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Dear Sirs

TRAFFIC IMPACT ASSESSMENT (TIA)

LTA has recently completed a set of guidelines to assist agencies and developers in the submission of a Traffic Impact Assessment (TIA) as part of Development Clearance (DC) submission requirements.

TIA's are established tools for the appraisal of anticipated traffic generated by proposed developments. The TIA would benefit the development by ensuring that suitable amelioration measures are identified to address possible traffic problems. In addition, the TIA would also assist the developer to optimise the development layout with respect to the arrangement of its ingress/egress points, car park accesses, drop-off points, servicing bays, etc.

Currently, TIA's are requested only on developments that are likely to have a significant traffic impact on the surrounding roads. We have received feedback that there is some uncertainty among developers on what a TIA encompasses and how it should be undertaken. As such, we are pleased to enclose a copy of the guidelines for your information and comments, if any. Please let me know should you need any further information.

Yours faithfully

PETER BOW
MANAGER (PLANNING)

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ANNEX A

Table 1 Conditions When a Local Traffic Impact Assessment (TIA) Would be Required

A TIA is required to be prepared at the Development Control stage if one or more of the following conditions applies to the development:

1. Developments exceeding the scales specified in the following table:

Type of Development	Scale of Development
Residential a. Landed properties/Condominiums/ Executive HDB housings b. HDB housing	a. 600 or more units b. 800 or more units
Retail Shopping centres	>= 10,000m² GFA
Commercial Office developments	>= 20,000 m² GFA
Industrial a. General industries b. Warehousing/Distribution c. Science park/High tech park	a. >=50,000m² GFA b. >=40,000m² c. >=40,000m²
Educational a. Primary school b. Secondary school c. International school d. Junior college e. University, polytechnic	a. >=2,000 students b. >=2,000 students c. >=2,000students d. >=2,000 students e. TIA required
Medical Hospitals	>= 200 parking spaces
Hotel Business & tourist	>= 600 rooms
Recreational Exhibition centre & major tourist attractions	>= 200 parking spaces

Note:
For mixed-use residential/retail developments, a TIA will be required if the total trip generation of the development exceeds 200 veh/hr either inbound or outbound. In such instances, Traffic Management will be able to advise applicant whether a TIA shall be required.

2. For types of development not listed in table above that may significantly impact on their surroundings, LTA may require the submission of a TIA. In considering whether a TIA is required, LTA will take into consideration the type, location and circumstances of the development proposed.

3. Any development seeking direct access either via a dedicated driveway or a new service/ access road onto a Category 2 (major arterial) or above type road.

ANNEX B
Key Issues to be Addressed in a Traffic Impact Assessment Report

Major Heading	Description of What to Include
1.0 INTRODUCTION	Description of the development proposal, study methodology, timing and output
1.1 Background	
1.2 Scope of Report	
1.3 The key Issues and Objectives of the TIA	
2.0 GENERAL DATA COLLECTION / EXISTING CONDITIONS	2.1 Current landuse characteristic of the site & in the vicinity, site access
2.1 Site Location	2.2 Description of road network & hierarchy, no. of lanes, medians, on-street parking, location of bus stops etc.
2.2 Description of Road Network	2.3 AM and PM and off-peak (required only if development's peak hour different from commuter peak) peak hour intersection and classification counts at critical intersections, maximum queue length at intersections on critical approaches. Assessment of the performance of the intersection including average delays, degree of saturation & queue length on all approaches and for the intersection without the development traffic
2.3 Existing Traffic Flow & Conditions	2.4 Current on-street parking supply & utilisation
2.4 Parking Supply & Demand	2.5 Rail & bus stop locations & distance, pedestrian access routes to bus stops
2.5 Public Transport	2.6 Identify existing pedestrian facilities & potential conflict locations with vehicles
2.6 Pedestrian Network	2.7 Approved proposed developments/redevelopment sites adjacent to the site
2.7 Proposed Developments in Vicinity	
3.0 PROPOSED DEVELOPMENT	3.1 Nature & size of the development, projected number of residential units, GFA of each component of development, hours & days of operations, staging and timing of development
3.1 The Development	3.2 Development access locations, sight distance of access points & comparison with stopping and desirable minimum sight distances, projected queuing at entrances
3.2 Access	3.3 The new road network, improvements to existing roads, circulation pattern & internal road layout
3.3 Traffic Circulation & Local System	3.4 Proposed parking provision, parking layout, location of
3.4 Parking	

	carpark entry/exit barriers, projected peak demand based on survey(s) of similar sites
3.5 Loading & Unloading Facilities	3.5 Provision and operation of service vehicle area
4.0 IMPACT OF PROPOSED DEVELOPMENT	4.1 Estimation of future traffic volumes following the full opening of development taking into account background traffic
4.1 Future Background Traffic	growth and adjacent approved developments
4.2 Traffic Generation	4.2 Estimated peak hour traffic generation based on surveys of similar sites (full survey results are to be included for reference)
4.3 Traffic Distribution & Assignment	4.3 Assignment of trips to the road system based on origin/destination surveys of similar or other developments in the area or another method agreeable to LTA
4.4 Impact of Generated Traffic	4.4 Projected traffic flows at key intersections for assessment years. Assessment of the performance of the intersection including the average delays, degree of saturation, reserve capacity, back of queue length on all approaches to key intersections (SIDRA output). Assessment of impact on residential amenity
4.5 Impact on Traffic Safety	4.5 Assessment of road safety impact e.g. whether a slip road should be considered at the entrance to the development to enhance safety
4.6 Pedestrians & Other Users	4.6 Provision for pedestrian crossings/overhead bridge to the bus stop & MRT
4.7 Recommended Works	4.7 Provide suitable justifications to show need for improvement. Improvements may include site access and circulation, local improvements to road junction(s) and any other traffic management measures. These should be shown on plan(s) drawn to scale 1:500 or 1:1000. Approximate cost of recommended works to be provided
5.0 SUMMARY & CONCLUSION	A technical summary that concisely sums up the study purpose, conclusions and recommendations