RETA 6350: Sustainable Urban Transport
Ortigas Greenways: Demonstrating Innovation in Walkable Districts

Terms of Reference
Consultant Firm

A. Background

1. Economic growth and rapid urbanization has resulted in a crisis in transport systems across Asia and the Pacific. The unprecedented growth in private vehicle ownership and use has led to severe congestion, high accident rates and pollution, both local and global. The response to these problems has all too often focused on solutions aimed at the immediate concern of growing congestion, which manifest in expanded road capacity, grade-separated intersections, etc. There is growing understanding that "building out of congestion" by providing for ever expanding numbers of private vehicles is an unsustainable approach and that managing demand to the available supply is required to ensure urban transport systems can fulfill their role in providing access and mobility for people and goods.

2. ADB's Sustainable Transport Initiative (STI)[1] was born to address these urgent issues facing developing member countries (DMCs), and to align transport sector interventions with the guidelines provided by ADB's Long-Term Strategic Framework (Strategy 2020)[2].

3. Amongst others, the urban transport sub-sector is an area that will receive increased attention under the STI. Building on ADB's work in this subsector, most notably the new paradigm for sustainable urban transport,[3] a number of key areas will be supported, including parking, nonmotorized transport (NMT), public transport, pricing mechanisms, financing structures and capacity development.

4. Nonmotorized transport, and in particular walking, is the most basic of mobility options, but it is often the most neglected in terms of investment and policy support. Enhancing pedestrian and bicycle facilities can be a highly cost-effective means to simultaneously alleviate traffic congestion, reduce air and noise emissions, reduce greenhouse gas emissions, improve human health, create conditions for higher quality of life, stimulate new economic opportunities, and cultivate social equity. Planning and implementing NMT can also be achieved within modest investment levels.

5. Currently, ADB has few significant NMT initiatives to utilize as demonstrations of the possibilities to member governments and cities in the Asia and Pacific region. Developing a portfolio of such demonstrations will begin the process of catalyzing investment to basic accessibility across a wider scope.

[1] Available at: http://www.adb.org/documents/policies/sustainable-transport-initiative/Sustainable-Transport-Initiative.pdf.
[2] Available at: http://www.adb.org/Documents/Policies/Strategy2020/Strategy2020.pdf.
[3] Available at: http://beta.adb.org/publications/changing-course-new-paradigm-sustainable-urban-transport.

6. The Ortigas Central Business District (hereafter Ortigas) in Metropolitan Manila, Philippines has been identified as an opportunity for a demonstration project targeting NMT, due to the strong level of political support, a highly receptive business community, and the significant shared interests with ADB.

7. Ortigas is located at the junction of the cities of Pasig, Mandaluyong and Quezon, and is home to major business establishments, condominiums, shopping malls and recreation centers. Stakeholders from both the public and private sector have taken efforts to improve the pedestrian environment in Ortigas. These include the following;

- The current mayor of Pasig City Robert Eusebio has identified improvements to nonmotorized transport infrastructure as a key policy priority.
- Ongoing improvements of nonmotorized infrastructure, including elevated walkways, have been made by the local business community.
- In 2010, Pasig City commissioned Transport and Traffic Planners, Inc. in association with the University of the Philippines Planning and Development Research Foundation, Inc. to conduct a Pasig City Central Business District Land Use and Transport Study.
- In 2010, ADB engaged local stakeholders, such as the Ortigas Center Association, to consider planning and design options to enhance public space in the Ortigas area.
- In 2009 and 2010, the Clean Air Initiative for Asian Cities (CAI-Asia) has assisted to galvanize local stakeholder support for improvements to pedestrian conditions in the Ortigas area; in addition, CAI-Asia has conducted field walkability surveys and pedestrian preference interview surveys as part of an ADB study “Walkability in Asian Cities: State and Issues”.
- In 2009, work was conducted by ADB Intern Kosuke Takahashi (University of Tokyo) on “Road Safety Improvements for Vulnerable Road Users by Analyzing Hazardous Spots”, focusing on the Ortigas area.
- In 2005, a Master Redevelopment Plan and Urban Design report was commissioned by Ortigas Center Association Inc., and executed by Palafox Associates. The report proposed improvements and facilities for pedestrians.

8. Despite these efforts, pedestrians continue to suffer from the lack of quality NMT infrastructure. This is manifested in the limited capacity for pedestrians along Epifanio de los Santos Avenue (EDSA), the lack of a direct route from Ortigas Mass Rapid Transit (MRT) station towards central Ortigas, and the lack of permeability across major throughways such as ADB Avenue. ADB, through the activities rendered through this TOR, wishes to support and enhance the initiatives taken by the actors indicated above to improve this situation.

B. Aim and Objectives

9. In view of the current situation, the ultimate aim of this project is to develop a high-quality demonstration on walkability in the Ortigas area, which is financially sustainable, socially inclusive and environmentally friendly. One of the highlight outcomes would be the development of an "Ortigas Greenway" that provides a high-quality walking corridor through Ortigas, with an initial linkage between the Ortigas MRT station to Ortigas Park.

Via the above, several synergistic objectives can be achieved, including:

- The delivery of a tangible nonmotorized demonstration for developing member country (DMC) and city officials in the region.
- Demonstration of a sustainable financing mechanism involving the private sector (Public Private Partnership) for nonmotorized interventions.
- Improvement of accessibility conditions for ADB employees and thereby improving ADB productivity.
- Improvement of accessibility conditions for the wider Ortigas community and thereby indicating ADB's commitment to being a contributing member of its community.
- Building upon ADB's own Greening the Headquarters initiative by adding a component on transport.

10. These objectives can only be achieved, though, if the appropriate planning base and project vision is created. Without a conceptual rendering of the design potential for the walking environment around ADB and within the adjacent areas of Ortigas, the local government officials and local property owners will not be motivated to transform the area with the appropriate investment in pedestrian and cycling facilities. The consultancy services requested in this document will establish and visualize the required vision to gain the commitments by major stakeholders to transforming the walking environment of the Ortigas area of Manila.

11. While this investment effort will be focused upon the Ortigas area, the long-term objective is to create an example that could be replicated in cities across the Asia and Pacific region. ADB is unique in its ability to attract and host officials across the region through conference and meeting events, as well as official sessions with government delegations. By offering a high-quality demonstration at the doorstep of ADB, the organization will be making a strong statement regarding its commitment to socially-inclusive and environmentally sustainable transport.

C. Scope of Work

12. This study and research will deliver the conceptual phase of the Ortigas Greenways initiative. To understand the current conditions and achieve a context-sensitive design, the initial work will involve analyzing pedestrian, traffic, and land-use conditions in the study area.

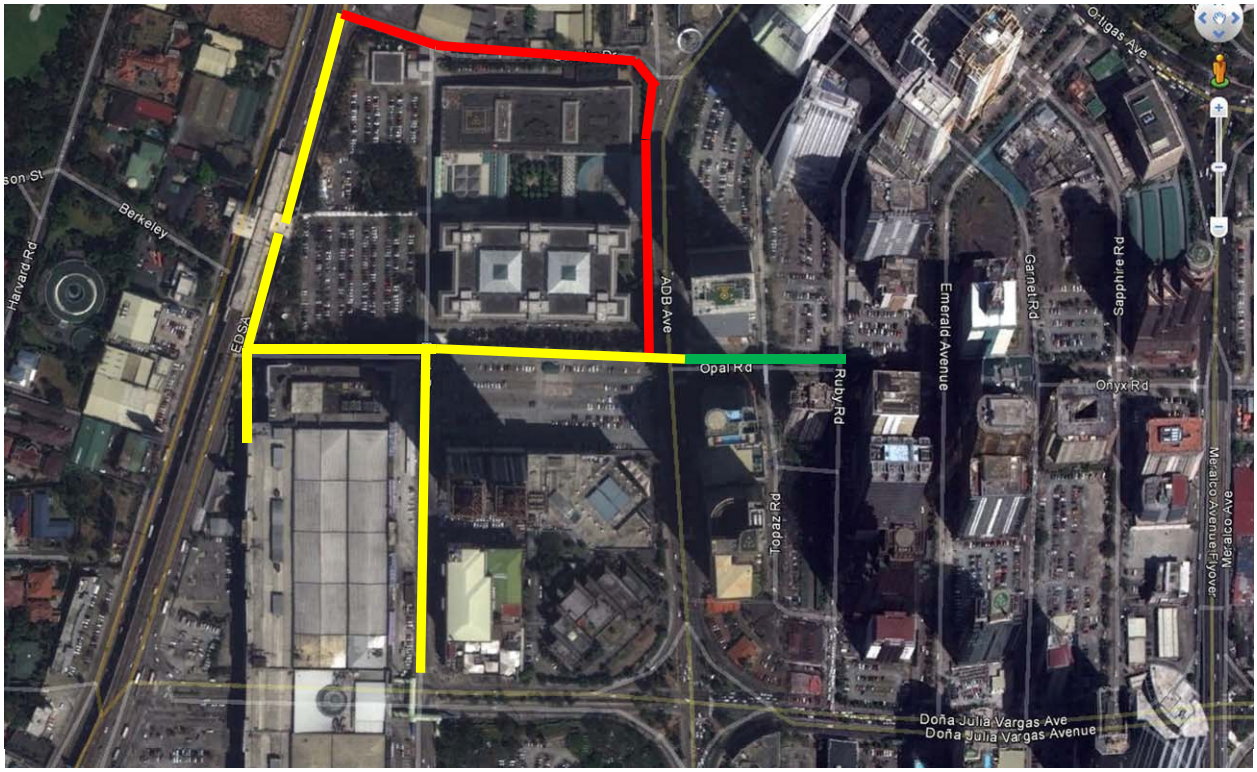
13. The project work will then focus upon conceptual planning activities to formalize the Ortigas Greenways vision across local government, the local business community, and ADB. The creation of design renderings for alternative NMT options will assist in motivating officials to recognize the potential of the area as a demonstration site.

14. To move towards eventual implementation of the Ortigas Greenway concept, the support and cooperation of a wide range of stakeholders will be necessary. This technical assistance project thus also involves a stakeholder engagement process that will strive to cultivate strong long-term relationships for project implementation.

15. The full study area encompasses the area delineated in the figure below, which is the portion of the Ortigas district surrounded by Shaw Boulevard to the south, EDSA to the west, Ortigas Avenue to the north and across Meralco Avenue and towards Metrowalk to the east. The Service Provider will conduct an overview assessment of the design work completed to date on this broader study area and will assist in enhancing the existing designs.

Figure 1: The study area, as defined by the yellow-boarded lines.

16. A more detailed geographical scope will be developed in conjunction with ADB to define the area for the preliminary design work on a demonstration Ortigas Greenway. At present, the likely greenway corridor will connect the Ortigas MRT station to Opal Road and Ortigas Park (see figure below). A portion of this alignment is expected to be constructed as an elevated walkway. In addition, design work will also be conducted on the other footpath segments that border ADB's headquarters facility (i.e. the relevant footpath segments along EDSA, Guadix Drive, and ADB Avenue). It is projected that the total selected segments for more detailed analysis will total approximately 1,400 meters in length.



Footpath upgrades

Potential elevated sections

Potential greenway street conversion

Figure 2: Alignment for detailed work on the Ortigas Greenway and footpath upgrades.

17. The study should also take into account the wider linkages to origins and destinations outside of the study zone. The initial study zone is to be a demonstration effort with a medium-term objective of replication in the greater Pasig City area. For this reason, consideration of connectivity and integration with pedestrian and public transport linkages will be useful.

D. Tasks

18. The specific tasks to be completed under this conceptual phase of the Ortigas Greenways initiative are as follows:

Task 1: Scoping study

The Service Provider shall conduct a scoping study and situational analysis on the existing NMT environment in Ortigas. This analysis shall build on existing NMT design studies and include assessments of public transport, motorized traffic, land use, and stakeholders in the study area. The scoping study shall consist of the following detailed components:

1.1 Background overview of initiative

- Provide a brief summary of previous research and analysis conducted on improving NMT conditions in the study area.

- In conjunction with the relevant stakeholders, articulate the vision and objectives of the Ortigas Greenways Initiative.

1.2 NMT assessment

The Service Provider shall assess and summarize in a report the existing conditions for pedestrians and cyclists in the study area. The Service Provider shall also establish the NMT user volumes and movement patterns that will assist in developing alternative designs.

- Conduct an assessment of the major desire lines for pedestrian traffic within the study area by estimating the approximate pedestrian flows (persons per hour per direction) on the major pedestrian corridors and intersections in the area, and plot these flows on a GIS-based map; conduct pedestrian count surveys with sufficient sample size to ensure a minimum confidence level of 75% accuracy.

- Conduct an assessment of all pedestrian crossings within the study area, including both formal and informal crossings; note the level of deviation between formal crossings and actual desire lines; note the level of delay caused to pedestrians; note the capacity of the crossings in relation to the levels of pedestrians; note the surface quality and state of maintenance; note the existence of any dedicated pedestrian signals; note the quality and legibility of related signage and road markings; note the existence and location of all drop curbs and note any crossings without drop curbs; note the provided slope and width of the drop curbs.

- Measure the width of the available roadway infrastructure[4], including overall right-of-way width, width of footpaths, effective width of footpaths (after accounting for obstructions), width of each traffic lane, and width of any delineators or medians.

[4] Overall right-of-way widths may be measured using digital mapping techniques;

- Assess the state of footpaths (including elevated segments), including surface quality, drainage, lighting, level of crowdedness, protection against the weather, level of exposure to traffic fumes/noise, level of exposure to safety/security risks and existence/quality of street furniture[5].

- Estimate the approximate number of bicycle users entering the study area by location; conduct cyclist count surveys with sufficient sample size to ensure a minimum confidence level of 75% accuracy.

- Assess the level of bicycle infrastructure provided, including dedicated cycle lanes, advanced stop lines and signage.

- Note the location of any existing formal bicycle parking facilities in the study area and plot on a GIS-based map.

- Provide photo imagery of the existing conditions, including images of each major intersection, major pedestrian crossings (both formal and informal), and existing problems with the pedestrian environment (e.g. blocked footpaths, narrow footpaths, unsafe crossings, lack of universal accessibility, lack of water drainage, lack of street lighting, uneven pavement tiles or holes in the pavement, etc.); at least 100 high-resolution images of existing conditions should be provided in the form of a digital photo library for the study area.

- Provide video clips of the existing conditions, including a recording of peak pedestrian flows on the major pedestrian corridors and a recording of the major problems with the existing pedestrian infrastructure; at least 15 high-quality video clips of these issues should be provided in the form of a video library for the study area.

1.3 Public transport assessment

- Assess the state of the major public transport stations and staging facilities within the study area, including MRT stations, jeepney ranks and stations, FX ranks and stations, tricycle ranks, and bus stations; place the existing location of each of these facilities on a GIS-based map; provide an assessment of their level of quality, including accessibility, maintenance/cleanliness, safety, lighting, comfort levels (e.g. provision of seating/protection from the weather), legibility (signage and system information), and relative air quality levels for waiting passengers .

- Plot the routes of jeepney, FX, and any bus services that operate inside the study area[6] on a GIS-based map; include the full routing of these services even if a large portion of the route is outside the study area.

- Provide an approximation of the public transport passenger volumes into and within the

[5] Footpath widths should be conducted by physical measurement. For other aspects, qualitative techniques may be used.

[6] Bus services operating on EDSA will not be considered part of the study area. However, the full route length and area of operation will be shown for jeepney and FX services that enter into the study area.

study area, in terms of both the passengers per peak morning hour per direction and the total daily passenger trips; conduct passenger count surveys with sufficient sample size to ensure a minimum confidence level of 75% accuracy.

- Provide tabular information on the fare costs for public transport services entering into the study area.

- Document the number of public transport owners, operators, and associations that provide services operating in the study area.

- Assess the level of interconnectivity between public transport modes, including ease of moving between modes, and availability of information/signage.

1.4 Motorized traffic assessment

- Note the location of all signalized intersections in the study area.

- Provide an approximate estimate of vehicle flows entering the study area during the morning peak hour and during the entire day.

1.5 Land use assessment

- Plot the land use characteristics (retail, office, residential, parking facilities, educational, etc.) of the major properties in the study area on a GIS-based map.

- Note the ownership details (name and contact details) of the major property holdings in the study area.

- Assess the quality of public spaces (e.g. parks), including their safety, level of accessibility, comfort, and level of maintenance.

1.6 Stakeholder assessment

- Identify all relevant stakeholders in the study area, including major property owners, business associations, public transport operating companies, local government agencies and officials, metropolitan government agencies and officials, national government agencies and officials, traffic police, civic organizations, vendor groups or representatives, etc.

- Develop a directory with detailed contract information of representatives of each major stakeholder.

Task 2: Conceptual and preliminary design

The Service Provider shall review and enhance the existing conceptual designs developed to date by the Pasig City local government, with added attention to the design of the segment linking Ortigas MRT station to Ortigas Park. The intent of this contribution is to develop conceptual designs of enhanced NMT and public transport facilities in the study area. These conceptual designs will be articulated

through digital renderings.

2.1 Conceptual design enhancements to existing Pasig City plans

- Conduct design work shop sessions on NMT and public space enhancements to the existing planning efforts undertaken by the Pasig City municipal government. These design sessions will take place with ADB and other relevant stakeholders, including the business community and local government agencies. These design sessions may be included as part of the stakeholder sessions outlined in Task 3 below. The work shop sessions will encompass conceptual design across the entirety of the study area.

- Summarize design recommendations on the NMT and public enhancements to the Pasig City plans with written descriptions, including recommendations on crossings, pavement and tiling materials, walkway widths, elevated structures (to the extent required), street furniture, landscaping, street lighting, public art, integrated public transport components, and integrated commercial facilities.

- Shortlist the areas and concepts to be displayed in renderings, and determine the final list of chosen targets in conjunction with ADB.

- In consultation with the ADB project team, develop at least 7 high-quality and high-resolution renderings of different perspectives of the NMT enhancements in the broader study area. The rendering software must employ photo-realism capabilities to make the resulting product relatively indistinguishable from an actual photo.

2.2 Conceptual and preliminary design of Ortigas Greenway segments

- Develop both conceptual and preliminary designs of the Ortigas Greenway segments, which include a corridor from the Ortigas MRT station to Ortigas Park, along Opal Road, as well as enhancements to footpaths at the periphery of ADB headquarters (these footpaths include along ADB Avenue, Guadix Drive, and EDSA). The preliminary design will include cross-sectional drawings of all segments, preliminary specification of the footpath materials, structural design of any required elevated sections and bridge/underpasses, and preliminary specification of all components (including street furniture, landscaping, street lighting, public art, street furniture, integrated public transport facilities, integrated commercial facilities, water drainage infrastructure, electric and telecommunications utilities/connections, bollards, curbs, etc.).

- Summarize design details and recommendations for the Ortigas Greenway segments into a written report, including the appropriate drawings and sketches.

- Shortlist the areas and concepts to be displayed in renderings and a video, and determine the final list of chosen targets in conjunction with ADB.

- Develop at least 10 high-quality and high-resolution renderings of different perspectives of the Ortigas Greenway segments.

- Develop a high-quality video of at least 60 seconds of the Ortigas Greenway segment

between the Ortigas MRT Station and Ortigas Park. The video will incorporate reality and animated features.

- The rendering and video animation software must employ photo-realism capabilities to make the resulting product relatively indistinguishable from an actual photo or video. Possible types of software that can produce the intended level of rendering and animation quality, include AutoCAD, Autodesk 3DS, Cinema 4D, ImageVis3D, Rhinoceros 3D, SketchUp, and Softimage 3D.

2.3 Cost estimation

- Provide a costing estimation of the proposed infrastructure for the Ortigas Greenways demonstration segments.

- Provide a costing estimation of the maintenance requirements for the Ortigas Greenways demonstration corridor.

Task 3: Stakeholder engagement

The Service Provider shall organize stakeholder engagement sessions with the major governmental and property owner groups in the study area. The Service Provider shall also assemble, print, and disseminate copies of the outputs from Tasks 1 through 3. For all stakeholder sessions, the Service Provider shall record discussions and produce meeting minutes.

3.1 Governmental stakeholders

- Organize and conduct work shop sessions with the Pasig City municipality (including transport department, urban development department, and traffic police).

- Organize and conduct work shop sessions with the Mandaluyong City municipality.

- Organize and conduct an informational session with the Metropolitan Manila Development Authority.

- Organize and conduct an informational session with representatives from National Government.

- Conduct a final joint governmental stakeholder session with all the above governmental stakeholders.

3.2 Property owners

- Organize and conduct general work shop sessions with the Ortigas Center Association, individual property owners, and property owners of large commercial establishments in the area.

- Organize and conduct focused work shop sessions with property owners along the segments of the Ortigas Greenway.

3.3 International NMT design forum

- Organize and assist in conducting an international NMT forum on the design of facilities in the study area.[7]
- Develop an invitation list of local and international NMT design experts.
- Conduct a walking tour of the study area with the NMT experts.
- Hold a design charrette with the expert group and document the recommendations.

E. Reporting and time lines

19. The tasks described in these terms of reference are expected to commence in December 2011 and terminate by 31 May 2012.

20. The Service Provider will conduct the work both from their offices, which are expected to be based in Manila, Philippines, and from on-site inspection. The Service Provider will be responsible for the cost of local travel to all meeting and to site inspections.

21. The Service Provider will report to the ADB's TA Team Leader/Project Officer for the Ortigas Greenways project.

22. The tasks are to be executed according to the following timetable:

i) Inception meeting – December 2011

The inception meeting provides an opportunity for ADB to review the terms of reference with the Service Provider. Suggestions on how to proceed and develop the project will be discussed. Modifications to the original scope and tasks can be discussed at the inception meeting. Any modifications, though, must be made only with the expressed written consent of ADB.

ii) Inception report – Two weeks after holding inception meeting

The inception report provides an overview of the project, the proposed methodology, and a summary of the major issues raised during the inception meeting.

iii) Scoping study (Task 1)

Draft scoping study – 17 February 2012

[7] ADB will be responsible for directly funding the travel of the international resource persons, including coverage of the costs of air tickets, local transfers, hotel, and daily allowances.

iv) Conceptual and preliminary design study (Task 2)

Submission of proposed targets and subjects of renderings – 24 February 2012

All renderings – 30 March 2012

Video clip – 6 April 2012

v) Stakeholder engagement and outreach (Task 3)

Stakeholder engagement sessions – From January 2012 through May 2012

International design forum – February or March 2012

vi) Full report

Final draft of full report (including Scoping Study, Conceptual and Preliminary Design Study, Renderings, and Stakeholder Engagement Summary) – 18 May 2012

vii) Final review – 29 May 2012

The final review session will be conducted with ADB project staff at ADB headquarters in Manila. This session will permit a review and discussion on the major findings and recommendations from the study, as well as a discussion on the way forward towards implementation.

Any proposed deviation from the above schedule is to be discussed with the client with the reasons for modification given.

F. Expected Expertise and Qualifications

23. The Service Provider will consist of a team of at least three technical experts who are fully capable of covering all the following skill sets:

(i) Urban / Transport Planner (2 person-months)
(ii) Architect (1 person-month)
(iii) Survey Specialists (3 person-months)
(iv) Graphic Designer / Multimedia Specialist (1.5 person-months)
(v) Communications Specialist (1 person-month)

24. The Service Provider must designate a person who will cover each of the above specialties. The same person may be proposed for more than one specialty. However, the proposal must include a team of at least three persons.

25. The table below summarizes the estimated level of effort associated with the tasks described in the terms of reference. This estimate is only provided for comparative purposes; the Service Provider is responsible for developing a team and schedule that result in the full delivery of the described outputs. The Service Provider may thus choose a different team structure and level of effort than described in the table below.

Task	Personnel	Estimated level of effort (days)
Task 1: Scoping Study		
1.1 Background overview	Urban / Transport Planner	3
1.2 NMT assessment	Urban / Transport Planner	10
	Survey Specialists	40
1.3 Public transport assessment	Urban / Transport Planner	2
	Survey Specialists	20
1.4 Motorized traffic assessment	Urban / Transport Planner	3
	Survey Specialists	12
1.5 Land-use assessment	Urban / Transport Planner	3
	Survey Specialists	12
1.6 Stakeholder assessment	Urban / Transport Planner	1
	Communications Specialist	2
	Survey Specialists	5
Task 2: Conceptual and Preliminary Design		
2.1 Conceptual design review of study area	Urban / Transport Planner	5
	Architect	10
	Graphic Designer	20
2.2 Preliminary design of Ortigas Greenway	Urban / Transport Planner	7
	Architect	15
	Graphic Designer	20
2.3 Cost estimate	Urban / Transport Planner	6
Task 3: Stakeholder Engagement		
3.1 Government stakeholders	Urban / Transport Planner	10
	Communications Specialist	10
3.2 Property owners	Urban / Transport Planner	10
	Communications Specialist	10
3.3 International Design Forum	Urban / Transport Planner	2
	Architect	2

26. The minimum and desired experience of the above five skills are listed in the table below.

Position	Required	Desired (in addition to required)
Urban / Transport Planner (with demonstrated experience in NMT)	▪ A bachelors university degree from an accredited institution in urban planning, transport planning, civil engineering, environmental science, or related field; ▪ Minimum of eight years of work experience conducting research or direct planning activities in transport policy, transport planning, or urban planning; ▪ Previous direct project experience with infrastructure cost estimates; ▪ Ability to work collaboratively in a team environment; ▪ Excellent oral and written communications skills in English, including ability to write technical papers and studies.	• A masters or doctoral level degree in the stated specialties; • Direct experience with the planning and implementation of pedestrian and bicycle facilities;
Architect	▪ A bachelors university degree from an accredited institution in architecture, urban design, urban landscaping or related field; ▪ Minimum of ten years of work experience in the design of streets, street furniture and public spaces; ▪ Ability to work collaboratively in a team environment; ▪ Excellent oral and written communications skills in English, including ability to write technical papers and studies.	• A masters or doctoral level degree in the stated specialties; • World-class recognition in the stated specialties.
Survey Specialists	▪ Qualification from an accredited institution with a minimum two-year degree; ▪ Academic training inclusive of course work in a technical field.	• Experience with urban planning and NMT infrastructure; • Experience with traffic surveys.
Graphic Designer / Multimedia	▪ Qualification from an accredited institution in graphic design or related	• A masters or doctoral level degree in the stated specialties;

Specialist	field; ▪ Minimum of five years of work experience in graphic design; ▪ Experience with digital video shooting and editing; ▪ Ability to work collaboratively in a team environment;	• Previous experience in design of urban landscapes.
Communications Specialist	▪ A bachelors university degree from an accredited institution in public communication or related field; ▪ Minimum of eight years of work experience in communications and/or public participation activities, involving both the public and private sector; ▪ Ability to work collaboratively in a team environment; ▪ Excellent oral and written communications skills in English, including ability to write technical papers and studies.	• A masters or doctoral level degree in the stated specialties; • Familiarity with and good working relationship with key local stakeholders, including the city administrations of Mandaluyong and Pasig City, the local business community, public transport operators, local residents and property owners.