Implementing the Philippines' National EST Strategy at the Local Level

Jose Regin F. REGIDOR
Director
National Center for Transportation Studies
University of the Philippines
Diliman, Quezon City
1101 Philippines
Tel/Fax No.: +63-2-928-8305
E-mail Address: jfregidor@up.edu.ph
URL: ncts.up.edu.ph

Abstract: The Philippines' national strategy for environmentally sustainable transport (EST) was launched in May 2011. While it is a national strategy and its promotion and implementation should be led by the Department of Transportation and Communications (DOTC), much of the work is perceived to fall unto the hands of local government units (LGU). It will be the cities that will ultimately be in the frontlines for implementing or realizing EST considering the specific projects that will be customized according to each city's needs and situations. Aside from the national strategy, an EST toolkit has been developed that highlights good practices that have already been implemented in some Philippine cities. This paper presents on the formulation of the national strategy and more importantly, on the practical approaches to implementing EST and discusses how LGUs should be able to harness other resources and ensure sustainability in planning and implementation for EST.

Key words: EST, local implementation,

1. INTRODUCTION

1.1 Context

The impacts of climate change in the Philippines, a country of almost 100 million people, cannot be overstated considering the aftermaths of increasingly frequent extreme climate events. It is in this general context that the issues and challenges in sustainable transport are discussed particularly with respect to the efforts currently exerted in the country.

The current transportation planning paradigm of 'forecasting and providing' has brought about negative externalities such as annual losses due to travel time, which translate to more than PHP 350 billion/year (USD 8.14 billion) in 2010 prices (NCTS, 2000). This does not include costs pertaining to environmental degradation (i.e., deterioration of air quality and noise) and health (e.g., increased incidence of respiratory diseases).

Emission from mobile sources has contributed 65% to the air pollution load nationwide, much more than the stationary sources (DENR, 2007). Meanwhile, the incidence of road crashes, many involving fatalities, continue to increase and costs have been estimated to constitute 2.6% of the Gross Domestic Product of the Philippines in 2005 (Sigua, 2000).

To mitigate these negative externalities of the transport sector, several initiatives have been taking place. One is the improvement of the public transportation system through the introduction of the Bus Rapid Transit, a cost-effective, environment friendly public transport mode, in Cebu City, where a Feasibility Study will be conducted following favorable outcomes of a Pre-Feasibility Study completed in 2010. Another is the development of facilities for cyclists and the pedestrians as a departure from the usual bias for cars and other motorized vehicles at the expense of walking and non-motorized transport.

1.2 Past efforts

Prior to the formulation of a national EST strategy, there have already been initiatives geared towards mainstreaming EST in the Philippines. This includes the "Capacity Building for Mainstreaming EST in Local and Metropolitan Development," supported by JICA and the MMDA and focused on Metro Manila local government units, which led to the drafting and signing of the Metro Manila Declaration among LGUs.

Another effort is the "Capacity Building and Social Marketing for Environmentally Sustainable Transport" that was supported by United Nations Development Program (UNDP) through the DENR. This project involved the conduct of workshops and case studies on five Philippine cities namely San Fernando, Marikina, Cebu, Cagayan De Oro, and Iligan. Outputs included the development of an EST guidebook or toolkit for local government units, the conduct of a national EST conference to promote broad-based awareness and support of EST, and the development of a web portal that will contain resources that can be freely accessed by local governments. A series of seminar-workshops were held in these cities to promote good practices and particularly highlighting the local experiences in implementing EST projects.

Such activities along with efforts through non-government organizations (NGOs) like the Clean Air Initiative for Asian Cities (CAI-Asia) and institutions like the UNDP, Asian Development Bank (ADB), and The World Bank (WB) were instrumental for setting the foundations necessary to implement the formulation of the national strategy.

2. NATIONAL EST STRATEGY

2.1 Formulation

The national EST strategy was formulated through a participatory process that included national and regional consultations. Involved in the consultation workshops were participants from national government agencies, local government units, non-government organizations, and the private sector. The national strategy covered the 12 thematic areas of EST that includes the following:

- Public Health
- Strengthening Roadside Air Quality Monitoring and Assessment
- Traffic Noise Management
- Vehicle Emission Control, Standards, and Inspection and Maintenance
- Cleaner Fuels
- Public Transport Planning and Travel Demand Management (TDM)

- Land-Use Planning
- Non-Motorized Transport (NMT)
- Environment and People Friendly Infrastructure Development
- Social Equity and Gender Perspectives
- Road Safety and Maintenance
- Knowledge Base, Awareness and Public Participation

A long list of strategies was first derived from consultations based on what on a common vision for sustainable transportation. These strategies were eventually streamlined to reflect priorities for each thematic area.

2.2 Strategies Focusing on Transportation Planning

The following Table 1 shows strategies, indicators and action plans specific to transportation planning that were derived from the national strategy.

Table 1. Strategies, indicators and action plans specific to transportation planning

Strategies	Indicators	Targets	Action Plans	Responsible Agencies
1) PT network integration (including efficient PT)	a) Inclusion in national plan	a) Inclusion in MTPDP by 2010	a1) Integrate EST in NTPP2, a2) DOTC to endorse NTPP2 to NEDA	a1) DOTC a2) DOTC/NEDA
	b) Number of LGUs having PT planning integrated in local plans	b) 4 metro areas (Metro Manila, Cebu, Davao, Baguio) by 2010	b) Development of HLURB policy guidelines to integrate PT plan to LGU plan - mandatory to HUCs	b)HLURB/DILG/DOTC
	c) Number of LGUs with intermodal stations	c) 33 HUCs with intermodal station(s) by 2011	c) Develop policy guidelines	c) DOTC, DILG
	d) Presence of integrated ticketing system for Metro Manila's rail system	d) Integrated ticketing by 2011	d) Develop policy guidelines	d) DOTC, LTFRB, LRTA
2) Develop and enhance appropriate freight transport policies	Number of development studies e.g., logistics improvement plan	a) Nationwide study on freight flow/logistics by 2010 b) Metro or City-specific studies on logistics by 2013	Push studies for rationalized truck routes	[National] DOTC, DPWH [Local] MMDA, LGU
3) Develop and implement appropriate TSM/TDM measures (e.g., synchronization of traffic lights, road widening and paving, alternate routes)	a) Travel time reduction for public and private transport users	a) 25% reduction in peak hour travel time in HUCs by 2013	a) Conduct studies to assess travel speeds along critical corridors/sections	a) LGUs
	b) Number of rationalized truck routes	b) Rationalized truck routes for Metro Manila by 2013	b) Assessment of truck routes in Metro Manila	b) Metro Manila LGUs & MMDA with DOTC
4) Develop mass transit systems especially BRT	a) Number of cities with appropriate mass transport	a) 33 HUCs with identified mass transport system by 2010	a) Assessment of existing public transport system	a) DOTC, LTFRB, DILG

Strategies	Indicators	Targets	Action Plans	Responsible Agencies
	b) Number of mass transport lines	b) One BRT line each in Cebu and Davao by 2013	b) Push studies for mass transport including BRT and rail	b) DOTC, LTFRB
5) Rationalize PT according to PT and road network hierarchies	Public transport mode and supply suitable to major corridor based on network demand estimates (to replace current RMC)	Rationalized PT along major arterials or corridors by 2015	a) Assessment of existing public transport system b) Push studies for mass transport including BRT and rail	[National] DOTC, LTFRB [Local] DILG and LGUs (particularly for tricycles and pedicabs)

Source: NCTS, Formulation of a National EST Strategy for the Philippines, 2011

The strategies and action plans in the preceding table include elements of public transportation, and travel demand and transport systems management. More importantly, there is reference to logistics that recognizes goods movement as an equally important aspect of transportation. That is, sustainable transport is not only for people but for freight as well. Table 2 shows selected examples of other strategies that can be carried out at the local level.

Table 2. Other strategies, indicators and action plans applicable to LGUs

Strategies	Indicators	Targets	Action Plans	Responsible Agencies
1) Develop policies and guidelines for pedestrian- and cycling-inclusive land use planning	a) Number of NMT-friendly cities	a) 33 HUCs evaluated using NMT compatibility indices by 2010	a) Develop local indices	DOTC, DILG and LGUs
	b) Number and length of bike lanes constructed	b) 33 HUCs to have NMT plans and implemented by 2012	b) Push for plan implementation by 2012	
	c) Number and length of pedestrian walkways constructed	c) 2012	c) Push for plan implementation by 2012	
	d) % or amount of budget provision or incentives on the use of NMTs (national and local government)	d) 2012	d) Push for plan implementation by 2012	
2) Provision of NMT facilities	a) Number of NMT-friendly cities	a) 33 HUCs evaluated using NMT compatibility indices by 2010	a) Develop local indices	[National] DOTC, DILG [Local] LGUs
	b) Number and length of bike lanes constructed	b) 33 HUCs to have NMT plans and implemented by 2012	b) Push for plan implementation by 2012	
	c) Number and length of pedestrian walkways constructed	c) 2012	c) Push for plan implementation by 2012	
	d) % or amount of budget provision or incentives on the use of NMTs (national and local government)	d) 33 HUCs to have allocated budgets or incentives for NMTs by 2012	d) Push for plan implementation by 2012	

Strategies	Indicators	Targets	Action Plans	Responsible Agencies
3) Incorporate "inclusive transport" principles in transportation infrastructure and vehicle design	a) % Reduction in accidents involving elderly, children, women and persons with disabilities	a) 50% reduction in accident rates by 2012	Strict implementation of provisions for PWD, senior citizens, pregnant women, etc.	[National] DOTC, LTFRB, LTO, etc., DTI, DPWH [Local] LGU
	b) % Increase in the number of public transport vehicles incorporating "inclusive" design	b) 100% of buses with priority seats by 2010		
	c) # of cities adopting or implementing environmentally sustainable transport infrastructure including green designs	c) 33 HUCs by 2012		
	d) Increase in #/Length of pedestrian walkways and other people friendly facilities	d) prepared pedestrian facilities plan for 33 HUCs by 2012		
4) Capability building on integration of land use and transport policies	a) Case studies on EST and develop toolkits	a) at least two detailed case studies on EST practices of LGUs per year	a) Detailed case study on the Marikina Bikeways in 2009 and search for EST leading practices of HUCs	[National] DOTC, HLURB, DILG, LCP, NCTS [Local] LGU
	b) Number of trainings/seminars on land use and transport integration conducted	b) at least 30 trained personnel per year	b) Development of EST training program and modules	
	c) Number of CLUPs/CDPs integrating EST	c) 33 HUCs with CLUPs /CDPs incorporating EST	c) Develop and conduct advocacy activities for LGUs	
	d) Recognition of good practices of LGUs on EST	d) at least 2 LGUs recognized for good practices on EST	d) Develop and implement recognition mechanics	
5) Promote mixed use development (compact, shorter trip distances)	a) Urban density (no. of persons/area); b) Diversity of land uses in a given space; c) trip lengths (unit distance)	Reduce trip distances to at least 75% of current levels by 2030 for the 33 HUCs	a) Conduct of transport surveys; b) Advocacy activities of responsible agencies; c) Recognition of local best practices in compact, mixed use development	[National] HLURB, DOTC [Local] LGU

Source: NCTS, Formulation of a National EST Strategy for the Philippines, 2011

There are many other strategies and action plans pertaining to other EST themes. These may be found in the Final Report of the Formulation of the National EST Strategy (NCTS, 2011).

3. GOOD PRACTICES

Based on inventories conducted during the past few years to document good practices, there have been many EST initiatives in a number of LGUs. These include the Marikina Bikeways network, the Cebu City smart traffic signal system (Sydney Coordinated Adaptive Traffic Signal or SCATS System), phase out of 2-stroke motorcycle-powered tricycles in San Fernando, La Union, and the walkways and electric jeepneys in Makati City. There are other initiatives but many have had marginal or limited success or are currently at the experimentation stage. Figure 1 shows the Marikina Bikeways network that was implemented beginning with a grant from the World Bank during the early part of the last decade for the pilot corridor. The mayor at the time was Bayani Fernando, popularly known as BF, who later became Chair of the Metropolitan Manila Development Authority (MMDA). BF embarked on an aggressive program to realize the network and encourage cycling in the city, including the creation of programs to teach cycling to children and promote cycling in schools and factories. Under BF, the Marikina City Bikeways Office (MCBO) was created to oversee development and programs.

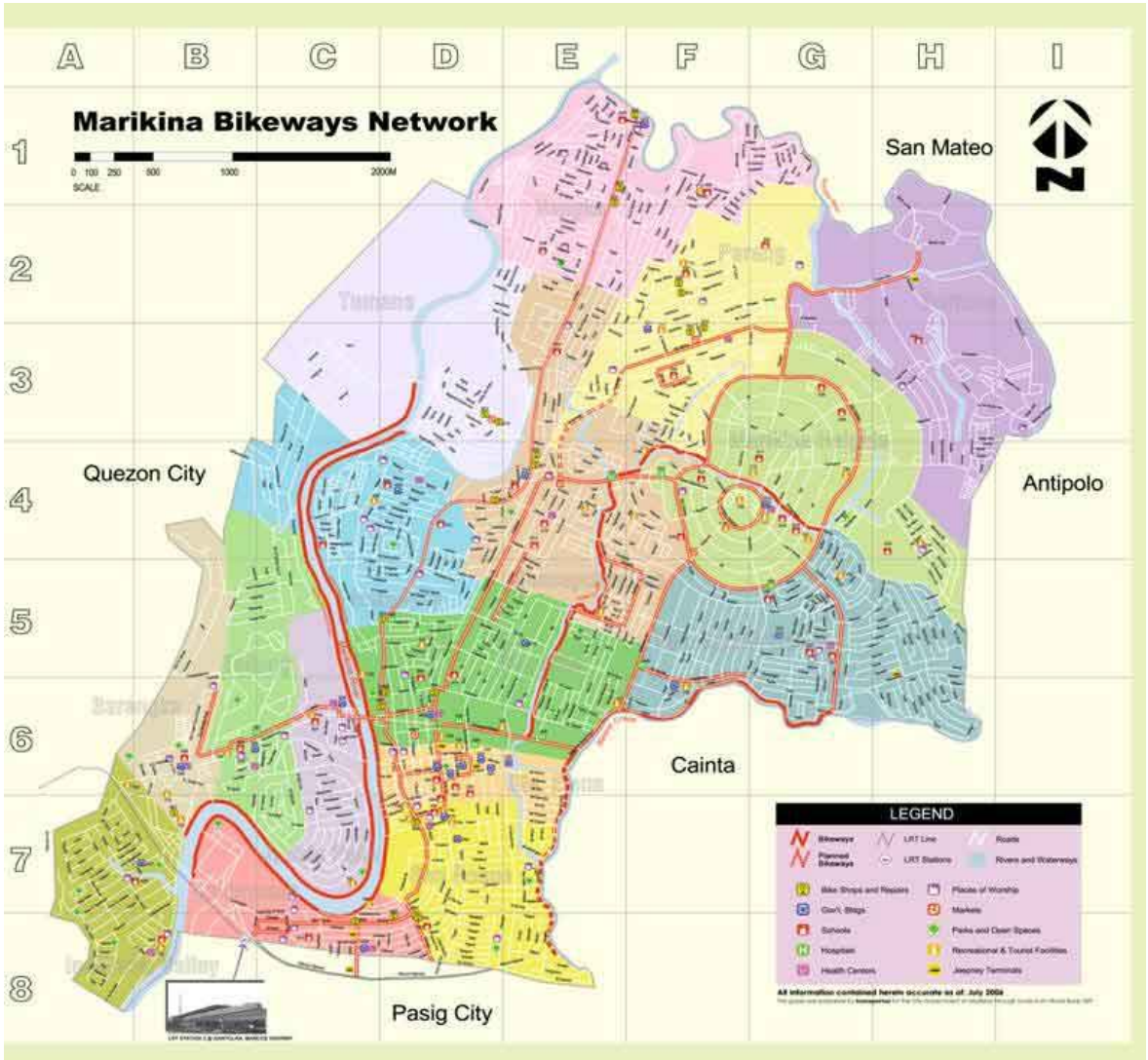

Figure 1. Marikina bikeways network (Source: Marikina City)

Expansion of the network continued under Fernando's successor, his wife Ma. Lourdes, who was mayor for three terms (9 years). This included the connection of the network towards the LRT Line 2 end station located in Santolan along Marcos Highway, a the boundary of the city with Pasig City. However, the MCBO was dissolved and its staff was distributed among the City Engineer's Office and the city's Planning and Development Office.

The bikeways scheme was adopted by the MMDA but the agency had a difficult time implementing bike lanes along the network that it identified along some roads in Metro Manila. Earlier this year, Pasig City came up with a local ordinance for establishing bicycle routes and facilities in that city. So far, the scheme has not yet been as successful as Marikina's. Meanwhile, cycling in Marikina has had a perceived decline during the last term of the previous administration there including the dissolution of the Marikina Bikeways Office. Currently, there are initiatives to revive the bicycle programs of that city where the bikeways remain intact although often used by motorcycles and tricycles that have been known to encroach on the bikeways.

The electric jeepney was first introduced in the middle of the last decade and banked on the iconic features of the jeepney in its promotion to cities. The first route was finally realized in Makati City where the former mayor (now Vice President of the Philippines) was very supportive of the initiative along with his son who was then City Councilor. The latter is now Mayor of Makati and continues to support the e-jeepney program. Figure 2 shows the electric jeepney routes in Makati City.

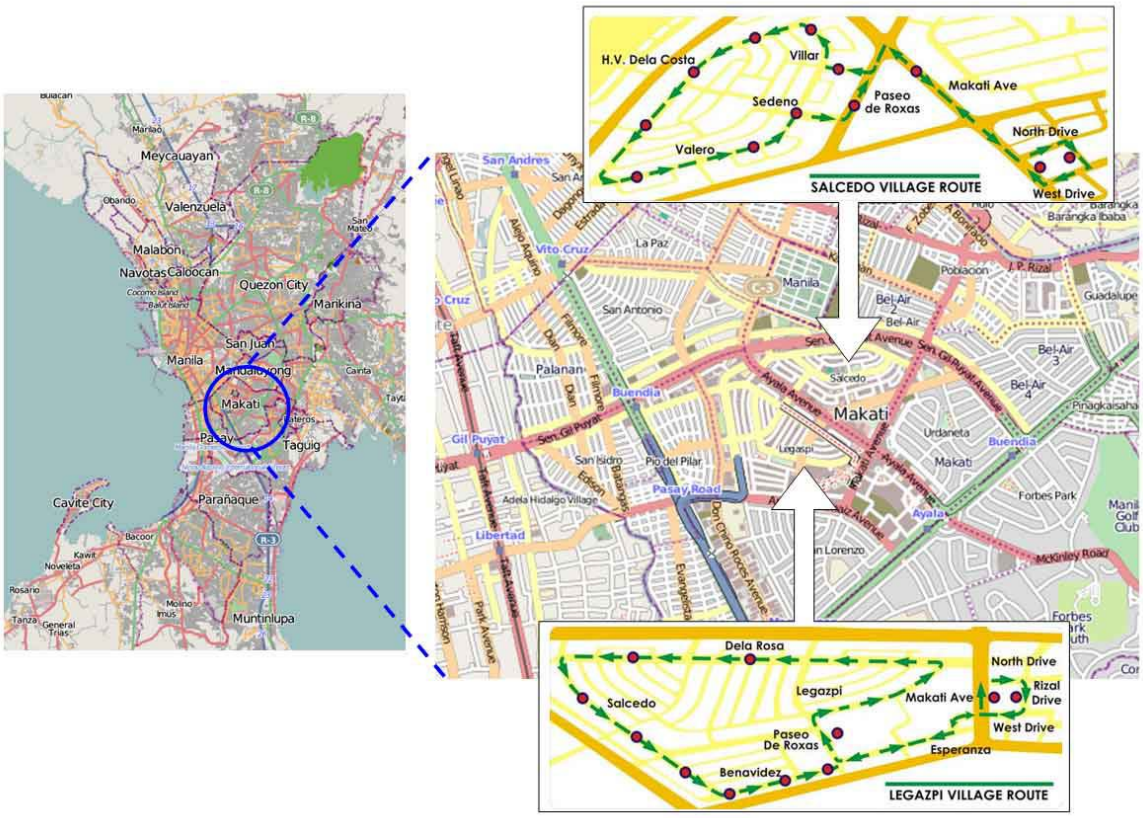

Figure 2. Electric jeepney routes in Makati (Source: ICSC)

Metro Manila and Cebu City have completed pre-feasibility studies for bus rapid transit (BRT) systems but with Cebu moving forward with a feasibility study that will be starting before 2011 ends. The target is to have the first BRT in the country to be operational by 2013. Meanwhile, Davao City in the southern Philippines is also working towards coming up with its own plan for a suitable public transport system.

4. IMPLEMENTING EST AT THE LOCAL LEVEL

4.1 Legal Basis

The national EST strategy can be adopted as a whole by LGUs through ordinances targeting specific EST themes while being open to others that the LGU is not yet ready or capable to engage in. The most common ordinances are those pertaining to air quality monitoring and particularly on roadside emission testing that empowers the anti-smoke belching units (ASBU) of cities. Although highly visible, these initiatives have not been evaluated properly to determine if these have had significant impacts to reduce harmful emissions.

There are also ordinances that are specific to certain EST practices such as those pertaining to cycling in Marikina City, Davao City and, more recently, Pasig City. Among these cities, only Marikina has the infrastructure designated for bicycle use that is important in order to encourage people to use bicycles. Often, the concern is about safety since drivers of motor vehicles tend to be aggressive against cyclists sharing road space. Allocating space for cyclists addresses this issue but ensuring that such spaces are indeed used by NMT rather than by motorcycles or encroached upon by other motor vehicles is another matter that is associated with traffic enforcement.

Having ordinances does not ensure success especially considering the Philippines' propensity for the creation of laws while usually falling short on the implementation side. Quezon City's green ordinance, for example, was supposed to set a timetable for the conversion of tricycles in that city from the conventional types to the more eco-friendly ones powered by alternative energy such as LPG and electricity. So far, there has been minimal, if any, progress to this end and the number of tricycles (including illegally operating units) has continued to increase. Thus, it is important to emphasize here that the overused term that is "political will" is indeed an important element for implementing the provisions of national and local laws formulated to address current and emerging problems concerning transport and traffic.

4.2 LGU Capacities

One option that may be considered is for the national government to come up with an incentive scheme to encourage EST at the local level. Perhaps an investment scheme may be formulated and supported by the national government that would identify particular areas where EST can be implemented. Such, however, assumes that cities would be capable of carrying out programs and projects concerning transport and traffic. In truth, there is at present very limited capacity among most cities to deal with basic transportation and traffic problems and this will certainly have serious implications if sustainable transport is to be realized.

The key competencies and skill sets required for traffic management, traffic engineering and transport planning were identified in a recent study (World Bank, 2010) and these are reproduced in the following Tables 3 to 5, categorized for traffic management, traffic engineering, and transport planning.

Table 3. Key Competencies and Skill Set on Traffic Management

Key Competencies	• Possess strong understanding on transport-related laws, rules and regulations • Possess understanding on fundamental concepts on measuring transport and traffic performance • Possess practical knowledge on Transportation Systems Management (TSM) measure
Skill Set	• Basic knowledge on traffic flow characteristics and travel behavior • Conduct of traffic surveys (e.g. Classified vehicle volume count, Vehicle occupancy survey, Travel time and delay survey) • Knowledge on different Transportation Systems Management (TSM) measures • Basic knowledge on intersection design and control • Basic knowledge on public transport facility design • Basic knowledge on highway design • Conduct of traffic accident investigation

Source: The World Bank, 2010

Table 4. Key Competencies and Skill Set on Traffic Engineering

Key Competencies	• Possess understanding on transport-related laws, rules and regulations • Possess advanced understanding on fundamental concepts on measuring transport and traffic performance • Possess advanced knowledge on Transportation Systems Management (TSM) and Travel Demand Management (TDM) measures • Possess advanced knowledge in transport facility design and evaluation
Skill Set	• Advanced knowledge on traffic flow characteristics and travel behavior • Design and conduct of traffic surveys (e.g. Classified vehicle volume count, Vehicle occupancy survey, Travel time and delay survey) • Knowledge on different Transportation Systems Management (TSM) measures • Advanced knowledge on intersection design and control • Advanced knowledge on public transport facility design • Advanced knowledge on highway design • Conduct of traffic accident analysis • Conduct of Traffic Impact Analysis (TIA) studies

Source: The World Bank, 2010

Table 5. Key Competencies and Skill Set on Transport Planning

Key Competencies	• Possess understanding on transport-related laws, rules and regulations • Possess advanced understanding on fundamental concepts on measuring transport and traffic performance • Possess knowledge on Transportation Systems Management (TSM) and Travel Demand Management (TDM) measures • Possess advanced understanding of the local planning process • Possess advanced knowledge in transportation planning
Skill Set	• Advanced knowledge on traffic flow characteristics and travel behavior • Design and conduct of traffic surveys (e.g. Classified vehicle volume count, Vehicle occupancy survey, Travel time and delay survey) • Knowledge on different Transportation Systems Management (TSM) measures • Advanced knowledge on travel demand forecasting • Advanced knowledge on public transport facility design • Conduct of traffic accident analysis • Conduct of Traffic Impact Analysis (TIA) studies

Source: The World Bank, 2010

Such competencies are useful references when determining whether an LGU would have the capacity to formulate, implement and evaluate transportation projects. A city's capacity is important if it is to come up with meaningful projects and particularly critical if the projects are intended to address environmental concerns. As such, fundamentals are important to have a basic understanding of what EST is and how it works prior to planning and implementation.

Note also that under the competencies, cities should have a system for data collection and management that would ensure currency of information that would be available for analysis related to projects. Often, basic data is unavailable simply because these are not collected. Often, too, data is not collected because cities do not know what transport or traffic data are relevant including the details pertaining to the information (e.g., count intervals, vehicle classifications, occupancies, etc.).

4.3 Partnerships for EST

It is possible to explore LGU-academe partnerships where a city and a local university would work together for transportation engineering and planning. Sustainability can be attained in such an arrangement given that local universities may have the technical capacities to collaborate with local governments on projects. The assumption is that such universities have programs related and relevant to transportation engineering and planning like Urban Planning and Civil Engineering.

In the event that local universities would have limited capacities, incentives may be provided for them to gain transport and traffic fundamentals necessary for engaging cities. Graduate programs are available for such purposes and there are training programs focusing on transportation and traffic that are practically crash courses for acquiring knowledge and skills necessary for collaborating with cities on solving transport and traffic problems.

In any case, the responsibilities of both parties involved should be clearly defined with terms of reference spelled out to determine, for example, data collection and sharing arrangements and reportorial commitments. Ideal would be formal agreement between a city and a local university through an instrument such as a Memorandum of Understanding (MOU) or a Memorandum of Agreement (MOA).

5. CONCLUSION

This paper presented current and past efforts focusing on sustainable transport. Many of these are continuing especially the promotion of good practices in EST that emanate from the national strategy that was recently formulated. The national EST strategy identifies action plans and the corresponding responsible agencies or entities. The key competencies and skill sets that will enable cities to formulate and implement meaningful programs and projects were also presented. More importantly, the paper examined the capacities of cities for transportation planning and recommended for collaborative agreements with local universities with sustainability in mind.

The general observation has been that LGUs are often unaware that certain programs and projects they are implementing or planning actually fall under EST. As such, they are unable to package their programs and projects in a way that can be attractive to both local and foreign support. One main objective of social marketing for EST is to assist cities by capacitating them with the fundamentals they would need to undertake projects geared towards sustainable transport.

The strategies developed for each EST thematic area are collectively called the national strategy and implies responsibility of a national agency for its implementation. Upon closer scrutiny, however, it must be realized that significant impacts will only be attained if EST is successfully implemented at the local level. The role of national agencies such as the DOTC and the DENR is to provide guidance and capacity to cities for the latter to be able to come up with meaningful programs and projects. After all, while big ticket EST projects may be initiated by national agencies, their success will be determined by how these are implemented at the local level. In the Philippines, cities have been empowered for such purposes and localizing national programs and strategies would be essential in addressing enduring and emerging problems concerning transport and traffic.

REFERENCES

National Center for Transportation (2011) **Formulation of a National Environmentally Sustainable Transport Strategy for the Philippines,** Final Report, Studies United Nations Centre for Regional Development, National Focal Agencies: Department of Transportation and Communications and Department of Environment and Natural Resources.

National Center for Transportation Studies (2009) **Capacity Building and Social Marketing for Environmentally Sustainable Transport,** Final Report, United Nations Development Program, Manila.

National Center for Transportation Studies (2009) **EST Casebook: Leading Practices of Philippine Cities on Environmentally Sustainable Transport (EST),** United Nations Development Program, Manila.

Regidor, J.R.F. and Espiritu, M.A.M. (2011) An Exploratory Study on the Feasibility of Electric Jeepneys as a Public Transport Mode, **Proceedings of the Eastern Asia Society for Transportation Studies,** Vol.8, DVD-ROM.

The World Bank (2010) **Promoting Partnerships for Transport Planning of Local Government Units in the Philippines,** Phase 1.