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Traffic Impact Assessment in the Philippines: A Gap Analysis with Australian Practice

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Abstract

Traffic Impact Assessment (TIA) is a vital tool for keeping transport infrastructure and services in step with land development. In the Philippines, some local government units have developed and legislated TIA requirements, but application nationally has so far been inconsistent and ineffective. This paper benchmarked Philippine TIA practice against Australian practice, which has a longer-established, state-based regulatory framework, to identify the gaps driving this inconsistency. The comparison identified several critical weaknesses in current Philippine practice. Recommendations for strengthening TIA practice in the Philippines are then proposed in light of these findings.

Keywords: *traffic impact, land development, traffic modelling, parking rates*

Traffic Impact Assessment (TIA) is a planning and regulatory tool requiring land development proponents to demonstrate that their projects will not create unacceptable traffic conditions on surrounding roads and intersections. When properly conducted, TIA achieves three outcomes:

- it quantifies the traffic generated by a development and its effect on nearby intersections
- it identifies specific mitigation measures that will keep traffic operations within acceptable limits
- it provides legally enforceable basis for requiring developers to fund or deliver the transport and traffic improvements to mitigate the impacts brought about by their projects.

In the Philippines, TIA is a growing requirement, but practice has so far have not resulted in consistent and meaningful outcomes that are expected from an effective TIA practice noted above. On the other hand, Australia has a mature TIA practice that has been effective at delivering the intended outcomes of TIA. It was therefore decided to compare Philippine against Australian TIA practice to identify gaps in Philippine TIA practices. The purpose is to document that gap, draw on the Australian experience to suggest what effective reform looks like, and provide a practical reform framework for Philippines to strengthens its TIA practice.

Literature Review

Regidor and Teodoro (2003) reported that a draft TIA guideline was prepared by the University of the Philippines National Center for Transportation Studies Foundation Incorporated in 2001 (updated version, UP-NCTSFI 2007). They noted that at that time only the Province of Laguna passed a resolution requiring developers to submit a TIA report, noting also that the implementation of TIA reports have been ineffectual. In the same vein, Regidor and Teodoro (2005) reports that the responsibility for providing solutions to potential traffic problems brought about by the proposed development is typically passed on to the local authority as project proponents find the solutions costly and would rather avoid them. In Metro Manila, for example, countermeasures are typically relegated to the Metropolitan Manila Development Authority (MMDA) with its traffic management

mandate while in other areas it would be the local government's traffic management unit.

Based on a comparative case study of Thailand and the Philippines, Limapornwanitch et al. (2005) identified institutionalization and legalization challenges, unavailability of established local planning and engineering standards, lack of trained personnel and severe budget limitations as the bottlenecks preventing the effective implementation of TIA. They highlighted the need for evaluators to track or monitor the implementation of mitigation measures of approved projects. At the same time, there needs to be opportunities for the community to assess these changes. If developers do not follow the final agreement, there should be some measures of accountability, such as penalty charges to ensure compliance.

In a more recent paper, Hora (2026) noted that TIA is often included in the Environmental Impact Assessment as required to get an Environmental Compliance Certificate from the government. Hora (2026) reported that although the Department of Public Works and Highways (DPWH) and the National Center for Transportation Studies (NCTS) have TIA guidelines, the lack of a national law requiring TIA has led to inconsistent practices. Hora (2026) further stated that some Local Government Units (LGU) have created their own local rules, but the practice is still not consistent nationwide. An example of an LGU TIA Ordinance is 'An Ordinance for the Imposition of Transport Development Fees (TDF) of Pasig City (Ordinance no. 26, 2017). The Ordinance required TIA as a requirement for the issuance of a building permit. It is worth noting that Villareal and Vergel (2011) illustrates how the technical output of a TIA can be used to calculate and legally justify the financial charge to be levied on the developer as part of a Traffic Impact Fee (TIF) mechanism.

Australia has an established Traffic Impact Assessment practice. Australian TIA practice is underpinned by a nationally recognized guideline developed and published by Austroads, which is the association of Australian and New Zealand transport agencies. The Austroads Guide to Traffic Management (GTM) Part 12 Integrated Transport Assessment for Developments (Austroads, 2020) details the framework for TIA practice in Australia. The Austroads TIA framework is referenced by Australian states to formulate their official statewide TIA guidelines. Australian states publish guidelines for TIA such as the following:

- Guide to Transport Impact Assessment Technical Guidance for Transport Practitioners (Transport for New South Wales, 2024),
- Transport Modelling Guidelines (Transport for New South Wales, 2025),
- Guide to Traffic Generating Development (Roads and Traffic Authority New South Wales, 2002).

For redevelopment and greenfield projects, Australia also develops a Precinct Structure Plan (PSP). A PSP is a plan for an area that sets out the preferred spatial location of key land uses and infrastructure. A PSP includes a Traffic Impact Assessment of the expected aggregate (or combined) developments in the area to prepare a set of transport and traffic development projects to support the expected traffic in the area and to determine contributions of developers in area to the estimated funding required. Examples of the relevant guideline for Australian practice of developing PSPs is the Precinct Structure Planning Guidelines: New Communities in Victoria (Victorian Planning Authority, 2021). The application of TIA on a PSP results in a list of required transport and traffic development projects to support the PSP. The cost of these projects then forms the basis of the Development Contributions Plan (DCP) as explained in the Guide to Infrastructure Contributions (Department of Planning, Housing and Infrastructure, 2025).

There is no equivalent PSP practice in the Philippines, although the Philippine Comprehensive Land Use Plan (CLUP) has some elements of a PSP. The Philippine CLUP does not include a TIA, whereas the Australian PSP is supplemented by a TIA. Moreover, the Philippine CLUP only provides a general land use plan, whereas the Australian Precinct Structure Plan is a detailed land use plan at the block level of resolution and it specifies road cross-section standards and detailed transport network, including concept drawings of intersections. This allows costing of these projects which then forms the basis of prospective developers' contribution.

Comparison of Philippine and Australian TIA Frameworks

The Philippine and Australian TIA Frameworks are compared in Table 1. Qualitatively, Philippine and Australian TIA Frameworks are similar. In specific aspects, Australian Framework has stronger requirements than Philippine Framework in the following aspects.

1. TIA is required for a Development Application which is done earlier than a Building Permit. This clarifies the use of the land that the project is to be built on at an early stage in the project design process, thus key transport and access requirements can already be considered at an

Table 1. Philippine and Australian Traffic Impact Assessment (TIA) Frameworks.

	Philippine TIA Framework	**Australian TIA Framework**
When is a TIA Required?	Support application of a Building Permit	Support application of a Development Application
Level of detail	Traffic Impact Assessment for sizeable developments and access needs.	Traffic Impact Assessment for sizeable developments and access needs, otherwise a Traffic Impact Statement (qualitative only) may be required.
TIA Methodology	Determination of scope of work Data collection Traffic impact analysis Traffic impact mitigation	Scoping and background conditions Proposed development analysis Impact assessment and mitigation Documentation
Land Use Trip Generation and Parking Requirements	Trip Generation Resources produced by the Institute of Transportation Engineers (ITE) Locally-surveyed trip generation rates	Average method: use of trip generation rates (preferred method for smaller developments) Benchmarking method: use of surveyed trip generations from similar developments First principles method: estimate trip generation based on evidence-based assumptions
Parking Requirements	Parking Generation Resources produced by the Institute of Transportation Engineers (ITE) Locally-surveyed parking generation rates	Specified parking rates for specific development types. First principles method: estimate parking rates based on evidence-based assumptions.
Performance Indicators	Capacity analysis, level of service, adequacy of parking, safety concerns, provisions for bicycle, pedestrian or public transport access	Multimodal performance criteria including walking, cycling, public transport, road, and freight & servicing
Transport Modelling	Use of standard procedures for analysis such as the Highway Capacity Manual (HCM) method.	Supported by Transport Modelling Guidelines
Road safety and access assessment	Traffic safety and access be covered by the TIA.	Supported by Road Safety and Access Assessment Guidelines.
Impact Mitigation	Development and evaluation of potential improvement measures needed to mitigate the impact of the development to the level defined by local/ state policies.	Mitigation measures should be assessed within the TIA and agreed with relevant authorities. For greenfield or redevelopment, the aggregate impacts of developments are accounted for and transport and traffic improvement projects are prepared to meet the transport demand of the precinct.
Developer contributions	The developer, government and other stakeholders will discuss the scope of transport and traffic improvement measures and who will pay for them. Developers will also submit development/construction plans and specifications incorporating the approved measures. Developers pays a Transportation Development Fees based on a fixed table of rates.	The minimum level of contribution is assessed on the basis of maintaining the performance level (e.g. average delay) in future year on the adjacent road network which would have otherwise occurred without the development. For projects within a Precinct Structure Plan, developers pays a Development Infrastructure Levy based on its proportional share of total cost of the specified infrastructure projects required by the precinct.

earlier stage.
2. Traffic Impact Statements may be required for smaller projects. Smaller projects may cause disruptions to major transport corridors if access and parking are not adequately considered even though traffic generation is not high enough to justify a TIA.
3. Guidelines for Traffic Generation and Parking requirement estimation methodologies gives weight to local and specific conditions of the project. The appropriate method for a development can be tailored specifically to the attributes of the project.
4. Transport/traffic modelling is guided by a separate specialist guideline. TIA is essentially a traffic modelling exercise; hence, the quality of a TIA report is determined by the quality of the traffic modelling analysis.
5. Traffic safety considerations are covered by separate specialist Traffic Safety Assessment Guideline.
6. Scope of impact mitigation is well-defined. It specifies the delineation of what is to be addressed by the developer.
7. For greenfield and redevelopment precincts, the aggregate impacts of individual projects from single or multiple developers have been identified ahead of time. This allows for improved Right-of-Way reservation and improved scoping of transport and traffic infrastructure services to meet anticipated generated traffic.
8. Contributions of developers to funding of transport and traffic infrastructure are based on a transport and traffic infrastructure program. This program of improvements is guided by TIA.

Comparison of Philippine and Australian TIA Practice

To better benchmark Philippine TIA practice to Australian TIA practice, real-world TIA reports from the Philippines and Australia were compared. The comparison focused on the technical execution of TIA. Five (5) Philippine Traffic Impact Assessment Reports were reviewed. These reports were submitted from the period 2018 to 2023. These TIA reports were for significant land developments including multi-story commercial, mixed-use and residential condominium projects. Ten (10) Australian Traffic Impact Assessment Reports were reviewed. These reports were submitted from the period 2017 to 2024 for a range of projects including small-scale residential accommodations to major town centers. Due to the sensitive nature of TIA reports, the specific nature of these reports was withheld from this paper and only relevant information were presented in this paper.

The Philippine and Australian TIA reports are compared in Table 2. The general content and form of Philippine and Australian TIA reports are similar. The key difference between Philippine and Australian TIA practice is that Australian TIA reports pay closer attention to marginal improvements that can be attributed to the development project, which can then inform the setting of the developer's monetary contribution to the implementation of the marginal improvements to the transport and traffic facilities. To this end, Australian TIA practice is more detailed and applies more refined analysis techniques that are better suited for assessing the impact of development projects. Traffic analysis methods applied in Philippine TIA reports tend to lack the level of detail necessary to examine marginal impacts of development projects on nearby critical intersections.

Summary of Major Findings

A TIA has three objectives as noted earlier. Major findings in gaps in Philippine TIA practice are summarised as follows:

Gaps in meeting TIA Objective #1: TIA quantifies the traffic generated by a development and its effect on nearby intersections. Philippine and Australian TIA practices are qualitatively similar in meeting this objective. There are, however, two major gaps in Philippine practice relative to Australian practice.

- The first gap is in traffic modelling practice. Philippine TIA methodology of using Volume-to-Capacity Ratio (VCR) analysis based on fixed lane capacities are not adequate nor appropriate for TIA of development projects. VCR analysis is too coarse as a modelling technique for assessing marginal impacts of developments and identifying improvements to intersection geometry and control. Australian TIA practice applies lane-based microanalytical methods to identify upgrades and improvements to mitigate the effect of development traffic.
- The second gap is in aggregating the impacts of projects from multiple developers in the same general area. There is no mechanism in Philippine TIA practice to assess a group of neighbouring development projects. Australian practice of developing a Precinct Structure Plan can account for all existing and potential development projects in an area, and their aggregate transport and traffic requirements are analysed and the required transport and traffic infrastructure and services are identified. The funding needed is also estimated and a funding

Table 2. Comparison Philippine and Australian Traffic Impact Assessment Reports.

	Philippine TIA Reports	**Australian TIA Reports**
Scope of TIA	Definition of impact area Baseline traffic Generated traffic Parking requirements Traffic analysis Countermeasures	Definition of project Existing traffic conditions Generated traffic Parking requirements Traffic analysis Concept Intersection Designs Supporting notes: Traffic Modelling
Traffic Generation	Trip rate method has been applied with the following sources used: A Review of Trip and Parking Generation Rates in the Philippines (Regidor, 2006), note that this is an academic review referencing external sources and not a guideline. Trip generation rates based on the consultant's database. Trip generation rates based on observed data on similar developments (no details given).	Trip rate method has been applied. Trip rates surveyed from past studies were applied.
Parking Requirements	Based on Implementing Rules of the Philippine National Building Code (2005). Minimum requirements have been applied.	Parking standards stipulated by Precinct Structure Plan apply.
Traffic Modelling	Mainly use of Volume-to-Capacity Ratio method using a simplistic approach of assuming a fixed capacity by number of lanes. No assessment of pedestrian crossing facilities performance. Assumptions of lane hourly capacities (900 to 1,100 pcu/lane) are unsubstantiated and unrealistic. There was one TIA report that applied a traffic modelling software.	High resolution lane-based modelling using microanalytical methods. Intersections are modelled considering detailed geometry and control to estimate capacity with a higher degree of sophistication (e.g. short lane modelling, traffic signal settings, etc.).
Performance Assessment	Level-of-Service (LOS) based on Volume-to-Capacity Ratio have been used. The LOS Method applied was not referenced.	Level of Service based on average delay, Volume-to-Capacity Ratio (or degree of saturation), delay, and queue length. Performance measures are stipulated by the relevant Traffic Modelling Guidelines.
Recommended measures	Various traffic management measures. None of the reviewed TIA proposed intersection geometry improvements.	Well-defined measures are recommended. Concept drawings of intersection geometry improvements are included.
Developer contribution	There were no recommendations on the cost apportionment of recommended transport and traffic improvements in any of the reports reviewed.	Cost apportionment to be covered by the developer is well-defined. For example, in one case it was recommended that intersection upgrade is required and that the developer should pay for a new auxiliary lane, while the rest of the scope of works will be for other sources, e.g. public funds.

mechanism is established on this basis.

Gaps in meeting TIA Objective #2: TIA identifies specific mitigation measures that will keep traffic operations within acceptable limits. While on paper, Philippine TIA Frameworks call for this, in the Philippine TIA reports reviewed, the mitigation measures recommended do not align well with the identified traffic issues resulting from development traffic. Recommended mitigation measures were also not assessed to validate that these measures are adequate. This is related to the limitation in traffic modelling methodologies noted earlier. The use of an overly simplistic traffic modelling technique will not be able to account for marginal improvements in transport and traffic facilities.

Gaps in meeting TIA Objective #3: TIA provides legally enforceable basis for requiring developers to fund or deliver the transport and traffic improvements to mitigate the impacts brought about by their projects. Philippine TIA practice fails to meet this objective, at least in the five TIA reports that were reviewed. Mitigation measures were proposed, but they do not specify the contribution of the developers for these mitigation measures. Although Philippine local ordinances provide for the collection of a Transport Development Fee, but this fee is not supported by a TIA in the same way as the Australian Precinct Structure Plan and Development Contributions Plan. Developers' contributions are determined according to a list of transport and traffic improvements that were pre-identified through a rigorous TIA process.

Conclusions and Recommendations

Traffic Impact Assessment is a vital tool to ensure that transport infrastructure and services keep pace with land development. The development and legislation of TIA practice in the Philippines is a step in the right direction, but its application nationally has so far been inconsistent and ineffective. Philippine TIA practice can be further improved. Benchmarking against a mature TIA practice, such as Australia's, has identified several areas for improvement. The following are recommended:

- Clarify and strengthen the legal provisions for defining the minimum contributions that developers must make to mitigate the impact of their land developments on the general public.
- Develop the expertise of the local government team reviewing the TIA reports, including skills in traffic modelling, parking requirements assessment and road/traffic safety assessments.
- Institute an equivalent of a Precinct Structure Plan for greenfield and redevelopment areas, including extending the application of the Transport Development Fee to fund transport and traffic projects to support the Precinct Structure Plan as determined by a TIA of the Precinct Structure Plan.
- Develop a Traffic Modelling Guideline to strengthen traffic modelling for TIA.
- Fund or conduct research in TIA applications, including the development of Traffic Generation Rate methods and Parking Requirement Assessments. Continually improve Philippine TIA Guidelines.

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Declaration of Generative AI and AI-assisted Technologies in the Writing Process

During the preparation of this work the authors used Claude in order to review the final draft. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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