

Aurelion Trip Generation Reference Guide

— UAE/GCC

A practical framework for development trip-generation scoping, evidence selection, sensitivity testing and authority-ready QA.

Prepared by Aurelion Solutions

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1. Purpose and use

Trip generation is the bridge between a development brief and the transport network assessment. This guide provides a disciplined workflow for selecting inputs, documenting assumptions, testing uncertainty and preparing an auditable trip-generation schedule for UAE/GCC development studies.

2. Core workflow

1. Confirm the development programme: land uses, gross floor area or other relevant independent variables, phasing, operating hours and opening year.
2. Define the assessment periods required by the relevant authority and identify coincident development/network peak periods.
3. Select the most defensible trip-generation evidence source for each land use. Record edition, land-use definition, setting, sample relevance and independent variable.
4. Apply only justified adjustments for internal capture, pass-by/diverted trips, transit, walking, cycling, shared mobility or mixed-use interaction. Keep the unadjusted baseline visible.
5. Convert person/vehicle estimates into directional arrivals and departures for each assessment period.
6. Aggregate by phase and scenario, reconcile totals, and test sensitivities where evidence or development mix is uncertain.
7. Document every assumption in a traceable schedule and reconcile the schedule with the traffic model, access strategy and TIS report.

3. Evidence hierarchy

Priority	Evidence	Aurelion application
1	Current local authority requirements / approved project methodology	Controls submission format, study periods, accepted methods and project-specific conditions.
2	Recent local observed data / comparable sites	Preferred where quality, land-use comparability and operating context are demonstrable.
3	Recognised industry trip-generation datasets	Useful benchmark; apply with judgement for local context and document limitations.
4	Client/operator data and specialist evidence	Use when source, period, occupancy and operating assumptions are transparent.
5	Engineering assumption / sensitivity	Use only when evidence is unavailable; label clearly and test downside/upside.

4. Land-use selection QA

- Match the actual operating model, not just the development label.
- Check whether the selected independent variable is appropriate and consistently measured.
- Separate materially different uses rather than forcing a blended rate.
- Treat schools, hotels, healthcare, logistics, drive-through, entertainment and event uses as operationally sensitive.
- Record whether data represent urban, suburban or other site settings and whether local modal conditions differ materially.

5. Adjustment controls

Adjustment	Evidence expected	Control
Internal capture	Mixed-use interaction logic, compatible uses, time overlap	Show gross external trips before adjustment; avoid double-counting.
Pass-by / diverted	Road function, access pattern, recognised evidence	Do not treat pass-by as zero network impact; turning movements still matter.
Transit / active mode	Mode-share evidence, accessibility, committed services	Separate person-trip and vehicle-trip logic where practicable.
Occupancy / shared mobility	Observed or defensible occupancy assumptions	State vehicle-occupancy conversion explicitly.
Phasing	Delivery programme and occupied floor area	Use phase-specific demand; avoid applying full-build demand early.

6. Recommended trip-generation schedule

Field	Minimum content
Development component	Use, phase, quantum, unit / independent variable
Source	Authority / observed / industry / operator / assumption
Reference	Edition/date/site/sample or source note
Base rate/equation	Recorded internally; do not reproduce licensed proprietary data publicly
Gross trips	By assessment period and direction
Adjustments	Type, percentage/logic, evidence
Net external trips	Arrivals, departures and total
Sensitivity	Low/base/high or project-specific test
QA status	Prepared / checked / approved for submission

7. UAE/GCC application notes

Authority expectations differ by emirate, city and project. In Dubai, RTA's Traffic Engineering System identifies supporting documents for TIS submissions including TIS reports, traffic-count spreadsheets, junction delay/LOS spreadsheets, master-plan trip-generation tables, access layouts and, for higher study levels, methodology and modelling material. Aurelion therefore recommends maintaining the trip-generation schedule as a controlled model input that reconciles to all downstream submission files.

8. QA red flags

- Using a rate because the land-use name sounds similar without checking definition or setting.
- Applying reductions without evidence or applying the same reduction twice.
- Mixing daily, AM, PM and development-peak rates inconsistently.
- Rounding at intermediate stages so totals no longer reconcile.
- Failing to distinguish gross site trips from net new external trips.
- Treating probability, occupancy or phasing assumptions as established facts.
- Using an old authority requirement without confirming current applicability.

References & source controls

Use the latest edition/current authority publication at the time of each project. The references below informed this Aurelion publication; no proprietary tables, rates or copyrighted manual content are reproduced.

- **Dubai RTA Traffic Engineering System — Supporting Documents —**
<https://tes.rta.ae/TES/Webpages/common/InformationalLinks/SupportingDocuments.aspx>
- **Institute of Transportation Engineers — Trip Generation, 12th Edition information —**
<https://www.ite.org/technical-resources/topics/trip-and-parking-generation-v2/trip-generation-info/>