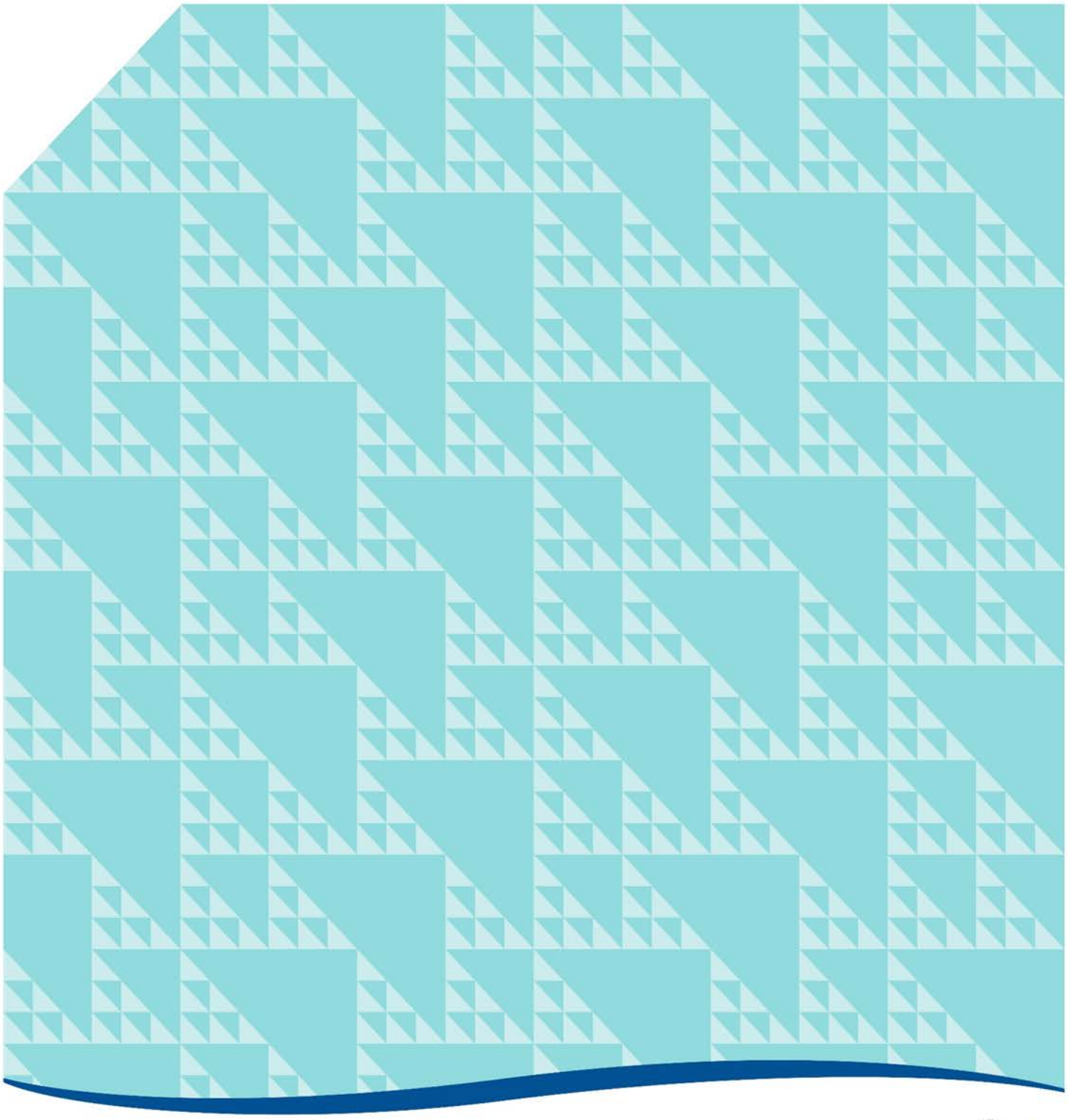
Traffic Impact Assessment
Guidelines

August 2020

TIA Guidelines



Department of State Growth

Tasmanian Government

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Introduction

These guidelines provide advice on the preparation of Traffic Impact Assessments (TIAs).

Additional advice is contained in the Austroads Guide to Traffic Management, Part 12: Integrated Transport Assessments for Developments.

To the extent of any conflict, the advice contained in this document takes precedence.

Background

TIAs are normally prepared in connection with land use development proposals.

They aim to predict the impact that the development is likely to have on the operation of the surrounding road network, particularly with respect to traffic flow and road safety.

Large developments may need a separate TIA to examine network performance during the construction phase.

A short report which focuses on road safety rather than traffic flow, sometimes described as a Traffic Impact Statement (TIS), is satisfactory for small scale developments.

Although TIAs have historically focused on trips made by motor vehicles, they must also consider other modes of travel including buses, taxis, bicycles and pedestrians.

For larger scale developments, it is often worthwhile to have a meeting with the relevant road authorities at an early stage to agree on the scope of the analysis required.

Any development which has the potential to increase traffic movements across a rail level crossing should be discussed with TasRail.

Key Principles

Access location

- Traffic turning in and out of accesses disrupts traffic flow and increases crash risk.
- Where a development site fronts onto more than one road, the access should generally be located on the road which carries less traffic. In most cases, access directly onto a State road will not be permitted if alternative access from a Council road is available.
- Some State roads are subject to Limited Access legislation (details of which roads are subject to Limited Access restrictions can be found on LISTmap). For these roads it is important to make early contact with the Department to clarify the conditions of the existing access licence as this may significantly constrain what development is permissible. Note that the creation of new private accesses is not permitted on a Limited Access road.

Impact on traffic flow

- A primary purpose of TIAs is to predict the impact that the vehicle movements associated with the proposed development will have on traffic flow on the surrounding road network.
- This analysis typically relates to the morning and evening peak periods when the road network is at its busiest. However, it is noted that some types of developments can generate the greatest number of movements at other times.
- In order to analyse the network performance, it is necessary to collect information about the current traffic volumes on the surrounding roads and estimate the amount of additional traffic that is likely to be generated by the development.
- The traffic implications associated with a development should be tested for the tenth year after the opening date.
- The growth rate that has been applied to the current traffic volumes should be clearly stated and justified.

Trip generation

- When discussing trip generation, it is important to avoid confusion about whether trips are one-way or two-way.
- The preferred approach when estimating trip generation is through comparison with similar existing developments. Trip generation rates derived from surveys of a wide variety of land use developments are contained in the Roads and Maritime Services (New South Wales), Guide to Traffic Generating Developments, Version 2.2, October 2002, and the Roads and Maritime Services (New South Wales), Guide to Traffic Generating Developments, Updated traffic surveys, August 2013.

- When information about similar developments is not available, the trip generation can be estimated from first principles by considering the number of staff, customers / visitors and service vehicles that are likely to travel to the proposed development. When calculating trip generation from first principles, it is important to clearly state and justify the assumptions that are being made.

Trip assignment

- The trips generated by the proposed development need to be assigned onto the surrounding road network. Assumptions relating to the directional distribution should be clearly stated and justified.
- The predicted turning movements are best presented on a diagram rather than in a table.
- To ensure clarity, it is desirable to provide separate diagrams for:
    - current traffic;
    - current traffic plus growth;
    - generated traffic; and
    - current traffic plus growth plus generated traffic.

Traffic capacity analysis

- Where the surrounding road network is already busy during the peak periods, an intersection capacity analysis will be necessary to establish whether the development will create issues with excessive queuing and delay. The use of computer analysis tools such as SIDRA may be required.
- If the analysis predicts excessive queuing and delay, it will be necessary to identify capacity improvements that can be made so that the network performance is no worse than it would have been without the proposed development.
- It should be noted that the cost of designing and constructing road infrastructure works required as a result of the proposed development will need to be funded by the developer.
- Where road infrastructure works are required to cater for the traffic generated by the proposed development, a concept / preliminary engineering design that confirms their viability should be prepared and included in the TIA.

Review of proposed access or intensification of use of existing access

- The adequacy and safety of the proposed access layout needs to be assessed with reference to the relevant Austroads Guides, including the provision of suitable sight distance and the need for turn lanes.
- The sight distances associated with the proposed access should be reviewed with reference to the technical advice contained in the Austroads Guide to Road Design, Part 4A, Unsignalised and Signalised Intersections. Relevant sight distances typically include: sight distance to the left and right for motorists exiting the development; forward sight distance to a vehicle waiting to turn right into the development; and sight distance to opposing traffic for a motorist waiting to turn right into the development.
- The need for turn facilities is to be evaluated with reference to the warrants contained in the Austroads Guide to Traffic Management, Part 6, Intersections, Interchanges and Crossings. It is desirable for the warrants graphs from the Austroads Guide to be included, with the projected traffic volumes associated with the proposed access clearly plotted.
- Other than for single residential dwellings or up to three residential units, it is expected that an access width suitable for allowing two-way traffic movement will be required.
- Adequate provision is to be made for the swept path of the largest vehicles that will service the development.

Internal layout

- All vehicles accessing the development must be able to turn around within the site so that they can both enter and exit in a forward direction.
- The driveway into the development should be arranged to avoid vehicles queuing back and blocking the adjacent road.
- The number of car parking spaces to be provided for various different land uses is set out in the relevant planning schemes. Generally, the intent is to provide sufficient off-street parking to cater for the development's needs.

Typical TIA content

TIAs should contain the information set out below. This list is not exhaustive and additional information may be required to adequately address site specific issues, particularly for larger developments.

- A brief description of the proposed development.
- A plan showing the location of the proposed development.
- Details of the proposed access location.
- A description and photographs of the existing road characteristics. Information presented should include:
    - speed limit (and operating speeds where this is significantly different)
    - road layout

    - lane widths
    - bicycle and pedestrian facilities
    - public transport availability
    - traffic volumes / turning movement counts for peak periods
    - crash history and analysis
- An estimation of the traffic likely to be generated by the proposed development, including advice on the largest vehicle that will be required to service the development.
- Predictions on the directional distribution of the generated traffic and diagrams showing how it is expected to be assigned onto the surrounding road network.
- Predictions on traffic growth and diagrams showing estimated traffic movements ten years after the opening of the proposed development.
- An assessment of whether the traffic generated by the development is likely to adversely impact on the efficient operation of the surrounding road network and evaluations using intersection capacity analysis tools as required.
- A review of the adequacy of the proposed access junction layout, including the provision of adequate sight distance and the need for turn lanes.
- Concept / preliminary engineering design plans for any locations on the surrounding road network where the traffic management arrangements are to be altered.
- A review of the proposed internal layout, including the number of car parking spaces.

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