SUSTAINABLE URBAN MOBILITY

A Case Study of Philippine Cities’ Initiatives  |  June – December 2017
ACKNOWLEDGMENT

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WWF-Philippines has been working as a national organization of the WWF network since 1997. As the 26th national organization in the network, WWF-Philippines has successfully been implementing various conservation projects to help protect some of the most biologically-significant ecosystems in Asia. Our mission is to stop, and eventually reverse the accelerating degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature.

The Sustainable Urban Mobility: A Case Study of Philippine Cities’ Initiatives is undertaken as part of the One Planet City Challenge (OPCC) 2017-2018 project.

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**Marikina City**
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EXECUTIVE SUMMARY

This urban mobility case study is an amalgamation of the ingenuity of several Philippine cities to achieve sustainability through governance. It is likewise an effort of WWF-Philippines to promote a climate resilient future where carbon emissions are kept at low bay and the quality of life is improved by means of management of cities.

Chapter 1 discusses transportation and mobility as ladders to achieving the sustainable development goals. There are no standalone Sustainable Development Goals (SDGs) that focus on transportation and mobility, but targets related to them are embedded in the entire document. For this case study, SDG 11 on making sustainable cities and communities is the context within which “mobility” is used and discussed. The role of cities is also tackled. Being agents of development, cities have very crucial roles in facilitating and regulating mobility.

Chapter 2 dwells on WWF’s One Planet City Challenge. This case study is an outgrowth of the Challenge. Since the thematic focus this year is sustainable mobility, homegrown initiatives of Philippine cities in line with the former are highlighted and analyzed.

Chapter 3 is an overview of the current situation of the transport sector in the country. It elucidates various national policies that have an impact on local governance. Among these is the National Environmentally Sustainable Transport, which was crafted as a framework policy of the State to fulfill its commitment to the Bangkok Declaration Sustainable Transport Goals for 2010-2020. This chapter also provides the foundation for managing mobility locally to target the national problems on sustainability.

Chapter 4 shows the criteria for which Philippine cities were selected for visitation. It also includes a discussion on data gathering framework and methodology used in this case study. Desk research, personal interviews, and participant-observation were employed to gather data. Personalities from both the government and private sector (residents, drivers, businesspeople included) were approached to shed light on matters related to the study.

Chapter 5 contains the bulk of the study, with the detailed illustration of diverse homegrown initiatives. The initiatives were classified into four major categories: pedestrianization and walkability, mass transport, alternative modes of transport, and institutional policies. The first initiative includes carless days, pedestrianization, and green spaces. The second one focuses on the Bus Rapid Transit. The third initiative involves electric vehicles such as e-jeepneys and e-trikes, as well as bike programs. The fourth category concentrates on institutional policies that have impacts on mobility such as public utility jeepney/public utility vehicle (PUJ/PUV) bans.

Chapter 6 summarizes and concludes this paper. It correspondingly enumerates ways forward that cities can adopt to ease the congestion situation in their respective localities. Both short- and long-term solutions are discoursed on in this chapter, the long-term being the sustainable urban mobility plan.

Notwithstanding the fact that the study is not conclusive of all cities in the country, it still gives a good window into the state of affairs in the grassroots. As such, it is the hope of WWF Philippines to provide a sustainable mobility catalogue for cities in the national and international scene.
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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<tr>
<td>AMT</td>
<td>Alternative Modes of Transport</td>
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<tr>
<td>BRT</td>
<td>Bus Rapid Transit</td>
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<td>CAR</td>
<td>Cordillera Autonomous Region</td>
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<tr>
<td>DOT</td>
<td>Department of Tourism</td>
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<td>DOTC</td>
<td>Department of Transportation and Communications</td>
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<td>DOTr</td>
<td>Department of Transportation</td>
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<td>GHG</td>
<td>Greenhouse Gas</td>
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<td>JICA</td>
<td>Japan International Cooperation Agency</td>
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<td>LRT</td>
<td>Light Rail Transit</td>
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<td>MDG</td>
<td>Millennium Development Goals</td>
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<tr>
<td>MRT</td>
<td>Metro Rail Transit</td>
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<td>NCR</td>
<td>National Capital Region</td>
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<td>NEDA</td>
<td>National Economic Development Authority</td>
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<td>NEST</td>
<td>National Environmentally Sustainable Transport</td>
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<td>NMT</td>
<td>Non-Motorized Transport</td>
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<tr>
<td>PDP</td>
<td>Philippine Development Plan</td>
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<td>PSA</td>
<td>Philippine Statistics Authority</td>
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<td>PPP</td>
<td>Public-Private Partnership</td>
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<td>OPCC</td>
<td>One Planet City Challenge</td>
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<td>SDG</td>
<td>Sustainable Development Goals</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<tr>
<td>WB</td>
<td>World Bank</td>
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<tr>
<td>WBCSD</td>
<td>World Business Council for Sustainable Development</td>
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<td>WWF</td>
<td>World Wide Fund for Nature</td>
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INTRODUCTION

Sustainable mobility means many things when it comes to policy debate. There is a shifting emphasis: sustainable transportation, sustainable freight transport, walkability, non-motorized transport (NMT), and connectivity, among others. There so many “sustainable”+ (qualifiers), but what does sustainable urban mobility really mean?

Sustainable mobility is the ability to meet the needs of society to move freely, gain access, communicate, trade, and establish relationships without sacrificing other essential human or ecological values today or in the future. Why is this an imperative issue for cities?

Cities are home to half of the human population, numbering around 3.5 billion people. History teaches us that where people populate, progress thrives—culturally, economically, and socially. It is a proper report that while urbanization “has the potential to usher in a new era of well-being, resource efficiency and economic growth,” it is also a source of poverty and inequality.

Why do we manage mobility? Why do we want to make it sustainable? Is it because of transportation demand? Human demand? Will it improve the quality of life? Will it decongest urban centers? Or lessen vehicular traffic? Mitigate environmental pollution?

Mobility management is one key to equalize the imbalance. By advocating for sustainable mobility amongst cities, the quality of life therein can be further improved. The transport sector is one facilitator of movement and development that is seen as an essential tool for mobility management. Concerted efforts of local government units and other concerned sectors are also essential elements in the evaluation of sustainability.

This case study is an attempt to do that. It is an initial catalogue of homegrown sustainable mobility initiatives being done by Philippine cities as solutions to the problem on climate change. An offshoot of World Wide Fund for Nature (WWF) - Philippines’ One Planet City Challenge, this study includes not only a list of programs and projects, but also a brief backgrounder on the transportation situation in the country as well as related national policies that focus on mobility. Similar to a policy paper, it likewise has a set of policy recommendations that local government units may adopt to further alleviate the congestion problem in their respective jurisdictions.

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3 UNFPA: http://www.unfpa.org/urbanization
Transportation and Mobility: 
Ladders to Achieving Sustainable Development

Also known as the post-2015 development agenda, the Sustainable Development Goals (SDG) are a set of goals authored by world leaders to serve as a guide for nations to achieve sustainable development. There has been a substantial shift from economism, to human development (as hallowed in the Millennium Development Goals or MDGs), and now, to the SDG.

One of the SDGs focuses particularly on sustainable cities and communities. It is the same goal that explicates mobility as used in this study. It is consequently but proper to discuss two interweaving concepts to lie out the foundations of the ensuing chapters.

1.1 Sustainable Transportation and Development

The question is simple. What is the role of the transport sector in achieving the SDG?

One quarter of the energy-related greenhouse gas (GHG) emissions in the world are attributable to the transport sector. As a main consumer of fossil fuel energy and “emitter” of GHG, managing the sector can help in achieving the SDG on energy.

In the 2030 Agenda, the United Nations stated that:

[...] ‘sustainable transport systems, along with universal access to affordable, reliable, sustainable and modern energy services, quality and resilient infrastructure, and other policies that increase productive capacities, would build strong economic foundations for all countries’ (para 27).

There is no particular standalone SDG dedicated to transportation. However, it is indirectly embedded in many other Goals. This means that the transport sector is cardinal to the accomplishment of the objectives and the achievement of the goals. It has a title role in sustainable development. This is discussed in the Agenda 21 as one among the many issues of development.

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7 Id note 2.
8The Agenda 21 is the outcome of the 1992 United Nation’s Earth Summit.
9 Id note 1.
Here are the transport-relevant SDG targets as designed by the Sustainable, Low Carbon Transport (SLoCaT), a partnership that promotes the integration of sustainable transport in global policies on sustainable development and climate change.

<table>
<thead>
<tr>
<th>DIRECT targets (5)</th>
<th>INDIRECT targets (7)</th>
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<tr>
<td>Road safety (Target 3.6)</td>
<td>Agricultural productivity (Target 2.3)</td>
</tr>
<tr>
<td>Energy efficiency (Target 7.3)</td>
<td>Air pollution (Target 3.9)</td>
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<td>Sustainable infrastructure (Target 9.1)</td>
<td>Access to safe drinking water (Target 6.1)</td>
</tr>
<tr>
<td>Urban access (Target 11.2)</td>
<td>Sustainable cities (Target 11.6)</td>
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<tr>
<td>Fossil fuel subsidies (Target 12.c)</td>
<td>Reduction of food loss (Target 12.3)</td>
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<td></td>
<td>Climate change adaptation (Target 13.1)</td>
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<tr>
<td></td>
<td>Climate change mitigation (Target 13.2)</td>
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Source: Partnership on Sustainable, Low Carbon Transport (SLoCaT)

It is undeniable that the most basic function of transportation systems is to connect people, places, and events. The sector is a facilitator of the economy’s growth. Likewise, it “…has been the key to […] welfare of the public, accessibility to employment and the amenities of life, public safety and social cohesion within communities.”

While developments in the transport sector continue to intensify, these are not without strings attached. As transportation “improvements” progressively happen, the degrading impacts on the environment increase as well. It has negative effects “…particularly related to energy consumption and degradation of urban environment through lowered air quality, increased temperatures, increased noise or ecosystems fragmentation.”

Because sustainable transport is critical to the achievement of the SDG, adequate focus must be given to it. It must be noted that to upgrade transportation, infrastructure build up is necessary. More often than not, these infrastructures last for years, and even decades. Transportation assists the movement of people, goods, and services. Wrong urban planning could mean clogging

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10 Id note 3.
14 Id note 12.
at important junctures in the city. Thus, planning is very important. The Cebu Bus Rapid Transit, as we will see later on, is an illustrative case.

The growth of the transport sector is directly proportional to the growth of emissions of greenhouse gas and fossil fuel consumption, environmental pollution, unless something is done. Even if these issues are on a worldwide scale, it is the developing countries that bear the brunt of the burden.

1.2 Sustainable Mobility and Development

Mobility is mentioned only once in the agenda, under Goal 10\textsuperscript{15}. Nonetheless, it is not a new theme in the discourse on development. It has “...become one of the most crucial themes of economic and social development of nations”\textsuperscript{16}. Sustainable mobility “...means transport systems and planning that are in line with concerns of sustainability; so its main goal is to accommodate the right to mobility and the need to reduce the negative effects of environmental pollution\textsuperscript{17}.”

It is in line with Goal 11—Make cities and human settlements inclusive, safe, resilient and sustainable—that mobility will be discussed, analyzed, and understood in this paper. There are many targets under this goal, but particular focus is given on target 2:

\textit{By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.}

Diagram: The Challenges of Making Mobility Sustainable\textsuperscript{18}

What do we need to ensure sustainable mobility? We need sustainable modes of transport. Aside from sustainable modes, new routes, as in walking paths or the renovation of existing ones is needed in the urban contexts\textsuperscript{19}. The objective is to make walking conducive and in that way encourage car-free lifestyles, if not car-reduced ones. These must all be integrated into a road network plan that factors in both pedestrian and vehicular traffic.

In the 2012 \textit{The Future We Want}\textsuperscript{20}, world leaders acknowledged the significance of

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\textsuperscript{15} Transforming Our World: The 2030 Agenda for Sustainable Development https://www.un.org/pga/wp-content/uploads/sites/3/2015/08/120815_outcome-document-of-Summit-for-adoption-of-the-post-2015-development-agenda.pdf; mobility is mentioned once only in: Goal 10 (Reduce inequality within and among countries) under target 10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies.


\textsuperscript{17} Ibid, p.165.

\textsuperscript{18} Id note 1, adapting the study of Molina and Molina (2002:14).

\textsuperscript{19} Id, note 16, p.155.

\textsuperscript{20} \textit{The Future We Want} is the written product of the 2012 United Nations Conference on Sustainable Development (Rio +20).
transportation and mobility to sustainable development, adding that cities have an equally vital role in achieving them.\(^2\)

![Table: Some Cities are the Size of Nations](image)

Note that some cities are the size of nations in terms of population. Some nations such as Sweden and Denmark are able to manage their population and resources. The same is not always true for other similarly-sized cities such as Metro Manila.

### 1.3 The Role of Cities

Cities are centers “...of employment, commerce, education, culture, social or political interaction.”\(^3\)

Because of this, there are ...significant demands for civil infrastructure needed to support social and economic activities and a suitable quality of life.\(^4\) All of these can be aggregated under the phenomenon of urbanization.

**How much area of the planet do cities occupy and how much of the planet’s resources do they use?**

They occupy merely 2% of the world’s land but consume 75% of its resources.\(^5\) With regard to waste, cities generate a similar percentage.\(^6\)

One scholar had to say:

*This rapid development, with poor planning and decision-making has led to many serious urban environmental problems. In the process, people from the countryside would migrate and settle in the urban areas to work or to look for a better quality of life. This migration, on the one hand, has drastically increased the population in the urban areas and contributed significantly to their economic activities. On the other hand, large urban populations have caused serious urban related problems; one of which is transport. In most developing Asian cities, road congestion is attributed to inadequate transport*

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\(^1\) Id note 1.
\(^3\) Id note 13, p.181.
\(^4\) Ibid
\(^6\) Ibid
Infrastructures, planning and management. The level of self-discipline on the part of the traveling public could further aggravate this condition. This problem has in turn crucial economic and environmental impacts on society as a whole.²⁷

Urban sustainability, therefore, requires rational mobility and sustainable transport that has a bearing on the environment, the economy, and society.²⁸ The swelling growth of urban centers makes cities an indispensable agent in effecting change.

WWF recognizes that cities are the key to a climate-resilient and sustainable One Planet future. Our goal is to find cities that are leading the way in sustainable urban development – and to reward those efforts. And in doing so, help other cities.

Cities are hubs of connectivity, but how have they managed to mitigate the negative effects of congestion? The initiatives underscored in the following sections will show the transformative solutions taken by Philippine cities.

CITIES MATTER. The role of cities in shaping the future of this planet grows stronger with each passing day. More than half the world’s population now lives in cities. Imagine if these cities were planned to enable everyone around the world to thrive and prosper while respecting the ecological limits of our one and only planet. Well, these cities might not exist today, but WWF’s objective is to support the creation and development of such places or what we call One Planet Cities. And although urban lifestyles currently have a huge impact on the climate, local governments also have great potential to reduce those impacts. A city’s choice of energy systems, transportation solutions, and building standards affects huge numbers of people, and will ultimately determine our success in the creation of a low-carbon, sustainable future.

WWF One Planet City Challenge 2017

2.1 One Planet City Challenge: What is it?

The One Planet City Challenge (previously called Earth Hour City Challenge) was designed by WWF to mobilize action and support from cities in the global transition toward a climate resilient future run on 100 percent renewable energy.

In a world where sustainable development and climate action are quickly becoming the top criteria for businesses and citizens alike, the Challenge is an opportunity for cities to showcase their livability and workability.

Local governments and municipalities in participating countries are invited to present holistic, inspiring, and credible plans for combatting climate change and for dramatically increasing the use of sustainable, efficient and, renewable energy-based solutions in the next few decades.

Entrants are also evaluated on their ability to realize other key benefits like increased resilience and enabling attractive, One Planet lifestyles. This 2017 special mention is given to cities that present impressive plans and actions for sustainable transport solutions. Local context, including resource availability, legal mandates, and basic needs of residents, is taken into consideration in order to create a level playing field for evaluation.

2017 is the fifth anniversary of the biennial Challenge and the second year for the Philippines to join. The criteria in evaluating said entrants are as follows:

- Level of ambition and ability to deliver on commitments and transformational change
- Ability to integrate actions into coherent and overarching climate action plans
- Determination to align with a transparent, science-based GHG emission reduction trajectory
- Innovative approaches to addressing urban mobility

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29 The EHCC Material (2016:6) notes, “[The Earth Hour Challenge is the] longest running comprehensive global sustainability contest for cities. It is unique in its combination of features: city participation through reporting emissions, plans and actions; professional consultation and feedback; and third party evaluation and selection by a high level independent international jury.”

30 http://wwf.panda.org/what_we_do/footprint/one_planet_cities/one_planet_city_challenge/

31 Lifted in toto from the WWF One Planet City Challenge Spread, 2017.

32 Ibid
WWF-Philippines propelled this case study as one of its OPCC deliverables. Simply put, this case study is intended to be an initial catalogue of highlighted sustainable mobility initiatives done by cities in the Philippines. It particularly muses on mobility initiatives that focus on walkability and pedestrianization, mass transport, and other alternative modes of transport. Institutional policy initiatives such as banning of motorized vehicles are also included along with related soft programs.

2.2 Thematic Focus on Sustainable Mobility

Two of the foremost issues faced by cities are the management of the transport sector as well as of mobility. It is prudent to say that sustainable transportation can be classified under the umbrella term of sustainable mobility.

Sustainable urban mobility requires a mind shift: where transport in private cars and trucking give way to different modes of public transport\(^{33}\). This includes ridesharing, cycling, non-motorized transport (electric and hybrid vehicles), among others.

With the thematic focus on mobility of OPCC 2017-2018, this case study shows that there are Philippine cities remarkably coming up with transformative solutions on mobility towards a sustainable one-planet future.

\(^{33}\) From: [http://wwf.panda.org/what_we_do/footprint/one_planet_cities/sustainable_mobility/](http://wwf.panda.org/what_we_do/footprint/one_planet_cities/sustainable_mobility/)
Country Context: The Philippines

Who consumes the most energy in the country?
The transport sector. It consumes more energy than any other sector, accounting for 36.5% of total energy. In addition, the sector accounts for more than 70% of total energy demand for the petroleum products consumption of the country.

As emphasized in the National Environmentally Sustainable Transport (NEST) Strategy, ‘most Filipinos take public transport with an estimate of about 70% of the total person trips taking public transport with as high as 80% in highly urbanized cities (HUCs).’

Further, at present, there are ‘over 23,000 buses, 36,000 taxis and about 217,000 jeepneys providing public transport services throughout the country.’ The circumstances in Metro Manila are more deplorable, where there are ‘more than 90,000 tricycles.’ The transport sector, thus, is a sector that merits discussion.

3.1 Brief Overview

The Philippines is an archipelago composed of 7,107 islands, of which only about 3,144 are named. There are three main islands: Luzon, Visayas, and Mindanao. These groups of islands are further subdivided into regions, the regions into provinces, and the provinces into cities and municipalities. The cities and municipalities are further subdivided into barangays. The barangay is the basic political unit.

The country is subdivided into 17 (seventeen) regions, namely, Regions I-XIII, the National Capital Region (NCR) or Metro Manila, Cordillera Administrative Region (CAR), and the Autonomous Region in Muslim Mindanao (ARMM). The (NCR) has 16 highly urbanized cities and one


36 Ibid
37 Ibid
38 Ibid—based on independent surveys by local government units. In many places in the country, tricycles (paratransit mode) are the leading modes of transport for trips that cross cities, towns, or municipalities.
urban municipality. As of September 30, 2014, the country had 81 provinces, 144 cities, 1,490 municipalities, and 42,029 barangays\(^{40}\).

According to the recent release of the Philippines Statistics Authority (PSA)\(^{41}\), the Philippine population has exceeded 100 million. This is based on the 2015 census of population, which had a total count of 100,981,437 people. This is at least 8 million higher than the 2010 census of population and housing, and at least 12 million higher than the 2007 census of population\(^{42}\).

More than half of the national population was recorded to have resided in Luzon, with Region IV-A/CALABARZON (14.4 million peoples), having the lion’s share, and the CAR, the least populated, with 1.7 people. NCR or the Metro Manila area comes in second nationwide as the home to 12.8 million Filipinos\(^{43}\).

The PSA also reports that the City of Manila is the second city of the 33 HUCs to have the largest population with 1.78 million people after Quezon City, which is the most populous city in the Philippines. Based on the 2010 census-based population projection, the country’s population is estimated to reach 142 million by 2045. In 2015, the population topped the 100 million mark. Taking the 2010 projections, there would be an increase of at least 40 million within the next 30 years\(^{44}\).

This increase in population raises an alarm because while population increases each year, our land area does not. More people mean busier roads. This is where transportation can play a role in managing the trajectories of development of the country.

3.2 Challenges and Developments in the Urban Landscape

Among the goals of the 2017-2022 Philippine Development Plan (PDP) is to improve the quality of life through inclusive transportation. The government, in the National Economic Development Authority (NEDA) - authored PDP, acknowledges that juxtaposed the growing demand for transportation, the current progress in the ‘expansion of the transport systems’ is derisory\(^{45}\). The following are the main problems\(^{46}\):

- (a) low-quality public transport;
- (b) traffic congestion;
- (c) poor road network quality;
- and (d) inadequate road safety features.

\(^{40}\) Ibid
\(^{42}\) Ibid
\(^{43}\) Ibid
\(^{44}\) Ibid
\(^{46}\) p.285, ibid
It is because of these that Filipinos prefer using private modes of transport to public ones. The large number of private vehicles then translates to congested thoroughfares, thereby increasing the odds of having accidents. Transport infrastructure is also manifestly troubled with issues.

In their presentation, NEDA identified issues in the development of transport infrastructure. These include:

**INSTITUTIONAL ISSUES**
- Weak regulatory regime (e.g., fragmented institutional structure)
- Poor project planning, preparation and development (issue on quality-at-entry of infrastructure projects)

**OPERATIONAL ISSUES**
- Unsynchronized planning, investment programming and budgeting
- Uncoordinated policy planning and program preparation

**IMPLEMENTATION ISSUES**
- Poor project execution causing delays and changes in project scope/costs (low absorptive capacity of institutions, bidding and procurement issues, ROW issues, etc.)

As shall be seen in the following sections, these identified institutional issues were pinpointed by all cities, too. The same is true with the operational and institutional issues. The situations on the ground do reflect the national condition of transport infrastructure.

**Congestion issues in Metro Manila**

There is a diversity of modes of transport in the country because of its unique topographical features. As an archipelago composed of many islands - land, water, and air transportation are used. Roads and water transport dominate in the flow of people and goods, respectively, while railways and air transport modes have their respective markets and geographic coverage.

While there have been moves by the Philippine government to alleviate the transportation situation such as the NEST Strategy, what remains unsolved is the problem with public transport. A diagnostic report on the Bus Transport Sector of the Philippine Institute of Development Studies (PIDS) detailed this.

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47 Ibid.
48 Presentation by Dir. Roderick M. Planta, Infrastructure. Staff, National Development Office for Investment Programming — NEDA
49 From the 2017-2022 PDP, Chapter 19: Accelerating Infrastructure Development, p. 283.
50 Figure 2 from Id note 53.
51 Id note 31, p.21.
Specific problems faced by cities with regard to congestion are discussed in the next section on homegrown initiatives.

There are transport policies, which have been most prevalent among Philippine cities. **Coding schemes are the most popular.** The usual terminology for these are odd-even, number coding, and color-coding. Odd-even schemes are applicable both to public and private transport. Color-coding is particularly for public transport—mainly jeepneys. A study observed that the popularity of such schemes is due in part to the perception that these have immediate impacts on traffic.

On top of this, **truck bans are also a popular mechanism** to manage traffic. There are two general types of truck bans – temporal (i.e., travel restrictions during certain periods of the day) and spatial (i.e., travel restrictions along certain roads). There is similarly a national ban on trikes and pedicabs along national highways. The motorists’ disregard for a Memorandum Circular 2007-01 of the Department of Interior and Local Government (DILG) banning “tricycles and pedicabs to operate ‘on national highways utilized by four-wheel vehicles greater than four tons and where normal speed exceeds 40 kph” led then DILG Secretary Jesse Robredo to issue another directive enjoining respective LGUs to implement the same in 2011.

It should be underscored again, however, that **local governments of cities have a very crucial role in promoting urban mobility and directing the path of development towards sustainability.** The “transport policy will be more effective if the impact of land use, urban activities, and administrative systems are taken into account, rather than a narrow focus on transport alone.”

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**PUBLIC TRANSPORT BUSES**

PUBLIC TRANSPORT BUSES

*Public transportation in the Philippines in general is fraught with problems [sic] inadequate road infrastructure and traffic congestion around urban areas.* In Metro Manila alone, an average of 191 persons live per hectare within a relatively small area of 620 km2. Around 2 million vehicles were also recorded in 2010 to have plied its 1000 km of road infrastructure. Several modes of mass transportation operate in Metro Manila, including (a) 4 rail transport lines: Light Rail Transit 1, Light Rail Transit 2, EDSA-Mass Transit (MRT-3) and PNR south commuter line, and (b) road-based transport: public utility buses (PUBs), taxis, public utility jeepneys (PUJs), Asian Utility Vehicles (AUVs), Tricycles (TC) and pedicabs (bicycles with sidecar).

Travel with intra and intercity routes often require commuters to avail of two or more types of transportation. Buses operate along the main thoroughfares such as the Epifanio Delos Santos Avenue (EDSA), Jeepneys operate along secondary roads, AUVs have fixed routes of no more than 15 kilometers, and Tricycles and pedicabs seat only one to three people at short distances in residential areas and arterial roads.

Among the road-based transportation options, buses offer more in terms of affordability and efficiency as they carry more people using less road space. With inadequate mass transport infrastructure in the city, buses become an indispensable alternative for the commuting public.

---Diagnostic Report on the Bus Transport Sector, see note 53.

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### 3.2.1 State of Philippine Traffic

In the Medium-Term Land Transport Action Plan 2005-2010 of the Department of Transportation\(^{54}\) (DOTr), the following were the identified problems that deface the public transport sector\(^{55}\):

1. public transport efficiency;
2. poor enforcement of traffic rules;
3. lack of road safety enhancement measures,
4. increasing levels of air pollution;
5. inadequate intermodal connections among road-based and rail-based public transport services;
6. inadequate standards and procedures on driver and vehicle safety; and,
7. poor coordination among land transport agencies.

Each year, the time “lost” because of the traffic congestion in Metro Manila (MM) alone was computed at PHP100 Billion\(^{56}\). This is according to a study done in 2000. As the years have passed, it expected to have gotten higher.

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\(^{54}\) Previously called as the Department of Transportation and Communication (DOTC)


\(^{56}\) p.2-30, id note 55
It is palpable that there are problems resulting from the *reliance on motorized vehicles in urban areas*. Accordingly, “congestion in Metro Manila (the Philippines) costs 4.6 per cent of its GDP”\(^5\). A 2014 Japan study found out that the *country loses P 2.4 billion per day because of traffic*.\(^6\)

What must be noted is that the pollution and emission generated by the country also affects others on a global scale. One study argues that “the economic costs not only exact a burden on the present generation but also commit the future generations to long-term debts, which may eventually have a global effect on growth.”\(^5\)

To address this, “many developed countries have embraced sustainable transportation development in an attempt to address the urban malaise and reverse the trend.\(^6\)” The Philippines is making an effort to do the same.

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\(^6\) p. 2, ibid

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**Waze: Metro Manila—worst traffic on Earth**

In 2015, Waze (a GPS-navigation app that updates you about traffic situations real-time) conducted a global survey on driver situation and Manila took the top spot in the cities level. It also was ranked first in terms length of home-office commute with an average time of 45.5 minutes. The country was number 13 in the list of countries with the worst road quality. However, if there is any consolation, it is that the country is the best in terms of drivers’ services, and the 4th in safety.


Now, 2017, how has transportation fared so far? Philippine cities have embarked on various sustainable transport initiatives that promote sustainable mobility.

---

One must ask, “is the rising number of private vehicles an indicator of economic success or environmental debility?”
A 2014 JICA study says traffic congestion is one of the core urban issues faced by MM.

Some highlights of the summary state (JICA, 2014:3-5):

- **Traffic demand** is at 12.8 million trips in MM and 6 million in the adjoining provinces of Bulacan, Rizal, Laguna and Cavite. Most of these trips are done using public transport [...]. The lesser share of the trips is done by private mode and yet it is this mode that takes up 78% of road space.

- **Traffic volume already exceeds road capacities** in most of the urban road sections and congestions is felt all throughout the day from 6am-9pm.

- If nothing is done, the **situation in 2030 will become a nightmare**. All roads will be saturated. Negative impact on economic, social and environmental aspects will be so large deterring the function and livability of MM.

- **Traffic congestions cost much** for the society. [...] transport cost of road users including vehicle operating cost and time cost is PHP2.4 billion a day in Metro Manila. This will increase to PHP6.0 billion a day by 2030 if nothing is done.

- **Traffic congestion output is poor air quality.**
3.2.2 Philippine Modes of Transport

The Philippines’ transport sector is home to different modes of transport. There are jeepneys, tricycles, buses, taxis, cars, add to these electric vehicles and car servicing ride-hailing apps. Aside from motorized transport, there are also non-motorized modes of transport in the country. These include walking, cycling, rickshaws, pedicabs, among others. These NMTs “…do not damage the environment directly and [are] a healthy form of transport”⁶¹. Excluding MTs and NMTs, there also are alternative modes of transport that run on electricity and clean fuel. Further, water-based transport are used as well.

Vehicle Registration Table:⁶²

### TRANSPORTATION

<table>
<thead>
<tr>
<th>Registered motor</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles by type (Th)</td>
<td>7,138.9</td>
<td>7,463.4</td>
<td>7,690.0</td>
</tr>
<tr>
<td>Cars</td>
<td>828.6</td>
<td>852.3</td>
<td>868.1</td>
</tr>
<tr>
<td>Sports utility vehicles (SUVs)</td>
<td>264.1</td>
<td>310.5</td>
<td>346.4</td>
</tr>
<tr>
<td>Utility vehicles</td>
<td>1,748.4</td>
<td>1,771.3</td>
<td>1,794.6</td>
</tr>
<tr>
<td>Trucks</td>
<td>329.4</td>
<td>341.6</td>
<td>358.4</td>
</tr>
<tr>
<td>Buses</td>
<td>34.5</td>
<td>33.6</td>
<td>31.7</td>
</tr>
<tr>
<td>Trailers</td>
<td>32.5</td>
<td>37.5</td>
<td>40.1</td>
</tr>
<tr>
<td>Motorcycles and tricycles</td>
<td>3,881.5</td>
<td>4,116.7</td>
<td>4,250.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Registered motor vehicles by classification (Th)</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>6,966.4</td>
<td>6,417.6</td>
<td>6,673.8</td>
</tr>
<tr>
<td>Government</td>
<td>67.3</td>
<td>72.2</td>
<td>72.2</td>
</tr>
<tr>
<td>Diplomatic</td>
<td>3.6</td>
<td>3.1</td>
<td>3.4</td>
</tr>
<tr>
<td>For hire</td>
<td>970.9</td>
<td>968.9</td>
<td>940.1</td>
</tr>
<tr>
<td>Tax exempt</td>
<td>0.7</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Light Rail Transit</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow lane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger traffic (M)</td>
<td>170.7</td>
<td>171.8</td>
<td>170.7</td>
</tr>
<tr>
<td>Gross revenue collection (MP)</td>
<td>2,514.0</td>
<td>2,526.8</td>
<td>2,524.0</td>
</tr>
<tr>
<td>Purple lane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger traffic (M)</td>
<td>70.3</td>
<td>71.4</td>
<td>72.9</td>
</tr>
<tr>
<td>Gross revenue collection (MP)</td>
<td>943.0</td>
<td>949.9</td>
<td>973.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metrostar Express</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger traffic (M)</td>
<td>158.8</td>
<td>174.5</td>
<td>176.1</td>
</tr>
<tr>
<td>Gross revenue collection (MP)</td>
<td>1,956.8</td>
<td>2,136.6</td>
<td>2,172.4</td>
</tr>
</tbody>
</table>

3.2.2.1 Motorized Mode of Transport (MT): Formal and Informal

In Metro Manila, there are three rail lines: “the 15 kilometer elevated LRT-1 from Parañaque City to Caloocan City which is owned and run by the Light Rail Transit Authority, the 16.8 kilometer LRT-3 which is a Build-Lease-Transfer contract operated by the Department of Transport and Communications, and the latest 13.8 kilometer LRT-2 from Santolan, Marikina City to Recto, which is owned and operated by Light Rail Transit Authority. There are plans to introduce greater integration in the public transport network, for example through the use of a unified ticketing system”⁶³.

The Bus Rapid Transit, popularly known as the BRT, is a “cheaper alternative to urban rail and can increase overall transportation efficiency”⁶⁴. We will later see in the case of Cebu City more about the BRT. The Cebu BRT is the first of its kind in the country.

The metered taxi is one mode of motorized transport that can service a commuter from one point to another, inter- and intra-city provided that the destination is within Metro Manila. At the moment, the flag down rate is pegged at PhP40.00. This is the minimum fee. Increments of PhP3.50 are added for a certain distance. The government allows for only up to a maximum of five passengers for taxicabs (driver included).

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⁶¹ p.3 id note 57
⁶² From: Philippine Statistics Authority, Philippines in Figures, 2015
⁶³ p.10 id note 57
⁶⁴ Ibid
Then, there are also **buses** that ply long distances. One can go from Manila City to Fairview, Quezon City by riding a bus. The minimum fare is usually at PhP9.00. Buses can service more than forty passengers in one trip.

Excluding these, we also have **informal motorized transport**. The country is home to the iconic **jeepney**, which is a countrywide mode. Unlike taxis, which can take you to any point in Metro Manila, jeepsneys ply particular, definite routes, depending on their locality. While they have exact routes, they can, however, also be rented for private purposes. The average-sized jeepney can seat about 18-20 passengers. These run on diesel or unleaded gas. Although recently, LPG gas-run vehicles have also been plying routes in the country.

Similar to the jeepney are **vans or AUVs** that service commuters to certain routes. For instance, from SM Fairview, one can go to SM North, or to SM Manila. These are usually called “**FX**,” since the pioneer vehicles ran these trips were mostly Tamaraw FX models. One FX can seat up to eleven people, driver counted in.

The most common informal motorized transport for short distances is the **tricycle**. These tricycles especially run routes that are in the inner parts of the barangays. A typical tricycle can seat up to four or five passengers, including the driver.

**Hierarchy of minimum fares (cheapest to most expensive):**

- **Jeep** (PhP8)
- **Bus** (PhP9)
- **Trike, FX** (PhP10)
- **Metered Taxi** (PhP40)

**Hierarchy of public transport modes based on seating capacity (least to most):**

- **Trike**
- **FX**
- **Jeep**
- **Bus**

### 3.2.2.2 Non-Motorized Modes of Transport (NMT)

“**Pedicabs**” (local term of cycle rickshaws) are one of the NMTs more commonly found all over the country. They ply the routes of “narrow streets” where jeeps and buses cannot enter. Usually, these serve short-distance trips.

In the country, Marikina City has introduced a “pedestrian and bikeway system that is not only a safer transportation scheme than private transport but may also facilitate better people-to-people interaction on a more human scale.” The Marikina Program was also successfully replicated by Pasig City. Other notable NMTs are featured in the immediately succeeding section.

---

66 Id note 55, p.33.
Despite the promising environmental implications of using NMTs, it is not unusual for governments ‘...to give priority to developing infrastructure that support long-distance and high-speed travel’\(^{67}\) for economic development.

Notwithstanding the mode of transport, many local government units have taken steps to create a separate, dedicated body to regulate affairs of the local transport sector and oversee the implementation of traffic policies. In Cebu City, a City Traffic Management Coordination Committee (CITOM) was constituted. The same was done in Pasig, where there now is the City Traffic Planning Management Office (CTPMO). Lastly, but not the least, Baguio City has also recently organized a City Traffic and Transportation Management Office (CTTO). It previously existed as a mere committee under the City Planning and Development Office.

With both motorized and non-motorized modes of transport increasing in operation, various suggestions as to how the traffic crisis can be managed have been proposed, to wit\(^ {68}\):

<table>
<thead>
<tr>
<th>Transportation planning should be integrated with land-use planning—such that Developments should be sited to minimize trips and/or to shorten trip length.</th>
<th>Considerations to restrict private vehicle usage should be given priority as a planning policy rather than as a knee-jerk reaction to tackling congestion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban transportation policies and practices should promote the use of public transportation. [...] the public transportation infrastructure should facilitate travel convenience and comfort, e.g. through integrated ticketing and integrated transfers.</td>
<td>NMT should be incorporated in urban transportation plans. In high-density urban areas, there are many short trips which can be accomplished without the assistance of motorized vehicles. [...]</td>
</tr>
<tr>
<td>Measures including legislations and incentives should be considered to enable a greater buying in of the new technology. Strategies to encourage efficient use of fuels should be considered.</td>
<td>Sharing information and best practices, especially those concepts that are relevant to the region. In order to achieve this, there is a need for greater study and research on transportation sustainability in the region.</td>
</tr>
</tbody>
</table>

Out of its commitment to promote sustainability, the Philippine government has formulated the National Environmentally Sustainable Transport (NEST) Strategy. The submissions above can also be located in the final version of the NEST.

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\(^{67}\) Id note 55, p.6.

\(^{68}\) Id note 55, p.56-57.
3.3 Formulation of a National Environmentally Sustainable Transport Strategy

Environmentally Sustainable Transport (EST) is “transport development that meets the needs of the present without preventing future generations from meeting their needs.” Before delving into the general idea of the NEST Strategy, let us have a recapitulation of the country’s commitments.

Commitments of the Philippines

<table>
<thead>
<tr>
<th>Year</th>
<th>Document/Instrument</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>United Nations Framework Convention on Climate Change (UNFCCC) Agreement in Rio de Janeiro (signatory)</td>
<td>Sustainable development and climate change</td>
</tr>
<tr>
<td>1999</td>
<td>Republic Act No. 8749 or the “Philippine Clean Air Act of 1999,” (author)</td>
<td>Environmentally sustainable transport through harmonization of national emission standards with international standards</td>
</tr>
<tr>
<td>2004</td>
<td>Manila Statement of 2004 (signatory)</td>
<td>Initiatives of the United Nations Centre for Regional Development (UNCRD) in extending assistance to the countries of the region, in preparing national strategies and action plans to promote environmentally sustainable transport, and to facilitate annual high-level meetings and expert group meetings</td>
</tr>
<tr>
<td>2005</td>
<td>Aichi Statement of 2005 (signatory)</td>
<td>The need for both national and local level governments to develop and adopt integrated policies, strategies, and programs incorporating key elements of environmentally sustainable transport</td>
</tr>
</tbody>
</table>

Source: NEST, 2011, see note 34.

In the 2005 Aichi Statement, twelve thematic areas that comprise the EST were identified:

1. Public health;
2. Strengthening roadside air quality monitoring and management;
3. Traffic noise management;
4. Vehicle emission control, standards, and inspection and maintenance;
5. Cleaner fuels;
6. Public transport planning and travel demand management;
7. Non-motorized transport;
8. Environment and people friendly infrastructure development;
9. Social equity and gender perspectives;
10. Road safety and maintenance;
11. Knowledge base, awareness, and public participation; and
12. Land use planning.

These 12 thematic areas are the rudiments wherein the NEST revolves. Thus, in its formation, NEST had two core objectives:

1. To reduce the annual growth rate of energy consumption and associated greenhouse gas (GHG) and air pollutant emissions from the transport sector in urban areas of the country; and

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69 Id note 34, p. 21.
70 Ibid
2. To achieve sustainable mobility through the development of a viable market for environmentally sustainable transport (EST) goods and services, which includes promoting transportation systems of low carbon intensity and shifting towards the use of more sustainable transport modes.\textsuperscript{71}

This was pursuant to a 2009 administrative order (AO 254, 30 Jan 2009)\textsuperscript{72} of then President Gloria Macapagal-Arroyo, mandating the DOTC to lead in formulating a NEST for the country. The NEST strategy was intended to make the Philippines’ transport policies “...into more people- and environment-friendly ones and to contribute to achieving the Sustainable Transport Goals set forth in the Bangkok 2020 Declaration.\textsuperscript{73}”

In connection with the execution of its commitment, the University of the Philippines’ National Center for Transportation Studies (UP-NCTS) for Regional Development was designated as the National Collaborating Center for the NEST formulation\textsuperscript{74}. The outcome document, which was a strategy—cum-action-plan, was intended to bridge the gap between and among local, national, and international initiatives that relate to EST.

There was a call for a NEST because the status quo strategy was no longer as effective and efficient as it was envisioned to be.

\textit{What, then, sets the EST apart from the conventional approaches to transport planning and policy development?}

<table>
<thead>
<tr>
<th>EST</th>
<th>Conventional approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals are consistent with sustainable development (pro-active)</td>
<td>Goals “are more for mobility and accessibility with mitigating measures prescribed to counter-act possible negative externalities of the resulting transport system, in short reactive”</td>
</tr>
<tr>
<td>Views negative externalities in its entirety</td>
<td>Tend to focus on mitigation of environmental impacts per transport activity unit</td>
</tr>
<tr>
<td>Recommended policy instruments are aimed at restraining growth in the most environmentally damaging forms of transport activity.</td>
<td></td>
</tr>
</tbody>
</table>

Content based on: NEST, 2011, see also note 34.

As the circumstances change, so should the actions of the government. In addressing transportation and other mobility issues, there is no one-size-fits-all solution. The government must adapt to the needs and demands of the time, instead of imposing one solution if it has already served its purpose, or if it has already exhausted its positive effects.

\textsuperscript{71} UN Center for Regional Development, at: http://www.ucrd.or.jp/index.php?page=view&type=13&nr=21&menu=232
\textsuperscript{72} The AO can be viewed in the Official Gazette’s website, at: http://www.officialgazette.gov.ph/2009/01/30/administrative-order-no-254-s-2009/
\textsuperscript{73} an important regional consensus agreed upon at the Fifth Regional EST Forum in Asia held in August 2010. “ Ibid.
\textsuperscript{74} p.3-11, id note 55
Other national strategies of the government include spending on transportation infrastructure. Through the Department of Public Works and Highways (DPWH), the national government intends to spend on the following programs:

<table>
<thead>
<tr>
<th>Program</th>
<th>Cost</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Decongestion Program</td>
<td>P107.8B</td>
<td>Construction/ widening of national roads and bridges; construction of by-passes/diversion roads, flyovers, interchanges, and underpasses</td>
</tr>
<tr>
<td>Integrated and Seamless Transport System</td>
<td>P95.9B</td>
<td>Construction/ improvement of logistics infrastructure network in Northern Mindanao, Davao, SOCSARGEN and CARAGA (MLIN); Construction/ improvement of roads leading to growth corridors in Western Mindanao; Studying and implementation of Inter-island linkage projects through long-span bridges; Connection of gaps along national roads; Construction/replacement of bridges; Initiation of studies on tunneling technology)</td>
</tr>
<tr>
<td>Public-Private Partnership Program</td>
<td>---</td>
<td>Augmentation and complementing of locally-Funded and foreign-Assisted projects; Construction of high standard highway network based on Master plan and Technical Studies</td>
</tr>
<tr>
<td>Convergence and Rural Road Development Program</td>
<td>P18.8B</td>
<td>Construction/upgrading of local access roads to designated tourism destinations, RORO ports / seaports and airports; Construction of Farm to Market Roads (FMRs); Construction/improvement of roads leading to industrial trade corridors.</td>
</tr>
<tr>
<td>Livable, Sustainable and Resilient Communities</td>
<td>P104.4B</td>
<td>Create Environment-Friendly Communities (Building of more bike lanes and pedestrian infrastructure.)</td>
</tr>
</tbody>
</table>

In a similar line, the DOTr is also now investing in a road-based public transport reform program. Its components include the PUV Modernization Program, the Integrated Terminal Exchange, the Bus Rapid Transit System, and the Intelligent Transport System.

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Data from the DPWH presentation, ‘DPWH Strategic Infrastructure Programs and Policies’ on the occasion of the 24th Annual Conference of the Transportation Science Society of the Philippines; 21 July 2017.

Ibid
CRITERIA FOR CASE STUDY

This year’s One Planet City Challenge theme revolves on sustainable mobility. Sustainable mobility, according to the World Business Council for Sustainable Development, is “the ability to meet the needs of society to move freely, gain access, communicate, trade, and establish relationships without sacrificing other essential human or ecological values today or in the future.”

4.1 Selecting Cities

There are many Philippine cities that advance and have forwarded initiatives promoting sustainable transportation and mobility. However, to narrow down the selection, it was necessary to select only a few whose initiatives can be adequately captured in a case study. Cities to be visited were selected based on the criteria described below. For this case study, cities must exhibit at least five of the criteria. Though, it must be pointed out that the cataloguing of homegrown initiatives is initiative-based, and not city-based.

The cities that were rated in this section were selected based on the availability of data on the Internet. Those cities with the most available data for desk research were counted in.

Of the seven cities identified, only five were qualified for visitation based on the criteria. A caution, however, is—the assessment was based on the available data gathered through online research. The gauge range was set from “high” to “marginal.” Performances of cities in a specific criterion, which were unavailable, were classified as “open” and rated 0. The rankings are as follows:

1. Marikina City
2. Pasig City
3. Baguio City
4. Vigan City
5. Cebu City
6. San Fernando City
7. Muntinlupa City
8. Mandaluyong City

Marikina, Pasig, and Vigan are the only cities that have approved initiatives that are all being implemented. Baguio has the most number of identified initiatives, but not all are approved. Half are pending proposals that have gone through the phase of public presentation. Vigan, on another note, has the most number of approved initiatives that have been carried out for more than a decade now. Cebu City is a recipient/host of a pending project set for implementation.

Other cities were personally visited, too, due to supervening circumstances. These are Muntinlupa and Mandaluyong City. Explanations are laid out in the succeeding sections of this study. Thus, a total of seven
cities (Vigan, Baguio, Cebu, Marikina, Pasig, Mandaluyong, and Muntinlupa) were personally visited. The rest of the cities whose initiatives are discussed briefly in succeeding sections were not visited, but data were gathered from both published primary and secondary sources.

4.2 Data Gathering Framework

The end goal of the research is to compile into a single index the homegrown initiatives of different Philippine cities that focus on sustainable transport and mobility. Public acceptability shall be the measure for evaluating the initiative’s social impact. It is necessary to link the social impacts of government initiatives to the acceptance of the public as it can help in determining points for improvement. For the purpose of this case study, impacts shall be taken to mean “…positive, negative, or neutral changes in social, economic, or political structures that will be caused by a proposed action. They can occur over space and time.” However, what will also be evaluated are approved and implemented actions/initiatives.

Target sample: Whose views are needed?

The target sample is composed of two major sets of interviewees: one from the local government unit and another from the public.

CRITERIA. Cities must:

1. Build a conducive setting for governance through sharing of resources, responsibilities, and risks;

   The government must spread its resources squarely among departments. For sustainable city planning, all departments must give their outputs so that not only is each of them a part of the process, each can also be held liable for their actions. Data sharing among departments should also be encouraged. With regard to risk, it is likewise vital that all departments of the government be aware of their responsibilities and the risks the city can face should they not do their jobs.

2. Adopt an inclusive city agenda integrating transport, public utilities, employment, and social welfare policies;

   Sustainable mobility is not just about cars, motorcycles, or jeeps. It also includes pedestrians. For that reason, there must be an integration of transport mobility management in city land use plans. It is central that there be doable and achievable goals that cities have to meet from time to time. Transport policies affect the delivery of basic social services, the environment, employment, and utilities.

3. Promote a sharing of public spaces between pedestrians and motorists (encourage the use of public transport);

   Streets are public goods. They are characterized by non-excludability and non-rivalry. That means that no one is excluded from enjoying it and the use of person A of the street will not deprive person B of enjoying the same. Ideally, at least, that is what streets and roads are. Thus, it is important in the spirit of sustainable mobility that cities mediate the use of streets and roads between pedestrians and motorists. This can be done through a repurposing of roads, creation of city road network plans, pedestrianization, inter alia.

4. Manage mobility in conjunction with environmental quality;

   Cities must foster ecological integrity by safeguarding that home-grown bionetworks are not exploited or destroyed by infrastructural transport initiatives. While putting up transport infrastructure is laudable, it is imperative that it does not jeopardize natural habitats and does not add to the emission of harmful greenhouse gases. City initiatives should always..

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78 The data gathering framework and methodology were abridged for ease of reading of this case study.)
Why is there a need to collate even the responses of the people? All projects, activities, and programs (PAPs) of the government must always be consulted with the people. Whether they are proposed or already implemented, stakeholder consultation is cardinal for good governance. This is so because as stakeholders, they are the ones who will be directly affected by the proposed PAP of the government. The opinions of the stakeholders will either validate or invalidate the initial findings of the desk research. Moreover, their opinions can elicit “valuable” material that can serve as a basis for “developing acceptable outcomes that can be implemented effectively and efficiently.”

1. Local Government Unit representatives—At least one official from each city shall be interviewed. The official must be directly concerned with the operations and implementation of the featured initiative.

2. Public—The public set is further divided into two: the commuting public and the motor drivers/operators.

It is important to point out the difference between informants and respondents as the distinction has an implication on the processing of data and interpretation of findings. For purposes of this research, “informant” shall mean “…an individual answering questions about the beliefs, positions, and behavior of a stakeholder group, an organization, or some other group or aggregate, speaking from a position of membership in the group, organization, or aggregate.” Informants are those from the LGU. On the other hand, “respondent” shall mean “…an individual answering questions about his or her personal opinions, beliefs, knowledge, values, attitudes, and behavior.” The respondents, then, are those from the affected public.

There must be diversity in the informants and respondents to have a higher degree of...
validity of the results. They will be differentiated according to age, sex, and socio-economic status. These will give an idea of the target sample demographics.

4.3 Case Methodology

Fieldwork was done on the following dates: Vigan City on August 14-15, 2017; Baguio City on August 16-18 and September 1, 2017; Cebu City on August 23-25, 2017; Pasig City on August 27 and September 4, 2017; Marikina City on September 13, 14, and 18, 2017; Mandaluyong City on September 14, 15, and 18, 2017; and Muntinlupa City on October 2, 2017.

During the site visitation, initial findings from the desk research were presented to local government units for them to confirm or dispute points taken from the review of related literature, studies, and online news reports. Subsequent findings shall be presented to the LGU through the polished output of the research.

For veracity, a triangulation of data gathering methods was done through the following:

1. **Document Analysis**—Primary data were derived from official records such as those from national agencies (e.g. the Philippine Statistics Authority, national policies), the local government units of each city (e.g. local ordinances and orders), and other published materials (e.g. from ADB, WB, WBSCD, etc.).

2. **Interview**—General interviews were conducted with respondents who were among those affected by the initiative/s in focus. For instance, in Cebu, this was done for the riding public who will be affected by the BRT. In Vigan, it was done for the business owners and tricycle drivers.

3. **Key Informant Interview**—KII was done with the LGU representatives. This varied from city to city, depending on which agency was in charge of the implementation.

The criteria ratings of each city are illustrated below.

**Gauge range:**

- **High (5)**—Has legislative measures and institutionalized practices
- **Moderate (3)**—Has legislative measures and proposed practices; OR has proposed measures and institutionalized practices
- **Marginal (1)**—Has no legislative measures yet, but have proposals from the city government; and has proposed practices
- **Open (0)**—Cannot gauge the city’s performance at the moment with the available data.
### Criteria Rating

<table>
<thead>
<tr>
<th></th>
<th>A - Vigan City</th>
<th>C - San Fernando, LU</th>
<th>E - Muntinlupa City</th>
<th>G - Mandaluyong City</th>
<th>B - Baguio City</th>
<th>D - Cebu City</th>
<th>F - Pasig City</th>
<th>H - Marikina City</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Build a conducive setting for governance through sharing of resources, responsibilities, and risks:</strong></td>
<td>Open 0</td>
<td>Mod. 3</td>
<td>Open 0</td>
<td>Mod. 3</td>
<td>High 5</td>
<td>Open 0</td>
<td>High 5</td>
<td>Open 0</td>
</tr>
<tr>
<td><strong>Adopt an inclusive city agenda integrating transport, public utilities, employment, and social welfare policies:</strong></td>
<td>High 5</td>
<td>High 5</td>
<td>Mod. 3</td>
<td>Mod. 3</td>
<td>High 5</td>
<td>High 5</td>
<td>High 5</td>
<td>Open 0</td>
</tr>
<tr>
<td><strong>Promote a sharing of public spaces between pedestrians and motorists (encourage the use of public transport):</strong></td>
<td>High 5</td>
<td>Mod. 3</td>
<td>Marg. 1</td>
<td>High 5</td>
<td>Mod. 3</td>
<td>High 5</td>
<td>High 5</td>
<td>Marg. 1</td>
</tr>
<tr>
<td><strong>Manage mobility in conjunction with environmental quality:</strong></td>
<td>High 5</td>
<td>High 5</td>
<td>High 5</td>
<td>Mod. 3</td>
<td>High 5</td>
<td>High 5</td>
<td>High 5</td>
<td>High 5</td>
</tr>
<tr>
<td><strong>Construct transport infrastructure, while providing a range of modal choices to inhabitants:</strong></td>
<td>Marg. 1</td>
<td>Marg. 1</td>
<td>Open 0</td>
<td>Mod. 3</td>
<td>Marg. 1</td>
<td>Marg. 1</td>
<td>Open 0</td>
<td>High 5</td>
</tr>
<tr>
<td><strong>Translate into policy principles of sustainability while supporting the economy; and:</strong></td>
<td>Mod. 3</td>
<td>Mod. 3</td>
<td>High 5</td>
<td>Open 0</td>
<td>Mod. 3</td>
<td>High 5</td>
<td>Mod. 3</td>
<td>Mod. 3</td>
</tr>
<tr>
<td><strong>Value public involvement, transparency, and accountability:</strong></td>
<td>High 5</td>
<td>High 5</td>
<td>Open 0</td>
<td>High 5</td>
<td>Open 0</td>
<td>Open 0</td>
<td>Open 0</td>
<td>Mod. 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># of criteria present in each city</th>
<th>6 of 7</th>
<th>7 of 7</th>
<th>4 of 7</th>
<th>5 of 7</th>
<th>6 of 7</th>
<th>6 of 7</th>
<th>3 of 7</th>
<th>7 of 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL POINTS</strong></td>
<td>24</td>
<td>25</td>
<td>14</td>
<td>19</td>
<td>26</td>
<td>18</td>
<td>26</td>
<td>9</td>
</tr>
<tr>
<td><strong>RANK</strong></td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>5</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td><strong>Qualified</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Disqualified</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As an interview tool/instrument, a focused interview questionnaire was used. It is a focused, semi-structured set of questions aimed at gathering qualitative data on (a) the LGU’s planning and implementation perspectives, and (b) the social acceptability of the public. By semi-structured, it means that questions can have more follow-ups, provided that they relate to the topic.
## Focused Interview Questionnaire

### For the LGU informants

<table>
<thead>
<tr>
<th>Topical Focus</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initiatives</strong></td>
<td>1. What are your initiative/s that focus on sustainable mobility?</td>
</tr>
<tr>
<td><strong>Rationale</strong></td>
<td>2. What is the rationale behind the initiative/s / project/s?</td>
</tr>
<tr>
<td><strong>Funding</strong></td>
<td>3. Did your LGU receive help (non-/financial) from inter-/national agencies/organizations? To what extent was it useful in the implementation of the initiative?</td>
</tr>
<tr>
<td></td>
<td>a. If not, did the LGU fully fund the initiative? Was it all from the IRA? Or was it pooled from the resources of concerned departments?</td>
</tr>
<tr>
<td><strong>Challenges</strong></td>
<td>4. What challenge/s has/have beset the (a) planning and (b) implementation of the initiative/s?</td>
</tr>
<tr>
<td><strong>Social acceptability</strong></td>
<td>5. What additional resource/s do you need to have a better implementation?</td>
</tr>
<tr>
<td></td>
<td>6. In your professional official capacity, how will you gauge the public’s acceptance of the initiative/s (rate from 1-lowest to 5-highest)?</td>
</tr>
</tbody>
</table>

### For the public respondents

<table>
<thead>
<tr>
<th>Topical Focus</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social benefit and acceptance</strong></td>
<td>1. Does the project/initiative benefit you? (Y-in what way/s?; N-why not?)</td>
</tr>
<tr>
<td></td>
<td>2. Has the implementation of the initiative affected your daily affairs [as compared to how things were prior to the implementation]? (Y-in what way/s?; N-why not?)</td>
</tr>
<tr>
<td><strong>Challenges</strong></td>
<td>3. What do you think are the challenges that beset the implementation?</td>
</tr>
<tr>
<td><strong>Recommendations</strong></td>
<td>4. What recommendations can you extend to the LGU to make the project/initiative better?</td>
</tr>
<tr>
<td></td>
<td>5. [if the initiative has adverse effects] What recommendations can you give to mitigate the negativities of the initiative/s?</td>
</tr>
</tbody>
</table>

During the interview, for ethical considerations, the following were explained to the respondents: (a) the research overview, (b) the goals of the research, (c) the purpose of the research, (d) the implications of participating in the research, and (e) the disposition of the final output of the research.

The data were collated, organized, and processed with respect to the particular contexts in which they were gathered. They are presented in the subsequent section.
What do cities do to manage urban mobility in such a way that it becomes sustainable? Cities come up with ‘policies and investments that shift automobile travel to public transport, cycling and walking which all contribute substantially to building more sustainable and inclusive cities.\(^{82}\)

As explained in the previous discussion on the One Planet City Challenge, homegrown initiatives of cities that focus on sustainable mobility will be featured. By “homegrown,” what is meant is that these initiatives are funded from local sources—or from the local government’s funds. This is, however, with the exception of Cebu City and Mandaluyong City, which are both recipients of pilot projects of the World Bank and the Asian Development Bank, respectively.

After organizing and processing the data gathered from the fieldwork, a summary reading of the identified initiatives of each city shows that there are common programs/projects among cities, albeit with different names. To visualize the commonalities:

It appears that among common initiatives, walkability and implementation of carless days are the most shared among cities. Next are the alternative modes of transport. Then comes mass transport. Among other uncategorized initiatives are soft programs. These include loan schemes and information campaigns.

The initiatives lumped in the “others” category involve those that are not shared among cities, or those that are unique in this set of cities. For instance, only Baguio has a total tricycle ban in the entire city. It also is the only city that bans motorcycles in the entire stretch of Session Road, and that bans PUJs from plying routes in the Central Business District. Cebu, on the other hand, is the only city that has a Bus Rapid Transit System in tow. A more elaborate discussion follows. It should be noted that most of the transport initiatives are land-based with very few water-based transport coming out of the research and discussion.

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\(^{82}\) P. 93 PROMOTING SUSTAINABLE TRANSPORT FOR INCLUSIVE DEVELOPMENT
Before delving into the specifics, it is but proper to have an introduction to Philippine cities. The Philippines has three kinds of cities. These are highly urbanized cities, independent component cities, and component cities. 63% of the Philippines' total population resides in urban areas, according to the UN Data of 2005, thus making it one of the countries with the “highest urbanization rates” in Asia.  

### REGIONS, PROVINCES, AND CITIES IN THE PHILIPPINES

<table>
<thead>
<tr>
<th>Region, Province, and Highly Urbanized City</th>
<th>Prov. City Mun. Brgy. Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philippines</td>
<td>81 144 1,490 42,029 92,337,852</td>
</tr>
<tr>
<td>National Capital Region (NCR)</td>
<td>15 1 1,706 11,855,975</td>
</tr>
<tr>
<td>City of Manila</td>
<td>1 897 1,552,171</td>
</tr>
<tr>
<td>City of Mandaluyong</td>
<td>1 27 328,699</td>
</tr>
<tr>
<td>City of Marikina</td>
<td>1 15 424,150</td>
</tr>
<tr>
<td>City of Pasig</td>
<td>1 30 659,773</td>
</tr>
<tr>
<td>Quezon City</td>
<td>1 142 2,745,720</td>
</tr>
<tr>
<td>City of San Juan</td>
<td>1 21 121,430</td>
</tr>
<tr>
<td>Caloocan City</td>
<td>1 188 1,489,040</td>
</tr>
<tr>
<td>City of Malabon</td>
<td>1 21 353,337</td>
</tr>
<tr>
<td>City of Navotas</td>
<td>1 14 249,151</td>
</tr>
<tr>
<td>City of Valenzuela</td>
<td>1 33 575,356</td>
</tr>
<tr>
<td>City of Las Piñas</td>
<td>1 20 552,573</td>
</tr>
<tr>
<td>City of Makati</td>
<td>1 33 529,039</td>
</tr>
<tr>
<td>City of Muntinlupa</td>
<td>1 9 459,941</td>
</tr>
<tr>
<td>City of Parañaque</td>
<td>1 16 588,126</td>
</tr>
<tr>
<td>Pasay City</td>
<td>1 201 392,069</td>
</tr>
<tr>
<td>Taguig City</td>
<td>1 28 644,473</td>
</tr>
<tr>
<td>Municipality of Pateros</td>
<td>1 10 54,147</td>
</tr>
</tbody>
</table>

#### Cordillera Administrative Region (CAR)

- Abra: 27 303 234,733
- Apayao: 7 133 112,636
- Benguet: 13 140 403,944
- Baguio City: 1 129 318,676
- Ifugao: 11 175 151,076
- Kalinga: 1 152 201,613
- Mountain Province: 10 144 154,107

#### Ilocos Region

- Ilocos Norte: 2 21 557 568,017
- Ilocos Sur: 2 32 768 658,567
- La Union: 1 19 576 741,906
- Pangasinan: 4 44 1,364 2,779,862

#### Cordillera Administrative Region (CAR)

- Baguio City: 1 129 318,676
- Ilocos Norte: 2 21 557 568,017
- Ilocos Sur: 2 32 768 658,567
- La Union: 1 19 576 741,906
- Pangasinan: 4 44 1,364 2,779,862

### Source: Philippine Statistics Authority

There are a total of 33 highly urbanized cities in the country. All of them face transportation and development problems uniquely within their contexts. 16 of the 33 are in Metro Manila, or within the National Capital Region. The rest are situated in other regions. The “average population growth rate in metro manila cities was pegged at 1.92%” from 2000-2007, while those outside MM, at 2.55%.  

WWF firmly believes that Philippine cities are taking initiatives at coming up with transformative solutions to solve the problem on transportation and mobility. One of the purposes of this study is to showcase those initiatives which can be replicated by other cities both national and international, as part of the shift towards a more sustainable management of cities and mobility.

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83 p. 2-1, id note 55
84 Ibid
85 p. 2-3, id note 55
There is a quick reference matrix of the highlighted initiatives taken by various local government units. These are either ongoing or pending programs/activities/projects (PAPs), with the exception of Mandaluyong City and San Fernando, whose featured programs have since been discontinued but still merit discussion. The matrix of initiatives can be viewed in the next page. What follows in the next section is a more in-depth discussion of initiatives.

As discussed in the Chapter on methodology, the cities were selected based on desk research and set criteria. Seven cities were personally visited for data gathering. Data for the rest of the cities whose initiatives are part of this study were gathered through desk research.

5.1 Categories of City Initiatives

Initiatives were grouped into larger categories so that they could be appreciated better. The four categories are (a) Pedestrianization, Walkability & Green Spacing, (b) Mass Transport, (c) Alternative Modes of Transport, and (d) Institutional policies.

The first category includes those initiatives focused on promoting walking to reduce emissions. This includes carless days and pedestrianization with examples from the cities of Vigan, Pasig, and Makati are included here. It also includes green spaces to encourage walking. The featured city is the city of IloIlo, whose esplanade has promoted walkability amongst its residents.

The second category refers to those initiatives which concentrate on public modes of transport that ply on fixed routes, such as buses and monorails. This takes account of the cities of Cebu, whose BRT Project is the first of its kind in the country. While jeepneys are also classified as mass transport, the electric jeepneys highlighted are placed under the next category.

The third is about alternative modes of transport. It includes electric vehicles and bike programs. This is where the e-trikes and e-jeepneys, which still run on motor engines but are powered by electricity, come in. Many cities are presented here.

The fourth category is on institutional policies. While mobility initiatives are best expressed in alternative modes of transport that reduce emissions, policies promulgated by local governments are also potential contributors to the reduction. Featured is Baguio City.
**Quick Reference Matrix**

<table>
<thead>
<tr>
<th>Initiatives →</th>
<th>Walkability</th>
<th>Mass Transport</th>
<th>Alternative Modes of Transport</th>
<th>Institutional Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cities ↓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bacoor</td>
<td></td>
<td></td>
<td></td>
<td>e-trike fleet service</td>
</tr>
<tr>
<td>Baguio</td>
<td></td>
<td></td>
<td></td>
<td>Various policies</td>
</tr>
<tr>
<td>Cebu</td>
<td></td>
<td>BRT Project</td>
<td></td>
<td>Bike lanes ordinance</td>
</tr>
<tr>
<td>General Santos Iloilo</td>
<td>Green spaces</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Makati</td>
<td></td>
<td></td>
<td></td>
<td>e-Jeepney</td>
</tr>
<tr>
<td>Mandaluyong</td>
<td></td>
<td></td>
<td></td>
<td>e-trike</td>
</tr>
<tr>
<td>Manila</td>
<td></td>
<td></td>
<td></td>
<td>e-trike</td>
</tr>
<tr>
<td>Marikina</td>
<td></td>
<td></td>
<td></td>
<td>Bikeways Program</td>
</tr>
<tr>
<td>Muntinlupa</td>
<td></td>
<td></td>
<td></td>
<td>e-Jeepney</td>
</tr>
<tr>
<td>Naga</td>
<td></td>
<td></td>
<td></td>
<td>e-trike</td>
</tr>
<tr>
<td>Pasig</td>
<td>Carless Days and Walkways</td>
<td>Community bus</td>
<td>Bike-sharing, bike lanes</td>
<td></td>
</tr>
<tr>
<td>Puerto Princesa</td>
<td></td>
<td></td>
<td></td>
<td>e-trike</td>
</tr>
<tr>
<td>San Fernando Vigan</td>
<td>Green spaces pedestrianization</td>
<td></td>
<td></td>
<td>Heritage policies</td>
</tr>
</tbody>
</table>
5.2 Pedestrianization, Walkability & Green Spacing

5.2.1 VIGAN CITY—Calle Crisologo Pedestrianization

Status: Ongoing

Vigan is the capital city of the Province of Ilocos Sur in the Northern Luzon region. It is also known as the Heritage City. The city was initially planned as the capital of the whole Ilocos province and was the capital during the American period. The population has increased since then. As of today, Vigan has about 53,000 night population. It triples in the day. The land area of Vigan is 28 sq. km.

Of all featured initiatives, the pedestrianization has been in implementation the longest. Calle Crisologo is a famous tourist spot, and in fact, the main one in the city. It is located in the town’s plaza, which makes it near the Church, commercial and food establishments, schools, and banks. It was named after the first civil governor in Vigan, Mena Crisologo, who is also a playwright.

In 2005, the city council passed the Transportation and Traffic Code of Vigan (Ord. 27 series of 2005). It bans the passage of all kinds of motorized vehicles along heritage area roads on weekends (Saturdays and Sundays). However, it only imposes a permanent closure to motorized vehicles on the part of Calle Crisologo where the old ancestral houses are erected [Art. III Sec. 10]. There is an exclusion: “PNP vehicles; BFP fire trucks and vehicles; garbage collection trucks; government utility vehicles; ambulances; and other vehicles in cases of emergencies such as the prevention of the commission of crimes; legal arrests and seizures; valid police operations; fires; floods; earthquakes; disasters and extreme actual emergency situations where the protection of life and property are at stake; funeral procession” [Art. III Sec.14].

The code also prohibits motor vehicles from entering the streets surrounding Plaza Burgos on weekends and on local festivals. There is an exemption to this: [Sec 12 (e)]—“...the use of vehicles powered by

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86 There was just one Ilocos province before it was divided into Ilocos Norte, Ilocos Sur, and La Union.
88 Ibid
non-combustion engines such as but not limited to electric/battery powered vehicles and solar powered vehicles for the use of senior citizen and the physically disabled."

There has been a change in the pattern of the traffic situation in Vigan. During super peak season (Semana Santa and December), the traffic is bad. The seasons used to be off-peak and peak season. Now, it is peak season and super peak season. Weekends are the real crowd drawers—especially long weekends.

City Tourism Officer Edgar dela Cruz gave his insights into the planning and current implementation of the pedestrianization in Calle Crisologo. He has spent the past 15 years as tourism officer, and given that long stay, his wisdom from experience in his job is valuable. According to him, it was when a Miss Universe event was held in Vigan that the mayor saw it was possible and doable to close all streets and pedestrianize it.

A true blue Bigueno, he said tourists like Vigan because it makes them feel like they are not in the Philippines, or that they are elsewhere in Europe. Calle Crisologo used to be the original commercial district of the city during the Spanish-American period. It was where much of the community’s market activities took place. The city government has been preserving it, with all its resources, to protect the heritage of Biguenos. This was successfully done by closing the entire street to motorized vehicles. Cars can go through intersections, but not through Crisologo. Neither can buses park nearby because the roads are narrow.

When Vigan had a boom as a heritage site, people began flocking to the city. Because of the tourist influx, the income of the city increased. There was then a need to balance the increasing development of Vigan with the protection of its heritage.

“We have a balancing act between tourism and heritage conservation. [...] Since we have no mountain, no sea, we decided to boost our heritage tourism.”

Vigan City Tourism Officer Edgar dela Cruz

89 Ibid
Aside from the Calle Crisologo pedestrianization, the streets of Plaridel and V. delos Reyes are now already undergoing cobblestoning. When finished, Vigan would already have three adjoining pedestrianized streets. The construction for the two streets is expected to take two years because of the time needed to process national funding. Additionally, there is also planned total ban on motor vehicles from plaza to the historic park. These would now be open only to calesas and people.90

What is the motivation of the city for closing the heritage street to cars and other motorized vehicles? The vibrations of motor vehicles are damaging old houses, so the mayor decided to pedestrianize and “cobblestone” the streets. This was to avoid further destruction of the houses and to lessen pollution from cars. Mr. dela Cruz stressed that the purpose of pedestrianization is both to promote tourism and lessen environmental pollution. Since the program of the mayor before was heritage conservation, it was used as a tool for development.91

When asked about challenges encountered in the planning and implementation of the pedestrianization, he conveyed that they had problems with home and business owners at first. He said, “Because even home owners could not touch their houses unless they conform to heritage conservation standards, they said it was like Martial Law.” Eventually, they were included as stakeholders in the planning stage. During the first few days of the closure of Calle Crisologo, signage were put up and radio announcements were done. These helped direct the traffic. Mr. dela Cruz stated that when the people saw the vision of the government for Calle Crisologo, they realized that it was important to preserve the houses.

For the planned pedestrianization of Plaridel and V. delos Reyes streets, on the other hand, he said there were no apprehensions for now. Sir Egay stands by the pedestrianization. He acknowledges that tourists are complaining about the traffic, but pegs the locals’ public acceptance at 4-5. Other plans of the city to keep its heritage identity include (a) the imposition of a conservation tax, (b) the revival of the Metro Vigan concept, (3) the banning of buses in the plaza, and (4) the phasing out of motor trikes.92 To balance the findings, it was but important to get the reaction of the affected public. The table of the responses of the respondents can be found in the Annexes section. They come from different backgrounds—students, business owners, commuters, trike drivers. Their responses were charted verbatim.

91 ibid
92 ibid
Four general points can be derived from the respondents:

a) The **Calle Crisologo pedestrianization** is perceived by both trike drivers and business owners as **beneficial**. Because it has become a tourist attraction in itself, more people spend their money going to and in stores along the stretch of Crisologo. One of the respondents said that aside from the fact that it preserves their heritage, the pedestrianization “disciplines people to walk.”

b) The same is favored by commuters and students because they believe it **preserves Vigan’s heritage**.

c) The ongoing construction (“cobble stoning”) of Plaridel and V.delos Reyes are not well-accepted by trike drivers, vendors, and commuters. This is because they see it as another looming source of heavy traffic. They do not think that pedestrianization will solve the congestion problem. A notable answer from one of the respondents is:

> If they will close Plaridel and V. delos Reyes, it would be difficult for us to service passengers because the closure would mean we would have to go around so many streets just to get to the destination. If they will really close Plaridel, how is that going to be? Along Plaridel Street are the lumber businesses and along V. Delos Reyes are the hotels. So how will that be?

d) Even if the pedestrianization of Crisologo is seen as beneficial, generally, respondents also believe that it is because of the closure that traffic flow is heavy during peak hours. This is because motorcycles and cars have to go through and around Crisologo just to get from one point to another, which, in actuality, can be straightly traversed were it not for the closure. In spite of this general observation, a trike driver conjectured that “what causes traffic is not the closure of CC but the double parking of cars. There are also a lot of streets being renovated now, which are supposed to be passageways for trikes and cars.”

As a consequence, though they like the project (cobble stoning) for its effect on heritage preservation and lessening pollution, they think it just diverts the flow of traffic and does not really solve the problem. Nevertheless, Biguenos are very much in favor of the current policy being implemented in Calle Crisologo.

There are suggestions on improving the current management of Calle Crisologo from the respondents that are worth quoting, to wit:

- “*Maybe the government could renovate the dilapidated houses.*”
- Calle Crisologo is technicolored. *“There is yellow, there is pink. On one side, there is a different color. On the other, there is another. The government should repaint the old houses and existing structures and impose a uniform, monochromatic theme, preferably a color that is relatable to heritage.”*
- “*Maybe the signs can be made bigger, so that tourists can read them properly.*”
- “*It would be nice if new attractions would be placed so that tourists could have more to see in the city.*”
Vigan City remains to be a model city of pedestrianization for all other local government units. Coupled with political will, the implementation of their policies proves that development can be facilitated with low carbon emissions. Vigan is evidence that development does not necessarily mean destruction of nature.

Ongoing construction for the cobble stoning of Plaridel and V. delos Reyes Streets.

Two of the trike driver-respondents and one vendor-respondent.
5.2.2 PASIG CITY—Carless Sundays and Walkability
Status: Ongoing

Before it became a highly urbanized city, Pasig was the capital of the province of Rizal. It is in fact one of the oldest towns, aged around 400 years, established by the Augustinian Friars way back in the 1570s. It is popularly known for the Pasig River. It has a land area of 31 square meters.

With its vision to be a healthy, livable, and sustainable ecopolis, the city has been implementing sustainable mobility programs in addition to its sustainable development programs. The city identified eight initiatives on sustainable mobility.

Two of these are:

1. Carless Sunday Roads/ Share the Road
   a. Promote active transport of walking, jogging and biking
   b. Implemented and sustained in five major roads for five years
   c. 185,000 visitors/ Carless loyalists
   d. 360 events/ activities
   e. Air-quality improvement by 72%
   f. Promotes entrepreneurship, bazaars/ business
   g. Promote family and community bonding spirit

2. Pedestrianization and Walkability Promotion
   a. 3 kilometers elevated skywalk at City Hall and other buildings
   b. 25 Elevated skywalk and walkways at the Pasig CBD/ citywide
   c. Provides convenience, connectivity and safety for pedestrians
   d. Traffic decongestion

Other related initiatives include:

- Odd-Even Traffic Vehicle Volume Reduction Scheme
  a. Implemented in six major gateways of the City
  b. Reduced travel time from 2 hours to 30 minutes
  c. Stabilizes flow of people and vehicles
  d. Promote quality time for self and family
  e. Vehicle traffic volume reduction by 40%

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94 Data from the CENRO.
• Intelligent Traffic System (ITS)
  a. Installed Six LED Monitoring Advisory in strategic areas • Lesser the risk of traffic accidents/deaths
  b. Installed the system including 82 Road Safety Blinking Solar Pedestrian Lights
  c. Safer road for pedestrian/violators Lesser carbon dioxide emission

To gather data from the LGU, an interview was conducted with the head of the City Environment and Natural Resources Office. Presently, it is the department in charge of the Carless Day initiative.

CENRO Raquel Naciongayo

The CENRO of Pasig is the implementing arm of the city with regard to sustainable development programs. They handle the sustainability transport programs, but as Ms. Naciongayo pointed out, one cannot avoid equating them with air quality and environmental protection. The city at present has a newly created CTDMO—City Transport Development Management Office. Next year, they will be the one running all traffic-related programs.

Ms. Naciongayo enumerated the different programs under their walkability initiative: the elevated walkways, carless Sundays, and the promotion of bike use.

For the elevated skywalk and interconnected walkways, she gave as an example the Ortigas CBD. According to her, its purpose is to promote connectivity of buildings, malls, so that it will become a walkable CBD. Another example she gave was the city hall area, where there is a “lakable” skywalk to the church, market, Tanghalang Pasigueno, among others.

Pasig City now has five Carless Sundays, from its inception in 2012. Every year, the city opens a different road to this program. Emerald Road has already been for 5 years. It started in 2012, and three months after, the road in front of City Hall followed suit. There is another one in MRR Pineda, near the river, which started in 2013. In 2014, the MRR Pineda road sharing program was launched. The road was shared among people, bikes, and vehicles in the following portions: 1/3 pedestrian, 1/3 bicycle, and 1/3 for public transport. It is closed to private cars and motorcycles. Owing to the Pasig senior citizens’ advocacy, the service road Imelda Avenue was included in the carless Sundays. The CEPMO is now hoping that carless weekends will happen in F. Ortigas.

“Sidewalks for the people. We want to change the mindset from being a car-centered community back to the basics of walking. That is the mindset we want—walkability.”

Raquel Naciongayo, CENRO

“For carless days, there should be entrepreneurship. So we have bike rentals. We have bazaars every Sunday. There are organic vegetables. There is one portion where there are massagers. In F. Ortigas our carless is 6am-6pm, so at least the people of the community can earn from this.”

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Below is a visualization of the MRR Pineda Road Sharing Program that Pasig implemented.

The CEPM Officer underscored that the walkability initiative of the city is not only for traffic reduction, but also for mobility. The programs are created for a combination of mobility and traffic decongestion, with a focus on health. The initiative is fully funded by the city government, in line with its vision to be a green city.

Like any other change, the carless Sunday brought in initial problems. For instance, some building managers were not prepared for it. It also came to a point where the city was asked to suspend the carless Sundays because the malls had a sale. Others went as far as challenging the city and looking for the legal basis of the program. Ms. Naciongayo also said that even some passengers would complain and say, “why close the road when roads are for cars?” She firmly believes that roads are also for people and not only for cars. Despite this initial setback, eventually, the mindsets of those affected have been conditioned.

To end with a good note, when asked to gauge the public’s acceptance of the program, Ms. Naciongayo said that it was at 5 (out of 5). She said, “if not [5], then all of those projects must have already died. But since our programs are continuously implemented and people support it, it is a 5.”

At the end of the interview, Ms. Naciongayo highlighted that the Pasig government is building the city not for vehicles, but for the people. She also stated the future plans of the city: to establish an e-trike service for barangay and health centers, a cable car system, a river ferry system (Pasig River Taxi), and a community shuttle service.

Pasig is a Philippine model city for the successful implementation of Carless Days. If a highly urbanized city like Pasig, whose bread and butter lies in its character as a business district, what more for the other cities?

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**ibid**
Road Sharing – a portion of MRR Pineda near the Pasig River

Carless Sunday in Emerald Avenue, Ortigas Center
5.2.3 Makati City—Pedestrianization
Status: Ongoing

In Makati, the Pedestrianization Project 2011-2020 is also in operation. It is [...] a joint initiative of the City Government of Makati, Makati Commercial Estates Association, Inc. (MACEA) and Ayala Land, Inc., meant to improve the traffic situation in the city, to provide safety and accessibility for pedestrians, and to create a distinct image for Makati Central Business District.\(^{97}\)

The Project’s components are pedestrian underpasses, elevated walkways, and covered walks. At present, 4.0 kilometers of constructed pedestrian underpasses, elevated walkways, and covered walks interconnecting transport hubs, buildings, and landscaped promenades of the Makati CBD are being used by over 300,000 people with an estimated reduction in motorization of around 100,000 vehicles. The City Government of Makati, in partnership with said corporations, plans to increase the walkway system from 4 kilometers to 30.4 kilometers.\(^{98}\)

Ayala Land environmental planner Arch. Tan noted that the MaCEA functions as both the main financier and implementer of the pedestrianization project. Ayala Land, Incorporated (ALI), on the other hand, handles the planning and the designing of the project and is also a partial financier. The LGU has the role of giving political support and promoting the project for investments attraction.\(^ {99}\)

The Pedestrianization Project began with the Elevated Walkway Concept in 2005. Its goals then were to improve traffic conditions, provide an alternative to driving, and create a distinct image for MCDB\(^ {100}\), quite similar to its goals now. It included (a) the Ayala-Legazpi Underpass, (b) the Legazpi Pedestrian Mall, (c) the Elevated Walkway, (d) the Ayala-Paseo Underpass, (e) the Ayala-Rufino Underpass, (f) the Paseo-Sedeno Underpass, (g) the Ayala-Salcedo Underpass, (h) the Legazpi Village Covered Walk, (i) the Ayala Triangle Covered Walk, (j) the Ayala Av Covered Walk, and (k) the Salcedo Village Covered Walk.\(^ {101}\)

The Concept likewise had traffic segregation components, which covered mid-block transit stops and pedestrian crossings, sidewalk fencing and landscaping, and public utility vehicle loading and unloading zones. It had some identified indicators of success. Among these are (a) the increased walking distance of the walkway from 450 meters to 700 meters, (b) less traffic congestion at intersections, (c) the creation of a distinct image of the MCBD, and (d) the increased usage of the walkway to more than 200,000 people on weekdays.\(^ {102}\)

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\(^{97}\) Makati City OPCC Checklist 2017

\(^{98}\) Ibid


\(^{100}\) Ibid

\(^{101}\) Ibid

\(^{102}\) p. 12 Ibid
The MaCEA, which has helped the city by constructing the De La Rosa Elevated Walkway, along with seven underpasses as of 2016, has invested a total of PhP 497 million in the city’s pedestrianization program.\textsuperscript{103} Out of this investment, the De La Rosa Elevated Walkway has been extended to a total of 1,100 meters. It is now the country’s longest elevated pedestrian walkway.\textsuperscript{104} It covers the areas between Greenbelt and the Makati Medical Center. The extension includes the area from V.A. Rufino to Salcedo Street and was built in 20 months on a budget of PhP 110.6 million.\textsuperscript{105} Before the extension, the walkway connected Paseo de Roxas and Greenbelt. Now, pedestrians can access Ayala Center via De La Rosa.

This 2017, the MaCEA was said to invest an additional PhP 150 million for the city’s project\textsuperscript{106}. Enhancements for sidewalks and constructions of covered walkways along De La Rosa and Valero streets, a covered walkway along V.A. Rufino Street, and a pedestrian crossing at the corner of Ayala Avenue and Sen. Gil J. Puyat Street, are among those currently in the works. MaCEA, further, intends to redevelop Legazpi Village and the Washington Sycip parks\textsuperscript{107}.

Owners of the properties located in the Makati Central Business District make up the MaCEA. They see the Project as a means to promote walking, especially for short distances within the CBD. Aside from this, the pedestrianization is also seen as a way to ensure safety of the people who traverse the CBD and as a way to reduce vehicular traffic.\textsuperscript{108}

\begin{thebibliography}{99}


\bibitem{104} ibid


\bibitem{106} ibid note 3

\bibitem{107} ibid note 5

\bibitem{108} ibid note 3

\end{thebibliography}
5.2.4 ILOILO CITY—Green Spaces
STATUS: Ongoing

nicknamed the City of Love, Iloilo City is the capital of the province of the same name. It is located in Western Visayas and is the core of the metropolitan area of Iloilo-Guimaras. As of 2015, its population was at 447,992\textsuperscript{109}.

For its efforts, the Asian Development Bank named the city a Livable City Champion. It also garnered the Gold Award in the 2010 International Livable Communities (LivCom) Awards, Chicago, USA, for the Iloilo River Development Project\textsuperscript{110}. Further, the city is one of the first awardees of the first Bayanihaan sa Daan awards in 2014 because of its esplanade.

In the 2011-2020 City Comprehensive Land Use Plan (CLUP)\textsuperscript{111}, urban issues on traffic congestion, garbage, poverty, pollution, flooding, illegal settling, among others, were included among the threats to the city. The Esplanade is one of the LGU’s responses to address such threats.

The River Esplanade was intended as a road to decongest a main access road (Gen. Luna Street) and to aid in the flood problem within the district. But then, when Ilonggos started to frequent it for walks and other leisurely activities as biking, the local government decided to reconsider their plan.

The total expense of constructing the esplanade was pegged at PhP 58.7 million, with funding from the local government, the private sector, the Office of the President, Department of Public Works & Highways (DPWH), and JICA.\textsuperscript{112} It was also partly funded by the Office of Senator Franklin Drilon (an Ilonggo himself), through his Priority Development Assistance Fund.

A FnF case study, reported and abridged by Rappler, noted that the local government officials saw the esplanade as an instrument to make Iloilo “a more livable city”\textsuperscript{113}. It was opened in August 2012.

\textsuperscript{109} Census of Population (2015). “Region VI (Western Visayas)”. Total Population by Province, City, Municipality and Barangay. PSA. Retrieved 20 June 2016
\textsuperscript{110} Major Awards/Citations, Iloilo City Government, from: \url{http://www.iloilocity.gov.ph/iloilocity2016/awards.html}
\textsuperscript{111} In 2013-2019 Iloilo City Comprehensive Development Plan (CDP), p.8.
\textsuperscript{112} 2013-2019 Iloilo City Comprehensive Development Plan (CDP), p. 22 and 29.
However, at the outset, officials could not sustain the transformation of what was then a road into an esplanade park as funds had already been allocated “for the construction of a road.” But with the growing demands of the people who needed more spaces for “leisure,” “the city government eventually gave in to public clamor, and started work developing that riverside stretch into a public park.”

The esplanade was also constructed as part of the efforts to rehabilitate the Iloilo River. The river has become a “catchment of waste and garbage, with hundreds of informal settlers living near the waterway adding to the pollution.” It is home to a number of “native mangrove species and native fish.”

Informal settlers were correspondingly relocated, so as to give way to the esplanade’s pathway. It is both pedestrian and bike-friendly, as it is not open to motor vehicles. It is a green walkway ornamented with trees that serves as a connectivity bridge to different areas in the city.

The esplanade is an initiative of the city government with regard to sustainable transport and mobility, as it encourages walking, cycling, and other forms of NMT. Among the mulled plans of the local officials are the passage of legislations on the inclusion of bike lands in city road development projects and the creation of bicycle loop in the university area.

5.2.5 SAN FERNANDO CITY, La Union—Walk Clean, Breathe Clean Initiative

STATUS: Non-operational

Northern Luzon is home to the Botanical Garden City of San Fernando. It is a component city located in the Province of La Union, and its capital. It has a total land area of 10,256 hectares, with a total of 59 villages (24 of which are urban). The population, as of 2013, is 120,819.

The WCBC Initiative was a trailblazer project envisioned by former Mayor Mary Jane Ortega. Aimed at promoting walkability in the Central Business District, the urban master plan along with the drainage and walkable city master plan will be developed as a basis for establishment of eco-friendly and pedestrian-friendly infrastructures within the CBD. It was conceptualized in 2014, and implemented in 2016. It was carried out by her successor, then Mayor Pablo Ortega (now congressman of the 1st district of La Union).

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114 ibid
116 ibid—research for the case study was supported by the Friedrich Naumann Foundation for Freedom.
117 City of San Fernando Program of Work
The objectives of the WCBC Initiative are to revitalize the Central Business District and to mobilize resources for Health and Wellness programs. The intended outputs are a Walkable CBD Code, that codifies all ordinances related to walkability, and a walkable CBD Design Plan that lays out areas where walkable infrastructure (such as a Walkable City Command Center) are to be established\textsuperscript{118}.

The initiative was carried out until the end of 2016. With the changes in administration in the government, the funding for the initiative was unfortunately discontinued. It was no longer adopted by the new administration so it ended by the end of 2016\textsuperscript{119}.

Other initiatives

Aside from the WCBC Initiative, the local government has also long implemented the Tricycle Conversion Program to the fuel-efficient four-stroke from two-stroke engines since 2000. Other programs and initiatives on local transportation management include the organization of transport cooperative from previously being a mere association, so as to access city financial assistance and benefits\textsuperscript{120}.

Further, an Eco-Bike Program was launched in April 2009. In compliance with the MDGs, the City of San Fernando gave 60 bicycles to city employees (payable in one year, through salary deduction) to promote bicycles as an alternative mode of transportation\textsuperscript{121}. This project helps in making one ton per year of carbon reduction\textsuperscript{122}. There are also proposals to put up bikeways along the Diversion Road (from the municipality of Bauang to the municipality of San Juan).

In its 2004-2007 medium-term vision, becoming a walkable city was written as one of the goals of San Fernando, hence, its programs related to sustainability.

Like the case of Mandaluyong, in spite of the discontinuation of the WCBC Initiative, it is deemed proper to include it in this study. It can be revived or revisited in the future, or even replicated by other cities in the country.

\textsuperscript{118} City of San Fernando—Green City Initiatives; 2014 CITYNET Executive Committee Meeting and International Seminar November 29, 2014 Hue, Vietnam
\textsuperscript{119} Per advise of the staff of the City Office for Strategy Management.
\textsuperscript{120} Lontoc, Annelie. (n.d.). ‘San Fernando, La Union Tricycle Sector Management.’ P.23.
\textsuperscript{122} Ibid
5.3 Mass Transportation

5.3.1 CEBU CITY—Bus Rapid Transit (BRT)

STATUS: For implementation

Cebu City is the capital of the province of the same name. It is also called the Queen City of the South. With a population of 922,611 based on the 2015 census\(^\text{123}\), it is considered as the fifth most populated city in the Philippines and most populous in the Visayas. It also serves as the significant center of commerce, trade and education in the region.

Cebu was chartered as a city in 1934, during the Commonwealth government\(^\text{124}\). It is also popularly known for the Sinulog Festival, a feast in honor of the Holy Image of Señor Sto. Niño de Cebu and celebrated every 3rd Sunday of January\(^\text{125}\) where almost hundreds of both local and foreign tourists flock the city to join the annual celebration.

In 2012, the World Bank completed a full feasibility study for the proposed BRT system in Cebu City. It would be appropriate to state that while the funding of the project comes from the World Bank, through the national government, the initiative of Cebu City government is noteworthy for having successfully lobbied for it.

Because of the controversial nature of the project, it was a necessity to have more interviews as compared to the other initiatives in this study. Thus, interviews with local government officials were done, as well as with members of the riding public, the business sector, and the drivers themselves.

For the record, the first round of interviewee-seeking was quite difficult as people in the plaza area refused to be interviewed. They either said they could not understand Filipino, or they were too shy to be interviewed. Pursuant to ethical standards, interviews with them were no longer pursued. Thus, a shift was made to drivers as subjects of interview. With a population of over thousands, even the sample size of those who were interviewed is not enough to derive conclusions about these sectors’ opinions. It is not even enough to make substantial generalizations.

\(^\text{123}\) [https://psa.gov.ph/population-and-housing]
\(^\text{124}\) Cebu City Charter, from: [https://www.cebucity.gov.ph/home-new/cebu-city-charter]
\(^\text{125}\) Ibid
In the transport sector, it was easier to converse with taxi drivers than with jeepney drivers as while they were plying routes, they could answer questions. Jeepney drivers, on the other hand, were either having their siesta at the time of the interview, or refused to give interviews because of the heat of the issue related to the BRT Project.

The interviews of local government officials as registered below are arranged in order of relation to the topic. The interview of Atty. Rafael Yap, the head of the BRT Project Implementation Unit, comes first as he tackles the specifics of the project. Mayor Osmena’s account comes second as he details the inception of the idea of establishing a BRT. Finally, the sentiments of Hon. Philip Zafra from the Association of Barangay Captains are documented as he expresses the reservations of the affected barangay captains, whom he is representing. Added to this is the view of Mr. Valeriano Avila, businessman and Cebu long-timer.

**Local Government**

- **Atty. Rafael Yap, Project Manager**

  Heading the Project Implementation Unit, Atty. Rafael Yap affirmed that the BRT Project is now on implementation stage. Engineering design is ongoing. They expect procurement by the end of this year and construction beginning 2018.

  The BRT is funded through a loan from the World Bank, an environmental project mainly aimed at the reduction of GHG and particulate matter as a result of modernizing public transport, specifically the removal of jeepneys and the modal shift to public transport. It is a soft loan to the national government. The city will not spend for its implementation, being the project’s beneficiary.

  On to the particulars, Atty. Yap explained that there are 21 proposed stations from Bulacao to Ayala. These will connect different establishments (schools, hospital, malls, residences, etc). Euro 4/5 buses will be used. There are a total of 176 proposed buses to be used in the BRT corridor. Each bus is 18 meters long and articulated. There is an accordion-like rubber linking them. The entire transit pathway is 21.58 kilometers. One bus can seat around 120. Payments scheme would be by automated fare collection. When operational, the minimum fare would be at PhP 9 (as estimated during the project development phase)\(^\text{126}\).

A series of consultations were conducted in the barangays as well as in major universities. Various sectors that will be affected were also consulted. Furthermore, consultations on the environment, Road Right of Way (RROW) acquisition, and information dissemination were also done. The project unit also met with the Sangguniang Panlungsod and the City Development Council at least twice.\textsuperscript{127}

Sir Yap further stated that lot owners whose properties are part of the BRT corridor will be duly compensated. The 2182 trees that will be potentially affected are also taken care of. The city’s policy stand, through the PIU, is to avoid, evade, mitigate, and compensate. It has already done with ‘avoid’ because the design has been finished more or less. As to ‘evade,’ the unit will see if earthballing is possible. For ‘mitigate,’ there is a fund the unit will transfer to the city government for a greening program. For ‘compensate,’ they will compensate those who will really be affected.

The city intends to engage a consultant to assist in creating a plan for those who will be displaced since this is the first time a project of this magnitude will impact the public transport industry, according to Atty. Yap. They will conduct a census on who will be affected and then, they will identify the possible interventions the city can provide for them. Majority of the drivers and operators have indicated that they would like to remain in their routes or transfer to other routes if possible. If not, to transfer to other routes economically feasible. In addition, the city will also build up the capabilities of those affected so that they can be able to participate either as drivers, operators or administrative staff of the BRT. He said that for the PUJ drivers, the city can either train them, absorb them, or make them part of the project.

On the words of Atty. Yap, most problems in the planning phase were institutional. “Trying to move forward with the feasibility study was a monumental move in itself,” he stated. Because of heavy consultations done with the riding public, there were no significant challenges in convincing them to be open to the project. On the side of the transport sector, he said that the industry is not monolithic in Cebu, therefore, the operators cannot coalesce to create such an opposition that would halt the project. The second problem he identified was communication. In response to

\textsuperscript{127} ibid
this, the city is going to engage a consultant to prepare the communications materials. They envision the project to be done by the fourth quarter of 2019, or the first quarter of 2020.

He rated the public’s acceptance of the BRT at four. For the PUJ drivers and operators, he pegged it at three because they are on “wait-and-see.” When asked if the BRT project would be stopped because of the reported, he said that it was unlikely that the project will be stopped because the entanglements that need to be untied are so complicated already. He was referring to the existing memoranda of agreements. These will also have implications on the cancellation or deferment.

In addition to the BRT project, Atty. Yap relayed that the city, at the time of the interview, was in possession of the DOST Hybrid Electric Train (HERT). There was already an agreement to run it, but there is a disagreement as to the length. This is the same HERT which will be transferred and operated in General Santos City, as shall be discussed in the following sections.

**Hon. Tomas Osmeña, City Mayor**

Mayor Tommy Osmeña first saw the BRT in 1992 in the City of Curitiba, Brazil. He described it as a “very innovative experiment using high capacity buses pretending they are trains.” Prior to that visit, he read about it in Time Magazine and in Reader’s Digest. In 1997, they went to Curitiba to see first-hand how the BRT works. Since it was “hard to deal with Imperial Manila,” he completely gave up on the idea until in 2008, he met two American consultants from the ADB. They mentioned a mass transit system that would work in the Philippines.

What Mayor Osmeña did was ask the ADB to give them a grant for a pre-feasibility study, with the Curitiba BRT in mind. They sent two other letters to the World Bank and JICA asking for the same. All three requests were approved. However, then President Benigno S. Aquino III disapproved the project.

It was only during this returning term of Mayor Osmeña that works for the implementation of the BRT Project began again. When asked why it took eight long years before the project could be implemented, he said that the approval process was very long. There was a lot of negotiation, and he did not want to experiment with a PhP 10 billion project.

“It is not BRT versus LRT but public transportation versus private. What does the city value more?

It is a question of maximizing the existing road capacity vis-à-vis the demand being requested of it. The cause of traffic is not the BRT but the number of private cars.”

“Tha’ts my basic philosophy. The poor people come first. The majority comes first. The rich people—they can leave early they can come late, they have their own cars anyway. Why don’t you wait until the traffic dies down then maybe when we open it up you can have a shared existence with the BRT?”

Mayor Osmeña on his traffic policy philosophy

© ISBellen/WWF-Philippines

Interview with Cebu City Mayor Tomas Osmeña wherein he clarifies the project specifics of the BRT | 2017.08.25
Despite the unhappiness the project can produce if implemented, he is still pushing for it because he wants to change the status quo. According to him, the country’s national policy views public utility vehicles as second-class citizens. Private vehicles are first class citizens. In the BRT community, it is the other way around. Private cars are second-class. BRT comes first. Hence, there is an equalization of the scales in society.

The BRT is going to affect many people once it is implemented in full blast. To mitigate the negative effects, the city government has prepared a plan, especially for jeepney drivers whose routes will be affected. This includes making downtown Cebu closed to private cars, so that only jeptney can ply routes. In effect, private car owners would be forced to commute using the BRT.

The BRT in Cebu is patterned after the Curitiba City BRT. Of all BRTs in the world, the mayor firmly believed that the Curitiba is the best model to follow because it incorporates urban planning. When asked how, he responded,

“In 1997, the BRT was already 12 years running. They perfected it already. In Curitiba, you can change rides without adding anything. No additional fare. [...] Now, in Cebu, the situation is people have to rent bed space just to go to work. With the BRT they will not need this.”

He said that it is the BRT model that helps urban design and equalizes social conditions—one can live in a farther place where house and lot is cheaper, but still can work because the BRT will equalize it.

We asked if the BRT has gained or is gaining support from the public. As mayor, he gauged the public’s acceptance at three. He acknowledges that the adjustment is heavy, but believes that when the people see how it works, the BRT project will be demand-driven. He also recognizes that people are scared of losing their jobs. However, he believes that they will eventually adjust to the changes since the local government will assist them in the transition.

Given the introduction to the BRT by Mayor Osmena and as Atty. Yap emphasized, the BRT would not have been pursued were it not for the city’s efforts. And true enough, it would not have proceeded had they not made steps on their part to push for funding and support for the project.
From this juncture, the explanation of Mr. Villarete is detailed.

- **Engr. Nigel Paul Villarete, City Administrator**

  City Administrator Nigel Villarete said that initially, the BRT was for transportation solely. But in 2009, when the city had to look for funding, the BRT became an environmental project. That time, the only one willing to fund it was the World Bank through the Clean Technology Fund. When it was approved, the reason for funding it was not for transport, but for emissions reduction.

  For the drivers who will be displaced by the BRT, he said that they never promised that they could accommodate everybody, but they hope that they could. He said that in the BRT, there are people running the buses, running the stations, doing the repairs. Whoever will be affected will have the first draft of the jobs. Moreover, since the BRT is positioned in the main road, there is a need to have new routes leading to the station so new franchises can be created.

  The government will do the best that it can to minimize the losses of those whose livelihood would be negatively affected by the implementation of the project. As to the social acceptability of the BRT, he pegged the BRT at 7-8 out of 10.
Notwithstanding the efforts of the government stated above, not everyone in the government totally supports the BRT Project. The Association of Barangay Captains (ABC), through their President and ex-officio City Councilor Philip Zafra, voiced out that they had reservations about the BRT. What follows are the sentiments of the ABC gathered during the monthly meeting of the Association Board of Directors in August.

- **Hon. Philip Zafra, ABC President, ex-officio councilor**

  Speaking for and in behalf of the Association of Barangay Captains, Councilor Zafra stated for the record that they are not opposing the BRT implementation, but they signify their reservations, to wit:

  1. The BRT will be implemented without first widening the roads. Accordingly, the widening will take place only in areas where the stations of the BRT will be placed. The roads should first be widened before implementation. If the BRT will be implemented, there should be a dedicated lane for it. What will remain are just two lanes. All other vehicles, jeepneys, private vehicles, trucks, any kind of transport will just be utilizing the two lanes left for them. It will just worsen the traffic condition of city streets.
  2. The needs before (referring to the time the BRT was conceptualized 15-20 years ago) are no longer the same today. Needs now are worse. There are many cars already.
  3. The BRT will be utilizing the city’s innermost portion of roads as a dedicated lane for BRT. Will flyovers be off-limits to any other kinds of vehicles?
  4. All agencies in the government including nation, the main problem is RROW acquisition. There is still that old project that would supposedly widen the south area. It was implemented only up to a certain part of the road. How can there be an unhampered travel of the BRT if the road is not yet finished?
  5. Did they take into consideration the many intersections along the road when they were planning the flow of trips? What about those vehicles that will cross the road of the BRT?

  He articulated that they wanted more transparency. According to him, some details in the project were not divulged to them. He even gave Indonesia as an example, where the BRT failed because the streets were narrow. He compared it to Cebu, which has similarly-sized streets.
Coun. Zafra also lamented that barangays, who are the grassroots, were not considered as partners in development. He asks that they be taken seriously and be included in discussions, not only during election period. Nonetheless, he reiterated that if their reservations be answered, they will give their full support to the project.

Additionally, there are other people outside the government who have reservations with regard to the project. Representing the business sector, we sat down with Mr. Valeriano Avila, former traffic czar of Cebu City. He has had a long experience managing the traffic in Cebu as well as in the management of the Mactan Airport. He also runs their family business in the city. So as a former part of the government and now part of the business sector, his views shed light

**Business Sector**

- **Mr. Valeriano Avila, Business Owner, former Traffic Czar and publicist**

  Mr. Avila took part in the conceptualization of the BRT in 1997. He opines that the reason Cebu is getting a BRT now is because it was not given the budget for a LRT, adding that if reduction of emissions is the goal of having the BRT, then the LRT would be a better option since emissions are not concentrated in Cebu City alone, but are also produced in nearby municipalities and cities. Personally, he prefers a tram. And while not the most needed mode of transport, the BRT is the cheaper option, between the BRT and LRT.

  When asked about the social acceptability, he could not give a definite quantification since he perceives that the project has been politicized. Thus, as an alternative, he proposed a tram. It requires the construction of trails on the road, without damaging the flow. When the tram passes by, the car can wait first and then can pass through once the tram goes. But, in the BRT, that cannot happen. In the LRT, you need to construct huge infrastructure first. Another solution he also proposes is for the DOTr to make side-loading jeepsneys, with ramps strategically positioned all over the city.

  He is firm in his view that cities cannot afford the BRT. Even if the goal is to reduce emissions, if the buses will use diesel, there will still be an emissions problem. With that, he ended by saying that the BRT is not the optimal alternative to the traffic problem of Cebu City.

The interviews with representatives from the local government and the business sector must be juxtaposed with the public’s opinion. While the interviewees are not representative of the entire Cebuano population, they at least give an idea about the public’s perception of the BRT Project.
Riding Public and Affected Drivers/Operators

As discussed in the initial part of this section, a number of the affected members of society were also interviewed. Summarized below are their responses to the questions on social acceptability.

The respondents are affected drivers and residents. The conduct of random interviews with these respondents resulted to four uniform opinions:

1. As for the taxi and jeepney drivers, the BRT will not alleviate traffic, but will worsen it. It is also seen as a threat to their livelihood, especially to jeepney drivers. Many of them do not have contingency plans yet for when they will be displaced.
2. Drivers and residents were not included in the consultation process. Most of them are unsure of the project’s status.
3. Drivers and residents who will be displaced oppose the BRT Project. They see private cars as the problem, and the BRT cannot help solve it.
4. The roads of Cebu City are narrow. They cannot expand to accommodate the BRT.

One taxi driver said, “If it will be pursued, the traffic will be like in Manila.” Another said since the BRT route will overlap with some jeepney routes, the jeeps will be removed. He additionally said that it is unfair because it is not the jeeps who cause traffic, but the private cars.

A jeepney driver, who has a wife and child and who transferred to Cebu from Bohol to earn a living, described his daily earnings:

“We earn PhP 2000 [in a day]. The rent is PhP 700. The gas is PhP 700. What is left? That PhP 600 is left to us per day. If the BRT will hire us, how much? Minimum wage? What about those older drivers, how will they be hired?”

When he was asked about the BRT, he said that if it were up to them, it should not be implemented. It is not going to solve traffic anyway, he underlined. One more jeep driver said that if the BRT is from terminal to terminal, what will happen to those passengers from places not passed through by the BRT? A different driver said that there will no longer be a 7-peso minimum fare once the BRT starts to operate.

One more jeepney driver also said that it was impossible for the government to look for a job for all of them since they still have to apply. But another driver saw a good thing in their misfortune, “the good thing is the BRT would not be able to enter the inner streets of barangays.”
Vendors along Mambaling, another road included in the BRT route, said that the government told them they would be paid in exchange of vacating their lots. Unfortunately, they have no relocation sites. They were called for a seminar about the project and they have already appealed their situations but as of the interview, received no decision yet. Employees of one of the shops along the road were also interviewed. One of them said that the city told their employers to list the names of the workers and that they [the city] would be in charge of looking for jobs for them.

There were four residents along Natalio Bacalso Avenue (where the BRT will begin) who surprisingly said they were not aware of the project. Another three residents whose settlements are affected by the Road Right of Way (RROW) acquisition bemoaned that even if they were told that they would be paid, they do not know how much and when the next talks would be. They see that it would be very difficult for them to look for a relocation site when asked to vacate. One of them said, “Unless they will pay us millions, then it is okay. But we don’t even know how much we will be paid.”

A resident who lives in the inner areas along the BRT roads also opined that if the government says it is a go, there is nothing they can do anyway but to comply. A taxi driver who has been on his job for over 10 years, said that it is not the BRT that affects them, but it is Grab that affects their livelihood. Come nighttime, passengers take Grab. The regular taxi drivers get passengers last. The same driver asked who will fix the BRT if it gets destroyed. He said jeepneys only cause traffic if they make roads their parking areas, but otherwise, traffic is moving.

When the respondents were asked about what solutions they could suggest to decongest the city, these were their responses:

1. The subway would reduce congestion, but it would be better if it were a skyway.
2. Between LRT and BRT, it is the LRT that would reduce traffic and not the BRT.
3. The skyway would surely reduce traffic. There is a flyover and a subway, but they cover just short distances.
4. It is the subway or overpass that can solve traffic. Between the two, it is faster to make an overpass. It is needed especially along intersections.
5. Outside the city center, it is the overpass that can help decongest.
6. A number coding scheme should be implemented.
7. Pick up points should be assigned in schools to avoid clogging during dismissal time. A lot of [private] cars make the roads along schools their parking lots.
8. In intersections, when the traffic light turns red, there should be no other cars in the middle. They should be strict.
9. The government should hire more traffic enforcers of CITOM.
As of September 2017, the BRT is totally a go. The additional budget requested for the acquisition of the RROW was recently approved by the national government. There is also another proposal to have a BRT in Metro Manila, but this is still under way. At the moment, it is the City of Cebu that has all the approved paperwork and is just awaiting implementation.

It is of no doubt that the entrance of the BRT is intertwined with far-reaching change. It is apparent from the interviews with the people affected that they are not yet completely ready for it. The number one source of the apprehension among drivers is their impending job displacement and/or dislocation. Among commuters, the question is whether or not the BRT will alleviate the traffic situation of the city. They have misgivings as to the success of the project. On the other hand, the local government, particularly the executive, firmly believes that the BRT is the answer to Cebu City’s transportation plight. Like any change, the BRT is expected to meet more reactions. Its success, in the long run, is dependent on the people’s acceptance—if its benefits will outweigh its drawbacks.

5.3.2 GENERAL SANTOS CITY—Hybrid Electric Road Train (HERT)
STATUS: Pending

General Santos City (Gensan) is located south of the Philippines in the island of Mindanao. It was also baptized the Tuna Capital of the country. It has a total population of 594,446.

The slogan of the city is well enunciated in its 2030 vision: GREEN to Creating a Livable Environment for All towards Nation-building in Gensan (CLEAN). GREEN stands for: Good governance with integrity and inclusiveness, Revenue growth through PPP, Environmental security and rehabilitation through disaster risk mitigation and resiliency and climate change adaptation, Needy and vulnerable population that should be nurtured, protected, developed, and empowered towards productivity and progress. In keeping with this vision, the local government has made moves towards sustainable transportation.

The LGU will formally receive the Department of Science and Technology (DOST)’s 40-meter train-like bus “Hybrid Electric Road Train (HERT)” this September 2017.

In 2015, the Department launched the HERT. It has been in Cebu City since February 2017 for a prior-scheduled test run earlier this year. Because of changing circumstances, the commercial test run of the HERT is going to be conducted in Gensan. The street

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128 Census of Population. (2015). “Region XII (Soccsksargen)”. Total Population by Province, City, Municipality and Barangay. PSA.
corners of Cebu are said to be too narrow for the train, and “uncooperative motorists...proved to be roadblocks for the mass transport innovation.”

The inventor of the road train is Filipino Engineer Rommel Caronia. It was manufactured using local parts and estimated to have cost 47 million pesos per unit. One unit has 5 interlinked air-conditioned coaches, which can hold up to 240 passengers in one trip. Furthermore, it is designed for roads and not for rails. What makes it environment-friendly is the fact that it is powered by hybrid diesel fuel and electric battery. This means less carbon emissions. It can run at a max speed of 50kph.

Through a contract of commodatum with the DOST Metals Industry research and Development Center (MIRDC), the city government loaned the use of the HERT for a particular period of time. The HERT will traverse the national highway within the city as well as the circumferential road. It will service the route along Lagao public Market to the city airport.

For now, this is the only available information on this project.

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134 “Commodatum is a “gratuitous contract” that allows a certain party to loan specific chattels for use, with the obligation to return them after an agreed period. Lagare said DOST-MIRDC officials and engineers had conducted an ocular inspection of the city’s roads and assessed the viability of using the HERT in the area.” ibid
135 Id, note 121.
136 ibid
5.3.3 MUNTINLUPA CITY—Electronic Jeepney Ride for Free (e-JRF) Program

STATUS: Ongoing

Muntinlupa City is located in the South of Metro Manila. It houses both the New Bilibid Prison and the exclusive village of the Ayala Alabang Homes. Branded as the Emerald City, the local government envisions the city “...as one of the leading investment hubs in the country, with educated, healthy and God-loving people living peacefully and securely in a climate change-adaptive and disaster-resilient community, under the rule of transparent, caring and accountable leadership.”

Additionally, among the city’s mission objectives is “to promote a broad-based economic growth and business-friendly environment for sustainable development.” In line with this, the city, in partnership with the Lingkod Muntinlupa Foundation, launched the Muntinlupa CareCard—an access card for residents.

One of the key components of the MCC is the free use of cardholders of the jeep for mass transport. In fact the e-JRF is an adjunct program of the Muntinlupa CareCard (MCC) Program.

The MCC Program is a product of a Public-Private Partnership (PPP) between the city government and the Lingkod Muntinlupa Foundation (LMF). With a total of 34 e-Jeepney units in operation and 6 on the way, the e-Jeepney Ride for Free (e-JRF) of Muntinlupa was lauded for its efforts in promoting alternative energy. Of the 34 units in operation, 14 are owned and operated by the city for free, while the remaining 20 are owned and operated by the foundation for pay.

Aside from the training of the human resource who will operate the units, the city also invested heavily in infrastructural support, to wit: sign boards, stops, and charging stations. The foundation, on the other hand, has spent for the purchase, maintenance, and operation of the e-Jeepney units.

For leading the e-Jeep revolution in the country, Muntinlupa was declared the “Electric Jeepney Capital of the Philippines” in 2016 by the Electric Vehicle Association of the Philippines (eVAP)

The e-JRF was the only entry of the country to the 2017 global competition held by the Union Internationale des Transports Publics (UITP; English: International Association of Public Transport) in Montreal, Canada. (PIO)

According to the LGU, the green and intelligent technology is applied in their approach to public transportation. In fact, the e-Jeep runs on deep cycle lead acid batteries and utilizes an electric motor. The electric motor produces zero smoke emission and zero noise pollution (ibid).
In the data gathering process, a letter was sent to the city government requesting for assistance in the conduct of the study. They accommodated the request by referring the matter to Miss Grace Salvador, the Program Director of the LMF.

- **Miss Grace Salvador, LMF Program Director**

During the interview conducted last October 2017, Miss Salvador explicated that the Muntinlupa Carecard was a product of a year of research. It was launched in March 2017 and is the first smart card in the country. The e-jeepney is the LMF’s part in the Carecard program. It works as a shuttle service for cardholders.

Cardholders are entitled to two free rides per day. Aside from the rides, they can also use the card for hospital subsidies and scholarships funded by the city. For one to be a cardholder, he/she must show (a) any proof of residence in the city, (b) voter’s registration, and (c) pay the PhP 80 membership fee. There are three kinds of cards: (a) for children aged 6-17 years, (b) for those aged 19-59 years old, and (c) for senior citizens. As of October, there were already 171,000 cardholders. The Foundation’s target is to have 200,000 members by December 2017.

When asked why it was a prerequisite to be a voter to avail of the card, Ms. Salvador noted,

“We considered that you don’t have to be a voter to get the card, however since it is a PPP, it is needed. It is a benefits card. Since voting is a duty, for people to enjoy the benefits afforded to residents of the city, one must be a voter. For those children 6 years old, parents of the children must be cardholders.”

Because the JRF (jeepney ride for free) is a PPP, there is a sharing in the funding between the city and the LMF. The city provides the logistics for the promotion of the CareCard while the purchase of the e-jeepney units is paid for by the foundation. The cost of the cards is sourced out from the membership fee paid upon application.

As to the challenges encountered in the planning and implementation, Ms. Salvador says it was just a matter of encouraging residents to become members.

Other LGUs (Malabon, Taguig, and Sta. Rosa, Laguna) have benchmarked with Muntinlupa City already. The e-Jeeps ply the routes where the existing public transport services do not cater. For the success of the e-JRF component of the Muntinlupa Carecard, the city was recognized during the 1st ASEAN Electric and Hybrid Vehicles Summit 2017 held at the World Trade Center, Pasay last June 30.142

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141 Children can avail of the card since the scholarship of the mayor is accessed through the care card.
Dubbed the “Wall Street” of the Philippines, as of the 2015 Census, the city has a total population of 582,602. Makati is the financial center in the country. In it are located the Philippine Stock Exchange, the biggest trading institution in the country.

The city noted in its official profile that it is a “...a major traffic generator for the greater Metropolitan Manila Area because it is the primary Central Business District of the country.”

What does the city then do? It “regulates the in-bound and out-bound traffic during the morning and afternoon peak hours respectively.” Notably, the government has admitted the “great concern that any further development in the City must be sustainable in terms of its traffic-carrying capacity, or programs are identified to mitigate potential severe congestion.”

The remarkable availability of fast data in the city’s portal is a feat. Also found in their portal are traffic data, which is open access to all. With reference to the city’s traffic volume and demand, the profile pronounces.

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143 1.4. ‘Transportation Network.’ In Profile of Makati City. Vol 1 part 1. Available at: http://www.makati.gov.ph/portal/main/index.jsp?main=2&content=0&menu=0#right_content
144 Ibid
145 Ibid
Based on 2011 estimates, Makati generates 594,872 vehicle trips daily equivalent to about 13% of the 4.5 million Metro Manila vehicle trips. [...] Eleven percent of internal traffic crosses Epifanio Delos Santos Avenue (EDSA) making this a major traffic issue considering that EDSA is a 10-lane highway with commuter rail line at the center.\textsuperscript{146}

Makati is implementing a number coding scheme from 7am-7pm. “...vehicles with plate numbers ending in one (1) or two (2) are barred from city streets [...] on Mondays, Three (3) and four (4) on Tuesdays, and so on. They also have a truck ban along major roads from 7am-10am and then 4pm-7pm. On top of these, Makati has traffic demand management (TDM) measures, against which they gauge the traffic situation of the city.\textsuperscript{147}

The local government of Makati, in its entry to the OPCC 2017, included two sustainable mobility initiatives. These are the e-Jeepney Project and the Makati Pedestrianization Project.

Accordingly, Makati City has been chosen as Champion City of the e-Jeepney Project, a component of the Climate Friendly Cities Program of the Institute for Climate and Sustainable Cities (iCSC)\textsuperscript{148}, [...] which envisions to promote utilization of electric jeeps as means of public transportation. The first major rollout of the e-Jeepney Project was in the Makati Green Route (MGR), where ten (10) e-Jeepneys passed through the Legazpi and Salcedo loops.

The e-jeepney is 14-seater (light passengers) and runs on pure electricity supplied by rechargeable automotive batteries. It does not consume gasoline or diesel to operate. Therefore, it has no noise, no fumes, and no harmful emissions. This e-jeepney Project has been labelled in the Discovery Channel documentary Ecopolis as "the best new modern mass transport technology with the best chance of saving the world's cities from the dangers of pollution."\textsuperscript{149}

In addition to the e-jeepney, the city also has a pedestrianization project discussed in that section of this paper. Yet again, Makati proves that despite being the financial capital and area of operation of big businesses, it can sway development in the direction that lessens carbon emission and promotes environmental sustainability.

\textsuperscript{146} Ibid
\textsuperscript{147} Ibid
\textsuperscript{149} Makati City entry to the 2017 OPCC.
5.3.5 MANDALUYONG CITY—E-Trike Pilot Project
STATUS: Non-Operational

Mandaluyong, the Tiger City of the Philippines, is where the Asian Development Bank and the Banco de Oro Bank head office were established. With a land area of 11.06 square kilometers, it is where part of the Ortigas commercial district is found.

Mandaluyong City was a recipient of a pilot project funded by the ADB in 2011. Twenty electric tricycles were tested and operated in the city, each powered by lithium-ion batteries. Among the findings of the pilot testing were: bigger passenger capacity, more comfort for both drivers and passengers, it is noise and smoke-free, and increased daily income\(^1\)\(^{50}\). Each e-trike could seat around six to eight passengers. One unit costs about PhP 200,000\(^1\)\(^{51}\).

The ADB e-trike is “a three-wheeled electric vehicle that is used to ferry a few passengers in short distances in side streets. Although the current design of the e-Trikes used in Mandaluyong can carry eight passengers, the Land Transportation Office only allows tricycles to carry a maximum of 6 passengers\(^1\)\(^{52}\).” For a full charge, it costs PhP 45 pesos and it can already operate for 24 hours—way cheaper than gasoline. There were four charging stations established in the city\(^1\)\(^{53}\). The e-Trike project was seen as a solution to the oil problem—as an alternative to oil fuel.

During fieldwork, residents were approached for interviews. However, they refused on the basis that there are no longer government-operated e-trikes plying routes. Thus, the staff-in-charge of the Tricycle Regulation Office (TRO), Mr. Cielo Martinez, was interviewed instead. He explained the situation.

As per our interview with him, it became clear that while the ADB e-trike project was brought for pilot testing in Mandaluyong, there are only two remaining trikes of the original twenty. These two are currently used only as service of the TRO, since they already have weak batteries. The others got destroyed permanently since the office did not have the materials and parts needed to fix them. Even if the ADB provided charging stations, support for maintenance was lacking. Operations were not sustained\(^1\)\(^{54}\).

\(^{50}\) DOE. Electic Tricycles. https://www.doe.gov.ph/alternative-fuels/electric-tricycles-


\(^{53}\) Ibid

He also stated that they would have wanted the program to continue because it was good for the city—less smoke, and less noise. The trikes operated from 2011 to 2015. It was fully funded by the ADB and the city government was happy to be selected as the recipient. There are e-trikes being operated in Mandaluyong to this day, but by a private organization, EV Wealth. The units are up for operation on a “hulog-boundary” system (similar to an amortization). The simple drivers, as Mr. Martinez pointed out could not afford the EV Wealth trikes\textsuperscript{155}.

The previous e-trike drivers went back to their motor trike driving. They felt equally unhappy about the program’s discontinuation because firstly, the operation of e-trikes did not exhaust them as much as the motor counterparts did. Secondly, the drivers did not get exposed to heat as much as they were in motor ones. Thirdly, their incomes were bigger because e-trikes could seat a maximum of 8 passenger per trip\textsuperscript{156}.

A short interview was also done with Mr. Samon Digma, the newly-appointed TRU Head. He was one of the former twenty e-Trike drivers. In fact, one of the two remaining operational e-Trikes was his. He said, “I was able to send my children to school because of it. [...] I hope there gets to be another testing [project].”

Even if the project is no longer in operation, it is still worth featuring. It was because of this pilot project that the country, through the DOE, in due course formulated a nationwide program on e-trikes. It has unfortunately been halted because of questions regarding the supplier and the terms of the contract. Now, many other LGUs have entertained the use of e-trikes within their jurisdictions, as shall be shown later.

\textsuperscript{155} They cost twice the amount of a motor tricycle. Ibid.  
\textsuperscript{156} Ibid.
5.3.6 BACOOR CITY, CAVITE — Green Franchise and E-Trike Fleet Service

STATUS: Ongoing

Also known as the Marching Band Capital of the Philippines, the City of Bacoor is the gateway to the province of Cavite. It was the first capital of the Revolutionary Government under then President Emilio Aguinaldo. As of 2015, Bacoor had a total population of 600,609 people.157

The city’s vision is to be “a business-friendly, environmentally sustainable and resilient city led by God-Centered, responsible and united Bacooreños.” Thus, they have generated initiatives to attain this vision.

What makes Bacoor City different from other cities with e-trikes are the incentives the local government gives to operators who operate electric tricycles or alternative fuel-run trikes. These come in the form of free franchise grants and easier registration.

Offsite public charging stations have also been set up to allow e-Trike drivers to charge batteries and not run out of charge in the middle of a trip.

The “Text An E-Trike” program has also been introduced to allow commuters to access the nearest available ETrike, much like a taxi fleet service.158

How does the program work? Commuters will just have to text their address and the available e-trike will go to them, the same way Grab and Uber work.159

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158 With reports from: http://www.goodnewspilipinas.com/bacoor-grants-free-green-franchises-to-e-trikes/
5.3.6 NAGA CITY, Bicol—City Electric Transportation

STATUS: Ongoing

Naga City, the Heart of Bicol, is an independent component city of the province of Camarines Sur. With a total land area of 84.48 sq.m., it houses a population of 174,931, as of the 2010 census. As an economic center and the trade city in the Bicol region, it is the center of Metro Naga (metropolitan precinct of Bicol). Already a multi-awarded city, Naga was again recognized as one of the top model cities during the Manila Times Philippine Model Cities Forum and Awards (May 11, 2017). The city bagged the Livelihood and Employment Haven Award (jobs and programs for self-sufficiency of residents).

In 2011, the city government of Naga passed its E-trike Ordinance\(^{160}\), allowing the operation of e-trikes in the city. As the law rationalizes, it aims to provide the community with an alternative means of transport that will promote, inter alia, a less polluted setting and for drivers and operators to have an opportunity to earn a higher and complementary source of income\(^ {161}\). These e-trikes are also a solution to reduce air and noise pollution in the city.

The minimum fare for each e-trike ride shall be at PhP 8.00 only. Around six to eight people can fit inside\(^ {162}\). The E-Trike Project shall be implemented through a rent-to-own scheme by the DOE. The LGU states that:\(^{163}\)

*Interested drivers or operators can avail of the e-Trikes, provided, however, that they will be paying a monthly amortization fee for the unit. Technical assistance and capability building seminars though shall be provided for free by the DOE with the help of the ADB and the DAP.*

The city was a recipient of 10 e-bikes from the United Nations through its Climate Change Program in 2012\(^ {164}\). As of 2017, according to the LGU, there are already 40 e-trikes in operation.

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\(^{160}\) City ordinance no. 65, series of 2011. In its explanatory note, the city council makes reference to the ADB-funded e-trikes turned over to Mandaluyong City. The E-tricycle Project is seen as a solution to “ensure energy sufficiency and sustainability.”

\(^{161}\) Naga City Ordinance No. 65 series of 2011.


\(^{163}\) Naga City LGU OPCC 2017-2018 checklist

\(^{164}\) Philippine Information Agency: [http://archives.pia.gov.ph/?m=7&r=r05&id=72050&y=2012&mo=01](http://archives.pia.gov.ph/?m=7&r=r05&id=72050&y=2012&mo=01)
5.3.7 PUERTO PRINCESA CITY—E-trike Pilot Project
STATUS: Pending

In 2016, it was reported that the city government of Puerto Princesa and BEMAC Electric Transportation Philippines, Inc. have inked a Memorandum of Understanding (MOU) “...to establish a pilot operation of electric tricycle (e-Trike) units within the city.” One of the inclusions in the MOU is the provision of BEMAC of two e-trike units to the city free of charge (model 68VM).

Moreover, technical training for both drivers and operators will be provided by BEMAC. The pilot project is meant to be a data-gathering mechanism “...to justify the future deployment of more e-trikes.”

5.3.8 MANILA CITY—E-Trike Project
STATUS: Ongoing

While some cities have phased out two-stroke trikes in favor of four-strokes, the City of Manila is advocating for a phase-out of gasoline-fueled tricycles in favor of electric ones.

The city government of Manila purchased 280 e-trikes for its program. According to Manila Mayor Joseph Estrada, the programs’ beneficiaries will be paying PhP 250 per day to the city for a duration of four years. This is at zero interest. After paying, they can fully own the units as driver-operators.

The e-trikes are manufactured by a Japanese company with whom the city has tied up. The charging of the batteries of said e-trikes are to be bankrolled by the city. The batteries are gel-type, which can be fully charged within 4-5 hours. Meralco, the power distribution company, constructed a charging station in Binondo. It is the first of the series of charging stations the company will construct.

Mainly a livelihood program, the e-trike project is also meant to improve air quality by reducing pollution. Last April, the LGU turned over 50 e-trikes to beneficiaries in the pilot site of District 3 (Binondo, Quiapo, Sta. Cruz), Manila. They cost around PhP 400,000 per unit. It has a capacity of six passengers. It can run at a maximum speed of 40-45kph. If successful, e-trikes will also ply routes along Malate and the University belt area.

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166 ibid
168 ibid
171 Ibid
5.4 NON-MOTORIZED TRANSPORT

5.4.1 MARIKINA City—Bikeways Program

STATUS: Ongoing

Marikina is known in the Philippines not only for being the Shoe Capital, but also for being the first city with bike lanes (organized). It has a total population of 531,128. The city is well-known for being the manufacturer of good quality shoes, hence, earning the moniker Shoe Capital.

With its vision to be a bike-friendly city, Marikina has gone far in its realization. Since the 1990s, the city has embarked on the promotion of a culture of cycling. In fact, it created the Marikina Bikeways Office, in charge of managing the program Its vision is to make Marikina a bicycle-friendly city. Its mission boils down to three: design and operation of safe bicycle trails and lanes, increase community acceptance of using bikes and NMT, and demonstrate the benefits of bikes as alternative transport modes and encourage the “...replication of this pilot program in other parts of Metro Manila.”

What is now the celebrated Bikeways Program of the city began as part of a pilot component of the Metro Manila Urban Transport Integration Project (MMURTRIP) in 2001. It was to be a “non-motorized and pedestrian path” that will connect residential areas to centers of commerce, education, hospitals, malls, public transport terminals, and LRT stations. The project was willfully endorsed by then Mayor Bayani Fernando, coupled with a request for funding from the World Bank.

Even though the program was launched in 2001, as early as 1996, the city promulgated Ordinance No. 137 series of 1996 “identifying streets and avenues to be laid with bicycle lanes for the exclusive use of cyclists.” The Marikina Bikeways Office was created by virtue of City Ordinance 117, series of 2001. The MCBO’s main task is to supervise and manage the maintenance of the bikeways network.

In 2006, the bicycle network was integrated into the city’s transport planning and Traffic Management Code. Similarly, rules and regulations with regard to the use of NMT were included. The following year, in 2007, the Marikina Bikeways Planning and Design Guidebook was commissioned. Just this 2014, the Bicycling Code of Marikina city was enacted.

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172 Data from the Marikina Bikeways Office (MBO).
173 Ibid
As of June 2015, there are a 7,513 bicycles being used in the city, with 18 biker clubs/associations (with more or less 1,343 active bike users.) Data from December 2015 state that the bike lanes have by far a total of 82 kilometers\(^\text{174}\). There are a total of 82 kilometers of bike lanes (MBO) as of February 2016. 110-unit bike racks were also installed at schools, playground, barangay halls, and other public places.

Bike users are categorized according to purpose of cycling, as follows:\(^\text{175}\)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work</strong></td>
<td>2079</td>
</tr>
<tr>
<td><strong>School</strong></td>
<td>402</td>
</tr>
<tr>
<td><strong>Touring</strong></td>
<td>2799</td>
</tr>
<tr>
<td><strong>Market</strong></td>
<td>1369</td>
</tr>
<tr>
<td><strong>Exercise</strong></td>
<td>1170</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>193</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
</tr>
</tbody>
</table>

The City Mayor’s Office referred WWF to Engineer Felipe, who is the head of the MBO. He gave an insight into the current implementation of the Bikeways program.

**Engineer Rommel C. Felipe, Manila Bikeways Officer**

The Marikina Bikeways Program is an ongoing initiative of the city. The city now has three major bike lanes: creek side, riverside, and safe cycling lanes. The first two are self-explanatory, while the last pertains to those lanes within the city. Safe cycling lanes are new bike routes, which will be introduced in secondary and tertiary roads that connect to major thoroughfares.

The MBP is fully funded by the city. As to the problems in the planning and implementation, Engr. Felipe could not give a definite answer as heading the Bikeways Offices was given as an additional assignment to him.

If he were to assess the public’s acceptance of the Program, he did not quantify, but he did say that their observation says that motorists have adapted to the existence of bike lanes.

During the interview last September, 2017, he also stated that there is a current proposal for a Bike Law awaiting approval. This is to regulate the e-bikes. Engr. Felipe said that, “some users of e-bikes, they go to different areas, thinking they are not covered by laws. They go without licenses, helmets. The city must have

\(^{174}\) Ibid
\(^{175}\) Source: Marikina Bikeways Office
a law separating e bikes, motor bikes.” He added that as his special assignment, they have a collaboration with Meralco. Accordingly, they will establish an e-bike electric station.

The MBO conducted its own survey among their residents in 2016. These are the perceived pros and cons of the Bikeways Program:

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tipid sa pamasahé/ you need not spend money for transport</td>
<td>Laws/ policies on bike lanes not being implemented</td>
</tr>
<tr>
<td>Safety for cyclists and other road users (promote attention and awareness)</td>
<td>Local settings have narrow roads</td>
</tr>
<tr>
<td>Environment-friendly (non-pollutive/no carbon footprint)</td>
<td>No need for bike lanes, bike lanes were only used as parking areas</td>
</tr>
<tr>
<td>Accessibility/mobility (bike-to-market)</td>
<td></td>
</tr>
<tr>
<td>Good road sharing program/space sharing</td>
<td></td>
</tr>
<tr>
<td>Lesser/avoid vehicular traffic/congestions</td>
<td></td>
</tr>
<tr>
<td>Health benefits</td>
<td></td>
</tr>
</tbody>
</table>

Source: MBO—copied verbatim
Enumerated below are the other bike-related projects, activities, and programs promoted and implemented by the MBO:\footnote{Ibid}

**Projects**

1. Introduction of New Protected Bike Lanes
2. Construction of Community Bike Park and Bike Station
3. Installation of Bike Signs and Furniture
4. Repair and Maintenance of Existing Bike Lanes

**Programs**

1. Annual Bike Clinic
2. Free Bike Repair
3. Bike Safety and Maintenance Seminar
4. Bike Patrolling
5. Clearing and Cleaning of Bikeways

**Events (Annual and Special Events)**

1. 60+ Earth Hour Fun Ride (Bikes, March)
2. Rotaride: Padyak para sa Kalikasan (May)
3. Pedal for HIV (May)
4. Ride of Silence (May)
5. Kalumpang Bike Fest (June)
6. Bikrisma/City Hood (Christmas Bike Parade)
7. City Fun Ride (Annual)

The achievement of Marikina in effectively implementing the Bikeways program has inspired many other LGUs to follow suit. As seen in this case study, other Philippine LGUs have already made moves related to the promotion of bike use, drawing inspiration from the case of Marikina City.

Below are three other bike-related initiatives led by cities whose other major efforts have been already discussed earlier:

In 2005, Marikina City Bikeways Program was awarded as the Outstanding Programme in Local Governance of the Top Ten Outstanding Local Government Programs by the Galing Pook Foundation for its best practice in promoting environmentally sustainable transport.
5.4.2 PASIG CITY—Bike Programs
Status: Ongoing

Aside from their ongoing implementation of Carless Sunday, the City is also an implementer of bike lanes and bike racks installation for each building. According to Ms. Naciongayo, their program is almost patterned after Marikina, being the most successful biking program. Pasig started in 2013.

A total of 15 kilometers of bike lanes were installed, in addition to the 660 bike parking facilities in buildings and other establishments.

Since 2011, special and monthly bike events were implemented in the city in pursuit of promoting a healthy lifestyle and NMT to the Pasiguenos. Now, they have 100 bikes for bike sharing. They also have a regular Bike for Life program, led by the city mayor. Bike Patrol groups are also organized. Their main duty is to secure the bike racks.

5.4.3 NAGA CITY—Bike Festival
Status: Ongoing

Another mobility-related initiative of Naga is the yearly Bike Festival, held every November. It is a whole day event implemented by the CENRO. It aims to reduce the carbon footprint by promoting zero emission mode of transportation with the goal of converting Naga City as Bicycle Friendly City. Through Executive Order No. 2016-043, the City Mayor ordered the constitution of the Naga City Bicycle-Friendly Task Force (BF Task Force). The task force is in charge of planning and assessing monthly bike-friendly city initiative as well as the annual bike festival.

177 In 2008, the city passed ordinance No. 2008-068, designating convenient and safe bicycle and motorcycle parking spaces for registered bikes and motorcycles at the city’s CBD by providing parking facilities such as bike racks and iron hooks.
178 Naga City LGU OPCC 2017-2018 checklist
179 Long title: Institutionalizing initiatives toward bicycle-friendly Naga City by establishing appropriate programs and projects, implementation mechanisms, and funding therefor.
5.4.4 CEBU CITY—Bike Lanes
Status: Ongoing

Aside from the BRT, Cebu City has also approved its own Tindak Sugbo Ordinance, or the bike lanes ordinance. The full title is “An Ordinance Providing for Shared Priority Bike Lanes in Designated Roads in Cebu City, Establishing Appropriate Traffic Rules and Regulations and Providing Funds and Penalties For Violations Thereof.” It provides for the (1) establishment of shared priority bike lanes/bike friendly zones [Sec.4], (2) establishment of bike racks/parking facilities [Sec.6]; and the (3) creation of the Tindak Sugbo Board [Sec.9]. The board shall be composed of:

i. the city mayor, or his/her duly designated representative;
ii. the chairperson of the SP Committee on Environment or his/her duly designated representative;
iii. the head of the City Traffic Operations Management (CITOM) or his/her duly designated representative;
iv. the head of the City Department of Engineering and Public Works (DEPW) or his/her duly designated representative;
v. the head of the City Planning and Development Office (CPDO) or his/her duly designated representative;
vi. five (5) active bike groups; and
vii. one (1) transport organization.

It also penalizes violators [Sec.8]. Likewise, the ordinance states that business permits of commercial establishments shall not be renewed unless they provide lanes/parking facilities for bikes. The 1.5-meter lanes will give priority to bikers, although these may be used by motorized vehicles if there are no bikers using the lane.

The proponent, former Councilor Nida Cabrera, was interviewed. Moreover, City Administrator Nigel Villarete was also interviewed. He advocates for a different kind of bike lanes from that prescribed in the ordinance.

- **CENRO Ma. Nida Cabrera**

The CENRO is a policy-making body. It authors the directions for transportation in coordination with CITOM, but does not work on implementation. The CITOM has been established first even before the CENRO was, hence, it takes the lead in implementing traffic policies.

Ms. Cabrera used to be a city councilor prior to her appointment as CENRO. She was the proponent of the Tindak Sugbo Lanes Ordinance (Bike Lanes Ordinance). Despite its approval, it has yet to be implemented. She explained that this is because the plan is to integrate it in the BRT project. There are acquisitions of RROW for the BRT, so there are affected private areas.

She explained that the rationale behind the bike lanes is the reduction of the carbon emissions. The bike lanes ordinance took almost two years to be approved. The council conducted FGDs, stakeholder workshops, and spoke with Tindak associations/groups in Cebu. Consultations were also done with other...
affected sectors. This includes the transport groups. Upon third reading of the proposal, there were no longer apprehensions and it was finally approved.

At the moment, she could not gauge the public’s acceptance of the bike lanes since it has not yet been implemented. She further clarified that the city administrator had some propositions as to the kind of bike lanes that would be installed. While Ms. Cabrera proposed shared bike lanes (the road is shared between bikes and cars), Mr. Villarete proposed off-road bike lanes.

As Ms. Cabrera stated, she was just appointed this mid-year. Nonetheless, she was able to give insight into the office’s role in relation to the identified initiatives. With regard to the BRT, the CENRO is in charge of the trees. They will ball out trees affected, except those subject for harvesting. There will be those that will be cut, but the priority (since the recommendations of environmental groups are stronger) is to ball out native trees.

- City Administrator Nigel Villarete

As previously stated, what City Administrator Nigel Villarete espouses are off-road protected bike lanes. He posed his disfavor of painting one portion of the road and designate it as bike lanes. He emphasized that part of transportation is the safety component. Bike lanes must be physically separated, not just painted. They should be installed in areas where people can go to places, not the road.

He said that the first challenge is to make the right plans. People look at fads—what sounds good—and they parrot it and implement it. He gave biking as an illustrative example:

If you are biking to exercise, what emissions have you saved? The government should not spend money for people to exercise. ... but there are some people who bike to work. When you are biking to exercise, you are actually causing traffic. When you cause traffic, you are actually producing emissions. And don’t advocate that we [the government] should build bike lanes. For you to exercise? No. bike lanes are for transportation. When you do that, you shift from any form of motorized transportation to biking. Then, you’re saving emissions.

In conclusion, he stated that if the bike lanes ordinance were to be implemented, they should be off-road protected bike lanes and not just mere shared ones. In spite of this contention, the city should be commended for embracing biking as an alternative mode of transportation.

“Transportation remains to be the last bastion of feudalism in our democratic society. It is the car owners deciding everything. The one that is causing traffic is the cars. Congestion? Cars. [...] Are there any decision-makers who are not car owners? The jeepney drivers, do they decide? This is not just in the Philippines, this is all over the world that the car owner is making the decisions.”

Engr. Nigel Paul Villarete, on congestion

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5.5 INSTITUTIONAL POLICIES

5.5.1 BAGUIO CITY

Often mistaken as a part of the province of Benguet, Baguio is actually a highly urbanized city independent of Benguet politically. It is not a component of the province. It was chartered as a city in 1909, supposedly to be a hill station for recovering Americans. It has a total land area of 57.51 square kilometers and a population of 345,366.\(^{181}\)

Considered as the “Summer Capital of the Philippines”, Baguio is no stranger to tourist influx. Because of the cool breeze, weekends (especially long weekends) have become the peak season. Previously, peak season was during holidays. It has become a popular term among residents to call the traffic weekends “Carmaggedon.”

The mission of the city government is to “…create a sustainable and enabling environment that will promote economic stability and ensure the general well-being of our citizenry.”\(^{182}\) If Pasig has successful Carless Sundays and Marikina, the Bikeways program, what is there to see in Baguio? Currently, the carless days and Session Road (the main thoroughfare) pedestrianization are still pending council approval. Nevertheless, there are laudable institutional policies which have been in effect in the city and which have greatly helped contain the traffic situation, to wit:

1. City Road Network Planning

a. Resolution No. 106 series of 2016 was passed by the city council, calling for the creation of a city road network plan tailored to the current vehicular and pedestrian traffic situation of Baguio.

b. Through Administrative Order No. 49 series of 2016, the city mayor already appointed members of the Technical Working Group.

2. Pedestrianization of Session Road

a. Proposal for carless days (s.2017) was filed which aims to fully pedestrianize Session Road, the city’s main thoroughfare, for all days of the week. Now on 2nd reading for publication, a series of public hearings shall be conducted to finalize the contents of the ordinance.

b. The only instances when vehicles (police cars, emergency medical service vehicles, fire trucks, ambulances) shall be allowed in the carless zone are in cases of emergency or events involving possible threats to life and limb.

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In addition to these, it has been a city practice to close Session Rd. for one week (usually beginning on the Last Monday of February up to the first Sunday of March) during Panagbenga since 1997. This is called “Session Road in Bloom” (SRB). SRB is one of the events cited as a substantiation to the success probability of the proposed Carless Days Ordinance.

3. Central Business District PUJ Ban (Ordinance No. 33 series of 2009)
   a. It is “unlawful for Public Utility Vehicles to use the Central Business District for loading and unloading due to heavy traffic and pollution.”
   b. Because of this, no jeepney plies routes along the entire stretch of Session Rd (from Session Rotunda to Malcolm Square/People’s Park).

4. Total Tricycle Ban Ordinance (Ordinance No. 28 series of 2012)
   a. The complete and full title is “An ordinance banning all tricycles within the territorial boundaries of the City of Baguio.”
   b. Baguio is the only PH City that bans the operation of tricycles in all streets and roads. Thus, the only public means of transport are jeepneys and taxis.

5. Conduct of Night Market
   a. The entire stretch of one lane of Harrison Rd turns into a night market every night from 9pm to 3am. No vehicle is allowed to enter the road between these hours. Not only does it encourage walking, it also has become a tourist attraction in itself.
6. **Motorcycle Ban Ordinance**
   a. *For the longest time, motorcycles have not been allowed to traverse Session Road and roads perpendicular/parallel to it such as Harrison Road, Abanao Street, Legarda Road, Magsaysay Avenue, Bonifacio Street, among others.*

   “I am in favor of pedestrianization. We should make the city a walking city.”
   
   Mayor Mauricio G. Domogan

7. **Baguio City/BLISTT (Baguio, La Trinidad, Itogon, Sablan, Tuba, Tublay) Urban Transport Improvement Project**
   a. *Though the creation of a Metro-Baguio (BLISTT) cluster remains to be contested, the Regional Development Council (RDC) (the body that authors the development plan of the Cordillera Administrative Region (CAR) included in its 2011-2016 Regional Development Plan a BLISTT Improvement Project. Among its goals are to transform crowded sidewalks into walkable areas, to construct bike lanes, to pedestrianize main access roads, and to look into the prospect of a BLISTT tramline/cable car system.*

8. **Automated Guide way Transit (AGT)**
   a. *Though already endorsed by the RDC of CAR and welcomed by the city government, funding is still lacking for the final feasibility study on the AGT proposal.*
   b. *The monorail will pass through Baguio City and the Municipality of La Trinidad, Benguet. Its construction costs about PhP 7 billion pesos.*
   c. *It was met with opposition from members of the public transport sector who believe they will be dislocated once the proposal pushes through.*

Since Baguio is a Tourism City, the local government, in coordination with other regional and national agencies, has advocated sustainable tourism management. Thus, interviews were done with the City Tourism Office, the Regional Director of the Department of Tourism-CAR, the City Environment and Parks Management Officer, and the City Mayor. Business managers/owners who could potentially be affected by the proposals were also consulted, on top of the commuters.

**Local Government**

Mayor Morris Domogan was interviewed briefly with regard to the institutional policies and pending initiatives of the city. His answers were recorded as follows:

- **Mayor Mauricio G. Domogan**

  Mayor Mauricio “Morris” Domogan underscored the city’s inclusion of the aspect of green governance in its agenda, as manifested in its programs on air and water quality, mobility, and waste segregation.

  He was asked about the pending proposed ordinance on the pedestrianization of Session Road. He fully supports it, but he noted that the pedestrianization of Session Road was done in

“*We should replace those jeepneys that are running coffins. Those jeeps, at least 15 years, are already old. What do you expect from [them]? They are already emitting too much. They should be phased out[...].”*

Mayor Mauricio G. Domogan

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183 AGT is a fully automated, driverless, grade-separated transit system in which vehicles are automatically guided along a "guideway". (MUCEP, 2015: part 2, p.1-5)
1996 during his second term as mayor. This was cut short, unfortunately, by protests from jeepney operators and drivers as well as taxi drivers. As a result, the city council then relented. Now that the pedestrianization is being revived, he intends to return it once the alternate roads’ constructions are done. He proposed that it be first done every weekend since he believes it should not be done drastically.

The mayor also fully supports the AGT-monorail as it will mean less pollutants. Though he acknowledges that jeepney and taxi drivers will complain about losing their livelihood, he wants to see how the city government can come in and help finance them for the transition. There are already sources of funding identified for project implementation, given that the city does not have sufficient funds for it. Through him, the city also signed for the reception of the e-jeepney, but has yet to receive a response.

With regard to public acceptance, Mayor Morris says that nearly all want to have the e-jeep, but the bone of contention is the affordability and feasibility of having one in the city. If these are met, he believes that the mobility projects and programs will surely be accepted by the people.

The matter was referred by the City Mayor’s Office to the City Environment and Parks Management Officer, Engineer Coleen Lacsamana. Her account includes a rundown of the environmental setting in the city.

**CEPMO Cordelia Lacsamana**

Ms. Lacsamana enumerated the efforts to pedestrianize Session Road as well as the carless day proposal as two of the city’s initiatives on sustainable mobility. The Environment Code, the Clean Air Ordinance, the PUJ and motorcycle ban along Session Road, and the total trike ban in the city are also among those policies enacted by the LGU to regulate and manage traffic as well as to reduce air pollution. Much as bike enthusiasts would like to have bike lanes, the same is not possible because the road system of the city cannot provide for it, being a “carjack terrain.” The primordial reason of the city for implementing these legislative measures is mainly safety and next, for decongestion. Decongestion translates to an automatic reduction of pollutants.

> “We are a vehicle crazy country. Many times experts say, we are not planning for people, but for vehicles. Nobody cares about the implications of really coming up with mobility plans. They don’t know how to go about it. We should have a plan. We keep on doing so many experiments.”

CEPMO Coleen Lacsamana

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184 There was a study which found that 65% of air pollution in Baguio is from vehicles. From: Lacsamana, Cordelia. (2017). Personal Interview.
With regard to mobility, Baguio is facing several issues, according to the CEPM Officer. There is no regulation on PUVs that are alternatives to big buses (referring to UV express and other colorum vans). Another concern is parking in the CBD. She wants parking, but it must be placed in proper areas. One more problem is the increasing number of ancestral claims being lodged on parts of the city’s parks. These are contributory to the greater problem of congestion in the city. Now, there is the apparent unpopularity of pedestrianization.  

Miss Colleen attributed this unpopularity to the lack of an efficient information dissemination system. She said, “...nobody is trying to explain the implications. Who are apprehensive of the program? It is the business establishment owners. When they see that more people are walking, maybe then can change their mind.” She pointed out the irony that while they allow Session Road to be closed for one whole week every year during the Flower Festival (Panagbenga), they reject the permanent pedestrianization of the thoroughfare. In her professional opinion, urban planning is wanting, sustainability- and environment-wise.

In relation to connectivity, the city also has green spaces. There is connectivity from one park to another through the sidewalks. Baguio has seven major parks, excluding community-based parks in the respective 128 barangays. These also foster an environment of walkability in the busy urban space of Baguio. In effect, the stadium of walkability in Baguio is somewhat a paradox. It is rejected in the center, but approved of in the periphery. From one park to another, people utilize these connecting sidewalks, without complaints. But when the focus is shifted to Session Road, hesitations loom.

Ms. Lacsamana strongly considers that there should be Pilot Demonstration Areas (PDAs), and the city should be the main PDA of all of its programs. Given this, she gauged the public’s acceptance of the mobility initiatives at 3. In terms of the initiatives the City is doing, however, she deems that the City is not appreciated.

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185 Ibid.
186 Ibid.
There are a lot of advocacy groups who speak up about sustainability issues, but because of the ostensible disconnect between them and the City government, these plans do not “cascade to the masses.”

When asked what she would recommend to the City to target these issues, she answered, “We really need to mainstream more existing policies and regulations in the city. Nobody is consolidating the initiatives we are making and consolidate[ing] it so we know if we are moving forward or we are stagnant.” Thus, she proposes a consolidation in the form of a codification of all transportation and mobility-related policies.

To end, she said that the City has been overtaken by development. Baguio is naturally destined to be visited by people. “We cannot close Baguio to tourists despite the traffic they bring,” she laments.

\[187\] Ibid.

The whole stretch of Session Road is home to a large volume of vehicles on a normal business day. This photo, including those that follow, show how the road looks on car-free days.
Baguio has 20-30 or more parades per year because the City is very conducive to walking\textsuperscript{188}. As a vacation destination, the tourist count of Baguio is rising. The CTO said that the evening population is at 300,000. The day population is more. From the peak season being on holidays and during Panagbenga, the peak season now is on weekends. The City has become the weekend destination. Mr. Joma Rivera details how tourist influx affects Baguio.

- **City Tourism Officer Jose Maria Rivera**

On top of the total trike ban and the PUJ ban in the CBD, CTO Joma Rivera acknowledged that there were other initiatives practiced by the City that help reduce emissions. He was referring to the yearly closure of Session Road for revelry during special events such as the Baguio Day (from 5AM-midnight), the Flower Festival/ Panagbenga (last Sunday of February to the first Sunday of March), Karkarna ti Rabii (October), Lantern Parade (December), among others. In an interview last August 2017, he also mentioned the yearly Photo-Walk Competition, a circuit-based photography contest that promotes walking and environmental sustainability awareness. Participants go to unexplored places in the City, with a certain theme in mind. The rationale behind these is to raise awareness that walking is a good mode of transport and to encourage people not take their vehicles to town. These programs are at no cost to the City (except for the Photo Walk, which needs funding for the prizes). The Tourism Office does not spend, but it utilizes the existing logistics it has even if they have ancillary expenses.\textsuperscript{189}

As with any government office, the CTO faces challenges of its own with regard to its implementation of mobility programs. Sir Joma relayed that there is a lack of resources at their disposal, being a mere office under the City Administrator’s Office. Nevertheless,

\textsuperscript{188} Rivera, Jose Maria. (2017). *Personal Communication*.

\textsuperscript{189} Ibid.
these temporary pedestrianization efforts are well accepted by the people, including business people, in Mr. Rivera’s professional judgment

He believes that the carless day would become an added attraction to the City because people will be going to session road to see it. “It is not enough maybe to pedestrianize, but maybe to add another attraction, to put al fresco restaurants and all, for people to appreciate that there are no cars and that they will be encouraged to pedestrianize,” he puts forth.¹⁹⁰

According to him, as a destination city, Baguio has learned to adjust to the influx of tourists. His primary recommendation is not to encourage visitors to bring their cars. He said, “for instance, on special events such as the media congress, we partner our visitors with our local drivers as well as Grab taxi so that they will be using the existing vehicles we already have in the city.”

From the Local City Tourism office, an interview was also done with Department of Tourism (DOT) Regional Director Venus Tan on her programs for making Baguio a walkable city.

**DOT Regional Director Marie Venus Q. Tan**

Dir. Tan started began by recalling the old Baguio. She delivered a narrative of the city’s history. Baguio was built for R and R (rest and recreation) wellness, being then an American Hill Station.

Regarding the vehicular traffic brought by tourists, Dir. Tan stated, “The equation of having 5000 taxis in the city is already wrong because the carrying capacity is no longer enough.” She wants people to have a sense of responsibility to nature. Thus, she launched her RevBloom Program—to re-green and revitalize Baguio.

She proposed the putting up of signage along TPLEX (Tarlac-Pangasinan-La Union Expressway) that walking in Baguio City is healthy. Within the city, she intends to erect walking matrix signage, which will tell people how many calories will be burned by walking certain distances, with corresponding average lengths of time to get there (for instance, the signage will say 1.6 meters = 130 calories and the time it takes to get there from that point). What Dir. Tan hopes to achieve is health tourism under her RevBloom Program.

On the matter of the proposed pedestrianization, she, like the other government officials, support it. She also suggested that the lane of cars going up must be the one that will be pedestrianized since driving up requires revving the car. This, in turn, means more emissions. Like the CEPM Officer, Ms. Tan believes that if Session Road is successfully closed to vehicles for one whole week every year, pedestrianization can be done, too, at least once a month. She believes that it is simply a matter of rerouting traffic and teaching people to walk.

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¹⁹⁰ Ibid.

“Urban development is too much already, but what do we do to avoid that? We can change mindsets to make people more responsible to nature. It is a call to action for people to realize the importance of the city.”

Dir. Venus Tan
During the interview, she talked about the application DOT filed for and in behalf of the city as one of the UNESCO Creative Cities. This is also in line with the RevBloom Program, so that Baguio can now be positioned as an art city, a resort city, and as a walking and wellness city.

Just this November, the UNESCO Creative Cities Network awarded Baguio City as the first Philippine Creative City for Crafts and Folk Arts, alongside 63 other Creative cities in the world.

Affected Public (Commuters, Drivers, Business Establishment Owners)

Different members of society were interviewed about the carless day and pedestrianization proposals as well as the institutional policies implemented by the city.

All respondents agree that traffic is a major problem in the CBD, especially on weekends and holidays. One common remark is that there are too many cars, but so few parking slots. As a result, those tourists with cars who are not aware of the 9-4 parking window along roads in the CBD disregard traffic rules and park illegally. On other topics, there are a multitude of views from those interviewed.

For the business sector, the general view is that the ban on PUJs, trikes, and motorcycles along Session Road does not harm the businesses. Patrons are mostly students, since major universities are very near Session Road. As to the pedestrianization and carless day, there is an apparent double-edged take on the proposals. The proposals, if implemented, can either weaken the businesses or not affect it significantly at all since not all patrons have cars anyway. There are “undisciplined tourists who come to the city and bring their Manila attitude.” All these contribute to an unpleasant situation along Session Road.

For commuters, pedestrianization is a good thing. It can help make Baguio a “healthier city.” The same was said about carless days and the ban on PUJs in Session Road. The idea is that by allowing more vehicles to enter, heavier traffic and worse pollution can be expected. As to trikes, one respondent said that trikes should not really be allowed to ply routes in town, as they are “aesthetically” not pleasing.

Another commuter said that carless days would help improve the air quality in Baguio, especially so since one study said that the PM10 content in the city was highest in the CBD\(^\text{191}\). One more respondent who both commutes and drives opined that “roads are really not just for cars but for people.” He said that the only time he uses his car is when he goes to work. Beyond that, he can just commute or walk from establishment to establishment since the distances are just short and walkable. He favors the pedestrianization and implementation of a carless day because these will help the traffic problem. Notably, he said that, “the driving population should participate in pedestrianization efforts because they would really help bring back the old Baguio.” That way, drivers could be well ordered. His take on the trike and motorcycle ban is that it is good for the city since it reduces both noise and air pollution along Session Road. Another respondent who happens to be a barangay official shares this perspective. She thinks that motorcycles would just worsen the traffic situation if they were allowed to enter Session Road.

\(^{191}\) This was in reference to the study of Dr. Achilles Costales and Dr. Angela Catelo.
Of all respondents, it was the Baguio old-timer, senior citizen, who was the sole person to say that taxis were a great help. She thinks taxis are better than other public utility vehicles because it can take you where you want to go, without needing to stand in long queues before you can ride. This is in relation to her health and age. For her, pedestrianization is disadvantageous for senior citizens who have a difficult time walking. She equally dislikes having motorcycles and tricycles along Session Road because as per her experience, they are a distraction on roads and can cause accidents.

When asked what solutions they can propose to address the traffic problem, they had many answers. These are chronicled as follows:

1. Since the CBD streets are cramped with vendors, the city should designate just one place for them in the street for their vending.
2. The city should give incentives to establishments who abide by green practices.
3. It should also be stricter when it comes to enforcing the parking laws. Some people park in spaces designated for building guests, but are not actually guests.
4. Better information campaigns are needed to inform those ignorant of the rules and regulations.
5. The city can partner with the academe so that the proposed solutions related to sustainable development can be translated to action.
6. There should be a centralized system of registering tourists who come to the city.
7. Business establishments should be required to have parking spaces so that people will not need to park along streets.

Aside from those conversed with above, the transport sector representative was also interviewed. The Federation of Jeepney Operators and Drivers Association—Baguio-Benguet-La Union Chairman Jonie Itliong aired their side. He is also currently working in a transportation management group, Beep. He gave insight into the plight of the drivers and operators:

- **Federation of Jeepney Operators and Drivers Associations—Baguio-Benguet-La Union (FEJODABBLU) Regional President Mr. Perfecto F. Itliong, Jr.**

  Straight to the point, Mr. Jonie Itliong said that jeepney drivers are against the modernization program of the national government because of poverty. They cannot afford the down payment for the said vehicles amounting to PhP 400,000 and PhP 500,000. What the jeepney drivers and operators in Baguio want is an upgrading, and not modernization. Upgrading means repainting and overhauling the jeepney, changing the engine to a new one, but the registration stays. With modernization, the registration is automatically a new one—2017.

  Since the main concerns of the transport sector are the institutional policies and proposals on pedestrianization and carless days, these were the foci of the interview.
On the banning of PUJs in Session Road, Mr. Itliong wholly approves of it. This is because according to him, smoke belching is very “lush”; add to that the fact that different loading areas there have become parking lots. He was part of previous experimental traffic schemes by the City. Recalling how they tried to disallow cars from going up, he observed that even with all cars just going down, the downtown area gets clogged. Traffic was just transferred, but downtown, it gets choked.

He likewise considers carless days good as long as it will be sustained. He said that if it will be just for one or two days, it is not significant, but if it can be done every week on a regular basis, that would be better. As for pedestrianization, he opines that it can be done in places other than Session Road because it will surely cause traffic and can become a source of dissatisfaction among visitors.

All said, he concluded that both pedestrianization and carless day would not benefit the traffic situation. According to him, these will clear the center, but will clog the outskirts. By clogging the outskirts, cars will be on idle mode, thereby producing more emissions and exacerbating pollution. This means more expenses on crude oil and less income for jeepney drivers.

When asked if he had proposals in mind to help decongest the city especially in terms of mobility, he gave six alternatives. First, he proposes that since public utility vehicles, including jeepneys, have rest days on top of their coding schemes, private cars should have, too. Second, on Saturdays and Sundays, an odd-even scheme for private cars should be implemented. Third, an electric jeep with designated stops can be introduced. Fourth, an electric tram can also be placed in the CBD. At least if the tram is no longer on the tracks, cars can pass through. Fifth, a multilevel parking should be constructed to help solve the problem on illegal parking. This, however, is subject to the condition that there should be no cars parked along Session Road and other CBD roads. And sixth, the bus terminal in Governor Pack Road corner Upper Session Road should be cleared and transferred elsewhere to de-clog that area.

The interview ended with these proposed alternative solutions that the city can adopt without harming the livelihood of jeepney drivers and operators.

Even if Baguio is 250 kilometers away from Manila, urbanization has smitten it as rapidly as it has in the capital metro. Thus, while some of the initiatives are still pending, they are included here because they serve as bases for other cities similarly situated, and because they show that Baguio has been exerting effort in battling with climate change.

There are also initiatives included in this study that are no longer operational. The same logic applies. They are highlighted here because they can be inspirations for other cities whose social circumstances can accommodate the initiatives.
Trajectories and Prospects

The initiatives laid out in this case study are but a few selected of the many that Philippine cities are engaging into in their effort to achieve sustainable development. Individually, these initiatives seem to make but a dent in the movement towards sustainable development but collectively, it is indubitable that they have a great impact on saving the environment. Sustainability has hope in these cities.

6.1 SUMMARY

A recurring pattern can be seen in the selected cities’ initiatives—there is the recognition that economic development demands equally important initiatives to slow down, if not halt or reverse its negative effects on the environment.

Two dominant motifs emerge as the foci of cities’ efforts on the subject of mobility—walkability and biking as a mode of transport. These are the ones that are the most common among cities. What is commendable about this is that there is a remarkable shift from motorized to non-motorized transport in various localities.

Into the bargain, for metro-city areas, mass transport is also a central concentration. Take for instance the Cebu and Metro Manila BRTs. This is probably because of the large land areas and distances between and point-to-point that will be serviced by the mode of transport. Bigger cities mean bigger populations. This is likewise why while the BRT is seen as a solution to Cebu City traffic, it may not be valued the same way, say, in San Fernando City.

E-tricycles and e-jeepneys are similarly important alternatives to the usual gas-fueled motor vehicles. Because they run on electricity, they also reduce noise and air pollution—problems which beset cities these days. Then, in cities where parks play a fundamental role in the social lives of the populace, they become instruments of walkability. This is illustrated by the Iloilo esplanade, which has encouraged walking along the Iloilo River and near a major thoroughfare. The same is true in Baguio City, where, if one would look at the parks from a bird’s eye view, one would see that all of them are connected by sidewalks, thereby constituting one network of walkable lush greens. In the face of urbanization, Iloilo and Baguio retain a green character.

There is likewise an emerging pattern concerning the challenges faced by cities in the planning and implementation of initiatives. The first one is in getting the people’s full support. For those initiatives that upset employment, drivers and operators voiced out their opposition. For those that impose sweeping adjustment, it was the riding public who conveyed their dismay. The second pattern is in information dissemination. It appears that regardless of the efforts of the local governments to circulate details of the initiative/s, there still are sectors that remain uninformed. The third one is in going head on with the business owners. It is a fact that every action has an equal and opposite reaction. For initiatives that affect the operations of commerce, business owners expressed qualms. Their interests impinge on the smooth implementation of initiatives.
6.2 ISSUES AND CHALLENGES

With a complete look into the interviews and initiatives of cities, the following issues and challenges can be drawn out:

1. **Inefficiency of public transport**—Across cities, what is very professed is that public transport is inefficient. This is especially the case in Metro Manila where traffic consumes a significant amount of time of commuters.

2. **Apparent disconnect between local government and private sector; and within the government**—There are apparent problems in communication and coordination lines between and among government departments, and between the government and private/civil society/people’s organizations. Some may be attributed to difference in political views/affiliation, and some to misrepresentation (or lack of representation).

3. **Lack of financial capacity of local government units**—A lot of city officials have expressed that even if they want to implement sustainable programs, most of these require funding for infrastructure building or for purchasing. The budgets of cities are not the same. Smaller cities get smaller budgets, making it impossible for them to, for instance, spend for the construction of a monorail, which costs millions of pesos. High-impact projects such as LRT or BRT are not constructed pronto because of lack of funding. Thus, they have to be funded through grants or loans from international agencies.

4. **Unintegrated road network and land use plans**—For example, instead of making plans, what local governments do is they paint bike lanes or expand roads to accommodate new cars. This does not solve the problem. It just transfers traffic and does not target the root cause. As long as transport networks are not assimilated into land use plans and city development plans, little or no change at all can be expected. This has been proven true in many case cities.

5. **Wide off the mark policies**—There are city policies, which are promulgated as knee-jerk reactions and not really as solutions to the congestion problem. An illustration would be the coding schemes, which are not always effective. In some instances, they encourage people to buy two cars, for alternate use. Mayor Osmeña pointed this out, as he explained why Cebu City does not have a coding scheme, despite immense vehicular activity.

6. **More cars make more roads logic**—Some LGUs solve the congestion brought about by the increasing volume of cars by building more roads. This is a “Band Aid” solution that addresses only the immediate effects of the traffic. Many of these roads are nationally funded, and so they are marred with delays in construction, which also contributes to added congestion.

7. **Reduction of air pollution not a rationale**—While there are cities whose rationale is to improve air quality, in most cities, policies and programs are carried out for traffic reduction. Air pollution is not the main goal, but merely a byproduct.

8. **Lack of comprehensive traffic data**—The reason why no adequate analyses are made on mobility and transport is because the data are either insufficient or unavailable. These are necessary in terms

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of planning and making projections. This is also essential so that baseline data can be established. Once this is established, there is a better gauge of whether or not the LGU is moving forward in terms of sustainable mobility.

9. **Unavailability of data for NMTs**—This is important, too, in planning so that the office in charge may include it in the land use and transport plans. Save for the City of Marikina that has cycling data, no other city has wide-ranging data on cycling activity.

To disentangle these, a sustainable urban mobility plan (SUMP) can be made in each city. This will incorporate pedestrian and vehicular traffic, garbage segregation, and other aspects of congestion into one plan. Given said issues, inclusive solutions can be created if all stakeholders are involved in the planning process. A wide-ranging inference from the data gathered is that Philippine cities want sustainable development, but they have qualms as to the sources of funding for projects and programs. A SUMP is a relatively inexpensive way of targeting mobility challenges.

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**SUSTAINABLE URBAN MOBILITY PLAN**

A Sustainable Urban Mobility Plan is a strategic plan that is designed to cater to the mobility needs of people and businesses in cities and their surroundings for a better quality of life. It builds on the existing planning practices and takes due consideration of integration, participation, and evaluation principles.\(^{193}\)

Roads are administrators of connectivity. In Metro Manila alone, residences are connected to innumerable establishments and institutions. This is why road connectivity is very essential. A SUMP recognizes this.

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\(^{193}\) Source: Rupprecht Consult, 2014.
It is not that public transport is expensive, but it is because it is ineffective and inefficient that most people prefer private vehicles. Mobility plans must focus on pedestrians and public transport, and not on private cars. The SUMP should also detail the goals and targets of the local government.

What is the scope of a SUMP? The policies and measures defined in a Sustainable Urban Mobility Plan cover all modes and forms of transport in the entire urban agglomeration, including public and private, passenger and freight, motorized and non-motorized, moving and parking.194.

The Vienna Model can be used as a basis: 195
Different modes of transport are taken into consideration. To have a better visualization of how much space each mode uses, below is an illustration:

![Space used per person according to mode of transport](image)

There is a tendency for the infrastructure capacity in a growing city to be overused, so that existing space must be used in the best way possible. The diagram shows the space used by each mode of transport.


The difference between the traditional traffic plans and a SUMP are detailed below:

<table>
<thead>
<tr>
<th>Traditional Transport Planning</th>
<th>Sustainable Urban Mobility Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on traffic</td>
<td>Focus on people</td>
</tr>
<tr>
<td>Primary objectives: Traffic flow capacity and speed</td>
<td>Primary objectives: Accessibility and quality of life, as well as sustainability, economic viability, social equity, health and environmental quality</td>
</tr>
<tr>
<td>Modal-focussed (focus on particular transport modes)</td>
<td>Balanced development of all relevant transport modes and shift towards cleaner and more sustainable transport modes</td>
</tr>
<tr>
<td>Infrastructure Focus</td>
<td>Integrated set of actions to achieve cost-effective solutions</td>
</tr>
<tr>
<td>Sectorial planning document</td>
<td>Sectorial planning document that is consistent and complementary to related policy areas (such as land use and spatial planning, social services, health, enforcement and policing, etc.)</td>
</tr>
<tr>
<td>Short- and medium-term delivery plan</td>
<td>Short- and medium-term delivery plan embedded in a long-term vision and strategy</td>
</tr>
<tr>
<td>Related to an administrative area</td>
<td>Related to a functioning area based on travel-to-work patterns</td>
</tr>
<tr>
<td>Domain of traffic engineers</td>
<td>Interdisciplinary planning teams</td>
</tr>
<tr>
<td>Planning by experts</td>
<td>Planning with the involvement of stakeholders using a transparent and participatory approach</td>
</tr>
<tr>
<td>Limited impact assessment</td>
<td>Regular monitoring and evaluation of impacts to inform a structured learning and improvement process</td>
</tr>
</tbody>
</table>

Source: Rupprecht Consult, 2014

6.3 RECOMMENDATIONS

It is in this light that, aside from the SUMP as a general recommendation, the following specific ways forward are also proposed:

1. **Cities must re-think their urban plans. Their land-use plans must include mobility networking** so that transport infrastructure and mobility groundwork are taken into account. This will ensure that plans will be executed to the people’s favor even if the reins of administration in the government will change. Because transportation networks connect different institutions, it should be properly planned. Walking, cycling, and mass transport are also modes of transport, but if not integrated in Land Use Plan, may be rendered useless because of alterations in patterns of land use.

2. **Land use plans and other local development plans must be in line with national policies.** The plans of component and highly urbanized cities should take into consideration the provincial and regional plans to ensure consistency. Coordination at the very least should be conducted in order for plans to be integrated well.

3. There must be a countrywide collation of mobility programs, activities, and projects (PAPs) by the national government, similar to a directory. The purpose of this is to have a national reference book of initiatives that cities, and even municipalities, can adopt. Since the Philippines is an archipelago, it is not that easy to convey PAPs from one city to another, especially if seas and islands separate them.

4. If cities cannot, then the national government should invest more in improving public transport. Having many modes of transport is much an advantage as it is a handicap. Too many modes of transport can mean clogged junctions and populated streets. Too few can mean longer travel times and more cutting trips. The answer really is public transport that is efficient.

5. **Private cars should also be regulated the same way public transport** is—in terms of road protocol. Since private cars already outnumber public ones, they should be subjected to more stringent coding schemes than those existing now. If PUJs and trikes are banned in many CBDs, private cars may be banned as well. This can help decongest the urban centers. Mayor Osmeña’s plan to close downtown Cebu to private cars is a policy which can be welcomed by CBD-congested cities.

6. The goal of government should be **not merely to re-route traffic, but to ease it.** Traffic re-routing has the potential to worsen the status quo if not done correctly.

7. **Designated stops must be placed in areas** which, after thorough assessment of data, are not nodal points of activity. Most loading/unloading zones are situated in areas that can turn into bottlenecks. It is a deplorable fact that without regard for road safety, jeepneys usually load and unload in undesignated areas\(^\text{198}\). This practice makes passengers all the more vulnerable to mishaps.

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\(^{198}\) Chin, 2013, quoting Cervero, 2000
8. **Policies should be updated every now and then.** Urban mobility is not a detached matter. It is connected to environmental protection, economic growth, and social development. Thus, approaches to tackle issues related to mobility must be holistic and fluid.

9. **There should be data reconciliation amongst departments** so that a comprehensive database on traffic and mobility can be created. Makati City’s portal can be used as a model. It shows traffic demand measures that can be used as basis for predictions.

10. Instead of roads, **sidewalks can be widened to promote walking**. However, lanes for cyclists must also be provided. But, these lanes must not take away space from the pedestrian lanes, if we are to truly promote non-motorized transport.

11. If the intended program is unpopular, perhaps it can be **repackaged and presented in terms of the benefits it can bring to the populace**. For example, the RevBloom program in Baguio promoted walkability through the proposed signage that illustrate the distance from one point to another, the time it takes and the calories burned by walking said distance. In Vigan City, heritage preservation was used as a slogan in their campaign for pedestrianization.

12. **Streets can also be repurposed.** This is being done already in Baguio City, where Harrison Road, a main thoroughfare, is converted into a night market from 9pm to 3am. This is also done by Pasig City during their Carless Days (on certain roads).
6.4 CONCLUSION

What must be emphasized is that these cities have different physical and socio-economic settings. Therefore, there are certain programs and projects that are inimitable to each city. Looking at the initiatives of the cities in this study, it can be said that the prevailing practice is road-based transport. This prevalence has “[undermined] the adequate consideration of the potentials of other available but perhaps slower urban mobility networks.” Thus, inclusive sustainable transport is more of a divergent than the mainstream in the mobility arena.

It is properly argued that

From the perspective of social sustainability, transportation projects should enhance the quality of life by ensuring safety and health to all road users, provide good access to key services, ensure equity between different community and generation groups as well as encourage citizen participation in decision making. The concept of social sustainability is relatively new although road safety and community severance have long been considered in transportation planning\(^{199}\).

In an identical line of reasoning, mobility projects must be designed and executed in such a way that the dimensions of environmental, social, and economic sustainability are balanced. With cities as the apparatus of revolution, the need now is more of transformative solutions rather than of curative ones, of forward-looking plans than of short-sighted ones, and of long-lasting programs than of provisional ones.

Many cities have already been stepping up finding ways to combat the impending ills of climate change. If all cities in the Philippines follow suit, they can enthuse other international cities to strengthen their commitment to reducing global emissions through concrete action. And then, a chain of pro-action will be created by cities for all places in the globe.

\(^{199}\) Chin, 2013:38