size	119 units
Remarks:	Existing Route-Inter Regional



Figure 8.7: Proposed Route 6 -PANABO CITY - CARMEN - STO. TOMAS - KAPALONG - TALAINGOD

Route Description	PANABO CITY – CARMEN – STO. TOMAS – KAPALONG - TALAINGOD
Alignment	Panabo Terminal- along Davao-Agusan (Daang Maharlika) National Highway - Carmen Terminal- left turn to Sto. Tomas- Carmen National Road- along Tagum- Panabo Circumferential Road to Sto. Tomas Terminal –Kapalong Terminal- Talaingod Terminal
Length	54.47 km
PPHPD	1,450
Passenger Demand	5,800
Population Served	165,418
Average Travel Time	186.75 min
Existing Public Transport Mode	Bus, UV, Tricycle, Motorcycle
Proposed Public Transport Mode - Number of Units	Bus – 155 units
Fleet Size	173 units
Remarks:	Existing Route

Route Map



Figure 8.8: Proposed Route 7 - TAGUM CITY - BRAULIO E. DUJALI - STO. TOMAS via Salvacion-Kinamayan

Route Description	TAGUM CITY – BRAULIO E. DUJALI – STO. TOMAS via Salvacion-Kinamayan
Alignment	Tagum Terminal- Tagum Diversion Road- along Capitol Road and San Miguel-Dujali Road- right turn to Prov'l Road (Bdry. Tagum- crossing Kinamayan-Sto. Tomas)- Sto. Tomas Terminal
Length	27.75 km
PPHPD	332
Passenger Demand	1,328
Population Served	129,695
Average Travel Time	95.14 min
Existing Public Transport Mode	Bus, Jeepney, Motorcycle
Proposed Public Transport Mode - Number of Units	Bus – 12 units
Fleet Size	14 units
Remarks:	Existing Route

PROPOSED KAPALONG TO SAN ISIDRO ROUTE MAP

Figure 8.9: Proposed Route 8 -KAPALONG – SAN ISIDRO via Mabantao – Florida – Suaon – Sambayon – Libuton – Sawata

Route Description	KAPALONG – SAN ISIDRO via Mabantao – Florida – Suaon – Sambayon – Libuton – Sawata
Alignment	Kapalong Terminal- Prov'l Road(Kapalong-Mabantao-Florida)- Prov'l Road(Florida-Suaon Jct. Gupitan Road)- right turn to Prov'l Road(Jct. Suaon-Libuton)- right turn to Prov'l Road to Sawata Terminal
Length	32.47 km
PPHPD	215
Passenger Demand	860
Population Served	36,541
Average Travel Time	111.33 mins
Existing Public Transpor Mode	t Motorcycles
Proposed Public Transponde - Number of Unit	· · · ·
Fleet Size	25 units
Remarks:	New Route



Figure 8.10: Proposed Route 9 - KAPALONG - SAN ISIDRO via Capungagan - Mabantao - New Boholano - San Miguel

Route Description	KAPALONG – SAN ISIDRO via Capungagan – Mabantao – New Boholano – San Miguel
Alignment	Kapalong Terminal- Prov'l Road(Kapalong-Mabantao-Florida)- right turn to Prov'l Road(Pandulian-Jct. San Miguel)- left turn to Prov'l Road (Km. 9 Sagayen-Sawata Prov'l Road)
Length	23.80 km
PPHPD	33
Passenger Demand	132
Population Served	76,503
Average Travel Time	81.60 mins
Existing Public Transport Mode	Motorcycles
Proposed Public Transport Mode - Number of Units	Jeepney – 3 units
Fleet Size	4 units
Remarks:	New Route

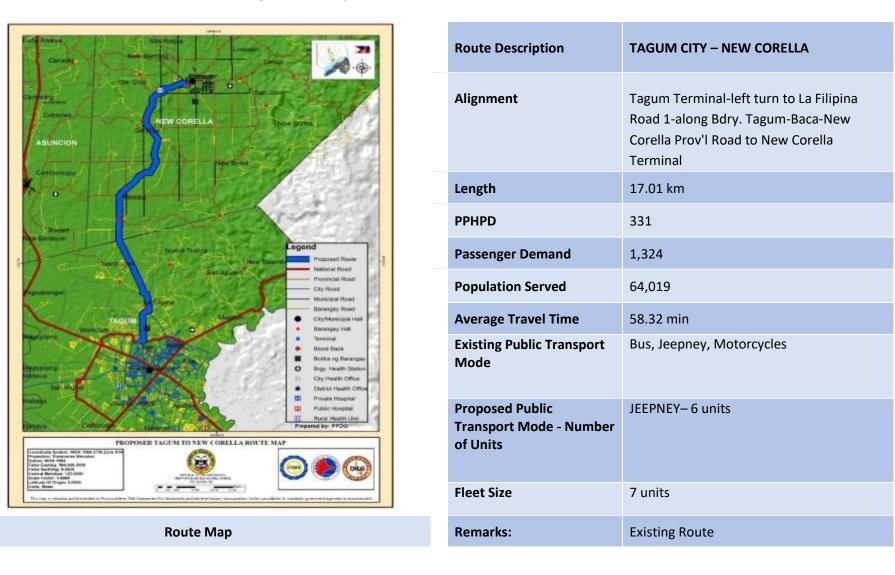


Figure 8.11: Proposed Route 10 - TAGUM CITY - NEW CORELLA

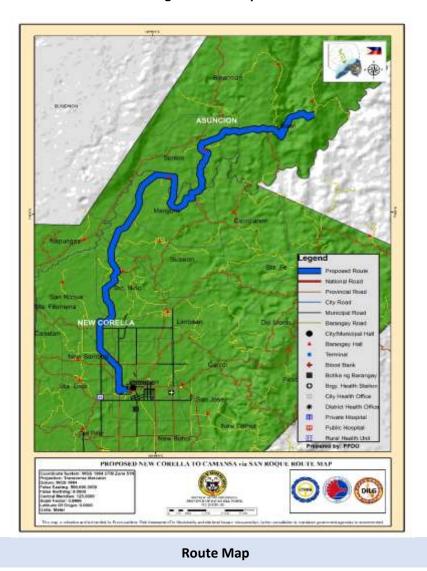


Figure 8.12: Proposed Route 11 - NEW CORELLA – CAMANSA, ASUNCION via San Roque – Macgum

Route Description	NEW CORELLA – CAMANSA, ASUNCION via San Roque – Macgum
Alignment	New Corella Terminal-along New Corella- Sto. Nino-Macgum Prov'l Road-left turn to Saug-Sonlon- right turn to Sonlon-New Visayas-Camansa Prov'l Road
Length	27.72 km
PPHPD	164
Passenger Demand	656
Population Served	19,858
Average Travel Time	95.01 mins
Existing Public Transport Mode	Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 17 units
Fleet Size	18 units
Remarks:	New Route

PROPOSED TAGUM TO NEW CORELLA TO SONLON ROUTE MAP **Route Map**

Figure 8.13: Proposed Route 12 -TAGUM CITY – NEW CORELLA – SONLON, ASUNCION via Limbaan – Crossing Sto. Nino – Macgum

Route Description	TAGUM CITY – NEW CORELLA – SONLON, ASUNCION via Limbaan – Crossing Sto. Nino – Macgum
Alignment	Tagum Terminal-left turn to La Filipina Road 1-along Bdry. Tagum-Baca-New Corella Prov'l Road to New Corella Terminal-along New Corella-Saug Prov'l Road to Sonlon Proper
Length	33.76 km
PPHPD	122
Passenger Demand	488
Population Served	75,865
Average Travel Time	115.75 min
Existing Public Transport Mode	Bus, Jeepney, Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 13 units
Fleet Size	15 units
Remarks:	New Route



Figure 8.14: Proposed Route 13 -TAGUM CITY – NEW CORELLA via Magdum – San Agustin – New Bohol – New Cortez – Carcor

Route Description	TAGUM CITY – NEW CORELLA via Magdum – San Agustin – New Bohol – New Cortez – Carcor
Alignment	Tagum Terminal-along Tagum Diversion Rd-left turn to Davao-Agusan NationalRoad-left turn to Botanical Park Road 1- along Sarona Road -Demetria Ave- Labastida Ave- along Prov'l Road (New Bohol to New Corella)- New Corella Terminal
Length	26.57 km
PPHPD	328
Passenger Demand	1,312
Population Served	36,104
Average Travel Time	91.10 min
Existing Public Transport Mode	Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 25 units
Fleet Size	28 units
Remarks:	New Route

Route	Map
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Figure 8.15: Proposed Route 14 -ASUNCION - NEW CORELLA via Mahayahay - Paton

Route Description	ASUNCION – NEW CORELLA via Mahayahay – Paton
Alignment	Asuncion Terminal-Solon Stalong Prov'l Road (Asuncion-Monte Carlo-Del Pilar)- right turn to Prov'l Road from Mahayahay to Mesaoy- along Prov'l Road to El Unido- New Corella Terminal
Length	15.09 kms
PPHPD	36
Passenger Demand	144
Population Served	37,622
Average Travel Time	51.74 min
Existing Public Transport Mode	Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 2 units
Fleet Size	3 units
Remarks:	New Route

City Hearth Office

Figure 8.16: Proposed Route 15 -KAPALONG – ASUNCION – NEW CORELLA via Capungagan – Dona Andrea – Canatan – Sta Filomena - San Roque

Route Description	KAPALONG – ASUNCION – NEW CORELLA via Capungagan – Dona Andrea – Canatan – Sta Filomena - San Roque
Alignment	Kapalong Terminal – along Capungagan to Dona Andrea- Nat'l Highway – Canatan - Jct Monte Carlo - Upper Cabaywa - Canatan - Sta Filomena - San Roque - New Corella Terminal
Length	27.56 km
PPHPD	21
Passenger Demand	84
Population Served	36,211
Average Travel Time	76.70 min
Existing Public Transport Mode	Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 3 units
Fleet Size	4 units
Remarks:	New Route

Figure 8.17: Proposed Route 16 -KAPALONG – ASUNCION – NEW CORELLA via Camoning Brgy Rd – San Vicente – Canatan – Silangan – New Sambog



Route Description	KAPALONG – ASUNCION – NEW CORELLA via Camoning Brgy Rd – San Vicente – Canatan – Silangan – New Sambog
Alignment	Kapalong Terminal - Bdry Maniki - Camoning - Canatan - Silangan - New Sambog - New Corella Terminal
Length	17.19 km
PPHPD	97
Passenger Demand	388
Population Served	41,372
Average Travel Time	58.94 min
Existing Public Transport Mode	Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 5 units
Fleet Size	6 units
Remarks:	New Route



Figure 8.18: Proposed Route 17 -ASUNCION – NEW CORELLA via Monte Carlo – Del Pilar

Route Description	ASUNCION – NEW CORELLA via Monte Carlo – Del Pilar
Alignment	Asuncion Terminal – Solon St Monte Carlo - Del Pilar - New Corella Terminal
Length	15.05 km
PPHPD	59
Passenger Demand	236
Population Served	33,431
Average Travel Time	51.60 min
Existing Public Transport Mode	Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 3 units
Fleet Size	4 units
Remarks:	New Route

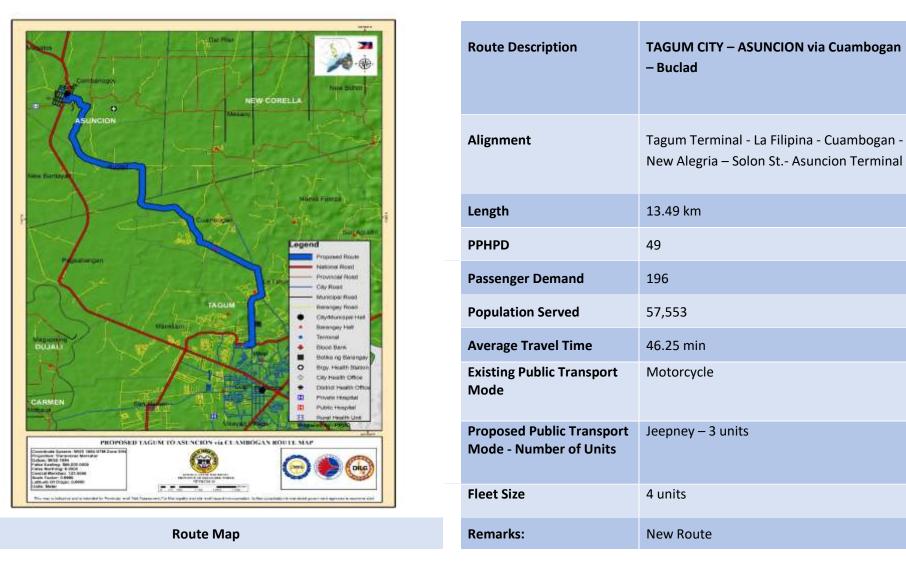


Figure 8.19: Proposed Route 18 -TAGUM CITY – ASUNCION via Cuambogan – Buclad

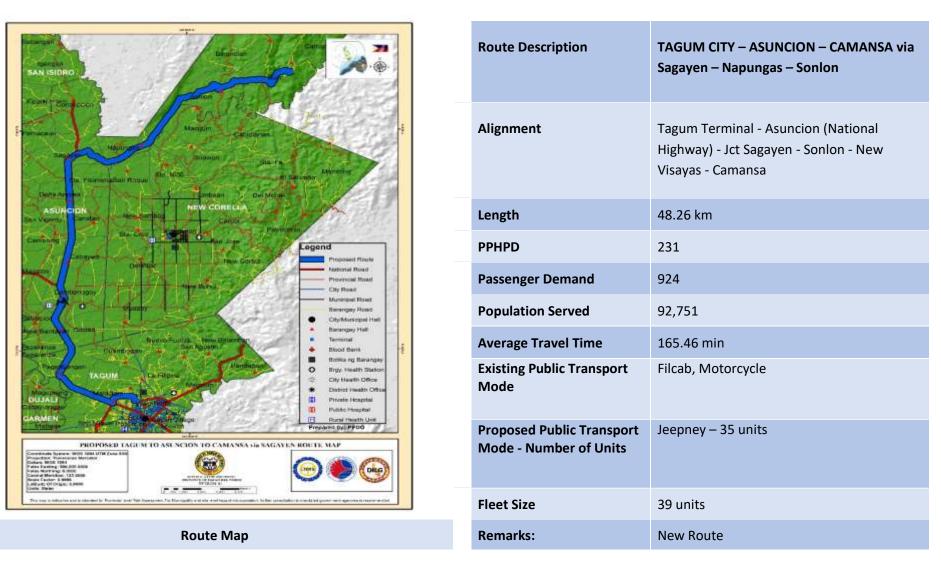


Figure 8.20: Proposed Route 19 -TAGUM CITY – ASUNCION – CAMANSA via Sagayen – Napungas – Sonlon

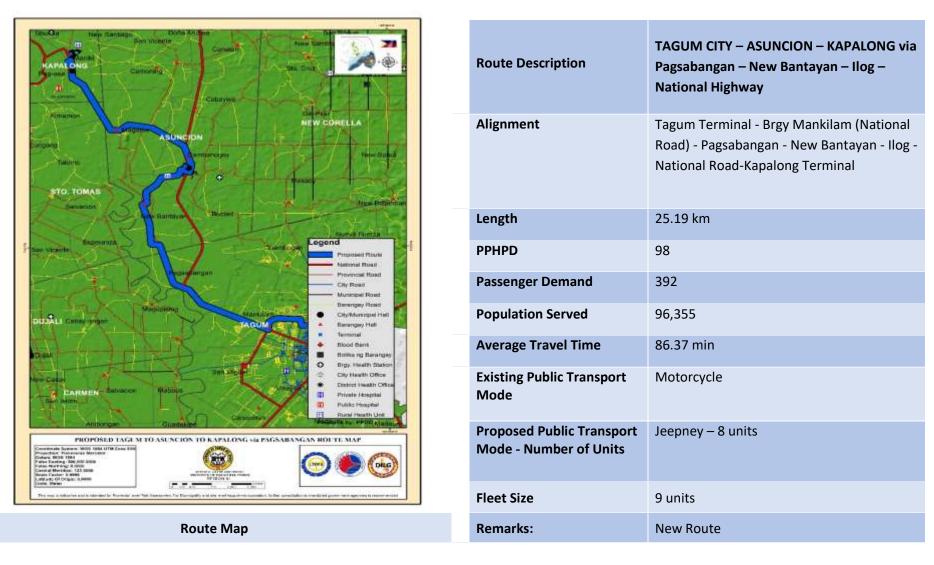


Figure 8.21: Proposed Route 20 -TAGUM CITY – ASUNCION – KAPALONG via Pagsabangan – New Bantayan – Ilog – National Highway



Figure 8.22: Proposed Route 21 -ASUNCION – KAPALONG via Canatan – San Vicente – Butay

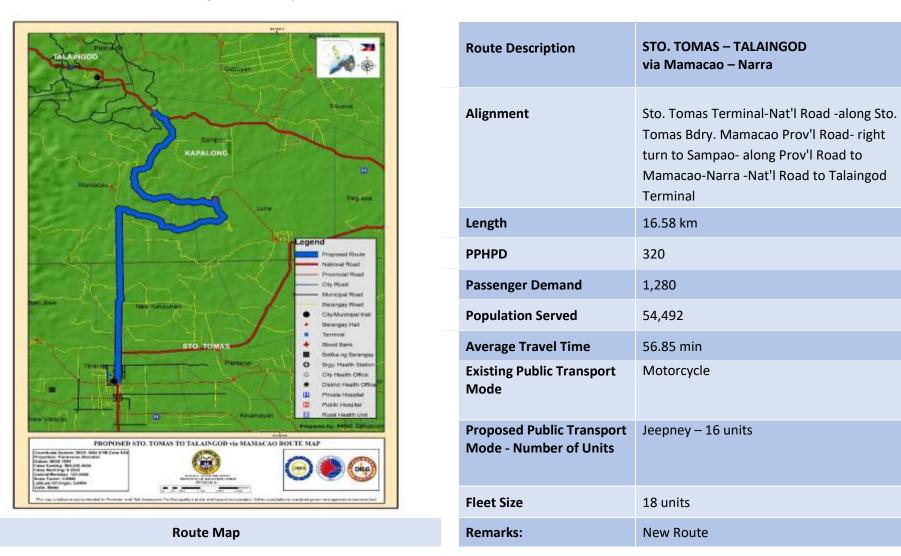


Figure 8.23: Proposed Route 22 -STO. TOMAS – TALAINGOD via Mamacao – Narra

Chantano	Fuel vetien of Duenesed Devite Dlan
Chabter 8	Evaluation of Proposed Route Plan



Figure 8.24: Proposed Route 23 -KAPALONG – PAITON, TALAINGOD via Gabuyan – Semong – Dagohoy – Angelo

Route Description	KAPALONG – PAITON, TALAINGOD via Gabuyan – Semong – Dagohoy – Angelo
Alignment	Kapalong Terminal-along Kapalong- Talaingod-Valencia National Road- right turn to Highway Gabuyan-Semong- Dagohoy Prov'l Road- access to Angelo- Dagohoy Prov'l Road and along Sto. Nino- Daligdigon-Paiton Road to Paiton Proper
Length	19.68 km
PPHPD	190
Passenger Demand	760
Population Served	36,541
Average Travel Time	67.47 min
Existing Public Transport Mode	Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 12 unit
Fleet Size	14 units
Remarks:	New Route



Figure 8.25: Proposed Route 24 -PANABO CITY – STO. TOMAS via Minda-New Malitbog

Route Description	PANABO CITY – STO. TOMAS via New Malitbog
Alignment	Panabo Terminal- along Davao-Agusan (Daang Maharlika) National Highway -left turn to Tadeco Road-along National Road to Sto. Tomas Terminal
Length	32.58 km
PPHPD	639
Passenger Demand	2556
Population Served	165,728
Average Travel Time	111.70 min
Existing Public Transport Mode	Tricycle, Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 64units
Fleet Size	72 units
Remarks:	Existing Route



Figure 8.28: Proposed Route 25 -STO. TOMAS – SINDATON, PANABO CITY via Tulalian



Figure 8.27: Proposed Route 26 -PANABO CITY – MABUHAY, CARMEN

Route Description	PANABO CITY – MABUHAY, CARMEN
Alignment	Panabo Terminal- along Davao-Agusan (Daang Maharlika) National Highway -left turn to Tadeco Road- along Panabo-Nanyo- Manay Road And Dalisay-Mabuhay Prov'l Road
Length	17.42 km
PPHPD	152
Passenger Demand	608
Population Served	71,316
Average Travel Time	59.73 mins
Existing Public Transport Mode	Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 8 units
Fleet Size	9 units
Remarks:	New Route

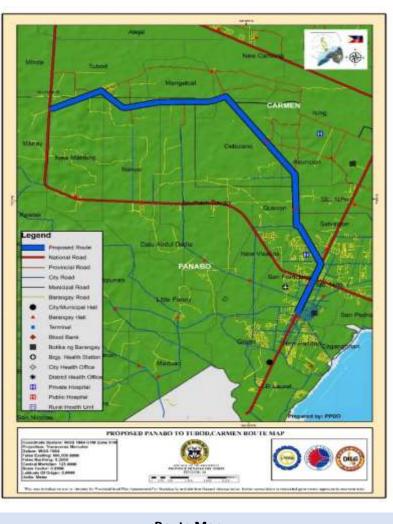


Figure 8.28: Proposed Route 27 -PANABO CITY – TUBOD, CARMEN

Route Description	PANABO CITY – TUBOD, CARMEN
Alignment	Panabo Terminal -along Daang Maharlika National Highway - left turn to Bangoy St Right turn to Nigara-Quezon Road - left turn to Cebulano - along Cebulano- Mangalcal Prov'l Road - left turn to Tubod- Basa-Mangalcal Prov'l Road - left turn to Jct. National Road
Length	14.01 km
PPHPD	179
Passenger Demand	716
Population Served	44,792
Average Travel Time	48.03 min
Existing Public Transport Mode	Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 8 units
Fleet Size	9 units
Remarks:	New Route

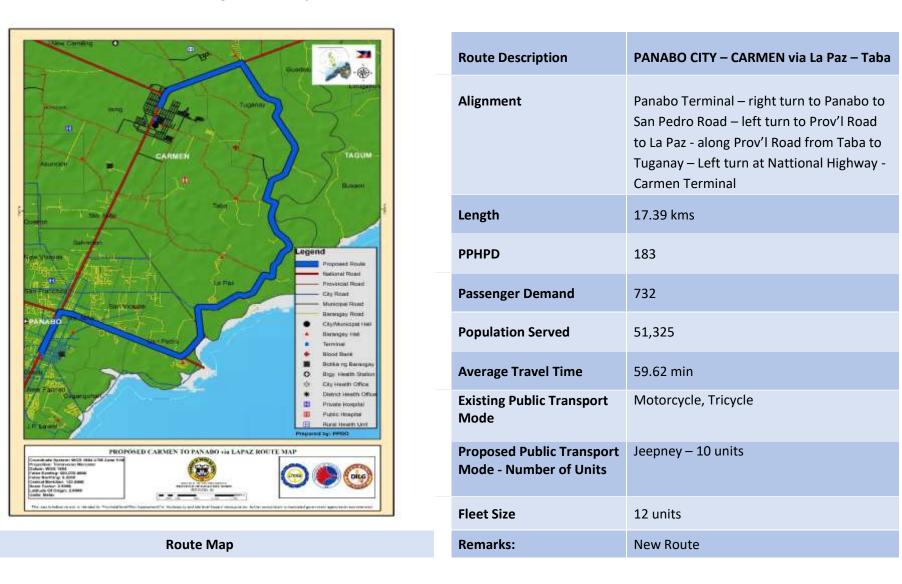


Figure 8.29: Proposed Route 28 -PANABO CITY - CARMEN via La Paz - Taba

Route Description PANABO CITY - CARMEN - BRAULIO E. DUJALI - STO. TOMAS via Tuganay -**Crossing San Miguel – Kinamayan** Alignment Panabo Terminal -along Daang Maharlika National Highway - Carmen Terminal- left turn to Tuganay-Anibongan-San Isidro Prov'l Road- along Dujali-New Casay Prov'l Road-Dujali Terminal- along Dujali-San Miguel Prov'l Road to San Miguel-Crossing Kinamayan Prov'l Rd- Left turn to Prov'l Road to Tibal-og- Sto Tomas Terminal Length 33.54 km **PPHPD** 250 **Passenger Demand** 1000 **Population Served** 120,518 **Average Travel Time** 114.99 min **Existing Public** Jeepney, Motorcycle **Transport Mode** PROPOSED PANABO TO CARMEN TO BUJALI TO STO, TOWAS 116 KINAMAYAN ROUTE MAP Jeepney – 25 units **Proposed Public Transport Mode -Number of Units Fleet Size** 28 units **Route Map** Remarks: **New Route**

Figure 8.30: Proposed Route 29 -PANABO CITY – CARMEN – BRAULIO E. DUJALI – STO. TOMAS via Tuganay – Crossing San Miguel – Kinamayan

PROPOSED TAGUM TO B.E. DUJALLYIA MAGUPISING ROUTE MAP

Route Map

Figure 8.31: Proposed Route 30 - TAGUM CITY - BRAULIO E. DUJALI via Magupising - Balisong

Route Description	TAGUM CITY – BRAULIO E. DUJALI via Magupising – Balisong
Alignment	Tagum Terminal- Tagum Diversion Road- along Capitol Road and San Miguel-Dujali Road- Right turn to Prov'l Road (Bdry. Tagum- Crossing Kinamayan-Sto Tomas)- left turn to Dujali-Magupising-Balisong Road -Dujali Terminal
Length	15.01 km
PPHPD	214
Passenger Demand	856
Population Served	83,396
Average Travel Time	51.46 min
Existing Public Transport Mode	Jeepney, Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 10 units
Fleet Size	12 units
Remarks:	New Route

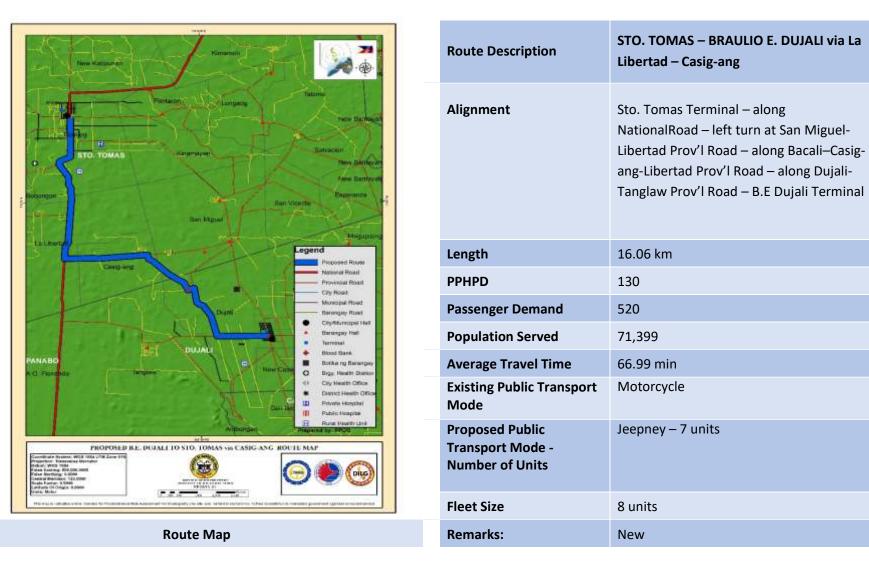


Figure 8.32: Proposed Route 31- STO. TOMAS - BRAULIO E. DUJALI via La Libertad - Casig-ang



Figure 8.33: Proposed Route 32 - TAGUM CITY - BRAULIO E. DUJALI - STO. TOMAS via Magupising - Talomo - Lunga-og

Route Description	TAGUM CITY – BRAULIO E. DUJALI – STO. TOMAS via Magupising – Talomo – Lunga-og
Alignment	Tagum Terminal- Tagum Diversion Road- along Capitol Road and San Miguel-Dujali Road- right turn to Prov'l Road (Bdry. Tagum- Talomo)- along Kimamon-Lungaog- Talomo Prov'l Road-left turn to Prov'l Road to FeederRoad 3-Sto. Tomas Terminal
Length	32.35 km
PPHPD	213
Passenger Demand	852
Population Served	100,154
Average Travel Time	110.91 mins
Existing Public Transport Mode	Motorcycle
Proposed Public Transport Mode - Number of Units	Jeepney – 22 units
Fleet Size	25 units
Remarks:	New Route

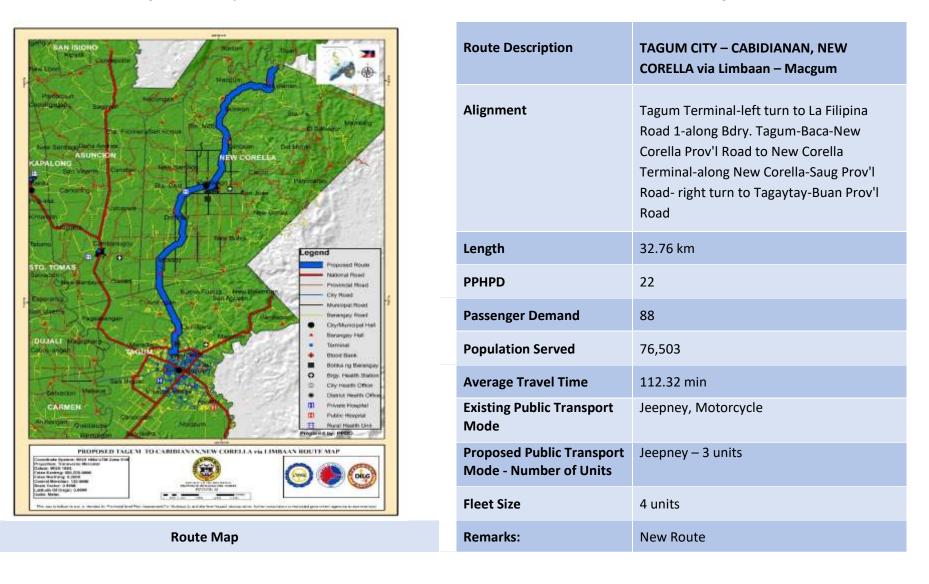


Figure 8.34: Proposed Route 33 - TAGUM CITY - CABIDIANAN, NEW CORELLA via Limbaan - Macgum

TAGUM CITY – ASUNCION – SAN ISIDRO Route Description via Igangon Alignment Tagum Terminal-Tagum Diversion Road-Nat'l Road (via Tagum-Panabo Circumferential Road)-Asuncion Terminal-Nat'l Road-Igangon Terminal-Sawata Terminal Length 41.05 km **PPHPD** 20 **Passenger Demand** 80 **Average Travel Time** 82 min **Proposed Public** UV – 3 units **Transport Mode -Number of Units Fleet Size** 4 units **Route Map** Remarks: **Existing Route**

Figure 8.35: Proposed Route 34 - TAGUM CITY – ASUNCION – SAN ISIDRO via Igangon

Route Description SAWATA, SAN ISIDRO – SITIO PATEL, KAPALONG via Libuton - Datu Balong -**Monte Dujali** Alignment Sawata Terminal- along Sawata-Libuton-Monte Dujali-Patel Prov'l. Road Length 28.33 km **PPHPD** 10 **Passenger Demand** 40 **Average Travel Time** 97 min. **Proposed Public** UV – 1 unit **Transport Mode -Number of Units Fleet Size** 2 units PROPOSED SAWATA, SAN ISIDIRO-SITIO PATEL, KAPALONG ROUTE MAP **Remarks: Route Map New Route**

Figure 8.36: Proposed Route 35 - SAWATA, SAN ISIDRO – SITIO PATEL, KAPALONG via Libuton – Datu Balong – Monte Dujali

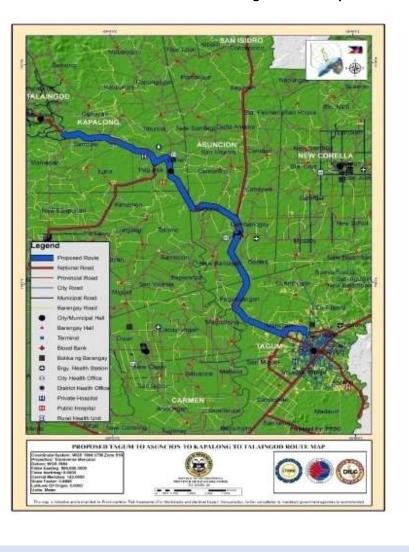


Figure 8.37: Proposed Route 36 - TAGUM CITY - KAPALONG

Route Description	TAGUM CITY – KAPALONG
Alignment	Tagum Terminal- Tagum Diversion Road- Nat'l Road- AsuncionTerminal-Nat'l Road- Kapalong Terminal- along Kapalong- Talaingod-Valencia Nat'l Road- Talaingod Terminal
Length	33.11 km
PPHPD	50
Passenger Demand	200
Average Travel Time	113 min
Proposed Public Transport Mode - Number of Units	UV – 5 units
Fleet Size	6 units
Remarks:	New Route

Route Map

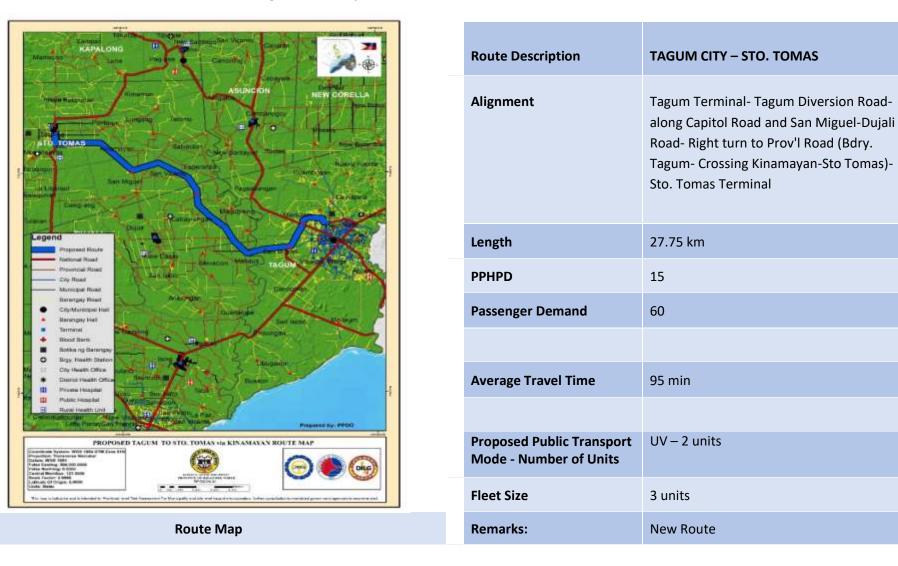


Figure 8.38: Proposed Route 37 - TAGUM CITY - STO. TOMAS



Figure 8.39: Proposed Route 38 - PANABO CITY - STO. TOMAS

Route Description	PANABO CITY – STO. TOMAS
Alignment	Panabo Terminal- along Davao-Agusan (Daang Maharlika) National Highway - Carmen Terminal- left turn to Sto. Tomas- Carmen National Road- along NationalRoad to Sto. Tomas Terminal
Length	33.08 km
PPHPD	45
Passenger Demand	180
Average Travel Time	113.42 min
Proposed Public Transport Mode - Number of Units	UV – 4 units
Fleet Size	5 units
Remarks:	New Route

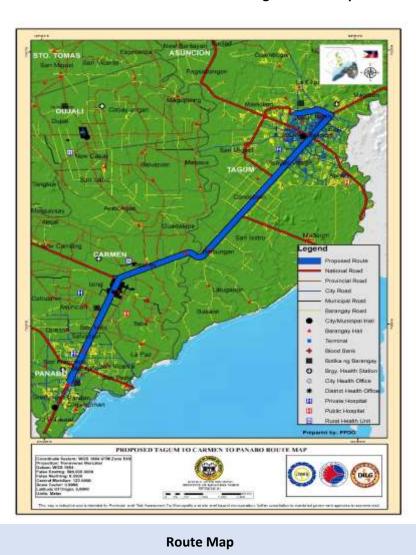


Figure 8.40: Proposed Route 39 - TAGUM CITY - PANABO CITY

Route Description	TAGUM CITY – PANABO CITY
Alignment	Tagum Terminal -Tagum Diversion Road- along Davao-Agusan (Daang Maharlika) National Highway- Carmen Terminal-Panabo Terminal
Length	27.58 km
PPHPD	450
Passenger Demand	1800
Average Travel Time	55 min.
Proposed Public Transport Mode - Number of Units	UV – 40 units
Fleet Size	45 units
Remarks:	New Route

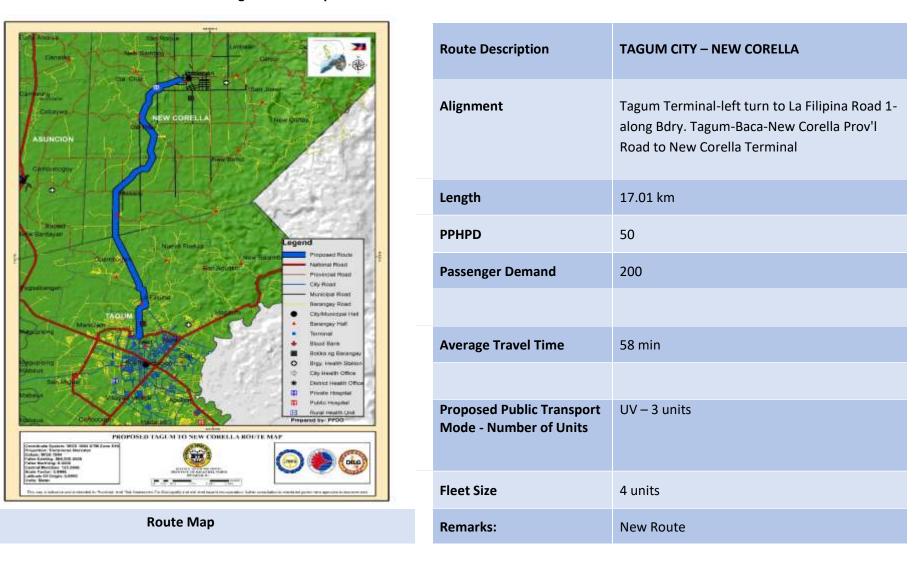


Figure 8.41: Proposed Route 40 - TAGUM CITY - NEW CORELLA

8.4.1 Proposed route packaging for franchises

Since some routes have low fleet sizes, they will be packaged depending on their location. Each packaged route will be considered as one franchise. The routes will be packaged as follows:

Table 8.11: **Proposed Route Packaging for Franchises**Province of Davao del Norte

Route Mark	Route Name	Mode of Transportation	Fleet Size	Package
ROUTE 1	TAGUM CITY-SITIO PATEL, KAPALONG via Igangon-Sawata-Libuton-Datu Balong-Monte Dujali	Standard Bus	13	Package 1
ROUTE 35	SAWATA, SAN ISIDRO - SITIO PATEL, KAPALONG via Libuton-Datu Balong-Monte Dujali	UV	2	
ROUTE 2	TAGUM CITY-ASUNCION-SAN ISIDRO via Km.9 Sagayen-Pamacaun-San Miguel	Standard Bus	4	Package 2
ROUTE 34	TAGUM CITY-ASUNCION-SAN ISIDRO via Igangon	UV	4	
ROUTE 9	KAPALONG-SAN ISIDRO via Capungagan-Mabantao-New Boholano-San Miguel	Jeepney	4	
ROUTE 7	TAGUM CITY-B.E. DUJALI-STO. TOMAS via Salvacion-Kinamayan	Standard Bus	14	Package 3
ROUTE 37	TAGUM CITY - STO. TOMAS	UV	3	
ROUTE 10	TAGUM CITY-NEW CORELLA	Standard Bus	7	Package 4
ROUTE 33	TAGUM CITY-CABIDIANAN, NEW CORELLA via Limbaan	Jeepney	4	
ROUTE 40	TAGUM CITY - NEW CORELLA	UV	4	
ROUTE 14	ASUNCION-NEW CORELLA via Mahayahay-Paton	Jeepney	3	Package 5

ROUTE 15	KAPALONG-ASUNCION-NEW CORELLA	Jeepney	4	
	via Capungagan-Dona Andrea-			
	Canatan-Sta Filomena-San Roque			
	·			
ROUTE 16	KAPALONG-ASUNCION-NEW	Jeepney	6	_
	CORELLA			
	via Camoning Brgy. Rd-San			
	Vicente-Canatan-Silangan-New			
	Sambog			
ROUTE 17	ASUNCION-NEW CORELLA	Jeepney	4	-
NOOTE 17	via Monte Carlo-Del Pilar	зеерпеу	•	
	via monte cano ben ma			
ROUTE 18	TAGUM CITY-ASUNCION	Jeepney	4	Package 6
	via Cuambogan-Buclad			
ROUTE 20	TAGUM CITY-ASUNCION-	looppoy	9	-
ROUTE 20	KAPALONG	Jeepney	9	
	via Pagsabangan-New Bantayan-			
	Ilog-Nat'l Hway			
	nog wat i nway			
ROUTE 36	TAGUM CITY - KAPALONG	UV	5	_
ROUTE 26	PANABO CITY-MABUHAY,	Jeepney	9	Package 7
	CARMEN	,		
				_
ROUTE 27	PANABO CITY-TUBOD, CARMEN	Jeepney	9	
				_
ROUTE 38	PANABO CITY - STO. TOMAS	UV	5	
ROUTE 30	TAGUM CITY-B.E. DUJALI	Jeepney	12	Package 8
	via Magupising-Balisong			
ROUTE 31	B.E. DUJALI-STO. TOMAS	Jeepney	8	-
KOOTE 31	via Casig-ang -La Libertad	Jeephley	O	
	via casig ang La Libertaa			
ROUTE 3	TAGUM CITY-SITIO PATEL,	Standard Bus	16	Lone
	KAPALONG			Franchise
	via Florida-Suaon-Gupitan			
ROUTE 4	TAGUM CITY-ASUNCION -	Standard Bus	28	Lone
	KAPALONG - TALAINGOD			Franchise
ROUTE 5	TAGUM CITY-CARMEN-PANABO	Standard Bus	119	Long
ROUTES	1AGOIVI CI I 1-CARIVIEN-PANABU	Stallual u BUS	119	Lone Franchise
DOUTE C	DANIADO CITY CADACTA	Chamble and D.	470	
ROUTE 6	PANABO CITY-CARMEN-	Standard Bus	173	Lone
	STO.TOMAS-KAPALONG -			Franchise
	TALAINGOD			

ROUTE 8	KAPALONG-SAN ISIDRO	Jeepney	25	Lone
	via Mabantao-Florida-Suaon-			Franchise
	Sambayon-Libuton-Sawata			
ROUTE 11	NEW CORELLA-CAMANSA	Jeepney	19	Lone
	via San Roque-Macgum			Franchise
ROUTE 12	TAGUM CITY-NEW CORELLA-	Jeepney	15	Lone
	SONLON, ASUNCION			Franchise
	via Limbaan-Sto. Nino-Macgum			
ROUTE 13	TAGUM CITY-NEW CORELLA	Jeepney	28	Lone
	via Magdum-San Agustin-New			Franchise
	Bohol-Carcor			
ROUTE 19	TAGUM CITY-ASUNCION-	Jeepney	39	Lone
	CAMANSA			Franchise
	via Sagayen-Napungas-Sonlon			
ROUTE 21	ASUNCION-KAPALONG	Jeepney	14	Lone
	via Canatan-San Vicente-Butay			Franchise
ROUTE 22	STO. TOMAS-TALAINGOD	Jeepney	18	Lone
	via Mamacao-Narra			Franchise
ROUTE 23	KAPALONG-PAITON, TALAINGOD	Jeepney	14	Lone
	via Gabuyan-Semong-Dagohoy-			Franchise
	Angelo			
ROUTE 24	PANABO CITY-STO. TOMAS	Jeepney	72	Lone
	via Minda-New Malitbog			Franchise
ROUTE 25	STO. TOMAS-SINDATON, PANABO	Jeepney	12	Lone
	CITY via Tulalian			Franchise
ROUTE 28	PANABO CITY - CARMEN	Jeepney	12	Lone
	via La Paz - Taba			Franchise
ROUTE 29	PANABO CITY-CARMEN-B.E.	Jeepney	28	Lone
	DUJALI-STO. TOMAS			Franchise
	via Kinamayan			
ROUTE 32	TAGUM CITY-B.E. DUJALI-STO.	Jeepney	25	Lone
	TOMAS via Talomo			Franchise
ROUTE 39	TAGUM CITY - PANABO CITY	UV	45	Lone
				Franchise

Source: PEO

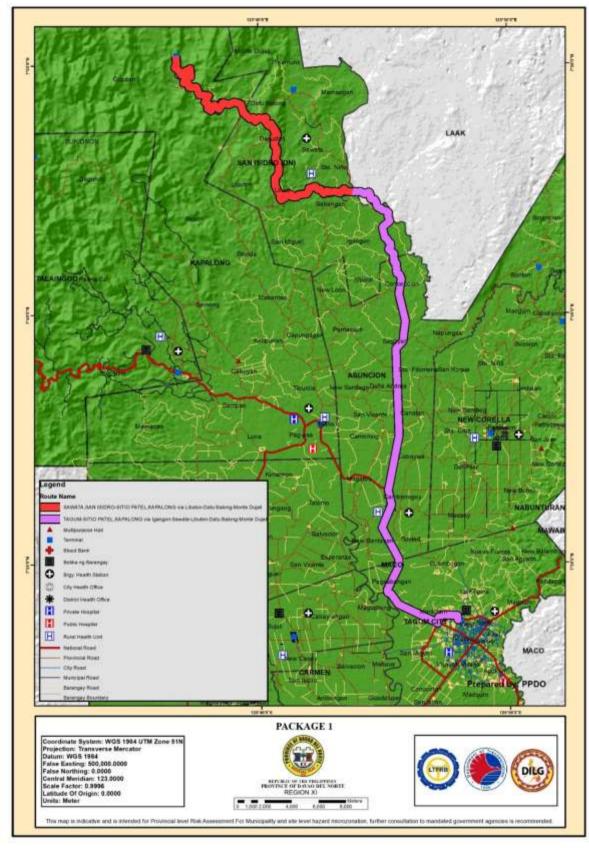


Figure 8.42: Package 1 Map (Routes 1 and 35)



Figure 8.43: Package 2 Map (Routes 2, 34 and 9)

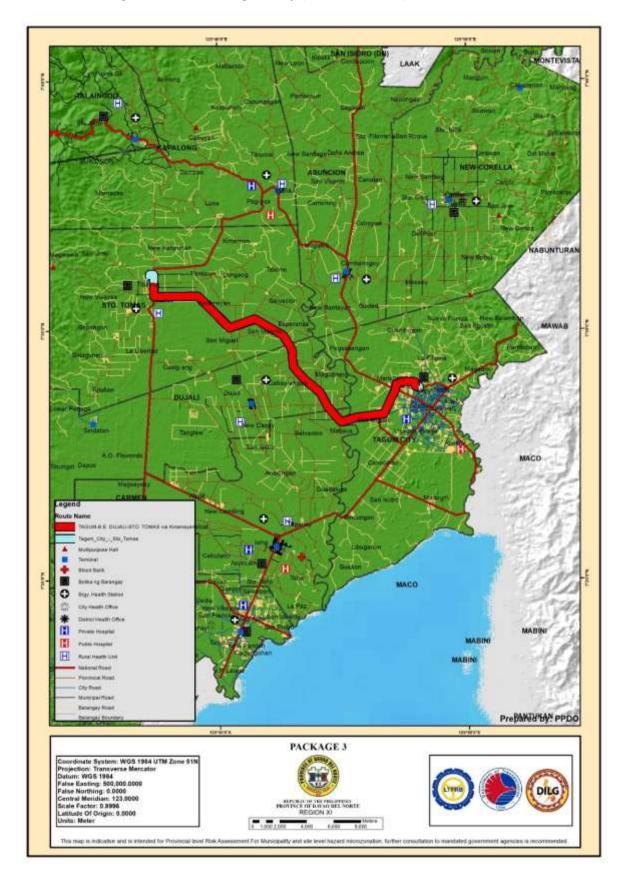


Figure 8.44: Package 3 Map (Routes 7 and 37)

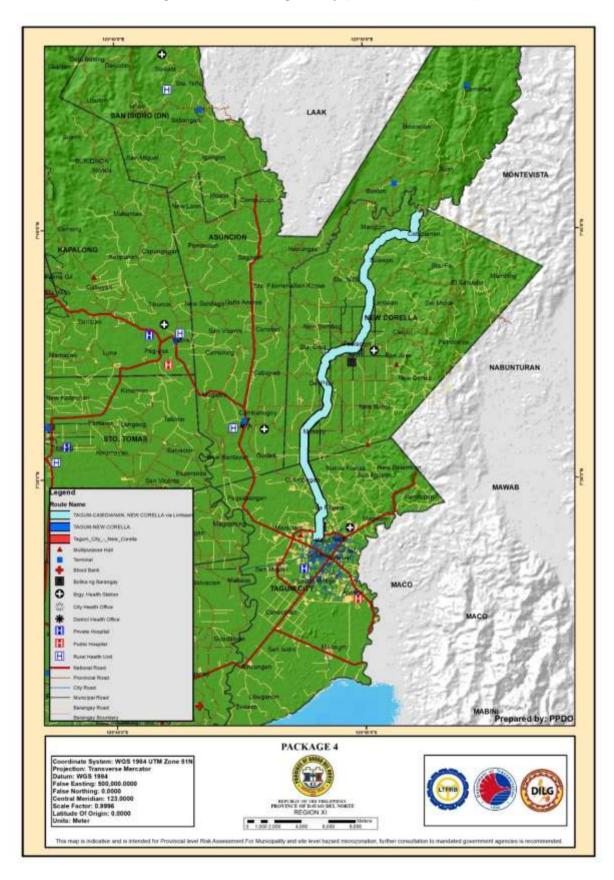


Figure 8.45 Package 4 Map (Routes 10, 33 and 40)

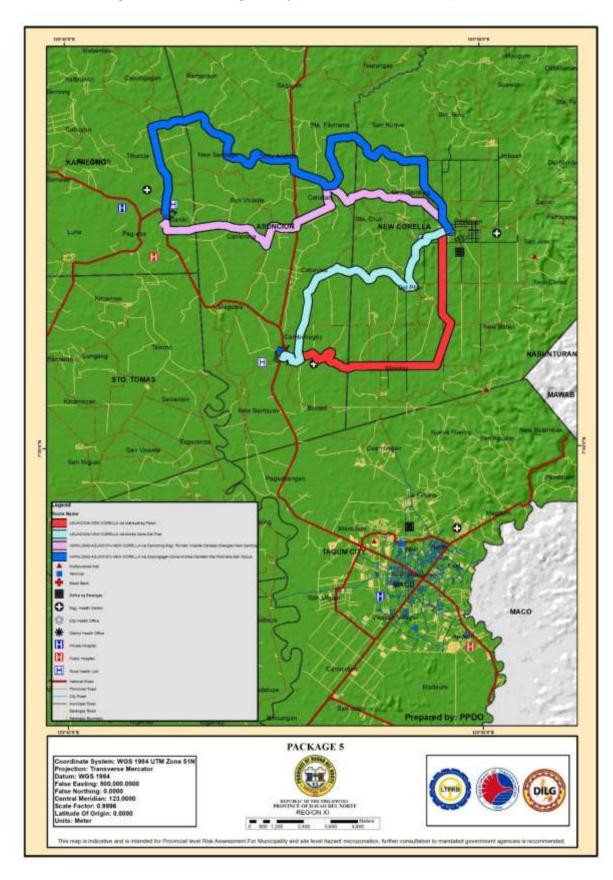


Figure 8.46: Package 5 Map (Routes 14, 15, 16 and 17)

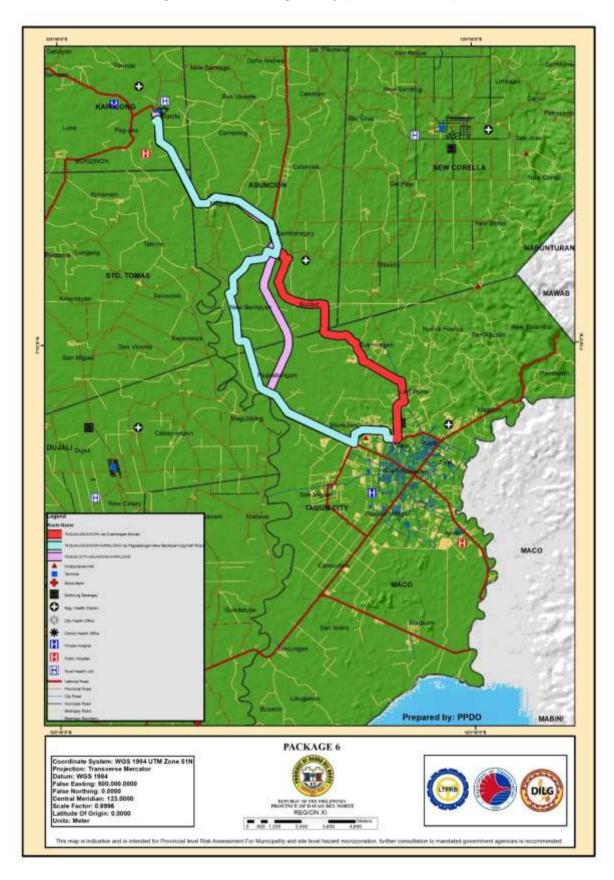


Figure 8.47: **Package 6 Map (Routes 18, 20, 36)**

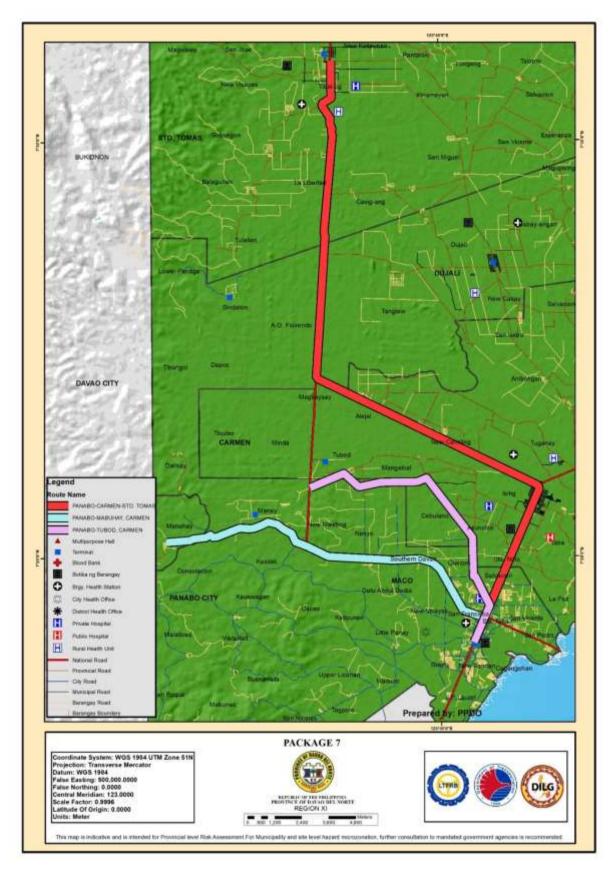


Figure 8.48: Package 7 Map (Routes 26,27 and 38)

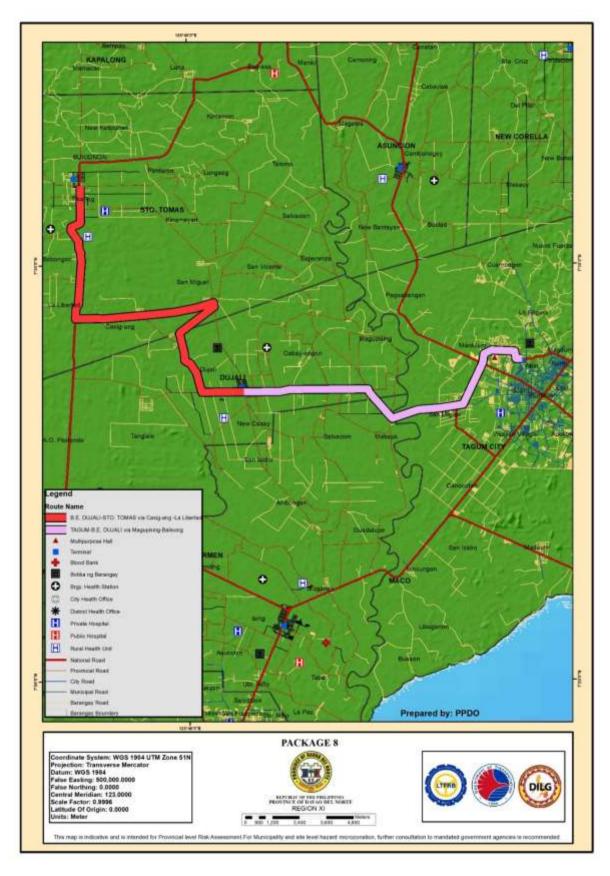


Figure 8.49: Package 8 Map (Routes 30 and 31)

8.5 Stakeholders Evaluation of Proposed Routes

To secure official inputs from stakeholders relative to the transport route planning of the province, a Multi-Sectoral Consultation (MSC) Workshop was conducted on August 28, 2018.

Consistent with the objective of the activity to harmonize views among the representatives of the transport sector and gather viewpoints of the stakeholders in local public transport route planning, the Technical Working Group invited the major transport related sectors to participate in the consultation. Most of the participants have also been involved in the development of the Provincial Road Network Development Plan of the province. The MSC participants are presented in the table below:

Table No. 8.12: List of Participants in the Stakeholders Consultation

Province of Davao del Norte

The Local Government Sector	The National	CSO/Private Sector/Academe
	Government Sector	
The Provincial LPTRP	 LTFRB 	Makasimoda
Technical Working Group	LTO	Avante Van Cooperative
(PPDO, PEO, PLO, PENRO,	PNP	Dupatoda
PAGRO, TOURISM)	DPWH	Tafetrasco
	DILG	Tagdasab Van Trans.
SP Member Committee Chair		Amcoda
on Infrastructure		STVTC Cooperative
		Samtrasco
• LGU Representatives		Davao Metro Shuttle Inc.
(C/MPDO and C/MEO)		Philippine Institute of Civil
		Engineers-North Davao Chapter
		Davao Del Norte State College
		Provincial Tourism Council
		Council of Women
		Davao Provinces Rural
		Development Institute
		Tagum City Chamber of Commerce
		Davao del Norte Federation of Day
		Care Centers
		Home for the Aged
		Fed. Of Senior Citizen

Source: PPDO

After the rationale of the formulation of the LPTRP and the proposed routes were being presented to the stakeholders, validation tools were employed to gather the best opinion from the participants.

Validation of ROUTES by level of urgency is a tool used in assessing the importance of the identified PROPOSED ROUTES in the LPTRP. The level of urgency is perceived by the stakeholders in their capacity to represent their respective sector group regardless of the transport survey results and its scientific analysis.

Participants were divided into twelve (12) societal sectors. These are the following: Transport Operators/Drivers, Traffic Enforcers, Terminal Operators, Vehicle Owners, Regulatory Agencies,

Vulnerable Sectors, Farmers, Politicians, Business Proprietors, Students, LGU Employees and NGA Employees

Each Stakeholder Group discussed and rated the proposed routes according to their perceived level of urgency. In a rating scale of 1 to 3, with Rate 3 being the most urgent route while Rate 1 being the most acceptable route.

Table No. 8.13: **Criteria for Route Prioritization**Province of Davao del Norte

RATE	LEVEL OF URGENCY	DESCRIPTION	
3	Urgent	 Needed to respond to emergency situation Needed to access major economic activities such agriculture, industries and tourism Needed to access major social services such as public health, education, safety and welfare Needed to support public mobility 	
2	Necessary	 Required to access important economic centers, production areas and large population Improved accessibility to growing communities 	
1	Acceptable	 Designed to spur economic activity in a potentially progressive community Nice to have but can be postponed without detriment to present operations 	

Source: PPDO

The rate descriptions were as follows:

Considering the rates assigned by the societal groups to all the presented proposed routes, the total score and rank are shown at Table 8.14:

Table No. 8.14: Stakeholders Ranking of Proposed Routes According to Urgency
Province of Davao del Norte

RANK	ROUTE NAME (PUB/PUJ/UV)	SCORE
1	TAGUM-SITIO PATEL, KAPALONG via Florida-Suaon-Gupitan	31
1	TAGUM-ASUNCION-KAPALONG- TALAINGOD	31
1	KAPALONG-SAN ISIDRO via Mabantao-Florida-Suaon-Sambayon- Libuton-Sawata	31
1	PANABO-CARMEN-STO. TOMAS	31

NABO-CARMEN-STO.TOMAS- PALONG-TALAINGOD	31
	31
	30
RMEN-PANABO via La Paz	30
O. TOMAS Tuganay-New Casay-San Miguel-	30
Igangon-Sawata-Libuton-Datu Balong-	30
	30
	30
	30
GUM-NEW CORELLA	29
Camoning Brgy. Rd-San Vicente-	29
·	29
NABO-MABUHAY, CARMEN	29
	28
	28
GUM-CARMEN-PANABO	28
	28
GUM-BRAULIO E. DUJALI-STO. TOMAS	
Salvacion-Kinamayan	28
	PALONG-TALAINGOD GUM-BRAULIO E. DUJALI Magupising-Balisong GUM-ASUNCION-SAN ISIDRO Igangon RMEN-PANABO via La Paz NABO-CARMEN-BRAULIO E. DUJALI- O. TOMAS Tuganay-New Casay-San Miguel- namayan GUM-SITIO PATEL, KAPALONG Igangon-Sawata-Libuton-Datu Balong- onte Dujali AULIO E. DUJALI-STO. TOMAS Casig-ang -La Libertad GUM - B.E. DUJALI-STO. TOMAS via domo GUM-ASUNCION-SAN ISIDRO IKM-9 Sagayen-Pamacaun-San Miguel GUM-NEW CORELLA PALONG-ASUNCION-NEW CORELLA Camoning Brgy. Rd-San Vicente- natan-Silangan-New Sambog PALONG-PAITON, TALAINGOD Gabuyan-Semong-Dagohoy-Angelo NABO-MABUHAY, CARMEN UNCION-NEW CORELLA Mahayahay-Paton GUM-ASUNCION-CAMANSA Sagayen-Napungas-Sonlon GUM-CARMEN-PANABO O. TOMAS-SINDATON, PANABO CITY via lalaian

TAGUM-SAWATA-PINAMUNO	28
KAPALONG-SAN ISIDRO via Capungagan- Mabantao-New Boholano-San Miguel	28
TAGUM-NEW CORELLA-SONLON, ASUNCION via Limbaan-Sto. Nino-Macgum	27
TAGUM-NEW CORELLA via Magdum-San Agustin-New Bohol-Carcor	27
TAGUM-ASUNCION via Cuambogan- Buclad	27
TAGUM-ASUNCION-KAPALONG via Pagsabangan-New Bantayan-Ilog-Nat'l Highway	27
PANABO-TUBOD, CARMEN	27
NEW CORELLA-CAMANSA via San Roque-Macgum	26
ASUNCION-NEW CORELLA via Monte Carlo-Del Pilar	26
ASUNCION-KAPALONG via Canatan-San Vicente-Butay	26
STO. TOMAS-TALAINGOD via Mamacao-Narra	26
TAGUM-CABIDIANAN, NEW CORELLA via Limbaan	26
KAPALONG-ASUNCION-NEW CORELLA via Capungagan-Dona Andrea-Canatan-Sta Filomena-San Roque	25
PANABO-STO. TOMAS via New Malitbog	25
	KAPALONG-SAN ISIDRO via Capungagan-Mabantao-New Boholano-San Miguel TAGUM-NEW CORELLA-SONLON, ASUNCION via Limbaan-Sto. Nino-Macgum TAGUM-NEW CORELLA via Magdum-San Agustin-New Bohol-Carcor TAGUM-ASUNCION via Cuambogan-Buclad TAGUM-ASUNCION-KAPALONG via Pagsabangan-New Bantayan-Ilog-Nat'l Highway PANABO-TUBOD, CARMEN NEW CORELLA-CAMANSA via San Roque-Macgum ASUNCION-NEW CORELLA via Monte Carlo-Del Pilar ASUNCION-KAPALONG via Canatan-San Vicente-Butay STO. TOMAS-TALAINGOD via Mamacao-Narra TAGUM-CABIDIANAN, NEW CORELLA via Limbaan KAPALONG-ASUNCION-NEW CORELLA via Capungagan-Dona Andrea-Canatan-Sta Filomena-San Roque

Source: PEO

8.6 Inter Regional Proposed Routes

The province is situated at the heart of Davao Region in Mindanao. It is bounded by Agusan del Sur at the North; Bukidnon at the Northwest; Davao City at the West, Davao Gulf at the South and Compostela Valley at the East. It actually lies at the crossroad of various destinations within and beyond Davao Region. Hence, for those who travel by land from Davao City to the neighboring provinces and regions, they shall always pass through Davao del Norte, particularly if they are taking a public land transport service.

Republic Act No. 7160 provides the local government units more powers, authority, responsibilities and resourcesto attain the fullest development as self-reliant communities and effective partners in attaining

national goals. It also calls for a more improved coordination of national government agencies with LGUs in planning and implementation of programs, projects and activities. In line with this, Department Order No. 2017-011 by the Department of Transportation empowers the LGUs to plan and implement local public transportation routes. However, the province's focus and scope in planning and implementation activities are limited only to its political jurisdiction. While there are routes that are identified within, the province can only recommend for approval of those routes that extend beyond its boundaries. Hence, the study team is recommending the adoption of these routes by DOTr, which is in the better position to integrate and harmonize the interprovincial, interregional and national public transport systems.

Table 8.15: **Proposed Inter Provincial Routes**Province of Davao del Norte

Route Description	Length (km)	Preferred Mode of Transportation	Type of Service
Tagum City – Davao City	57.5	PUB/UV	Regular/Express
Sto Tomas – Davao City	65	PUB/UV	Regular/Express
Braulio E. Dujali – Davao City	52	UV	Express
Tagum City - Monkayo	63.4	UV	Express
Tagum City – Laak, Compostela Valley	52	PUB/UV	Regular/Express
Tagum City – Mati City, Davao Oriental	113.6	PUB	Regular
Tagum City – Valencia, Bukidnon	154	PUB	Regular
Tagum City – Butuan City, Agusan Del Norte	234	PUB	Regular
Panabo City –Malabug, Davao City via Malatibas	33	PUJ	Regular
Sto. Tomas – Magwawa – Upper Panaga, Davao City	24	PUJ	Regular
Panabo City – Paquibato/Mapula, Davao City	32	PUJ	Regular

Source: PEO

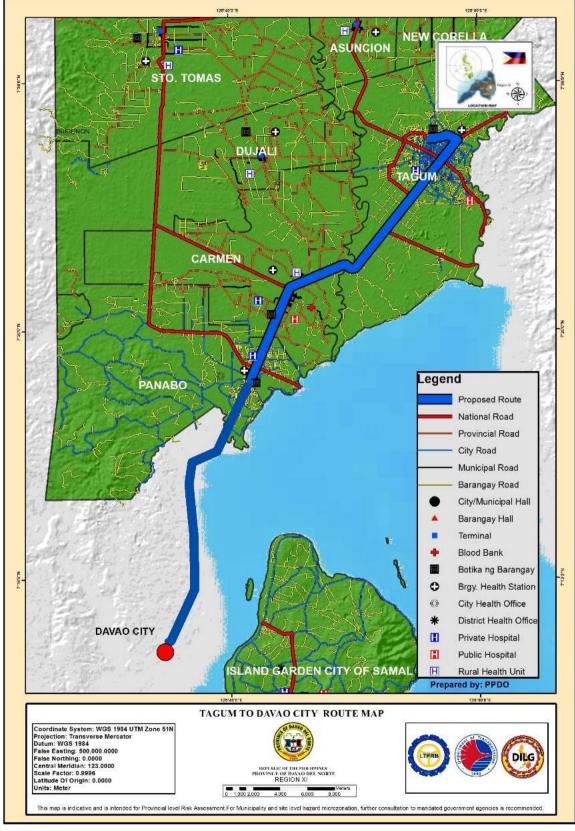


Figure 8.50: Tagum City to Davao City Route Map

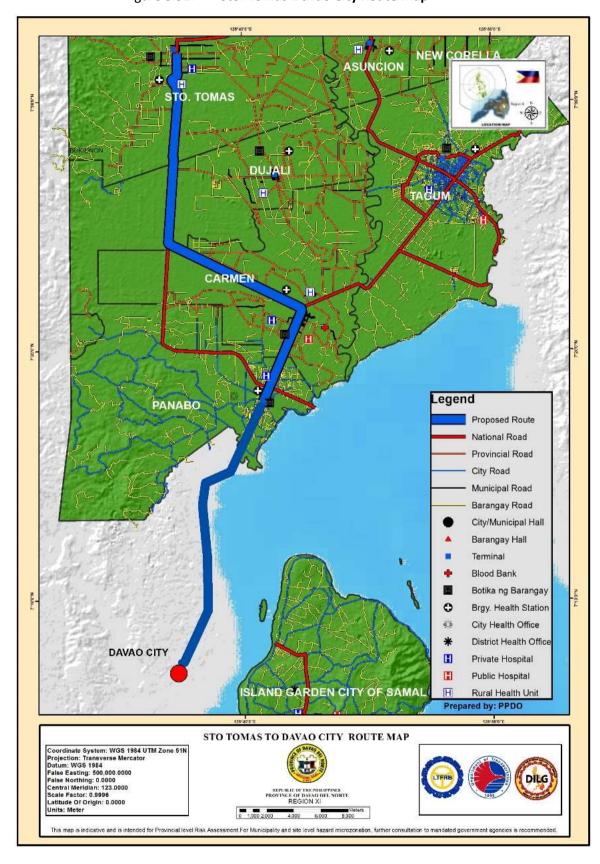


Figure 8.51: Sto. Tomas-Davao City Route Map



Figure 8.52: Braulio E. Dujali-Davao City Route Map

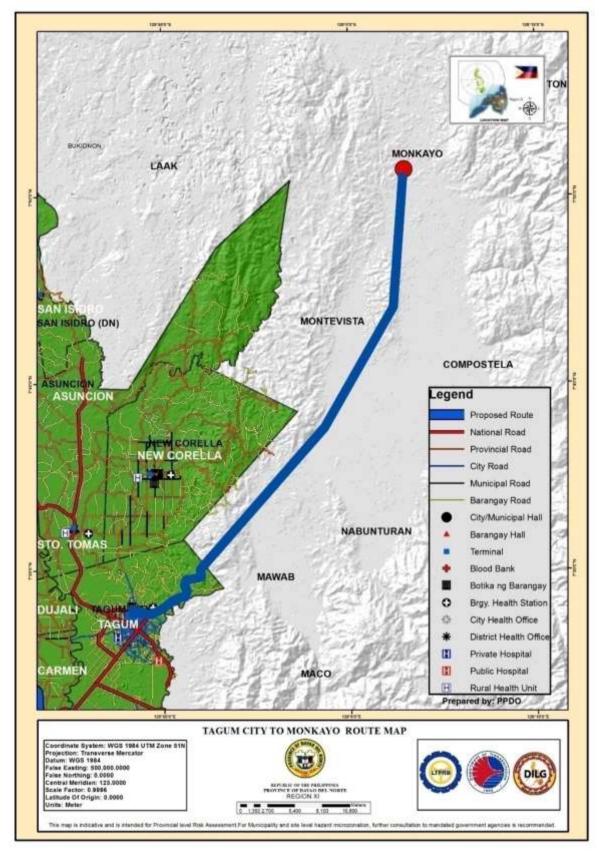


Figure 8.53: **Tagum City-Monkayo, Davao de Oro Route Map**

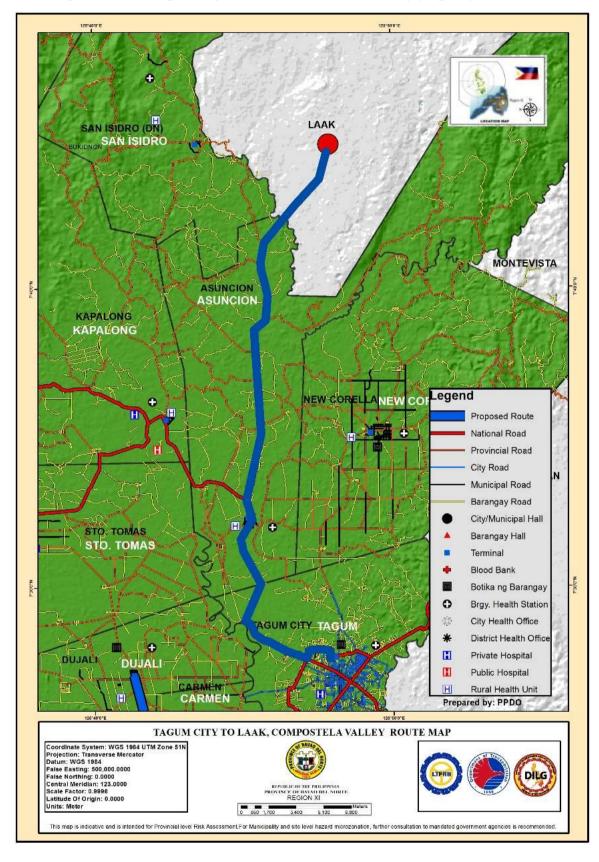


Figure 8.54: Tagum City-Laak, Davao de Oro Route Map (Regular)

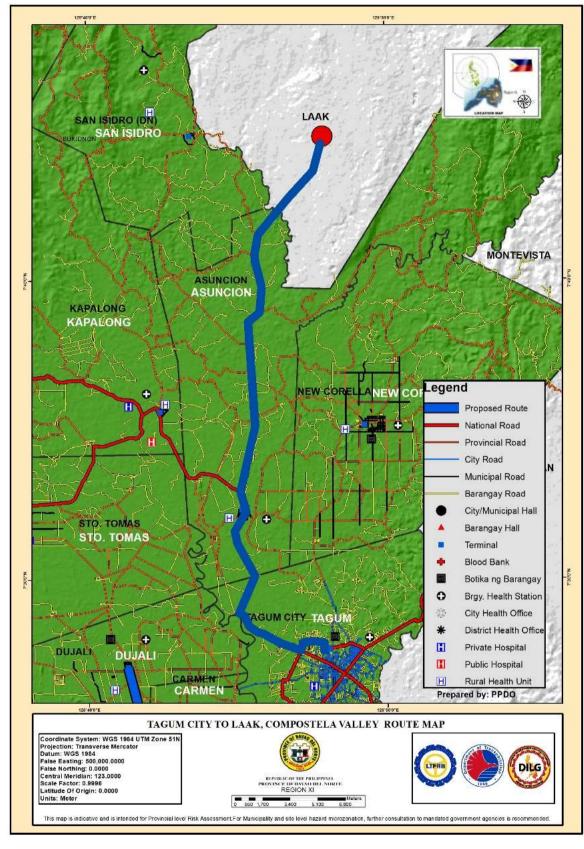


Figure 8.55: Tagum City-Laak, Davao de Oro Route Map (Express)



Figure 8.56: Tagum City-Mati City, Davao Oriental Route Map



Figure 8.57: **Tagum City-Bukidnon Route Map**

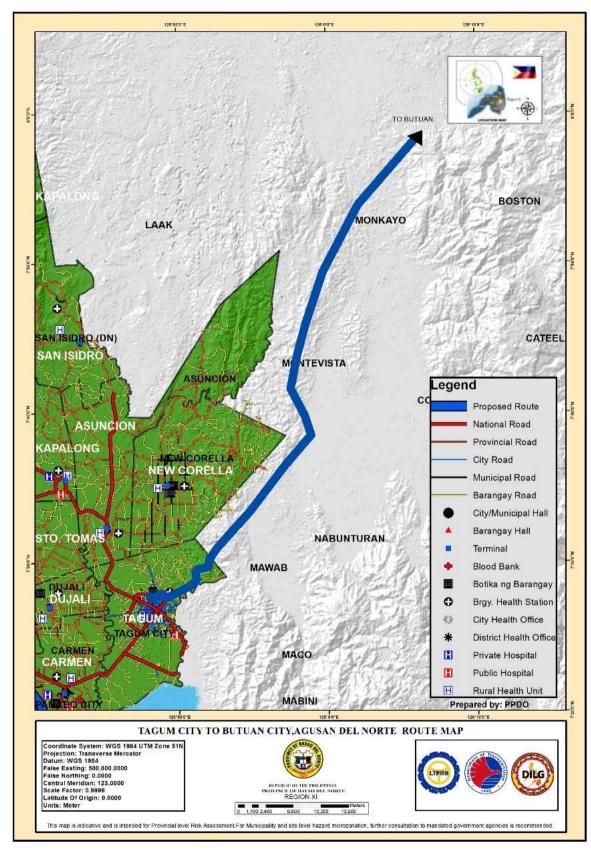


Figure 8.58: Tagum City-Butuan City, Agusan del Norte Route Map

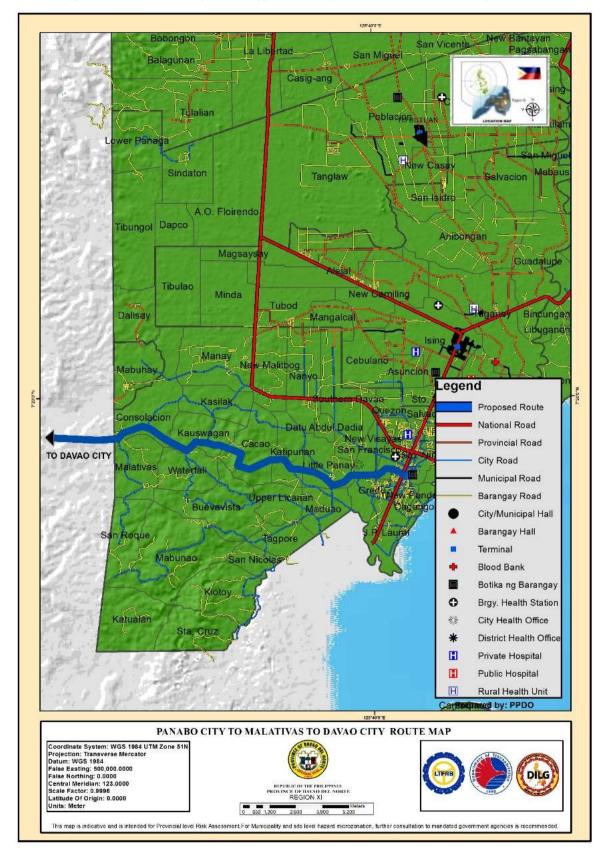


Figure 8.59: Panabo City-Malabug, Davao City via Malativas Route Map

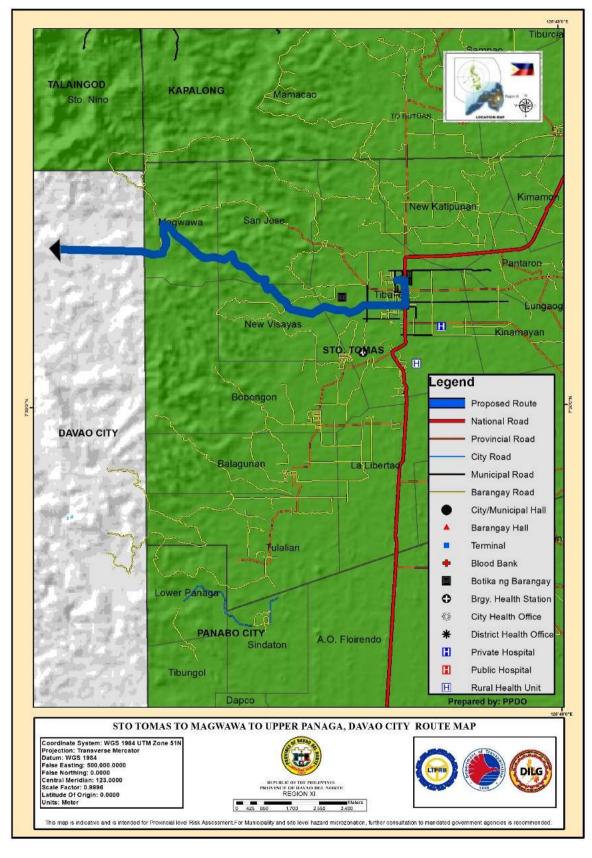


Figure 8.60: Sto. Tomas-Magwawa-Upper Panaga, Davao City Route Map



Figure 8.61: Panabo City-Paquibato/Mapula, Davao City Route Map

CHAPTER 9 MONITORING AND EVALUATION



CHAPTER 9

MONITORING AND EVALUATION

Monitoring and Evaluation (M&E) is an integral part of the public transportation system which focus is on the implementation of the Local Public Transport Route Plan (LPTRP). It also considers the plan implementation of the Local Road Network Plan under the transport sector component of the Provincial Development and Physical Framework Plan (PDPFP) of the province.

The objectives of M&E are:

- 1. To enable the province to assess the progress of LPTRP, vis-à-vis, its targets, objectives and goals, with an established and operationalized systems and structures;
- 2. To utilize the LPTRP achievements not only for reporting to other project stakeholders but also for understanding the factors that influence performance and for using the lessons learned in future planning and programming; and
- 3. To promote the culture of performance among project implementers and stakeholders as part of the effort to introduce institutional reforms in the provincial government.

9.1 Monitoring and Evaluation Framework

M&E will look into LPTRP's accomplishments in relation to its contribution in the achievement of the goal of the transport sector component of the Provincial Development and Physical Framework Plan (PDPFP) of the province. PDPFP's goals in the road sector states that the development of the sector supports the enhancement of the governance, economic, environmental and social undertakings of the province.

Consequently, this is being aligned with the major components considered under the LPTRP, where the economic, environmental, and social aspects shall be the major considerations. In integrating these three main components these shall be focused on resilience, inclusiveness, and the quality of life while facilitating the achievements of the "KUYA GOB" development agenda of the province. This is to ensure that a sustainable public transport is provided.

9.1.1Monitoring and Evaluation System

The relationship of the goal, outcomes and outputs is presented in the Results Matrix in Table 9.1. This is to aid in assessing the progress of implementation by showing the links and relationship in the attainment of objectives as inputs and activities are provided and/or implemented. This is measured using the actual data gathered through the existing tool of the LGU thus, will serve as a guide in the conduct of monitoring and evaluation processes of public transportation services.

The achievement of enhanced economic, environmental, and social undertakings as the overall goal of public transport service shall be the result of the following performance outcomes/objectives:

- 1. Accessible within a reasonable access time to public transport mode
- 2. Reliable where waiting time is predictable at stops and terminals
- 3. Safety in compliance to travel speed regulations while providing passengers security of travel

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- 4. Security providing sufficient and efficient passenger space with utmost compliance to load capacity and accessibility law
- 5. Affordability to both passengers and operators
- 6. Comfort or ride comfort is the usability of facilities, riding comfort (crowd-density in vehicle), ambient conditions, and other complementary facilities
- 7. Clean Environment where there is low-emission in transport to reduce the sector's contribution to air pollution and climate change
- 8. Governance working with other government agencies together within the public transport sector setting standards to make public transport accessible, reliable and efficient

However, the results matrix suggests that monitoring and evaluation is dependent on the following:

- Availability of baseline information of the condition in the project areas; among others, on the economic, social and physical aspects;
- Functionalization of an effective and efficient data collection systems and procedures with the involvement of project implementers, partners and stakeholders;
- Efficient information sharing among project implementers, partners and stakeholders for appropriate action.

Table No. 9.1. Results Matrix: Monitoring and Evaluation, Davao del Norte, CY 2018

Results and Activities	Performance Indicators	Baseline 2018	Source of Data	Responsible Office
Development Objectives	s/Outcomes:	L		l
Accessibility	No. of available mode of transport	It varies on average of 4 on routes along national the highway	PLGU/MLGU/CLGU Transport Terminal Operators	Transport Terminal Operators
	Average frequency of public utility vehicles	It varies on average of 2 every hour on routes along the national highway	PLGU/MLGU/CLGU Transport Terminal Operators	Transport Terminal Operators
	No. of terminals with gender responsive facilities	None	MLGU/CLGU Transport Terminal Operators	Transport Terminal Operators
Reliability	Average number of minutes passenger waiting time	It varies on average of 30 minutes on routes along the national highway	Survey	Transport Terminal Operators
	Average number of minutes passenger dwell time	It varies on average of 30 minutes on routes along the national highway	Survey	Transport Terminal Operators
	No. of hours of service	It varies on average of 16 hours on routes along the national highway	Survey	Transport Terminal Operators

Results and Activities	Performance Indicators	Baseline 2018	Source of Data	Responsible Office
Safety	Percentage reduction in road accidents by 2023	Local data not readily available	Provincial Traffic Engineering/ PNP reports/ TARAS	C/M/B LGU PNP P/C/M/B DRRMO HOSPITALS
	Percentage reduction of deaths resulting from traffic accidents	Local data not readily available	Provincial Traffic Engineering/ PNP reports/ TARAS	C/M/B LGU PNP P/C/M/B DRRMO HOSPITALS
	Average running speed	It varies at 80 kph on routes along the national highway	C/MLGU Traffic Management Group	P/C/M Engineer's Office P/C/MPDO
Security	No. of available/working CCTVs and GPS	It varies as observed on bus routes the along national highway	LTO	LTO
	No. of Road markings/signage available	It varies per road markings and signage are present on routes along the national highway	P/C/M LGU DPWH	P/C/M Engineer's Office P/C/MPDO DPWH
	No. of available/working street-lighting	It varies. Working street lightings are present on routes along the national highway	P/C/M LGU DPWH	P/C/M Engineer's Office P/C/MPDO DPWH
	No. of terminal facilities properly secured	It varies across terminal operators. Services of Police or Men in uniform are as needed	P/C/M LGU DPWH	P/C/M Engineer's Office P/C/MPDO DPWH

Results and Activities	Performance Indicators	Baseline (2018)	Source of Data	Responsible Office
Affordability	(Amount) Travel cost, fare rates	It varies province wide. On average - 10.00 per kilometer on routes along national highway	LTFRB	LTFRB
	Average monthly revenue per route, deadhead			
Comfort	No. of passengers (loading capacities)	It varies. Over loading on peak hours at routes going to rural areas	C/M LGU LTO	P/C/M Engineer's Office P/C/MPDO LTO
	No. of public transport with Wifi access	None	C/M LGU LTO	P/C/M Engineer's Office P/C/MPDO LTO
Clean environment	No. of public transport compliant to emission standards	Varies	C/M LGU LTO	P/C/M Engineer's Office P/C/MPDO LTO
Governance	Presence of LGU legislated public transport related policies	Yes	C/M LGU LTO	P/C/M Engineer's Office P/C/MPDO LTO
	No. of terminals with gender responsive facilities	-	C/M LGU LTO	P/C/M Engineer's Office P/C/MPDO LTO
	Presence of Joint enforcement structure	-	C/M LGU LTO	P/C/M Engineer's Office P/C/MPDO LTO

Source: PPDO and PEO

9.1.2 M& E Schedules

Table No. 9.2: **Monitoring and Evaluation Schedules for LPTRP**Province of Davao del Norte

Results Level	Monitoring Frequency	Evaluation Frequency
Impact	Annual Data Gathering	Every three years assessment of results
Outcomes	Annual data gathering and integration results	Annual assessment of progress towards outcome
Output	Monthly data gathering and quarterly consolidation	Quarterly evaluation of progress
Input	Monthly and per activity data gathering and monitoring	Monthly evaluation of activities and inputs

Source: PPDO

9.1.3 Route Service Plan

Providing for a cost-efficient and effective transport service is an important consideration in developing our transport routes. It is also the goal that all public transportation agencies strive to achieve. Aside from instituting standards for an effective performance measurement system, there should also be a systematic and continuous service evaluation schemes that will be put in place.

The Province of Davao del Norte incorporates in its LPTRP a route service plan to provide a structured approach that will allow transit service planning as well as some needed modifications, expansions or reductions of transport route services in the course of the plan implementation. Please see Table No. 9.3 below.

Local Public	Transport Route	Plan 2019-2023	Province of Davao	del Norte
LUCAI PUDIIC	II alispuit noute	E FIAII 2013-2023.	riuvilice di Davad i	JEI NUITE

Ta	able No. 9.3: Service Plan for all the Pro	ROUN posed Trai D	nsport Rou	tes in Da	TARG avao del N ET			TARG ET	PEAK HC	URS	OFF PE HOUF		LATE NIC	
NO.	PROPOSED ROUTES	TRIP ROUT E LENG TH (km)	MODE	FLE ET SIZE	ROUN D TRIP TRAV EL TIME	OPE RATI NG HOU RS	OPERA- TING HOURS	ROUN D TRIP TRAV EL TIME	HOURS	HEA D- WAY (min)	HOURS	HEA D- WAY (min)	HOURS	HEA D- WAY (min)
RATION	ALIZED ROUTES			ı				1		T				
ROUT E 1	TAGUM-SITIO PATEL, KAPALONG via Igangon-Sawata- Libuton-DatuBalong-Monte Dujali	69.05	Stand ard Bus	13.0	307.77	480.0 0	0:00 - 24:00	307.77	6:00 - 8:00 ; 16:00 - 19:00	40.00	8:00 - 16:00	80.00	0:00 - 6:00 ; 19:00 - 24:00	360. 00
ROUT E 4	TAGUM-ASUNCION - KAPALONG - TALAINGOD	33.11	Stand ard Bus	28.0	147.58	480.0 0	0:00 - 24:00	147.58	6:00 - 8:00 ; 16:00 - 19:00	20.00	8:00 - 16:00	40.00	0:00 - 6:00 ; 19:00 - 24:00	200. 00
ROUT E 5	TAGUM-CARMEN-PANABO	27.58	Stand ard Bus	119. 00	122.93	480.0	0:00 - 24:00	122.93	6:00 - 8:00 ; 16:00 - 19:00	5.00	8:00 - 16:00	10.00	0:00 - 6:00 ; 19:00 - 24:00	50.0
ROUT E 6	PANABO-CARMEN-STO.TOMAS- KAPALONG - TALAINGOD	54.47	Stand ard Bus	173	242.78	480	0:00 - 24:00	242.78	6:00 - 8:00 ; 16:00 -	5.00	8:00 - 16:00	10.00	0:00 - 6:00 ; 19:00 -	50.0

									19:00				24:00	
ROUT E 7	TAGUM-B.E. DUJALI-STO. TOMAS via Salvacion-Kinamayan	27.75	Stand ard Bus	14.0	123.69	480.0	0:00 - 24:00	123.69	6:00 - 8:00 ; 16:00 - 19:00	35.00	8:00 - 16:00	70.00	0:00 - 6:00 ; 19:00 - 24:00	350. 00
ROUT E 10	TAGUM-NEW CORELLA	17.01	Stand ard Bus	7.00	75.82	480.0	0:00 - 24:00	75.82	6:00 - 8:00 ; 16:00 - 19:00	70.00	8:00 - 16:00	140.0	0:00 - 6:00 ; 19:00 - 24:00	360. 00
ROUT E 12	TAGUM-NEW CORELLA- SONLON, ASUNCION via Limbaan-Sto. Nino-Macgum	33.76	Jeepn ey	15	150.47	480	0:00 - 24:00	150.47	6:00 - 8:00 ; 16:00 - 19:00	35.00	8:00 - 16:00	70.00	0:00 - 6:00 ; 19:00 - 24:00	350. 00
DEVELO	PMENTAL ROUTES					,								
ROUT E 2	TAGUM-ASUNCION-SAN ISIDRO via Km.9 Sagayen-Pamacaun-San Miguel	43.52	Stand ard Bus	4	193.97	480	0:00 - 24:00	193.97	6:00 - 8:00 ; 16:00 - 19:00	120.0	8:00 - 16:00	240.0	0:00 - 6:00 ; 19:00 - 24:00	360. 00
ROUT E 3	TAGUM-SITIO PATEL, KAPALONG via Florida-Suaon- Gupitan	65.92	Stand ard Bus	16.0 0	293.81	480.0	0:00 - 24:00	293.81	6:00 - 8:00 ; 16:00 - 19:00	30.00	8:00 - 16:00	60.00	0:00 - 6:00 ; 19:00 - 24:00	300. 00
ROUT E 8	KAPALONG-SAN ISIDRO via Mabantao-Florida-Suaon- Sambayon-Libuton-Sawata	32.47	Jeepn ey	25.0 0	144.72	480.0 0	0:00 - 24:00	144.72	6:00 - 8:00 ; 16:00 -	20.00	8:00 - 16:00	40.00	0:00 - 6:00 ; 19:00 -	200. 00

									19:00				24:00	
ROUT E 9	KAPALONG-SAN ISIDRO via Capungagan-Mabantao-New Boholano-San Miguel	23.8	Jeepn ey	4	106.08	480	0:00 - 24:00	106.08	6:00 - 8:00 ; 16:00 - 19:00	120.0	8:00 - 16:00	240.0	0:00 - 6:00 ; 19:00 - 24:00	360. 00
ROUT E 11	NEW CORELLA-CAMANSA via San Roque-Macgum	27.71	Jeepn ey	19	123.51	480	0:00 - 24:00	123.51	6:00 - 8:00 ; 16:00 - 19:00	30.00	8:00 - 16:00	60.00	0:00 - 6:00 ; 19:00 - 24:00	300. 00
ROUT E 13	TAGUM-NEW CORELLA via Magdum-San Agustin-New Bohol- Carcor	26.57	Jeepn ey	28	118.43	480	0:00 - 24:00	118.43	6:00 - 8:00 ; 16:00 - 19:00	20.00	8:00 - 16:00	40.00	0:00 - 6:00 ; 19:00 - 24:00	200. 00
		DOLINI												•
		ROUN			TARG			TARG	PEAK HC	URS	OFF PE		LATE NIC	
NO.	PROPOSED ROUTES	D TRIP ROUT E LENG TH (km)	MODE	FLE ET SIZE	TARG ET ROUN D TRIP TRAV EL TIME	OPE RATI NG HOU RS	OPERA- TING HOURS	TARG ET ROUN D TRIP TRAV EL TIME	PEAK HO	HEA D- WAY (min)	OFF PE HOUR HOURS		HOURS	

	ICADAL ONO AGUNGION NEW								0.00				0.00	
	KAPALONG-ASUNCION-NEW								6:00 -				0:00 -	
ROUT	CORELLA via Capungagan-Dona	27.56	Jeepn	4	122.84	480	0:00 -	122.84	8:00 ;	120.0	8:00 -	240.0	6:00 ;	360.
E 15	Andrea-Canatan-StaFilomena-San		ey				24:00		16:00 -	0	16:00	0	19:00 -	00
	Roque								19:00				24:00	
	KAPALONG-ASUNCION-NEW								6:00 -				0:00 -	
ROUT	CORELLA via CamoningBrgy. Rd-	17.19	Jeepn	6	76.62	480	0:00 -	76.62	8:00;	80.00	8:00 -	160.0	6:00;	360.
E 16	San Vicente-Canatan-Silangan-	17.15	ey		70.02	400	24:00	70.02	16:00 -	00.00	16:00	0	19:00 -	00
	New Sambog								19:00				24:00	
									6:00 -				0:00 -	
ROUT	ASUNCION-NEW CORELLA via	45.05	Jeepn	4.00	07.00	480.0	0:00 -	07.00	8:00;	120.0	8:00 -	240.0	6:00;	360.
E 17	Monte Carlo-Del Pilar	15.05	ey	4.00	67.08	0	24:00	67.08	16:00 -	0	16:00	0	19:00 -	00
									19:00				24:00	
									6:00 -				0:00 -	
ROUT	TAGUM-ASUNCION via		Jeepn				0:00 -		8:00;	120.0	8:00 -	240.0	6:00;	360.
E 18	Cuambogan-Buclad	13.49	ey	4	60.13	480	24:00	60.13	16:00 -	0	16:00	0	19:00 -	00
									19:00				24:00	
									6:00 -				0:00 -	
ROUT	TAGUM-ASUNCION-CAMANSA		Jeepn				0:00 -		8:00 ;		8:00 -		6:00 ;	150.
E 19	via Sagayen-Napungas-Sonlon	48.26	ey	39	215.10	480	24:00	215.10	16:00 -	15.00	16:00	30.00	19:00 -	00
									19:00				24:00	
									6:00 -				0:00 -	
ROUT	TAGUM-ASUNCION-KAPALONG		Jeepn			480.0	0:00 -		8:00 ;		8:00 -	110.0	6:00 ;	360.
E 20	via Pagsabangan-New Bantayan-	25.19	еу	9.00	112.28	0	24:00	112.28	16:00 -	55.00	16:00	0	19:00 -	00
	llog-Nat'l Hway						200		19:00		10.00		24:00	
ROUT	ASUNCION-KAPALONG via	16.99	Jeepn	14.0	75.73	480.0	0:00 -	75.73	6:00 -	35.00	8:00 -	70.00	0:00 -	350.
11001	AGGINGIOIN-IVAI ALOING VIA	10.99	acebii	14.0	13.13	+00.0	0.00 -	13.13	0.00 -	33.00	0.00	70.00	0.00 -	550.

E 21	Canatan-San Vicente-Butay		еу	0		0	24:00		8:00 ;		16:00		6:00 ;	00
									16:00 -				19:00 -	
									19:00				24:00	
									6:00 -				0:00 -	
ROUT	STO. TOMAS-TALAINGOD via	16.58	Jeepn	18.0	73.90	480.0	0:00 -	73.90	8:00;	30.00	8:00 -	60.00	6:00;	300.
E 22	Mamacao-Narra	10.56	ey	0	73.90	0	24:00	73.90	16:00 -	30.00	16:00	00.00	19:00 -	00
									19:00				24:00	
	KAPALONG-PAITON,								6:00 -				0:00 -	
ROUT	TALAINGOD via Gabuyan-	19.68	Jeepn	14.0	87.72	480.0	0:00 -	87.72	8:00;	35.00	8:00 -	70.00	6:00;	350.
E 23	Semong-Dagohoy-Angelo	19.00	ey	0	01.12	0	24:00	01.12	16:00 -	33.00	16:00	70.00	19:00 -	00
	Semong-Dagonoy-Angelo								19:00				24:00	
									6:00 -				0:00 -	
ROUT	PANABO-STO. TOMAS via Minda-	32.58	Jeepn	72	145.21	480	0:00 -	145.21	8:00;	10.00	8:00 -	20.00	6:00;	100.
E 24	New Malitbog	32.30	ey	12	143.21	400	24:00	143.21	16:00 -	10.00	16:00	20.00	19:00 -	00
									19:00				24:00	
									6:00 -				0:00 -	
ROUT	STO. TOMAS-SINDATON,	13.64	Jeepn	12.0	60.80	480.0	0:00 -	60.80	8:00;	40.00	8:00 -	80.00	6:00;	360.
E 25	PANABO CITY via Tulalian	13.04	еу	0	00.00	0	24:00	00.00	16:00 -	40.00	16:00	00.00	19:00 -	00
									19:00				24:00	
									6:00 -				0:00 -	
ROUT	PANABO-MABUHAY, CARMEN	17.42	Jeepn	9	77.64	480	0:00 -	77.64	8:00;	55.00	8:00 -	110.0	6:00;	360.
E 26	FANADO-MADONAT, CARMEN	17.42	ey	9	77.04	400	24:00	77.04	16:00 -	33.00	16:00	0	19:00 -	00
									19:00				24:00	
ROUT	PANABO-TUBOD, CARMEN	14.01	Jeepn	9.00	62.44	480.0	0:00 -	62.44	6:00 -	55.00	8:00 -	110.0	0:00 -	360.
E 27	I ANADO-TODOD, CARIVIEN	14.01	ey	9.00	02.44	0	24:00	0∠.44	8:00 ;	33.00	16:00	0	6:00;	00

				16:00 -		19:00 -		l
				19:00		24:00		!

		ROUN D			TARG ET	OPE		TARG	PEAK HO	DURS	OFF PE		LATE NI	
NO.	PROPOSED ROUTES	TRIP ROUT E LENG TH (km)	MODE	FLEE T SIZE	ROUN D TRIP TRAV EL TIME	RATI NG HOU RS	OPERA- TING HOURS	ET ROUN D TRIP TRAVE L TIME	HOURS	HEAD -WAY (min)	HOURS	HEA D- WAY (min)	HOURS	HEA D- WAY (min)
ROUT E 28	PANABO CITY - CARMEN via La Paz - Taba	17.39	Jeepney	12.00	77.51	480.0	0:00 - 24:00	77.51	6:00 - 8:00 ; 16:00 - 19:00	40.00	8:00 - 16:00	80.00	0:00 - 6:00 ; 19:00 - 24:00	360. 00
ROUT E 29	PANABO-CARMEN-B.E. DUJALI- STO. TOMAS via Kinamayan	33.54	Jeepney	28.00	149.4 9	480.0	0:00 - 24:00	149.49	6:00 - 8:00 ; 16:00 - 19:00	20.00	8:00 - 16:00	40.00	0:00 - 6:00 ; 19:00 - 24:00	200. 00
ROUT E 30	TAGUM-B.E. DUJALI via Magupising-Balisong	15.01	Jeepney	12.00	66.90	480.0	0:00 - 24:00	66.90	6:00 - 8:00 ; 16:00 - 19:00	40.00	8:00 - 16:00	80.00	0:00 - 6:00 ; 19:00 - 24:00	360. 00
ROUT	B.E. DUJALI-STO. TOMAS via	16.06	Jeepney	8.00	71.58	480.0	0:00 -	71.58	6:00 -	60.00	8:00 -	120.0	0:00 -	360.

Source: PEO

E 31	Casig-ang -La Libertad					0	24:00		8:00 ;		16:00	0	6:00 ;	00
									16:00 -				19:00 -	
									19:00				24:00	
									6:00 -				0:00 -	
ROUT	TAGUM-B.E. DUJALI-STO. TOMAS	32.35	Jeepney	25.00	144.1	480.0	0:00 -	144.19	8:00;	20.00	8:00 -	40.00	6:00;	200.
E 32	via Talomo	32.33	Jeephey	25.00	9	0	24:00	144.19	16:00 -	20.00	16:00	40.00	19:00 -	00
									19:00				24:00	
									6:00 -				0:00 -	
ROUT	TAGUM-CABIDIANAN, NEW	32.76	Jeepney	4.00	146.0	480.0	0:00 -	146.02	8:00 ;	120.0	8:00 -	240.0	6:00;	360.
E 33	CORELLA via Limbaan	02.70	оссрпсу	4.00	2	0	24:00	140.02	16:00 -	0	16:00	0	19:00 -	00
									19:00				24:00	
									6:00 -				0:00 -	
ROUT	TAGUM-ASUNCION-SAN ISIDRO	41.05	UV	4.00	147.7	480.0	0:00 -	147.78	8:00 ;	120.0	8:00 -	240.0	6:00;	360.
E 34	via Igangon	41.03	OV		8	0	24:00	147.70	16:00 -	0	16:00	0	19:00 -	00
									19:00				24:00	
	SAWATA, SAN ISIDRO - SITIO								6:00 -				0:00 -	
ROUT	PATEL, KAPALONG via Libuton-	28.33	UV	2.00	101.9	480.0	0:00 -	101.99	8:00 ;	240.0	8:00 -	480.0	6:00;	360.
E 35	DatuBalong-Monte Dujali	20.00		2.00	9	0	24:00	101.00	16:00 -	0	16:00	0	19:00 -	00
	BataBalong Monte Bajan								19:00				24:00	
									6:00 -				0:00 -	
ROUT	TAGUM CITY - KAPALONG	33.11	UV	6.00	119.2	480.0	0:00 -	119.20	8:00 ;	80.00	8:00 -	160.0	6:00;	360.
E 36	TAGOM OTT - TAT ALONG	00.11		0.00	0	0	24:00	110.20	16:00 -	00.00	16:00	0	19:00 -	00
									19:00				24:00	
ROUT	TAGUM CITY - STO. TOMAS	27.75	UV	3.00	99.90	480.0	0:00 -	99.90	6:00 -	160.0	8:00 -	320.0	0:00 -	360.
E 37	1700W 0111 - 310. 10WA3	21.13	ÜV	3.00	33.30	0	24:00	99.90	8:00 ;	0	16:00	0	6:00;	00

									16:00 -				19:00 -	
									19:00				24:00	
									6:00 -				0:00 -	
ROUT	DANIADO CITY STO TOMAS	22.00	UV	5.00	119.0	480.0	0:00 -	110.00	8:00;	100.0	8:00 -	200.0	6:00;	360.
E 38	PANABO CITY - STO. TOMAS	33.08	υv	5.00	9	0	24:00	119.09	16:00 -	0	16:00	0	19:00 -	00
									19:00				24:00	
									6:00 -				0:00 -	
ROUT	TACLINA CITY DANIADO CITY	07.50	UV	45.00	00.00	480.0	0:00 -	00.00	8:00;	45.00	8:00 -	20.00	6:00;	150.
E 39	TAGUM CITY - PANABO CITY	27.58	UV	45.00	99.29	0	24:00	99.29	16:00 -	15.00	16:00	30.00	19:00 -	00
									19:00				24:00	
									6:00 -				0:00 -	
ROUT	TAGUM OITY, NEW CORELLA	47.04	1.15.7	4.00	75.00	480.0	0:00 -	75.00	8:00;	120.0	8:00 -	240.0	6:00;	360.
E 40	TAGUM CITY - NEW CORELLA	17.01	UV	4.00	75.82	0	24:00	75.82	16:00 -	0	16:00	0	19:00 -	00
									19:00				24:00	

9.4 Revision of the LPTRP

The monitoring and evaluation of LPTRP shall be the responsibility of the province and in collaboration and coordination with the LTFRB. This is to ensure that a sustainable public transport is provided. Sustainable transport as defined in the Philippine National Environmentally Sustainable Transport Strategy (NESTS), is "transport development that meets the needs of the present without preventing future generations from meeting their needs."

Pursuant to the DILG-DOTr Joint Memorandum Circular No. 001, series of 2017, Section 4. Paragraph F, the LPTRP shall be revised at least once every three years after the last approval. The revision shall be based on the M & E system developed as well as on the planning considerations that are enumerated. In addition to this, there shall be initial assessments of the approved LPTRP to be conducted at least 6 months after it was implemented.

CHAPTER 10 CONCLUSION AND RECOMMENDATIONS



CHAPTER 10

CONCLUSION AND RECOMMENDATIONS

10.1 Summary of Conclusions

- Davao del Norte is strategically located at the heart of Davao Region. It has a travel distance of 55 kilometers from the regional center, which is Davao City. The province is a crossroad for those travelling from Davao City to the provinces of Compostela Valley, Agusan del Sur, Bukidnon and Davao Oriental. Presently, both physical and spatial development is taking place and spreading from the regional center to adjacent provinces, particularly Davao del Norte. As the Study Area of this plan, the province plays a key role in accelerating the achievement of regional development policies. For this purpose, there is a need to upgrade the current transport system of Davao del Norte to support Davao Region's varied social and economic activities.
- The population of Davao del Norte is increasing at a rate of 1.38% until 2020. This is coupled with the growing economic activities in the province that will trigger the additional requirement for built-up areas including the need for residential and settlement spaces, infrastructure and transport facilities. Major growth centers like Tagum City and Panabo City and emerging centers like the Island Garden City of Samal, Sto. Tomas and Kapalong need to have substantial areas allocated for urban expansions, as indicated in their respective comprehensive development plans.

An efficient local public transport system has to be put in place because it is an important support to urban and social development. The transport routes influence every aspect of community life as they are the means for moving people, goods and services throughout the communities, the region and moreover, to other destinations outside the Study Area. In addition, it plays a significant role in shaping patterns of growth, facilitating economic prosperity and influencing the character and livability of our communities.

- The existing road network of Davao del Norte is comparatively well-developed. Its theoretical capacity is enough to accommodate the present level of traffic volume. The completion of road projects proposed in the existing plans will be sufficient even for the forecasted traffic volume in 2022. However, there are problems that limit the use of existing road space such as the bottleneck sections in built-up areas, insufficient management of intersections, traffic accidents and poor traffic discipline.
- The present public transport modes in Davao del Norte are public utility bus (PUB), public utility jeepney (PUJ) and utility van (UV) express. These are owned and operated by private groups or individuals. "Habal-habal" or single motorcycles ply particularly in remote areas, especially those with high elevation and difficult terrains. Services by all these modes of transportation are more or less satisfactory. Fare rates are regulated by the LTFRB.
- Eventually, land transportation will be augmented by the operation of the railway system, which implementation will commence by 2019.

10.2Recommended Route Structure and Plan

The Joint Memorandum Circular (JMC) No. 001, Series of 2017 gave the task to all LGUs to prepare and submit their respective LPTRPs to the DOTr and the LTFRB. It is at the level of the LGUs that local public transport routes were identified and prioritized based on local need and resources. The prioritization of routes was based on the urgency of transport expressed by time periods, namely: short term, medium term (5 years) and long term (10 years). From The level of the LGU, the LPRTP is further endorsed to the LTFRB for the review, consideration and approval prior to its full implementation. The following tables provide the lists of the proposed local public routes according to priority:

a. Short Term

Table No. 10.1: List of Proposed Routes for Public Utility Bus (PUBs)

Province of Davao del Norte

Route No.	Route Name	Fleet Size (Units)	Location of Terminal	Proposed Location of Stops
1	TAGUM-SITIO PATEL, KAPALONG via Igangon-Sawata-Libuton- DatuBalong-Monte Dujali	13	 Tagum City Terminal Asuncion Terminal Sawata, San Isidro Terminal Proposed Terminal at Sitio Patel, Kapalong 	 Crossing Capitol, Mankilam Pagsabangan E/S Brgy. Cabaywa Km. 9, Sagayen Brgy. Concepcion Brgy. Igangon Brgy. Sabangan Brgy. Sto. Nino Brgy. Libuton Brgy. Dacudao Brgy. DatuBalong Brgy. Monte Dujali
2	TAGUM-ASUNCION-SAN ISIDRO via Km.9 Sagayen-Pamacaun- San Miguel	4	 Tagum City Terminal Asuncion Terminal Sawata, San Isidro Terminal 	 Crossing Capitol, Mankilam Brgy. Cabaywa Brgy. Dona Andrea Km. 9, Sagayen Brgy. Pamacaun Brgy. New Loon Brgy. San Miguel Brgy. Linao
3	TAGUM-SITIO PATEL, KAPALONG via Florida-Suaon-Gupitan	16	 Tagum City Terminal Asuncion Terminal Kapalong Terminal Proposed terminal at Sitio Patel, Kapalong 	 Crossing Capitol, Mankilam Pagsabangan E/S Brgy. Cambanogoy Brgy. Magatos Brgy. Maniki Brgy. Tiburcia Brgy. Capungagan Brgy. Mabantao Brgy. Florida Brgy. Suaon

			T	T 2
				- Brgy. Gupitan
		2.5		- Brgy. Monte Dujali
4	TAGUM-ASUNCION -	28	Tagum City Terminal	- Crossing Capitol,
	KAPALONG – TALAINGOD		Asuncion Terminal	Mankilam
			 Kapalong Terminal 	- Pagsabangan E/S
			 Talaingod Terminal 	- Brgy. Magatos
				- Brgy. Gabuyan
5	TAGUM CITY-CARMEN-	119	Tagum City Terminal	- Curvada, Magdum
	PANABO CITY		Carmen Terminal	- St. Mary's College,
			 Panabo City Terminal 	Tagum City
				- Corner Pioneer Ave.
				- Cor.Sobrecary St.
				- Visayan Village CES
				- Cor. Redulosa St.
				(Near Medical
				Mission Hospital)
				- Cor. Timog Ave.
				- Km. 48, Canocotan
				- Brgy. Tuganay,
				Carmen
6	PANABO CITY-CARMEN-	38	Panabo City Terminal	- Brgy. Magsaysay,
	STO.TOMAS-KAPALONG-		Carmen Terminal	Carmen
	TALAINGOD		• Sto. Tomas Terminal	- DAPECOL
			 Kapalong Terminal 	- NAFCO
			 Talaingod Terminal 	- Brgy. Pag-asa,
				Kapalong
				- SitioNarra,
				Gabuyan, Kapalong
7	TAGUM CITY -BRAULIO E.	14	Tagum City Terminal	- Crossing Capitol,
	DUJALI-STO. TOMAS		• Sto. Tomas Terminal	Mankilam
	via Salvacion -Kinamayan			- Brgy. San Miguel,
				Tagum City
				- Brgy. Magupising,
				BE Dujali
				- Brgy. Esperanza
				- Brgy. Salvacion
				- Brgy. Kinamayan,
10	TA CLINA CITY NEW CODE:	-	T	Sto. Tomas
10	TAGUM CITY-NEW CORELLA	7	Tagum City Terminal	- La Filipina E/S
			New Corella Terminal	- Brgy. Cuambogan
				- Brgy. Mesaoy
				- Sitio Paton, Mesaoy
				- San Juan, Mesaoy
				- Brgy. Del Pilar

Source : PEO/PPDO

Table No. 10.2: List of Proposed Routes for Public Utility Jeepney (PUJ)

Province of Davao del Norte

		Fleet		
Route	Route Name	Size	Location of Terminal	Location of Stop
No.		(Units)		•
8	KAPALONG-SAN ISIDRO	25	Kapalong Terminal	- Crossing Capitol,
	via Mabantao-Florida-Suaon-		Sawata, San Isidro	Mankilam
	Sambayon-Libuton-Sawata		Terminal	- Pagsabangan E/S
				- Brgy. Cambanogoy
				- Brgy. Magatos
				- Brgy. Maniki
				- Brgy. Tiburcia
				- Brgy. Capungagan
				- Brgy. Mabantao
				- Brgy. Florida
				- Brgy. Suaon
				- Brgy. Libuton
12	TAGUM CITY-NEW CORELLA-	15	Tagum City terminal	- Brgy. Mesaoy
	SONLON, ASUNCION		New Corella Terminal	- San Juan, Mesaoy
	viaLimbaan-Sto. Nino-		 Proposed Terminal at 	- Prk. 7, Poblacion
	Macgum		Sonlon, Asuncion	- Brgy. Limbaan
				- Crossing Sto. Nino
				- Brgy. Suawon
4.2	TA CURA CITY NEW COREUA	20	- 0	- Brgy. Macgum
13	TAGUM CITY-NEW CORELLA	28	Tagum City terminal	- Curvada, Magdum
	via Magdum-San Agustin-		New Corella Terminal	- Highway Brgy.
	New Bohol-Carcor			Magdum - Botanical Park
				- Brgy. San Agustin
				- Brgy. New Bohol
				- Brgy. New Cortez
				- Brgy. San Jose
				- Brgy. Carcor
16	KAPALONG-ASUNCION-NEW	6	Kapalong Terminal	- Brgy. Camoning
	CORELLA		New Corella Terminal	- Brgy. San Vicente
	ViaCamoningBrgy. Rd-San			- Highway Canatan
	Vicente-Canatan-Silangan-			- Brgy. Canatan
	New Sambog			- SitioSilangan, Sta.
				Cruz
				- Brgy. New Sambog
19	TAGUM CITY-ASUNCION-	39	Tagum Terminal	- Crossing Capitol,
	CAMANSA		Asuncion Terminal	Mankilam
	via Sagayen-Napungas-		 Proposed Terminal at 	- Brgy. Dona Andrea
	Sonlon		Camansa, Asuncion	- Brgy. Sagayen
				- Brgy. Napungas
				- Brgy. Sonlon
				- New Visayas, Brgy.
				Buan Bray Camanca
20	TAGLIM CITY ASLINGUAL	0	a Taguna Tagasia al	- Brgy. Camansa
20	TAGUM CITY-ASUNCION- KAPALONG	9	Tagum Terminal Asympton Terminal	 Crossing Capitol, Mankilam
	via Pagsabangan-New		Asuncion Terminal Kanalana Tarminal	- Pagsabangan E/S
	Bantayan-Ilog-Nat'l Hway		Kapalong Terminal	
	Dantayan-nog-Nat i Hway			- Brgy. New Bantayan

	1			Dray Magata
22	KADALONG DAITON	1.1	V I	- Brgy. Magatos
23	KAPALONG-PAITON,	14	Kapalong Terminal	- Highway Gabuyan
	TALAINGOD		Proposed Terminal at	- Brgy. Semong
	via Gabuyan-Semong-		SitioPaiton, Brgy.	- Brgy. Dagohoy
	Dagohoy-Angelo		Dagohoy	- Angelo, Brgy.
	D111100 000 000100			Dagohoy
24	PANABO-STO. TOMAS	72	Panabo City Terminal	- Brgy. New Malitbog
	via Minda-New Malitbog		• Sto. Tomas Terminal	- Brgy. Tubod
				- Brgy. Floriendo
				- DAPECOL
25	STO TOMAS SINDATON	12	Sto. Tomas Terminal	- NAFCO
25	STO. TOMAS-SINDATON, PANABO CITY	12	• Sto. Tomas Terminai	- Brgy. New Visayas
	via Tulalian		D I D	- Brgy. Bobongon
	via Tulaliali		 Proposed Brgy. Sindaton Terminal 	- Brgy. Balagunan - Brgy. Tulalian
20	DANIADO CITY CADRAEN	12		
28	PANABO CITY - CARMEN via La Paz - Taba	12	Panabo City Terminal	- Brgy. San Pedro - Brgy. La Paz
	Vid Ld PdZ - TdDd		Carmen Terminal	- Brgy. La Paz
				- Brgy. Tuganay
29	PANABO CITY-CARMEN-	28	• Danaha City Torminal	- Brgy. Tuganay
23	BRAULIO E. DUJALI-STO.	20	Panabo City TerminalCarmen Terminal	- Brgy. San Isidro
	TOMAS			- Brgy. Casay
	via Kinamayan		BE Dujali Terminal Cha Tamas Tamas and	- Brgy. San Miguel
	via Kiliallayali		• Sto. Tomas Terminal	- Brgy. Kinamayan
30	TAGUM CITY-BRAULIO E.	12	Tagum City Terminal	- Brgy. San Miguel,
	DUJALI		BE Dujali Terminal	Tagum City
	via Magupising-Balisong		22 2 ajan 1 annina	- Brgy. Magupising
				- Brgy. Cabay-angan
				- Brgy. New Casay
31	BRAULIO E. DUJALI-STO.	8	Sto. Tomas Terminal	- CrosssingBrgy. La
	TOMAS		BE Dujlai Terminal	Libertad
	via Casig-ang -La Libertad			- Brgy. La Libertad
				- Brgy. Casig-ang
32	TAGUM CITY-B.E. DUJALI-	25	Tagum City Terminal	- Brgy. San Miguel,
	STO. TOMAS		• Sto. Tomas Terminal	Tagum City
	via Talomo			 Brgy. Magupising
				- Brgy. Esperanza
				- Brgy. Talomo
				- Brgy. Lunga-og
				- Brgy. Pantaron
33	TAGUM CITY-CABIDIANAN,	4	Tagum Terminal	- Brgy. Mesaoy
	NEW CORELLA		New Corella Terminal	- Brgy. Del Pilar
	via Limbaan		• Proposed Terminal at	- Brgy. Limbaan
			Cabidianan, New	- Brgy. Suawon
			Corella	- Tagaytay, Macgum
	Source: PEO/PPDO			- Brgy. Cabidianan

Source: PEO/PPDO

The utility van (UV) express is a mode of public transportation that operates in the province making use of the existing bus routes, either within or passing through the LGU. As UV express provides alternative transport service at the identified bus routes, it should be deemed that this type of service augments bus transport services. In order that UVs will not compete with bus transport is to make it clear that UV services are limited to "point to point" (P2P) operation only. The following table presents a list of UV express routes that are proposed for short term approval and implementation.

Table 10.3: **UV Express Routes Proposed for Short Term Approval**Province of Davao del Norte

Route No.	Route Name	Fleet Size (Units)	Location of Terminal	Location of Stops							
34	TAGUM-ASUNCION- SAN ISIDRO via Igangon	4	Tagum City TerminalSawata, San Isidro Terminal	Point-to-Point (P2P) Service							
35	SAWATA, SAN ISIDRO - SITIO PATEL, KAPALONG via Libuton- DatuBalong-Monte Dujali	2	 Sawata, San Isidro Terminal Proposed Terminal at Sitio Patel, Kapalong 	Point-to-Point (P2P) Service							
36	TAGUM CITY - KAPALONG	5	Tagum City TerminalKapalong Terminal	Point-to-Point (P2P) Service							
37	TAGUM CITY - STO. TOMAS	3	 Tagum City Terminal Sto. Tomas Terminal	Point-to-Point (P2P) Service							
38	PANABO CITY - STO. TOMAS	5	Panabo City TerminalSto. Tomas Terminal	Point-to-Point (P2P) Service							
39	TAGUM CITY - PANABO CITY	45	 Tagum City Terminal Panabo City Terminal	Point-to-Point (P2P) Service							
40	TAGUM CITY - NEW CORELLA	4	Tagum City TerminalNew Corella Terminal	Point-to-Point (P2P) Service							

Source: PEO/PPDO

b. MEDIUM TERM

Table No. 10.4: Public Utility Jeep (PUJ) Proposed for Medium Term Approval
Province of Davao del Norte

Route No.	Route Name	Fleet Size (Units)	Location of Terminal	Location of Stops
9	KAPALONG-SAN ISIDRO	4	Kapalong Terminal	- Brgy. Tiburcia
	via Capungagan-		 Sawata, San Isidro 	- Brgy. Capungagan
	Mabantao-New		Terminal	- Brgy. Mabantao
	Boholano-San Miguel			- Pandulian,
	_			Mabantao
				- Brgy. San Miguel
				- Brgy. Linao
17	ASUNCION-NEW	4	Asuncion Terminal	- Asuncion NHS
	CORELLA		New Corella Terminal	- SitioMonte Carlo,
	via Monte Carlo-Del Pilar			Cambanogoy
				- Brgy. Del Pilar
18	TAGUM-ASUNCION	4	Tagum City Terminal	- La Filipina E/S

	via Cuambogan-Buclad		Asuncion Terminal	Brgy. CuamboganNew Alegria,BucladBrgy. Buclad
22	STO. TOMAS-TALAINGOD	18	• Sto. Tomas Terminal	- Brgy. Mamacao
	via Mamacao-Narra		Talaingod Terminal	- Brgy. Sampao - SitioNarra, Brgy. Gabuyan
26	PANABO-MABUHAY, CARMEN	9	Panabo City Terminal	- Brgy. Southern Davao
			Proposed Brgy. Manay Terminal	Brgy. NewMalitbogBrgy. ManayBrgy. Dalisay
27	PANABO-TUBOD, CARMEN	9	Panabo City TerminalProposed Brgy. Tubod Terminal	Brgy. QuezonBrgy. CebulanoBrgy. Mangalcal

Source: PEO/PPDO

c. LONGTERM

Table No. 10.5: **Public Utility Jeep (PUJ) Proposed for Long Term Implementation**Province of Davao del Norte

		Fleet				
Route No.	Route Name	Size (Units)	Location of Terminal	Location of Stop		
11	NEW CORELLA-	19 units	 New Corella Terminal 	- Brgy. New Sambog		
	CAMANSA via San Roque-			- Brgy. San Roque		
	Macgum		 Proposed Terminal at 	- Brgy. Sto. Nino		
			Camansa, Asuncion	- Brgy. Macgum		
				- Brgy. Sonlon		
				- New Visayas, Brgy.		
				Buan		
				- Brgy. Camansa		
14	ASUNCION-NEW	3 units	 Asuncion Terminal 	- Asuncion NHS		
	CORELLA		 New Corella Terminal 	- Sitio Paton, Mesaoy		
	via Mahayahay-Paton			- El Unido, Mesaoy		
15	KAPALONG-ASUNCION-	4 units	 Kapalong Terminal 	- Brgy. Tiburcia		
	NEW CORELLA		 New Corella Terminal 	- Brgy. Capungagan		
	via Capungagan-Dona			- Brgy. New Santiago		
	Andrea-Canatan-			- Highway Dona		
	StaFilomena-San Roque			Andrea		
				- Brgy. Canatan		
				- Brgy. Sta. Filomena		
				- Brgy. San Roque		
				- Brgy. New Sambog		
21	ASUNCION-KAPALONG	14 units	 Asuncion Terminal 	- Brgy. Cambanogoy		
	via Canatan-San Vicente-		 Kapalong Terminal 	- Highway Canatan		
	Butay			- Brgy. San Vicente		
				- Brgy. New Santiago		
				- SitioButay, New		
				Santiago		

Source: PEO/PPDO

Table No. 10.6: Comparative Data on Existing and Proposed Routes with Justification

EXISTING ROUTE	MODE	NAU	NUO	ROUTE MARK	PROPOSED ROUTE	MODE	FLEET SIZE	REMARKS	JUSTIFICATION
TAGUM - SAN ISIDRO (Tagum - Monte Dujali)	PUJ	4	2	ROUTE 1	TAGUM-SITIO PATEL, KAPALONG via Igangon- Sawata-Libuton-DatuBalong-Monte Dujali	PUB	13	Upgrade to PUB, Extend to Sitio Patel	More units for better service
TAGUM - SAN ISIDRO	PUB	1	1	ROUTE 2	TAGUM-ASUNCION-SAN ISIDRO via Km.9 Sagayen-Pamacaun-San Miguel	PUB	4	Retained	More units for better service
TAGUM - SAN ISIDRO	PUJ	14	1					deleted route	
TAGUM - SAN ISIDRO	PUB	9	5					deleted route	
TAGUM - Florida, Kapalong	PUJ	13	4	ROUTE 3	TAGUM-SITIO PATEL, KAPALONG via Florida- Suaon-Gupitan	PUB	16	Upgrade to PUB, Extend to Sitio Patel	Upon demand by LGU's
TAGUM-ASUNCION - KAPALONG - TALAINGOD (Tagum - Panabo via Circumferential route)	PUB	2	2	ROUTE 4	TAGUM-ASUNCION - KAPALONG - TALAINGOD	PUB	28	Route cut to Tagum - Talaingod only	Long route lengths are prone to cutting trips by operators unless route is in demand
TAGUM - TALAINGOD	PUJ	33	4					deleted route	
TAGUM - KAPALONG	PUJ	19	57					deleted route	
PANABO - CARMEN - TAGUM (from Davao City)	PUB	501	420	ROUTE 5	TAGUM-CARMEN-PANABO	PUB	119	Route cut, less no. of units	Some of these existing units are extending service to locations beyond Tagum and Panabo
PANABO - SAN ISIDRO (from Davao City)								deleted route	Long route lengths are prone to cutting trips by operators unless route is in demand

PANABO- TALAINGOD	PUB	10	10 (only 2 operate in KAP-TAL)	ROUTE 6	PANABO-CARMEN-STO.TOMAS-KAPALONG - TALAINGOD	PUB	173	Retained, increase no of units	needed route, only 2 PUB are operating in Kapalong-Talaingod due to existence of UV routes
TAGUM - PANABO via Kinamayan	PUB	27	7					deleted route	route reconfigured
PANABO - CARMEN - STO. TOMAS (from Davao City)	PUB	25	43					deleted route	retained route to Talaingod
TAGUM - STO. TOMAS	PUJ	40	30	ROUTE 7	TAGUM-B.E. DUJALI-STO. TOMAS via Salvacion- Kinamayan	PUB	14	Upgraded to PUB	
				ROUTE 8	KAPALONG-SAN ISIDRO via Mabantao-Florida- Suaon-Sambayon-Libuton-Sawata	Jeepney	25	New Route	Upon demand by LGU's
				ROUTE 9	KAPALONG-SAN ISIDRO via Capungagan- Mabantao-New Boholano-San Miguel	Jeepney	4	New Route	Upon demand by LGU's
TAGUM-NEW CORELLA	PUB	6	4	ROUTE 10	TAGUM-NEW CORELLA	PUB	7	Retained, increase no of units	
TAGUM-NEW CORELLA	PUJ	42	36					deleted route	
				ROUTE 11	NEW CORELLA-CAMANSA via San Roque- Macgum	Jeepney	19	New Route	Upon demand by LGU's
TAGUM - SONLON, ASUNCION	PUJ	3	3	ROUTE 12	TAGUM-NEW CORELLA-SONLON, ASUNCION via Limbaan-Sto. Nino-Macgum	Jeepney	15	Retained, increase no of units	
				ROUTE 13	TAGUM-NEW CORELLA via Magdum-San Agustin-New Bohol-Carcor	Jeepney	28	New Route	Upon demand by LGU's
				ROUTE 14	ASUNCION-NEW CORELLA via Mahayahay- Paton	Jeepney	3	New Route	Upon demand by LGU's
				ROUTE 15	KAPALONG-ASUNCION-NEW CORELLA via Capungagan-Dona Andrea-Canatan- StaFilomena-San Roque	Jeepney	4	New Route	Upon demand by LGU's

				ROUTE 16	KAPALONG-ASUNCION-NEW CORELLA via CamoningBrgy. Rd-San Vicente-Canatan- Silangan-New Sambog	Jeepney	6	New Route	Upon demand by LGU's
				ROUTE 17	ASUNCION-NEW CORELLA via Monte Carlo-Del Pilar	Jeepney	4	New Route	Upon demand by LGU's
				ROUTE 18	TAGUM-ASUNCION via Cuambogan-Buclad	Jeepney	4	New Route	Upon demand by LGU's
TAGUM - ASUNCION (Tagum - Napungas)	PUJ	28	24	ROUTE 19	TAGUM-ASUNCION-CAMANSA via Sagayen- Napungas-Sonlon	Jeepney	39	Extend to Camansa	Upon demand by LGU's
				ROUTE 20	TAGUM-ASUNCION-KAPALONG via Pagsabangan-New Bantayan-Ilog-Nat'l Hway	Jeepney	9	New Route	Upon demand by LGU's
				ROUTE 21	ASUNCION-KAPALONG via Canatan-San Vicente-Butay	Jeepney	14	New Route	Upon demand by LGU's
				ROUTE 22	STO. TOMAS-TALAINGOD via Mamacao-Narra	Jeepney	18	New Route	Upon demand by LGU's
				ROUTE 23	KAPALONG-PAITON, TALAINGOD via Gabuyan- Semong-Dagohoy-Angelo	Jeepney	14	New Route	Upon demand by LGU's
				ROUTE 24	PANABO-STO. TOMAS via Minda-New Malitbog	Jeepney	72	New Route	Upon demand by LGU's
				ROUTE 25	STO. TOMAS-SINDATON, PANABO CITY via Tulalian	Jeepney	12	New Route	Upon demand by LGU's
				ROUTE 26	PANABO-MABUHAY, CARMEN	Jeepney	9	New Route	Upon demand by LGU's
				ROUTE 27	PANABO-TUBOD, CARMEN	Jeepney	9	New Route	Upon demand by LGU's
				ROUTE 28	PANABO CITY - CARMEN via La Paz - Taba	Jeepney	12	New Route	Upon demand by LGU's
PANABO - BE DUJALI	PUJ/Filc ab	12	2 - PUJ 7 - Filcab	ROUTE 29	PANABO-CARMEN-B.E. DUJALI-STO. TOMAS via Kinamayan	Jeepney	28	Extend to Sto. Tomas	Upon demand by LGU's
				ROUTE 30	TAGUM-B.E. DUJALI via Magupising-Balisong	Jeepney	12		Upon demand by LGU's
				ROUTE 31	B.E. DUJALI-STO. TOMAS via Casig-ang -La Libertad	Jeepney	8		Upon demand by LGU's
				ROUTE 32	TAGUM-B.E. DUJALI-STO. TOMAS via Talomo	Jeepney	25	New Route	Upon demand by LGU's

				ROUTE 33	TAGUM-CABIDIANAN, NEW CORELLA via Limbaan	Jeepney	4	New Route	Upon demand by LGU's
TAGUM - SAN ISIDRO	UV	2	14	ROUTE 34	TAGUM-ASUNCION-SAN ISIDRO via Igangon	UV	4	Retained but Point-to-point only	Upon demand by LGU's
				ROUTE 35	SAWATA, SAN ISIDRO - SITIO PATEL, KAPALONG via Libuton-DatuBalong-Monte Dujali	UV	2	New Route, Point-to-point only	Upon demand by LGU's
				ROUTE 36	TAGUM CITY - KAPALONG	UV	6	New Route, Point-to-point only	Upon demand by LGU's
				ROUTE 37	TAGUM CITY - STO. TOMAS	UV	3	New Route, Point-to-point only	Upon demand by LGU's
PANABO - STO. TOMAS (from Davao City to Talaingod)	UV	1	30	ROUTE 38	PANABO CITY - STO. TOMAS	UV	5	Route cut within alignment only, P2P only	Upon demand by LGU's
PANABO - CARMEN - TAGUM (from Davao City to Davao de Oro / Davao Oriental	UV	660	300	ROUTE 39	TAGUM CITY - PANABO CITY	UV	45	Route cut within alignment only, P2P only	Upon demand by LGU's
				ROUTE 40	TAGUM CITY - NEW CORELLA	UV	4	New Route, Point-to-point only	Upon demand by LGU's

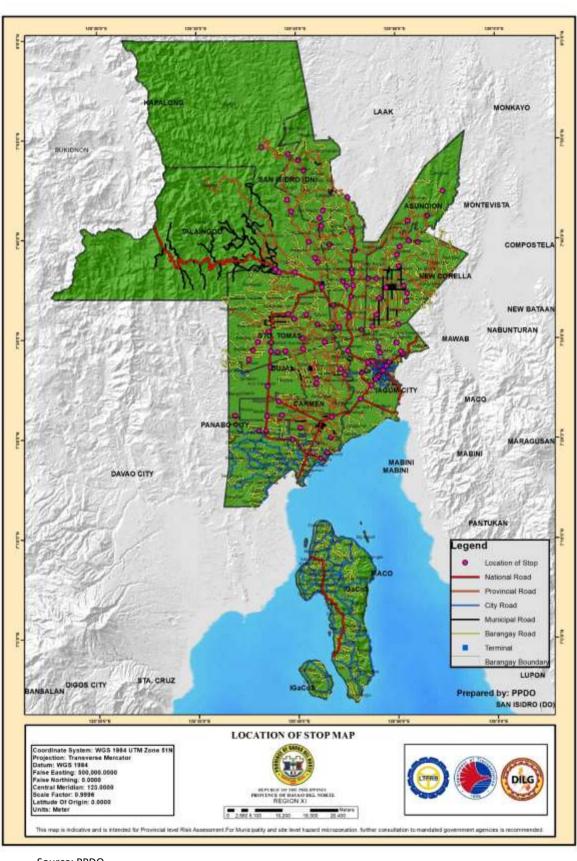


Figure 10.1: **Location of Route Stops Map**

Source: PPDO

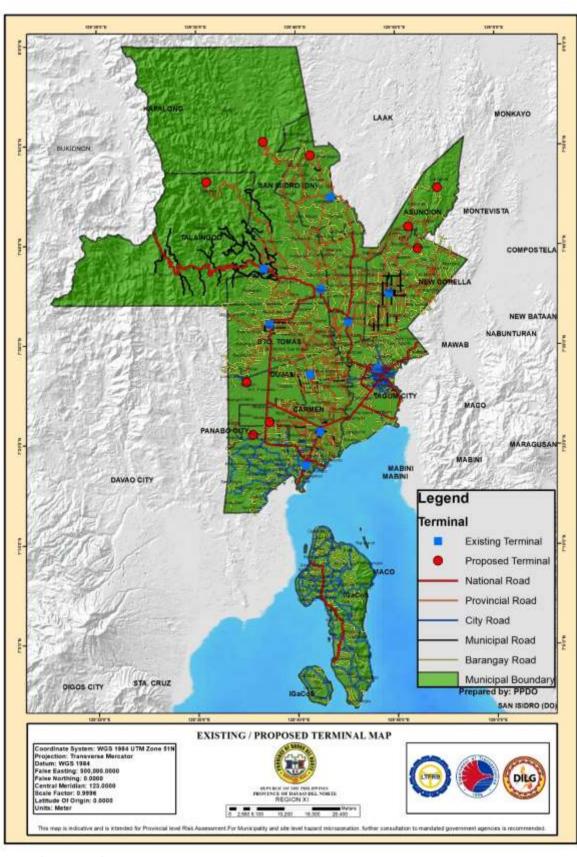


Figure 10.2: Existing and Proposed Transport Terminals Map

Source: PPDO



Figure 10.3: **Tagum City to Sitio Patel, Kapalong via Igangon-Sawata-Libuton-DatuBalong-Monte DujaliRoute Map**

Dacudao Binancian SAN ISIDRO daon an Miguel Florida Mabantac Pamabaun ASUNCION Sa Napungas mong Capungagan Katipunan Suawon Stal Fe KAPALONG ilomenaSan Roque Sto. Niño Mambing Gabuyan Limbaan D NEW CORELLA Del Monte Tiburcia New SantiagoDon mpao Camoning Legend Proposed Route National Road mamon Provincial Road New Bohol anogoy City Road Lungaog 0 Municipal Road STO. TOMAS Barangay Road Kinamayan City/Municipal Hall San Vicente Barangay Hall Cuambogan Terminal Blood Bank Botika ng Barangay 0 Brgy. Health Station City Health Office DUJAL District Health Offic 0 Private Hospital Public Hospital San Isidro CARMEN Rural Health Unit Prepared by: PPDO PROPOSED TAGUM TO ASUNCION TO SAN ISIDRO ROUTE MAP PF
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Figure 10.4: Proposed Tagum City to Asuncion to San Isidro via Km. 9
Sagayen-Pamacaun-San Miguel Route Map

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Figure 10.5: **Proposed Tagum City to Sitio Patel, Kapalong via Florida- Suaon-GupitanRoute Map**



Figure 10.6: Proposed Tagum City-Asuncion-Kapalong-Talaingod Route Map

ew Bantayan ASUNCION STO. TOMAS San Vicente San Miguel Pagsa Magupising Cabay-angan DUJALI Dujali San Mignel TAGUM San Isidro Tanglaw Anibongan Magsaysay Alejal Guadalupe Madaum San Isidro New Camiling Legend CARMEN Proposed Route National Road Provincial Road Libuganon City Road H Municipal Road Barangay Road City/Municipal Hall Barangay Hall Terminal Blood Bank Botika ng Barangay Brgy. Health Station City Health Office District Health Office 100 Private Hospital Public Hospital Rural Health Unit Prepared by: PPDO PROPOSED TAGUM TO CARMEN TO PANABO ROUTE MAP oordinato System: WGIS 1984 UTM Zone S1N rojection: Transverse Mercator atum: WGIS 1984 silve Easting: 500,000,0000 silve Northing: 0.0000 silve Northing: 0.0000 entral Merdiam: 123,0000 calle Factor: 0,9996 stitude Of Origin: 0.0000 nits: Meter

Figure 10.7: Proposed Tagum City to Carmen to Panabo City Route Map

nan Capungagan Pamacaun Sagayer Katipenan Gabuyan TALAINGOD Tiburcia New SantiagoDoni KAPALONG Mamacao Camoning NEW CORELL ASUNCION abaywa San Jose New Bohol banogo H 0 STO. TOMAS Salvacion Kinamayan New Visayas New Bantay Nueva Fuerza Bebongen Esperanza Cuambogan San Migue agsahangan Balagunan Casig-ang Cabay-angan Tulalian DUJALI egend Proposed Route Sindaton National Road A.O. Floin San Islaro Provincial Road City Road Cano Dapco Aniboliga CARMEN Municipal Road Magsay Guadalupe Barangay Road City/Municipal Hall Tibulao Tubod Mangalo cungan Barangay Hall Terminal Libuganon Blood Bank Botika ng Barangay Busaon Brgy. Health Station City Health Office PANABO District Health Office 100 Private Hospital Public Hospital Rural Health Unit Prepared by: PPDO PROPOSED PANABO TO CARMEN TO STO.TOMAS TO KAPALONG TO TALAINGOD ROUTE MAP minate System: WGS 11 ojection: Transverse Merc tum: WGS 1884 Ise Easting: 500,000,0000 se Northing: 0.0000 ntral Meridian: 123,0000 rise Factor: 0.9996 "Bude Of Origin: 0.0000 its: Meter ordinate System: WGS 1984 UTM Zone 51N DILG

Figure 10.8: Proposed Panabo City-Carmen-Sto. Tomas-Kapalong-Talaingod Route Map

levaSantiagoSan Vicente Canatan KAPALONG Camoning Cabaywa ASUNCION Kimamon **NEW CORELLA** New Katipunan mbanogoy 0 TOMAS Wiseras New Bantayan Nueva Fuerza Esperanza Cuambogan San Miguel La Libertad Pagsa Jangan La Filipina Casig-ang Magupising Cabay-anga Tulalian Legend Proposed Route National Road Mabaus) TAGUM Provincial Road San laidro City Road Canoo Municipal Road Anibohgan Barangay Road City/Municipal Hall Guadalupe Barangay Hall Madaum San Isidro Terminal Blood Bank Botika ng Barangay 0 Brgy. Health Station Libuganon City Health Office District Health Office Busaon (1) Private Hospital H Public Hospital Rural Health Unit Prepared by: PPDO PROPOSED TAGUM TO STO. TOMAS via KINAMAYAN ROUTE MAP ordinate System: WGS 1984 UTM Zone 5th yection: Transverse Merculor arm: WGS 1984 se Easing: 500,000,000 se Northing: 0.0000 se Northing: 0.0000 trail Meridian: 123.0000 de Factor: 0.9986 Nude Of Origin: 0.0000 ts. Meter DILG

Figure 10.9: Proposed Tagum City to Braulio E. Dujali to Sto. Tomas via Salvacion-Kinamayan Route Map

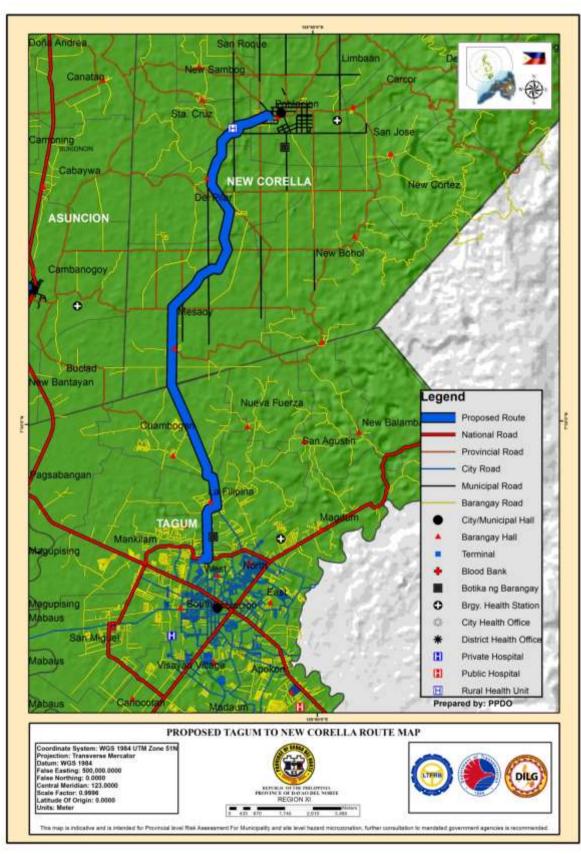


Figure 10.10: Proposed Tagum City to New Corella Route Map



Figure 10.11: **Proposed Kapalong to San Isidro viaMabantao-Florida- Suaon-Sambayon-Libuton-SawataRoute Map**

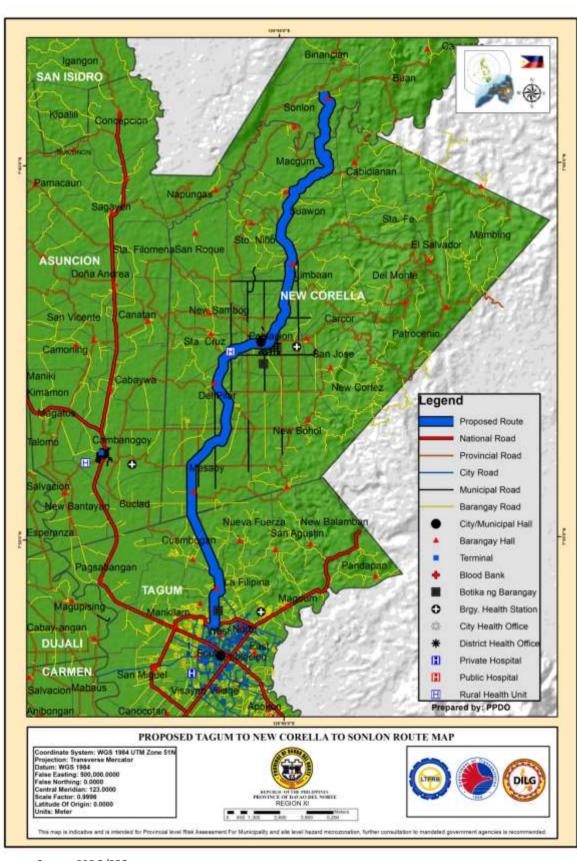


Figure 10.12: Proposed Tagum City-New Corella-Sonlon, Asuncion
Via Limbaan-Sto Nino-MacgumRoute Map

mars. mbaan Canatan Carcor Patrocenio an Jose Cabaywa **NEW CORELLA** New Cortez ASUNCION Cambanogoy . Nueva Euerza Legend New Balamban Cuambogan Proposed Route National Road agsabangan Provincial Road City Road Municipal Road Barangay Road TAGUM City/Municipal Hall Mankilam Barangay Hall Terminal Blood Bank Botika ng Barangay 0 Brgy. Health Station iquel City Health Office San N District Health Office Mabaus Private Hospital Public Hospital Rural Health Unit Canocotan Prepared by: PPDO PROPOSED TAGUM TO NEW CORELLA via MAGDUM ROUTE MAP Coordinate System: WGS 1984 UTM Zone 618 Projection: Transversa Mercasor latum: WGS 1984 UTM Zone 618 latue Easting: 500,000.0000 late Northing: 9,0000 lettral Meridian: 123,000 lette Factor: 0.9904 artivate Of Origin: 0.0000 initial. Meters

Figure 10.13: **Proposed Tagum City to New Corella via Magdum- San Agustin-New Bohol-Carcor Route Map**

New Loon Napungas Capungagan Sagay Sto. Nino San Roque Sta. Filomena Tiburcia New Santiago Dona Andre KAPALONG San Vicente Sta. Cruz ASUNCION **NEW CORELLA** Cabaywa Legend Kimamon Proposed Route National Road Provincial Road City Road ambanogoy Municipal Road Talomo Barangay Road City/Municipal Hall 0 Barangay Hall STO. TOMAS Terminal Blood Bank Salvacion Botika ng Barangay Buclad 0 Brgy. Health Station City Health Office District Health Office Esperanza Cuambog San Vicente TAGUM 0 Private Hospital Public Hospital Pagsat angan **DUJALI**Magupising Rural Health Unit Mankilam Prepared by: PPDO Magdun PROPOSED KAPALONG TO ASUNCION TO NEW CORELLA via CAMONING ROUTE MAP crotrosed KAPA
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Figure 10.14: Proposed Kapalong-Asuncion-New Corella via CamoningBrgy. Road-San Vicente-Canatan-Silangan-New SambogRoute Map

abangan lgangon SAN ISIDRO Congepcion amacaun Cabidianan Sta Fe Mambing Sto. Nino El Salvado ta FilomenaSan Roque Dona An Limbaan Del Monte NEW CORELLA ASUNCION San Vicente Patrocenic Camoning Legend Proposed Route New Cortez National Road Provincial Road ew Bohol City Road аподоу Municipal Road 0 Barangay Road City/Municipal Hall Barangay Hall Buclad Nueva Fuerza New Balamb San Agustin Terminal speranza Blood Bank Cuembogan Botika ng Barangay 0 Brgy. Health Station TAGUM 0 City Health Office District Health Office Magupis DUJALI 0 Private Hospital Public Hospital ARMEN Rural Health Unit Prepared by: PPDO PROPOSED TAGUM TO ASUNCION TO CAMANSA via SAGAYEN ROUTE MAP ordinate System: WGS 1984 UTM Zone S1h
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Figure 10.15: **Proposed Tagum City-Asuncion-Camansa via Sagayen- Napungas-Sonlon Route Map**

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Figure 10.16: **Proposed Tagum City-Asuncion-Kapalong via Pagsabangan-New Bantayan-Ilog National Highway Route Map**

Sabangan Sabangan SAN ISIDRO San Miguel Kıpalili New Loon Mabantao Pamacaun Capungagan Katipunan TALAINGOD KAPALONG Sagayen Legend Proposed Route National Road Tiburcia Provincial Road City Road Municipal Road 0 Barangay Road City/Municipal Hall н Barangay Hall Mamacao Terminal Blood Bank Botika ng Barangay 0 Brgy. Health Station 43 City Health Office District Health Office 10 Private Hospital STO. TOMAS H Public Hospital libal-og Rural Health Unit Pantaron Lungang Prepared by: PPDO PROPOSED KAPALONG TO PAITON, TALAINGOD ROUTE MAP PROPE

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Figure 10.17: **Proposed Kapalong to Paiton, Talaingodvia Gabuyan- Semong-Dagohoy-AngeloRoute Map**

mamon New Katipunan an Jose Magatos ASUNCION NEW CORELLA Kinamayar STO, TOMAS Esperanza Bobongon Cuambogan San Miguel Balagunan Casig-ang Cabay-angan DUJALI New Casey Sindaton Mebaus Tanglaw PANABO TAGUM San Isidro A.O. Floirendo Dapco Anibologan Legend Magsay Guadalupe Proposed Route CARMEN Tibulao Minda National Road Provincial Road Mangalos City Road Consolacion Municipal Road H Barangay Road City/Municipal Hall Barangay Hall Kasilak Terminal Blood Bank Botika ng Barangay Cacao Katipunan PANABO 0 Brgy. Health Station Little Panay City Health Office District Health Office Private Hospital H Public Hospital Rural Health Unit San Nicola Prepared by: PPDO PROPOSED PANABO TO STO. TOMAS via MINDA TO NEW MALITBOG ROUTE MAP Coordinate System: WGS 1984 UTM Zone 51N Projection: Transverse Mercator Datum: WGS 1984 Palse Easting: 500,000,000 False Northing: 0,000 Central Meridian: 123,000 Scale Factor: 0,996 Lattoude Of Origin: 0,000 Units: Meter

Figure 10.18: Proposed Panabo City to Sto. Tomas via Minda to New Malitbog Route Map

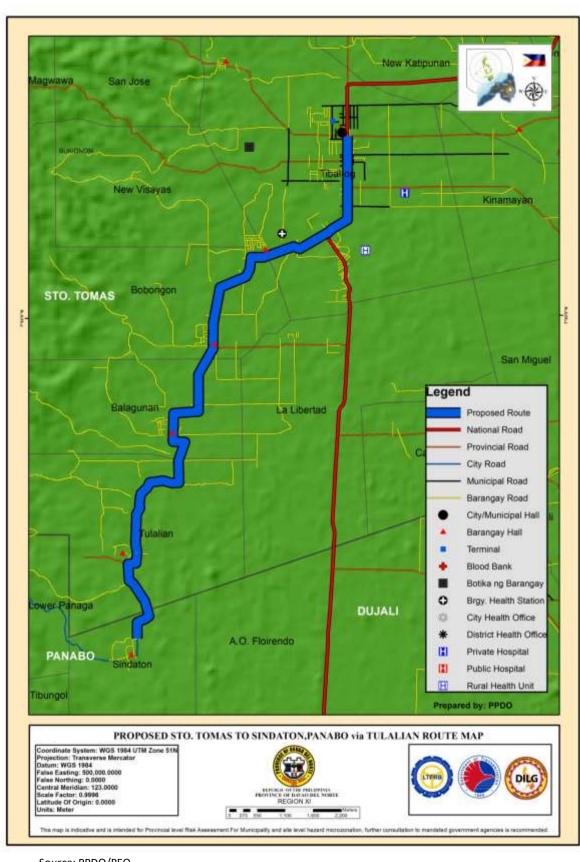


Figure 10.19: Proposed Sto. Tomas to Sindaton, Panabo City via Tulalian Route Map



Figure 10.20: Proposed Panabo City to Carmen via La Paz-TabaRoute Map



Figure 10.21: Proposed Panabo City-Carmen-BE Dujali - Sto. Tomas via Kinamayan Route Map

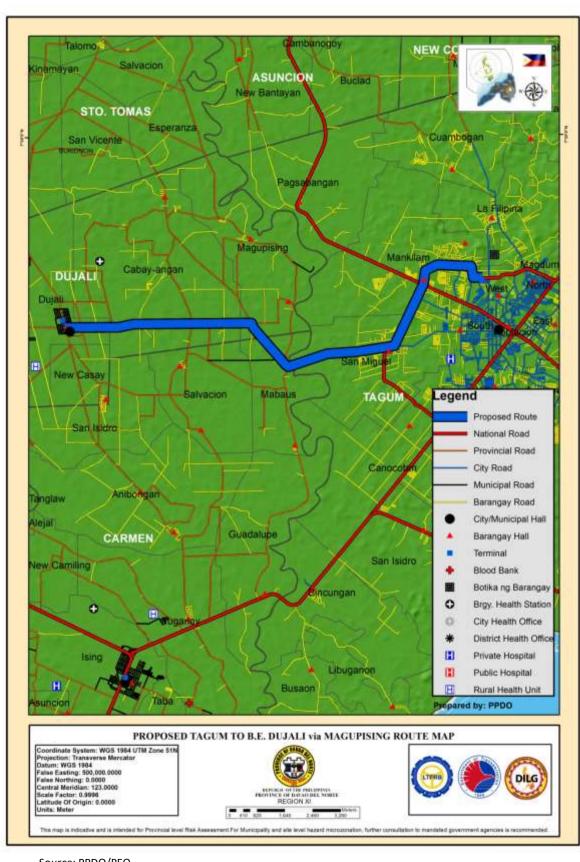


Figure 10.22: Proposed Tagum City- BE Dujalivia Magupising-Balisong Route Map



Figure 10.23: Proposed BE Dujali to Sto. Tomas via Casig-ang-Libertad Route Map



Figure 10.24: Proposed Tagum City – BE Dujali- Sto. Tomas via Talomo Route Map

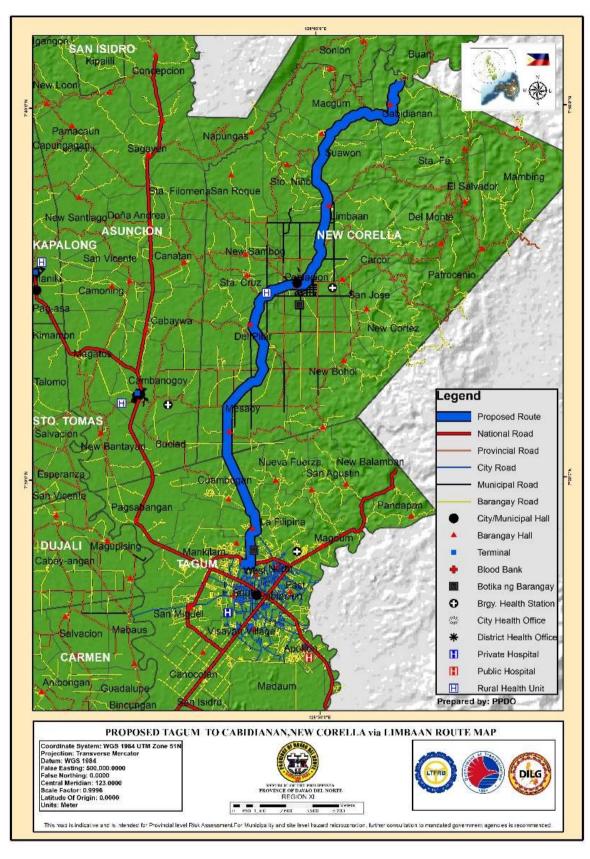


Figure 10.25: Proposed Tagum City-Cabidianan, New Corella via Limbaan Route Map

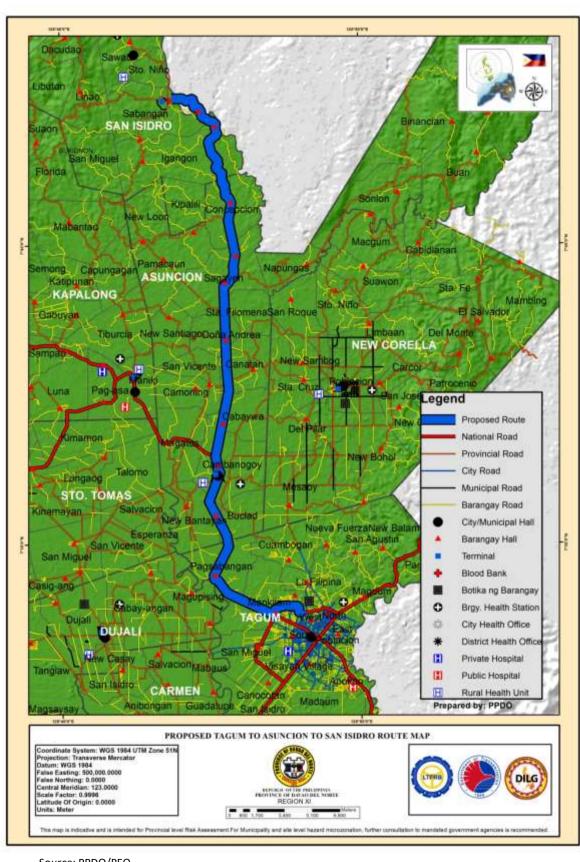


Figure 10.26: Proposed Tagum City to Asuncion to San Isidro via Igangon Route Map

Mamangan SAN ISIDRO Legend Sto. Niño Proposed Route Libutori National Road Provincial Road Sabangan City Road Municipal Road Barangay Road City/Municipal Hall San Miguel Igango Barangay Hall Terminal KAPALONG Blood Bank Botika ng Barangay 0 Brgy. Health Station Кірі City Health Office New Loon District Health Office Semong (1) Private Hospital Palma GITALAINGOD Public Hospital Rural Health Unit Katipunan Capungagan Prepared by: PPDO 'Vo PROPOSED SAWATA, SAN ISIDIRO-SITIO PATEL, KAPALONG ROUTE MAP cordinate System: WGS 1984 UTM Zone S1N rejection: Transverse Mercatur soun: WGS 1984 WGS 1980 slee Easting: 500,000,0000 slee Northing: 0.0000 entral Merdian: 123,0000 catle Factor: 0,9996 attude Of Origin: 6.0000 nits: Meter

Figure 10.27: **Proposed Sawata, San Isidro to Sitio Patel, Kapalong via Libuton- DatuBalong-Monte DujaliRoute Map**



Figure 10.28: **Proposed Tagum City to Kapalong Route Map**

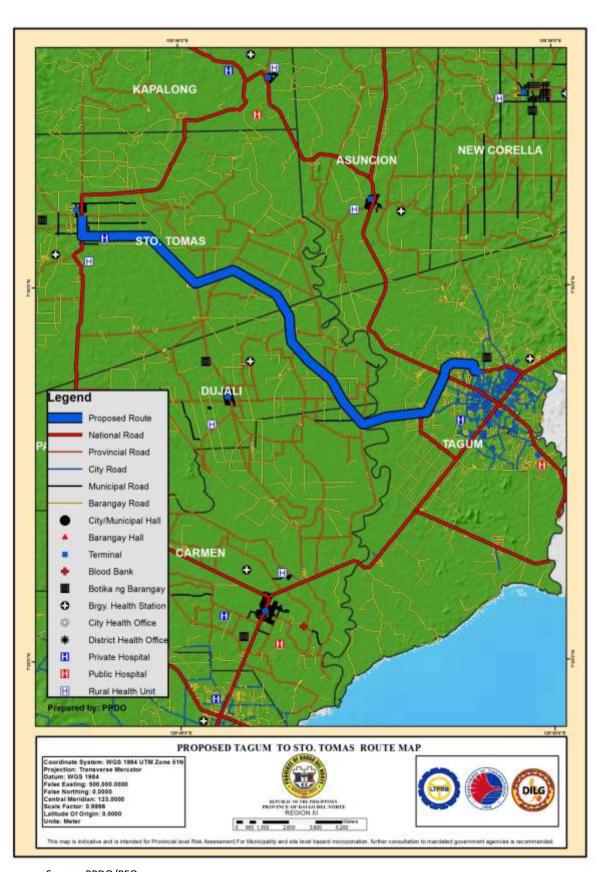


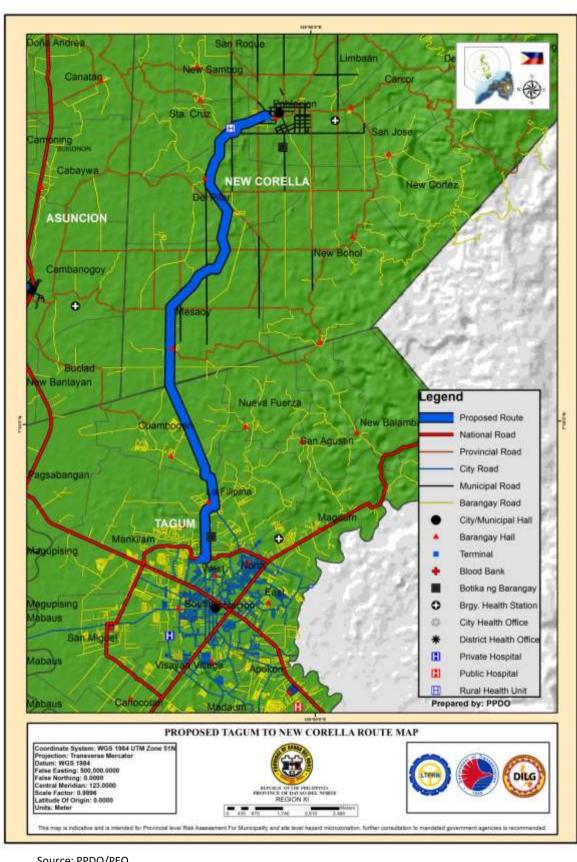
Figure 10.29: **Proposed Tagum City to Sto. Tomas Route Map**



Figure 10.30: Proposed Panabo City to Sto. Tomas Route Map



Figure 10.31: Proposed Tagum City to Panabo City Route Map



Proposed Tagum City to New Corella Route Map Figure 10.32:

GupitanDatu Balong Dacudao Sto. Niño Libuton SAN ISIDRO Sabangan Igangon San Miguel Kipalili Congepcion New Loon Legend Semong Proposed Route Pamacaun National Road KAPALONG Sagave Provincial Road City Road Municipal Road Sta ASUNCION Barangay Road Gabuyan New Santago City/Municipal Hall Tiburc Dona Andrea Barangay Hall Terminal Sampao Blood Bank 0 San Vicente Botika ng Barangay Brgy, Health Station City Health Office Camoning Mamacao District Health Office 0 Private Hospital Public Hospital STO, TOMAS New Katipunan Magatos Rural Health Unit Kimamon Piordinate System: WGS 1984 UTM Zone 5th ojection: Transverse Mercator tum: WGS 1984 in the Easting: 500,000,000 se Northing: 0.0000 se Northing: 0.0000 se Northing: 10.0000 se Factor: 0.9996 tude Of Origin: 0.0000 ts: Meter PROPOSED KAPALONG TO SAN ISIDRO ROUTE MAP DILG

Figure 10.33: **Proposed Kapalong to San Isidro via Capungagan-Mabantao- New Boholano-San Miguel Route Map**

Sta. Filomena San Roque Doña Andrea New Samboo San Vicerite Sta. Cruz Carnoning NEW CORELLA Magatos ASUNCION Legend Proposed Route National Road Provincial Road City Road Municipal Road Barangay Road 0 City/Municipal Hall Mesacy Barangay Hall Terminal Blood Bank Botika ng Barangay Brgy. Health Station Ö-City Health Office New Bantaya District Health Office m Private Hospital TAGUM Public Hospital Cuambogan Rural Health Unit Pagsabangan PROPOSED ASUNCION TO CORELLA via MONTE CARLO ROUTE MAP coordinate System: WGS 1984 UTM Zone S1N trojection: Transverse Mercator latum: WGS 1984 also Easting: 500,000.0000 also Northing: 0.0000 entral Meridian: 123,0000 cale Factor: 0.9996 attitude Of Origin: 0.0000 inits: Meter

Figure 10.34: Proposed Asuncion to New Corella via Monte Carlo-Del Pilar Route Map

Del Pilar imbanogoy New Bohol **NEW CORELLA** 0 SUNCION New Bantaya Nueva Fuerza Cuambogan San Agustin Legend Proposed Route sabangan National Road Provincial Road City Road Municipal Road TAGUM Barangay Road City/Municipal Hall Manklam Barangay Hall Terminal Magupising DUJALI Blood Bank Botika ng Barangay Brgy. Health Station Ö-City Health Office District Health Office 0 Private Hospital CARMEN Public Hospital Mabaus Rural Health Unit PROPOSED TAGUM TO ASUNCION via CUAMBOGAN ROUTE MAP coordinate System: WGS 1984 UTM Zone S1N rejection: Transverse Mercator later: WGS 1986 UTM 2000 0000 alse Northing: 0.0000 alse Northing: 0.0000 cale Factor: 0.9996 attude Of Origin: 0.0000 inits. Meter

Figure 10.35: Proposed Tagum City to Asuncion via Cuambogan-Buclad Route Map

TALAINGOD Tiburcia Sampao KAPALONG H Pag-asa Legend Proposed Route National Road Provincial Road City Road Municipal Road an Jose Barangay Road New Katipunan City/Municipal Hall Barangay Hall Terminal Blood Bank STO, TOMAS Botika ng Barangay Pantaron Brgy. Health Station City Health Office District Health Office 10 Private Hospital Public Hospital Rural Health Unit H Kinamayan New Visayas Prepared by: PPDO Salvaci PROPOSED STO. TOMAS TO TALAINGOD via MAMACAO ROUTE MAP poordinate System: WGS 1984 UTM Zone S1N opertion: Transverse Mercator tom: WGS 1984 isse Easting: 500,000.0000 isse Northwing: 0.0000 inter Merchain: 123.0000 atle Factor: 0.9990 fibuse Of Origin: 9.0000 its: Meter

Figure 10.36: Proposed Sto. Tomas to Talaingod via Mamacao-Narra Route Map



Figure 10.37: Proposed Panabo City to Mabuhay, Carmen Route Map



Figure 10.38: Proposed Panabo City to Tubod, Carmen Route Map

Binancian ASUNCION Cabidianan Legend Sta Fe Proposed Route National Road Provincial Road San Roque City Road Municipal Road NEW CORELLA Limbaan Del Monte. Barangay Road Canatan City/Municipal Hall Barangay Hall Terminal New Samb Blood Bank Botika ng Barangay Brgy. Health Station 0 Ö-City Health Office District Health Office 0 Private Hospital **New Certez** Public Hospital Rural Health Unit New Bohol PROPOSED NEW CORELLA TO CAMANSA via SAN ROQUE ROUTE MAP oordinate System: WGS 1984 UTM Zone S1N rejection: Transverse Mercator abun: WGS 1984 utm WGS 1984 utm WGS 1984 utm WGS 1980 use Northing: 0.0000 uses Northing: 0.0000 uses Northing: 0.0000 uses Factor: 0.9996 utm WGG 1986 utm

Figure 10.39: Proposed New Corella to Camansa via San Roque-Macgum Route Map



Figure 10.40: Proposed Asuncion to New Corella via Mahayahay-Paton Route Map

Macgun Napungas Suswon Pamacaun apungagan Sagay Sto. Niño Sta Filomena San Roque Tiburcia New Santiago Doña Andre KAPALONG San Vicente ASUNCION NEW CORELLA Legend Kimamon Proposed Route National Road Provincial Road City Road ambanogoy Municipal Road Talomo Barangay Road City/Municipal Hall 0 Barangay Hall STO. TOMAS Terminal Blood Bank Salvacion Botika ng Barangay Buclad New Bantaya 0 Brgy. Health Station 0 City Health Office District Health Office Esperanza Cuambogi San Vicente TAGUM Private Hospital H Public Hospital Pagsabangan DUJALIMagupising Rural Health Unit Mankilam Prepared by: PPDO Magde PROPOSED KAPALONG TO ASENCION TO NEW COBELLATIO CAPENGAGAN TO DONA ANDREA TO CANATAN TO SEA. FILOMINA TO SAN ROQUE ROUTE MAP Coordinate System: WGS 1984 UTM Zone 61N Projection: Transverse Mercator Datum: WGS 1984 False Easting: 500,000,000 False Northing: 0,000 Central Mercidian: 123,000 Scale Factor: 0,996 Latitude Of Origin: 0,000 Units: Meter his map is indicative and is intended for Pro

Figure 10.41: Proposed Kapalong to Asuncion to New Corella via Capungangan to Dona Andrea to Canatanto Sa. Felomina to San Roque Route Map

apungagan Sagayen Doña Andrea New Santiago KAPALONG Canatan Gruz Camoning ASUNCION Cabaywa Legend Proposed Route Kimamon National Road Provincial Road City Road Municipal Road ungaog Barangay Road City/Municipal Half Cambano Barangay Hall Talorno Terminal STO. TOMAS Blood Bank H Botika ng Barangay 0 Brgy. Health Station 0 City Health Office District Health Office New Bantayan Private Hospital Salvacion I Public Hospital H Rural Health Unit an Vicente PROPOSED ASUNCION TO KAPALONG via CANATAN TO SAN VICENTE TO BUTAY ROUTE MAP coordinate System: WGS 1984 UTM Zone S1N rejection: Transverse Mercator totum: WGS 1984 alse Easting: 500,000,0000 alse Northing: 0.0000 alse Northing: 0.0000 carle Factor: 0.9996 attude Of Origin: 0.0000 inits: Meter

Figure 10.42: Proposed Asuncion to Kapalong via Canatan to San Vicente to Butay Route Map

Proposed Routes (Touching LGU)

STO. TOMAS DUJALI PANABO TAGUM CARMEN PANABO egend Proposed Route National Road Provincial Road City Road Municipal Road Barangay Road City/Municipal Hall Barangay Hall Terminal Blood Bank Botika ng Barangay 0 Brgy. Health Station City Health Office District Health Office Private Hospital DAVAO CITY Public Hospital ISLAND GARDEN CITY OF SAMAL Rural Health Unit Prepared by PPDO BRAULIO DUJALI TO DAVAO CITY ROUTE MAP oordinate System: WGS 1984 UTM Zone 61N ojection: Transversa Mercator tum: WGS 1984 Nee Easting: 500,000,000 lee Northing: 9,0000 lee Northing: 9,0000 das Pactor: 0,8986 Novde Of Origin: 0,8000 list Meter

Figure 10.43: Proposed Braulio E. Dujali to Davao City Route Map



Figure 10.44: Proposed Panabo City to Malativas to Davao City Route Map

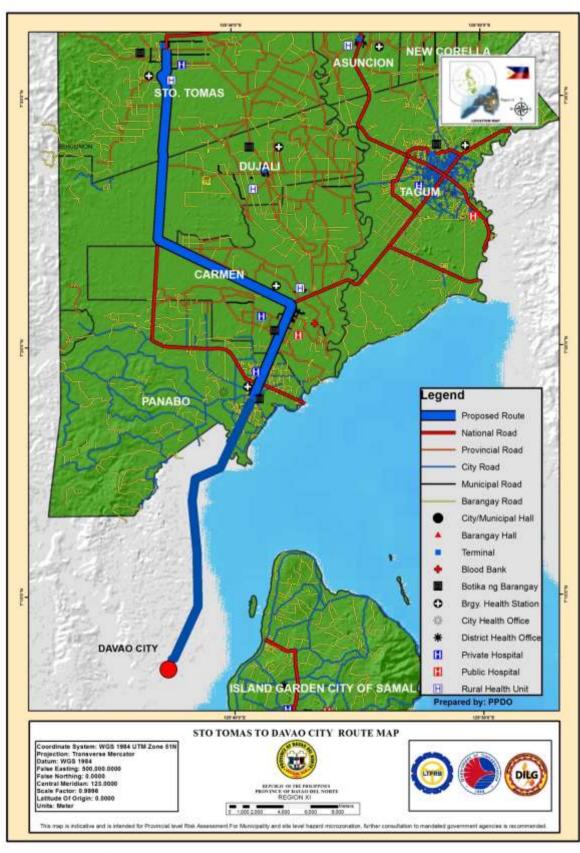


Figure 10.45: **Proposed Sto. Tomas to Davao City Route Map**

TALAINGOD KAPALONG Mamacao Sto Nino Kimam New Katipunan San Jose Pantaron New Visayas H Kinamayan STO TOMAS egend Bobongon Proposed Route National Road DAVAO CITY Provincial Road City Road Balagunan La Libertag Municipal Road Barangay Road City/Municipal Hall Barangay Hall Terminal Tulalian Blood Bank Botika ng Barangay ower Panaga 0 Brgy, Health Station 43 City Health Office PANABO CITY District Health Office A.O. Floirendo Sindaton H Private Hospital m Public Hospital Tibungol Rural Health Unit Dapco STO TOMAS TO MAGWAWA TO UPPER PANAGA, DAVAO CITY ROUTE MAP Coordinate System: WGS 1984 UTM Zone 51N Projection: Transverse Mercator Datum: WGS 1984 Palse Easting: 500,000.0006 False Northing: 0.0006 Central Mertidian: 123,000 Scale Factor: 0.9906 Latitude Of Origin: 0.5000 Units: Meter

Figure No. 10.46: Proposed Sto. Tomas to Magwawa to Upper Panaga, Davao City Route Map

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Figure 10.47: Proposed Tagum City to Mati City, Davao Oriental Route Map

TO BUTUAN BOSTON MONKAYO LAAK ø SAN ISIDRO (DN) CATEEL SAN ISIDRO ASUNCION egend Proposed Route ASUNCION National Road Provincial Road KAPALONG City Road Municipal Road Barangay Road City/Municipal Hall Barangay Hall STO. TOMAS NABUNTURAN Terminal Blood Bank Botika ng Barangay DUJALI 0 Brgy, Health Station TABUM City Health Office 0 District Health Office MACO m Private Hospital Public Hospital Rural Health Unit MABINI Prepared by: PPDO TAGUM CITY TO BUTUAN CITY, AGUSAN DEL NORTE ROUTE MAP Coordinate System: WGS 1984 UTM Zone 61N Projection: Transverse Mercater Datum: WGS 1984 Palse Easting: 500,000,000 False Northing: 0,000 Central Meridian: 123,000 Scale Factor: 0,996 Latitude Of Origin: 0,000 Units: Meter

Figure 10.48: Proposed Tagum City to Butuan City, Agusan del Norte Route Map

SAN ISIDRO (DN) SAN ISIDRO MONTEVISTA ASUNCION ASUNCION KAPALONG KAPALONG Legend NEW COREL ANEW COP Proposed Route National Road Provincial Road City Road Municipal Road Barangay Road City/Municipal Hall STO. TOMAS Barangay Hall STO. TOMAS Terminal Blood Bank Botika ng Barangay 0 Brgy. Health Station 0 City Health Office AGUM CITY TAGUM District Health Office Private Hospital DUJALI DUJALI Public Hospital Rural Health Unit CARMEN Prepared by: PPDO TAGUM CITY TO LAAK, COMPOSTELA VALLEY ROUTE MAP Coordinate System: WGS 1984 UTM Zone 61N Projection: Transverse Mercater Datum: WGS 1984 Palse Easting: 500,000.0000 False Northing: 0,000 Central Meridian: 123,000 Scale Factor: 0,996 Latitude Of Origin: 0,000 Units: Meter

Proposed Tagum City to Laak, Davao de Oro Route Map Figure 10.49:

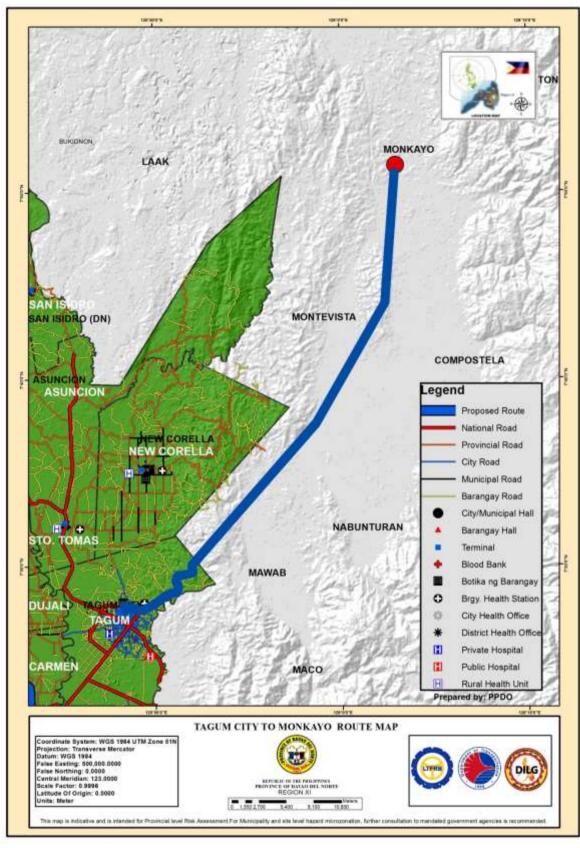


Figure 10.50: Proposed Tagum City to Monkayo, Davao de Oro Route Map

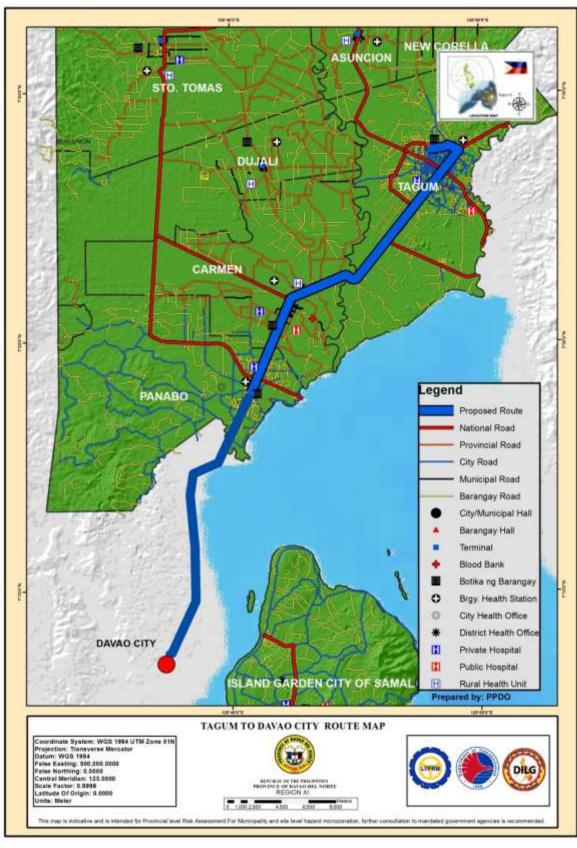


Figure 10.51: Proposed Tagum City to Davao City Route Map

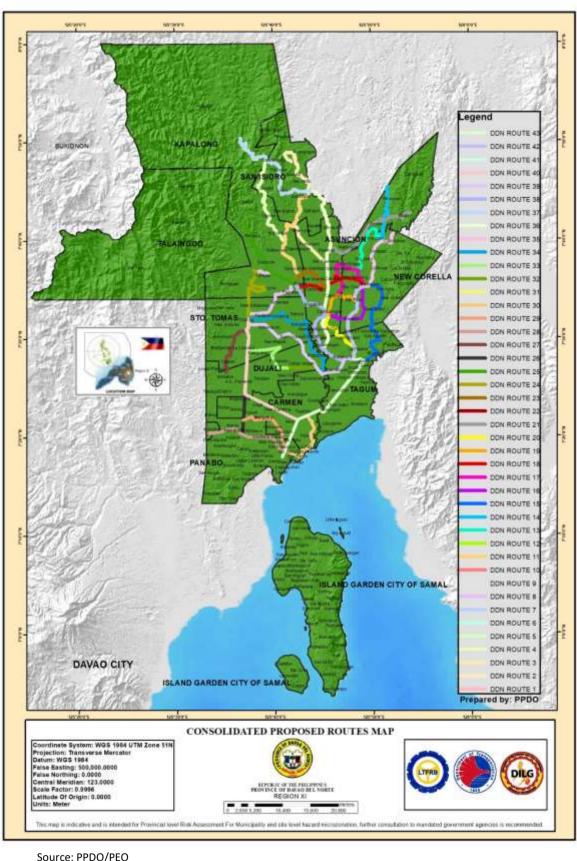


Figure 10.52: Consolidated Proposed Routes Map

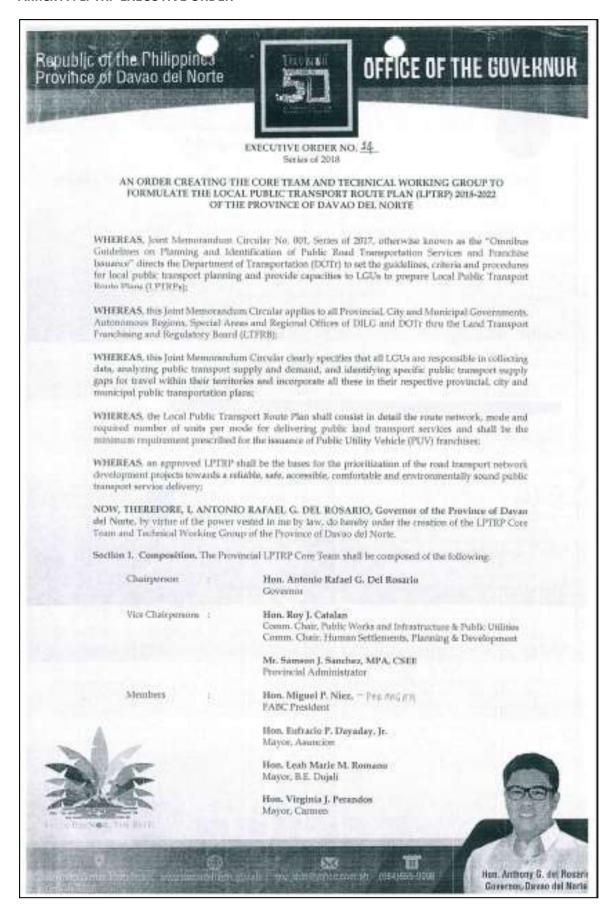
10.3 Recommendations

- The proposed routes listed in this plan are intended for public utility bus, public utility jeepney and utility van, with due consideration of the length, mode of transport and recommended number of units. These proposed routes were subjected to public road transport principles, namely: comfort, reliability, environment-soundness, safety and accessibility. In addition, other criteria were taken into account such as distance capacity, passenger expense, utilization, quality of service, and intelligent transport system. It is highly recommended that these routes should be approved and implemented by DOTr.
- This plan also identifies 4 inter provincial transport corridors in the province, namely:
 - a. Tagum-Kapalong-Talaingod-Bukidnon Road;
 - b. Asuncion-Laak, Compostela Valley Province-Veruela, Agusan del Sur Road;
 - c. Davao-Agusan Road; and
 - d. Surigao-Davao Coastal Road

These corridors link multiple centers within and outside the Study Area, hence this plan also recommends the approval and implementation of routes identified along these corridors in order to provide and increase accessibility within and beyond Davao Region.

- DOTr should also approve and implement the public transport routes proposed by component cities and municipalities in support to the approved provincial routes.
- DOTr should recommend and approve the type of transport mode that can efficiently serve areas with high elevation and difficult terrains in order to minimize if not discourage the operation "habal-habal" and top-loading practices of public utility vehicles.
- DOTrshould regulate the operation of the utility van express as supplemental service only to
 public utility bus, thus, will be provided with limited operating units with point to point
 operation.
- Supply of road furniture along the proposed provincial routes is highly recommended as
 these provide drivers with the necessary word of advices, rules, distance and directional
 information in order to travel roads and thoroughfares safely. Road furniture deemed
 essential to the welfare of drivers are road signs, guideposts, safety barriers, light and utility
 poles, boundary fences and raised road markers.
- Improvement of terminal facilities that must consider two perspectives: the operator's and the users in consonant to the following important components of a good terminal design:
 - 1. Terminal capacity the number of bus berths that can cater to projected peak-hour requirement.
 - 2. Passenger level of inspection and repair- the level of service a passenger receives on the journey between the entry/release points of the depot and the boarding platforms.
 - 3. Accessibility for buses, it entails the location of entrance and exit points, ensuring convenient and unhindered access to the terminal. Facilities that propagate convenient and unobstructed and universal accessibility while boarding and alighting at platforms.

- 4. Commuter safety the design of high visibility spaces to minimize pedestrian-vehicle points of conflict, particularly its high occurrence during platform transfers. Include also the installation of CCTVs in the vicinity.
- 5. Passenger amenities provision of facilities such as toilets, payphones, visible signage, drinking water, food stalls, trash receptacles and space for changing diapers to add to passenger convenience.
- For the Provincial Government of Davao del Norte to institutionalize a body that will oversee and monitor the efficient implementation of a road transport system.
- Implement efficiently the PUV Modernization Program
- Integrate the Local Public Transport Plan in the Local Road Network Development Plan and the Provincial Development and Physical Framework Plan, and to implement the proposed road projects found in the LRNDP and PDPFP.



Barrier Barrier	
	Hon, Maria Theresa R. Timbell Mayur, Kapalong
	Hon. Rhudora S. Alcoran Mayor, New Corella
	Hon. Arnel H. Sitoy Mayor, San Isideo
	Hor. Daniel S. Betssalem, Jr. Mayor, Str. Tomes
	Hort Basilio A. Libayao Mayor, Talaingod
	Hon. Allan L. Bellon Mayor, Tagum Chy
	Hon. Al David T. Uy Mayor, Island Gardon City of Samal
	Hon, James G. Gamao Mayor, Panubo City
	ing Group. In the performance of their functions, the cure term shall be sking Group composed of the following:
Team Leader :	Mr. Nelson E. Plata OKC-PPDC, PPDO
Co-Team Leader:	Engr. Raul G. Mabanglo Provincial Engineer. PEO
Members	Engr. Jivellyn B. Co Asst. Provincial Engineer, PEO
	Ms, Ma, Theresa V. Catao Project Development Officer IV, PPDO
	Ms. Midred B. Funtilon Project Evaluation Officer IV, PPDO
	Engr, Maria Hazel C. Zafra Planning Officer III. PPDO
	Ms. Aracell N. Cajes Planning Officer III, PPDO
	Engr. Ingrid F. Labronie Project Development Officer III, PPDO
	Mr. Romoel Docton Engineering Assistant, PPDO
	Engr. Decter Paraguya Engineer III. PEO
	Engr. Gilbert Mambulau, Jr. Engineer II, PEO
Fugs Toll (CN ORDER C	REATING THE CORE TEAM AND TRURFFUCAL RUBBING DROUPTO FORMULATE THE IC TRANSPORT BOUTE PLAN JUTTIS 2018-2022 OF THE PROVINCE OF DAYWOOD.
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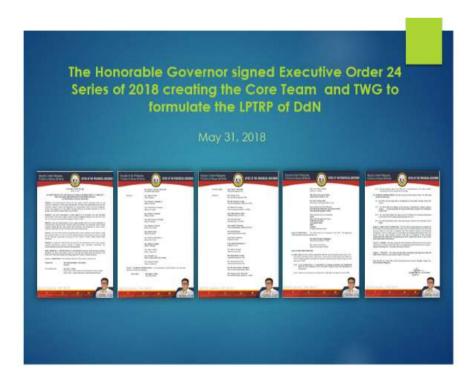
Mr. Floan D. Gamad C&M Foreman, PEO Mr. Jasper Ryan P. Crucio Engineering Assistant, PEO Mr. Therea R. de la Cruz Engineering Assistant, PEO Ms. Ma. Jamice Boiser- Madulara Senior Tourism Operations Officer Ms. Princess Lyo N. Vistal, EnP Environmental Mgt. Specialist L PENRO Engr. Christopher Dalisay Engineer II, PAGRO Atty. Mera Grace Apuya-Mejus Administrative Officer V, PLO Mr. Alex O. Delola, MPA Information Technology Officer II, OSS Representatives from the following: City/Municipal Planning & Development Office City/Municipal Engineer's Office Representatives from the following: DPWH PNP Traffic Management Group LTFRB Regional Office LTO Regional Office NGOs Academe Transport/Business Sector Section 3. Secretariat. The Provincial Planning and Development Office (PPDO) shall act as Secretariat to the TWG. The designated staff to provide secretorial functions are: Ms. Maria Florencia Cadagdagon Administrative Officer V, PPDO Ms. Lorilei A. de la Torre Administrative Aide III, PPDO Section 4. Roles and Functions. 4.1. Core Team. By virtue of DOT: Department Order No. 2017-011 dated June 19, 2017, DOT:-DILG JMC No. 0015eries of 2017 dated June 17, 2017 and the LPTRP Manual, the LPRTP Core Team is bereby tasked. to formulate the LPTRP of Davan del Norte Province subject to the approval of LTFRB. 4.1.1. As an oversight team, it is responsible in managing, prioritizing and coordinating efforts for the completion of the Local Public Transport Route Plan formulation of the province. AN ORDER CREATING THE CORE TEAM AND TECHNICAL WORKING GROUP TO FORWILL ATE THE LOCAL PUBLIC TRANSPORT ROUTE PLAN & PROTEST 218-2822 OF THE PROVINCE OF DAVID DELIVERY TO REPORT OF THE PROVINCE OF DAVID DELIVERY.

4.1.2. Monitors and evaluates the completeness of the different segments of the LPTRP. 41.3 Reviews the plan output of the TWG as to its harmonization to the vision, mission, development thrusts and goals of the province. 4.2 Technical Working Group. Upon the issuance of this Executive Order. The TWG shall perform the following 4.2.1. The TWG shall be responsible in formulating the Local Public Transport Route Plan (LPTRP). 4.2.2. The TWG shall work together in the generation, identification, mapping, banking, analysis and documentation of necessary information required in the formulation of the EPTRF; 4.2.3. The TWG shall facilitate the approval of the LPTRP by the Provincial Development Council (PDC) and the Sangganiang Panlalawigan (SP); and 4.2.4. The TWG shall perform other tasks and functions related to the formulation of the LPTRP. Section 5, Target Date of Completion. The Core Team is hereby required to complete the LPTRP within Six (6) months after the DOTs issues a letter of communication to the Local Chief Executive. Where on such date of completion, the LPKTP shall be endoned to the Provincial Development Council for approval and consequently to the Sangguniang Panialawigan. Pursuant hereto, the Core Team members and the TWG who are employees of the Provincial Government shall peteritize the accomplishment of their assigned task herein on top of their other regular duties and functions. Section 6 Funding. The funds required for the formulation shall be drawn from the current appropriation of General Fund under PPDO's Knowledge Management Development Program -Supplemental Budget No. 2 included in the Bevised 2018 AIP. Section 7. Diffectivity. This Order shall take effect immediately upon approval hereof and shall remain in full force unless somer procked or amended. Done this seik day of May 2018 at the Provincial Government Center, Mankilam, Taguan City, Davao dal Norte, Phillippines. BANAEL G. DEL ROSARIO ANTONKT D/ AN ORDER CREATING THE CORE TEAM AND TROUNISCAL WORKING GROUP TO FORGULATE THE LOCAL PORCE TRANSPORT ROUTE PLAN (LPHIN) 289-292 OF THE PRODUCE OF DAVAO DEL NORTE.

1. CAPACITY BUILDING FOR LGUS



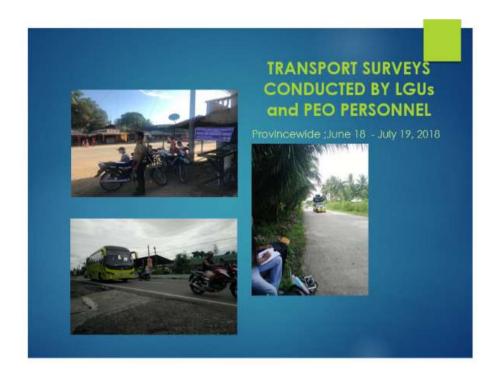
2. CREATION OF THE LPTRP TEAM



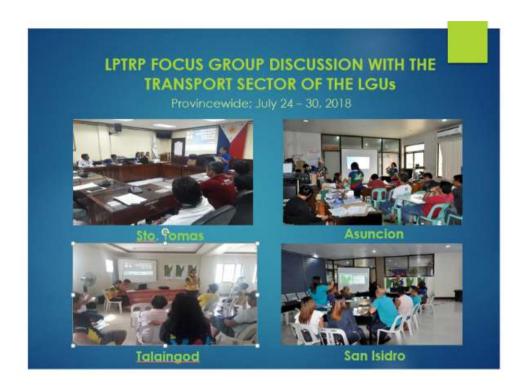
3. ORGANIZATIONAL MEETING



4. TRANSPORT SURVEYS



5. FOCUS GROUP DISCUSSIONS





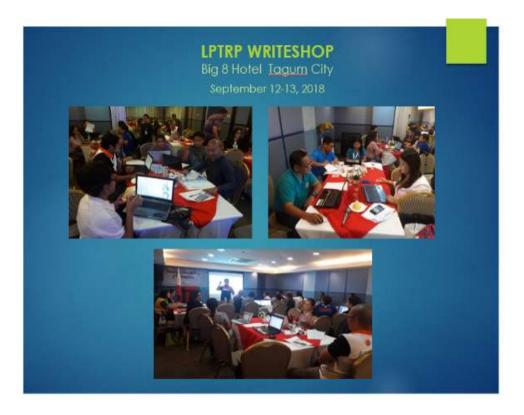
6. 2-DAY PLANNING WORKSHOP



7. MULTI-STAKEHOLDERS CONSULTATION WORKSHOP



8. LPTRP WRITESHOP



9. LPTRP APPROVAL BY THE PROVINCIAL DEVELOPMENT COUNCIL

