TERMS OF REFERENCE FOR CONSULTANTS

I. INTRODUCTION

1. **Manila Traffic**. The traffic conditions in Manila are deteriorating resulting in economic loses and social costs to all. The government has developed an overarching plan to improve the transport situation through both large infrastructure projects and system operations improvements. NEDA is preparing the Roadmap for Transport Infrastructure Development for Greater Capital Region with the help of the Government of Japan, which build on the previous five transport plans for the city. Key to the plan is the development of large infrastructure such as the Mega Metro Subway, commuter rail service, expressway connections and additional bridges across the rivers. The proposed loan is directly aligned with the Manila transport plans and will augment the major infrastructure proposals through support for system management and operations improvement, notably along the main transport corridor in the city. The assistance can address many of the challenges facing the city transport system and the flexibility to adapt to the changing circumstances and priorities of the government.

2. **The Epifanio de los Santos Avenue (EDSA) is the major transport corridor in the National Capital Region** (NCR). The corridor serves all main modes of transport and suffers severe congestion. The congestion is getting worse, resulting in economic loss, social and gender exclusion, and deteriorating air quality and road safety. Urgent action is required to improve EDSA and reduce the cost of transportation to allow continued and sustainable development of the city.

3. **The economic engine of the Philippines**. In 2016, NCR accounts for 36.6% of the country's gross domestic product (GDP).[1] Congestion on EDSA is estimated to cost ₱2.4 billion a day.[2]

4. **The primarily transport corridor**. EDSA serves as the main corridor for several sub-modes: Metro Manila Rail Transit System Line 3 (MRT-3), the highest volume transit line in the city;[3] provincial buses (main route in and out of the city); city buses (busiest bus corridor in the city); and private vehicles (highest traffic volume in the city). EDSA is evolving as an urban clearway to serve large demand for travel. In addition, this is currently the only high capacity road which links the expressway systems north and south of the city.

5. **Inefficient use of road space**. The current traffic volumes on EDSA at Guadalupe Bridge are 166,000 two-way passenger car unit per day. Th growth in traffic on EDSA has been limited due to capacity restraint, it operates at or near to capacity for over 16 hours a day; traffic volume to capacity ratio is estimated to range from 0.8 to 1.1. There are 15,000 buses per day on EDSA (crossing Guadalupe Bridge) which currently operate at around 60%–70% of capacity, suggesting there are too many buses for the bus demand. MRT-3 currently carries 400,000 passengers per day, and is operating at about 80% of its' current capacity and about 40% of its ultimate capacity. MRT-3 has capacity to carry around one million passengers per day with additional rolling stock and signal system improvements to increase travel speed and train frequency.

6. **Poor public transport facilities.** EDSA has low standard transport facilities, especially for public transport users. The access and egress from MRT-3, Manila Light Rail Transit System

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[1] Philippine Statistics Authority. Database 2017. Manila.
[2] NEDA. 2104. *Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas.* Manila.
[3] MRT-3 is a 19.6-kilometer (km) line with 13 stations, starting from North Avenue station in Quezon City and ending in Taft Avenue station in Pasay City.

(LRT) 1,[4] and bus stops and/or stations are of very low-quality. Also, the public transport interchange locations between EDSA and key cross routes are very poorly served. These poor facilities result in unsafe, inconvenient, difficult, and more expensive trips for public transport users.

7. **Poor public transport integration.** EDSA has the main metro systems, with MRT-3 and northern parts of LRT-1 running along the road. In addition, there are interchanges with the southern sections of LRT-1 and LRT-2[5] crosses EDSA in Cubao. The proposed Mega Manila Subway project will run parallel to EDSA for about 2/3 of its length, and must be included as part of any holistic solution for improving the overall transport system in the EDSA corridor. Historically, many systems were planned in isolation, with limited dedicated interchange facilities provided, thus, reducing the overall benefits of the public transport system.

8. **Poor traffic management and road operations**. EDSA does not have a uniform number of lanes and the merging and diverging adds to the congestion. The U-turns, while banning left turns and thus removing the need for signalized junctions, add to travel distances and/or time and add to overall congestion. EDSA also suffers from encroachment by economic enterprises along much of its length, dramatically reducing the capacity and operational efficiencies of the road. In addition, many vehicles 'stand-by' on EDSA, notably buses, taxis, delivery vehicles, and courier service motorbikes. This is highly inefficient use of the limited road space. Such activities compound the congestion and creates a poor user experience for all road users.

9. **Dangerous road conditions**. The high traffic volumes and poor traffic management result in a high number of accidents, although these are normally classified as minor due to the slow speeds. Access/egress to and from EDSA is very poor for pedestrian and public transport users. Poor access/egress to and from EDSA causes unsafe and uncomfortable trips for pedestrian and public transport users. In addition, pedestrian environment is vulnerable to the intensified rainfalls, which is anticipated due to climate change. The congestion and inefficient transport systems are contributing to a very unhealthy environment with high levels of carbon dioxide, nitrogen oxide, and particulate matter resulting from vehicle emissions, the highest levels in the country.

10. **High cost of transportation**. A poor transport system is several impacting the economic development and growth of Metro Manila. Transportation costs for freight are very high due to increased travel times resulting from sever congestion and it is normal for users of EDSA to experience a 3–4 hour commute each day. The poorest in society are paying up to 30% of their disposable income on transport or transport related costs. The congestion is resulting in missed economic opportunities for business and people alike. Inefficient transport system is resulting in high levels of pollution with EDSA having the highest levels of hydrocarbons, nitrogen oxides, carbon monoxide, sulfur dioxide, and toxics in the country, as well as high contributions of greenhouse gases.

11. **Institutional issues and jurisdiction**. EDSA passes through six cities of Metro Manila and is under the control of the Department of Public Works and Highways (DPWH) for infrastructure and the Metro Manila Development Authority (MMDA) for traffic management, while the Department of Transportation (DOTr) is responsible for public transport planning and overseas operations. Each of the cities, together with MMDA, is responsible for traffic and land

[4] LRT-1 is a 19.65 km-line with 21 stations starting from North Avenue station and ending in Baclaran station in Pasay City.

[5] LRT-2 is a 13.8 km line with 11 stations starting from Santolan Station in Pasig City and ending in Recto station in Manila.

use enforcement along EDSA. There is no consistent approach to the maintenance, operation, management, or enforcement of traffic rules or operation of road space. Traffic management and road safety on EDSA is almost non-existent. A clear institutional structure and well-defined roles and responsibilities is required to successfully implement the proposed loan.

12. **Previous experience and lessons learnt.** EDSA and the traffic conditions in Manila have been studied on numerous occasions over the last 50 years. The Japan International Cooperation Agency is currently preparing the next transport masterplan, the 6th since the mid-1990s. Each of these plans have similar and sensible solutions to address urban transport problems, but each study recommendations have failed to be implemented as envisaged. Strong government ownership and cross administration commitment is required. With worsening traffic conditions in Metro Manila, the current administration has made a strong commitment to address the problems and find workable solutions led by DOTr.

13. **System and management improvements**. The overarching objective of the assistance is to ease traffic flow and increase overall capacity throughput along EDSA and improve connectivity between public transport modes and access to the surrounding areas. Well-aligned institutional structures with powers and mandate to deliver are required.

14. **The assistance outputs.** To address the problems, an integrated suite of outputs is required. The project will include the following outputs:

15. **Output 1: Pedestrian access and interchange facilities improved**. Improved pedestrian and interchange facilities between public transport services, the surrounding catchment areas and new transport infrastructure will ensure the attractiveness of public transport and maintain a suitable mix of transport modes. Pedestrian access or greenways will be provided at key locations along EDSA to ensure smooth, safe, and efficient access between the major developments and the EDSA corridor. The pedestrian facilities will link each main mode of transport (buses, MRT-3, LRT-1, and Mega Manila Subway) with the surrounding areas via dedicated facilities to accommodate the pedestrian volumes. The output will include bus stop and station infrastructure program development linking to the pedestrian walkways. Access to the MRT-3 and LRT-1 stations will also be improved through additional entry/exit locations, direct and convenient (mechanized where necessary) links to surrounding areas, buildings, and shopping malls. Particular attention will be given to ensure suitable design features for the mobility impaired, women, elderly, and the youth. This output is likely to form one of the core projects for early delivery under the proposed loan.

16. **Output 2: Public transport operations improved.** EDSA, being the primary public transport corridor in Metro Manila, must increase its carrying capacity to meet the growing demand for travel and improve public transport services and operations. Operational improvements are required for all major public transport modes, LRT-1, MRT-3, city bus services and provincial bus services, as well as the proposed subway line. Bus reform will ensure that supply meets demand, and that competition between bus services is removed from the street through modern, performance-based franchising arrangement. A full reform and fleet renewal program for city buses will provide reliable, faster, more comfortable, convenient, more attractive, and affordable services. Provincial buses will connect to public transport services on EDSA at improved interchange facilities thus reducing congestion on EDSA by providing dedicated terminal facilities at suitable locations on the approaches to EDSA from both the north and south. MRT-3 capacity will be increased to meet its design capacity, additional rolling stock and improved signaling and power systems will ensure that MRT-3 maintains its role as the prime mass transit mode in the corridor carrying the highest number of passengers in increased comfort and reliability. Station enhancements, including sufficient ticket barriers, spacious concourses, and

sufficient access/egress points will be provided to meet the increased passenger demand. Improvements to LRT-1 will mainly focus on improved access arrangements and interchange facilities. Design features catering for all users will be included to ensure suitable travel environment for those with disabilities, women, the elderly and the youth. Operation support may also be provided while preparing these facilities. Any related transport infrastructure and facilities may be identified and prepared as required for integrated solutions.

17. **Output 3: Traffic management and institutional oversight improved**. A traffic management system will be developed for EDSA. The system will provide real time system management for the reformed lane operations of EDSA. Traffic management and traffic engineering solutions will be provided to address the number of lanes, to keep merging and/or diverging traffic to a minimum, to cater for all major turning movement requirements, and eliminate encroachment along EDSA. The project will explore traffic restraint measures, either fiscal or physical to restrain vehicle use in the congested areas. The traffic flow along EDSA will be impacted by the range of other road infrastructure being implemented and these will be factored into the project. Diverted traffic and connections to a new road network system will allow EDSA to play its role in an expanded and broader road network. The project will support the establishment, training, and initial operations of a traffic control unit and system. Clear and well defined institutional structures will be prepared that will provide the necessary oversight and operational management of the traffic management system, this is likely to require the establishment of an overarching body with responsibility for traffic planning, management and operations of EDSA. The output will also include a communication and outreach program, which will outreach to those directly or indirectly affected by the project. Women's participation in both the traffic management system and the outreach activities will be promoted.

18. The TA will (i) define the project scope and institutional parameter, (ii) prepare feasibility study of the ensuing project, (iii) prepare bidding documents for core sub-project, and (iv) prepare institutional arrangements and capacity development program.

II. IMPLEMENTATION ARRANGEMENT

19. The DOTr will be the implementing agency. ADB will administer the TA through the Transport and Communications Division of the Southeast Asia Department. The consultants will work closely with ADB, DPWH, DOTr, MMDA, and Metro Rail Transit Corporation.

III. OBJECTIVE AND OUTPUTS

A. Objective

20. The consulting service aims to (i) define the project scope and delivery structure, (ii) prepare feasibility study of the ensuing project, (iii) prepare bidding documents for sub-project, and (iv) prepare institutional arrangements and capacity development program.

21. The initial stage of the project preparation activities will be to confirm the scope, core projects and timing of the TRTA activities. An individual consultant will be hired to assist with this activity. The consultant will be an urban transport specialist with an engineering degree or a degree in a related field. They should have over 10 years’ experience, preferable with working experience in the Philippines of Asia.

B. Output

22. **Output 1. Core and non-core subproject on pedestrian access and interchange improvements prepared.** To support the proposed sector loan the first output of the TRTA will prepare the core project, the pedestrian access and interchange facilities in the Ortigas area. A consultant firm will be hired to prepare all necessary documents for the core project, including: (i) project scope, (ii) cost estimates, (iii) project viability assessment, (iv) financial arrangements, (v) implementation structures, (vi) safeguard requirements for resettlement, environment and social aspects, (vii) approvals as required, and (viii) bidding documentation. For the pedestrian access projects that are not part of the core project a firm will be hired to prepare the necessary documentation. The same firm for output 1 would be required undertake this output. The initial stage of the work would be to agree suitable locations for pedestrian improvements along EDSA. Once a firm set of locations is agreed by government the work would entail project preparation activities including: (i) project scope, (ii) cost estimates, (iii) project viability assessment, (iv) financial arrangements, (v) implementation structures, (vi) safeguard requirements for resettlement, environment and social aspects, (vii) approvals as required, and (viii) bidding documentation

23. **Output 2. Preparation of measurers and implementation arrangements to improve public transport operations improved.** The public transport sub-projects for bus and MRT-3 improvements will include rolling stock, signals, and station improvement for MRT-3, bus reform for all public utility vehicles on EDSA, including a new franchising mechanism and a fleet renewal program. For both MRT-33 and bus full feasibility studies, project evaluation, safeguard documentation, implementation and contracting arrangements will be prepared under the TRTA.

24. **Output 3. Capacity development assessment, traffic management and institutional oversight requirements assessed and actions for improvement prepared.** A frim will be recruited to prepare the traffic management program for EDSA, including (i) traffic management planning and design concept for EDSA, (ii) traffic management improvement facilities such as new lane markings, improvement of interchanges, sidewalks, and traffic management center, (iii) traffic management and monitoring facilities and (iv) a program for the development and training of a traffic management unit.

IV. CONSULTANT STAFFING

25. The lists of the required consultancy are shown in Table 1 and 2.

Table 1. List of the required international consultancy

Title	Qualifications	Estimated person-months
Urban Transport Specialist/ Team Leader	Postgraduate degree in urban transport engineering, transport economics, or equivalent and at least 15 years of professional experience and knowledge of planning of (i) urban pedestrian ways, (ii) public transportation reform and (iii) urban traffic management plan.	10
Urban Transport Engineer	Postgraduate degree in urban transport engineering or equivalent and preferably 15 years of professional experience and knowledge in designing of urban pedestrian ways.	3
MRT Operation Specialist	Postgraduate degree in urban transport engineering or equivalent and preferably 15 years of professional	3

Title	Qualifications	Estimated person-months
	experience and knowledge in management of the operation of trains/light rail transit.	
MRT Facility Specialist	University degree in urban transport engineering, mechanical engineering, electric engineering or equivalent and preferably 15 years of professional experience and knowledge of planning/maintaining train facilities.	3
PPP Specialist	Postgraduate degree in public sector management, transport economics, transport engineering or equivalent, and professional experience in implementation of public-private partnerships (PPPs) with preference for the public transportation PPPs	3
Bus Operation Specialist	University degree in urban transport engineering or equivalent and preferably 15 years of professional experience and knowledge in management of the operation of buses.	5
Traffic Management Specialist	University degree in transport/urban planning, engineering, or a related field, and preferably 7 years of professional experience and knowledge in urban traffic management.	3
Traffic Safety Engineer	University degree in transport/urban planning, engineering, or a related field, and preferably 7 years of professional experience and knowledge in urban traffic safety.	2
Road Design Engineer	University degree in transport/urban planning, engineering, or a related field, and preferably 7 years of professional experience and knowledge in planning and designing of urban road interchanges.	2
Communication Specialist	University degree in communications, media relations or a related field. and preferably 7 years of relevant experience in providing communication assistance to projects preferably with strong preference for practical experience in public transportation projects.	3
Gender Specialist	University degree gender studies, social studies, urban studies or transport studies with strong focus on social aspects, gender related fields, or in a related field, and at least 7 years of relevant experience in gender analysis and gender mainstreaming in infrastructure sectors, with strong preference for practical experience in gender and transport. Work to include to gender analysis, collection of sex disaggregated data, and consultation with female users.	3

Table 2. List of the required national consultancy

Title	Qualifications	Estimated person-months
Architect/ Deputy Team Leader	University degree in architecture or equivalent, and at least 15 years of professional experience in the designing public facilities with strong preference in designing pedestrian walkways.	16
Architect	University degree in architecture or equivalent, and at least 10 years of professional experience in the designing public facilities with strong preference in designing pedestrian walkways.	12
Civil Engineer	University degree in civil engineering or equivalent and preferably 10 years of professional experience and knowledge of designing of urban transport structures	12

Title	Qualifications	Estimated person-months
Park Engineer	University degree in gardening or civil engineering or equivalent and preferably 10 years of professional experience and knowledge of designing public parks.	6
Bus Specialist	University degree in transport engineering, transport economics or equivalent and preferably 7 years of professional experience and knowledge of management of bus operation.	12
Traffic Management Expert	University degree in transport/urban planning, engineering, or a related field, and preferably 7 years of professional experience and knowledge in urban traffic management.	12
Road Designer	University degree in transport/urban planning, engineering, or a related field, and preferably 7 years of professional experience and knowledge in planning and designing of urban road interchanges.	12
Legal Advisor	University degree in law and being licensed as a legal professional in Philippines and preferably 5 years of professional experience on regulatory law in the context with the transport sector.	6
Financial Specialist	University degree in financing, economics or a related field, and preferably 7 years of professional experience and knowledge in financial assessment for public transportation project.	8
Procurement Specialist	University degree in communications, media relations or a related field, and preferably 7 years of relevant experience in public procurement of goods and civil works under official development assistance.	12
Social and Resettlement Specialist	University degree in social development or a related field. and preferably 7 years of relevant experience in resettlement and income restoration under urban infrastructure project.	8
Environment Specialist	University degree environmental engineering, environmental science or a related field, and preferably 7 years of relevant experience in environmental impact assessment and monitoring under urban transport project.	8
Communication Specialist	University degree in communications, media relations or a related field, and preferably 7 years of relevant experience in providing communication assistance to projects.	12
Gender Specialist	University degree gender studies, social studies, urban studies or transport studies with strong focus on social aspects, gender related fields, or in a related field, and 5 years of relevant experience in gender analysis and gender mainstreaming in infrastructure sectors, with knowledge and understanding about gender and transport.	12
CAD Operators	Technical qualification and certificate of competence in the use of AUTOCAD software to produce roadworks drawings.	24