Traffic Counting - Specification for Manual Data Collection

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Article Purpose	To provide specification on a safe and standard method for collecting Traffic Counting Data, specifically using the Manual Traffic counting "Tally Method"
Intended Users	Anyone who is responsible for setting up, monitoring, and/or uploading Manual Tally sheets traffic data whether it be provincial staff, AMB staff or contracted suppliers.
Last Reviewed	18th July 2025

Requirements & Methodology

Step 1: Site Preparation and Selection

Manual traffic count preparation starts in the office. Preparation should start with a review of the purpose of the count, count period, time intervals, and the placement of Observers (Tally Clerks), in order to accurately capture counts by direction of travel.

The AWM layer called 'Traffic Count Sites - Temp' can help to guide where the count locations should be.

This helps the project coordinator from the Asset Management Branch (AMB) determine the number of Tally Clerks required for each traffic count station and the specific field procedures to follow.

Tally sheets should be filled out as much as possible before heading to site. It's also important to assess available resources early, including how many people and what equipment will be required, the level of data quality needed, and ensuring there is enough budget to carry out the survey properly and efficiently.

Tally Clerks

Manual traffic counts involve having a trained person, known as a 'Tally Clerk' or 'Observer', record vehicles on a tally sheet as the vehicles pass a specific point on a designated road. This is a simple method often done by DOWH staff, but local community members can also be hired if needed.

When hiring local Tally Clerks, it's recommended to work with a councilor or village leader to find candidates with at least a Grade 10 education. All Tally Clerks must be trained by a supervisor to correctly identify and record different types of vehicles. Once trained, they should complete a 30–40 minute supervised trial count to confirm they are categorising and counting accurately. The quality of the data depends on how well the Talley Clerks are trained and prepared for the task.

Equipment required

The most important equipment that shall be used in manual traffic data collection is tally sheets (DOWH Traffic Count Tally Sheets 📎) and the vehicle classification reference DOWH Traffic 12 Class 📎.

The use of a tally sheet shall involve trained personnel to make a tick mark for every vehicle in a given classification. Separate tally sheets should be used for each direction of travel and this direction should be clearly stated on the tally sheet.

NOTE: Please make sure they have enough copies of the tally sheet to last the duration of the count period.

Other equipment needed is as follows:

- Necessary accessory equipment (flashlight, batteries, pens, etc.)
- Stopwatch and tally counter (if available/needed)
- Data collection forms (DOWH Traffic Counting Data Collection Form) (fill in as much data as possible before leaving the office e.g. site location should be known at a minimum)
- Extra pens and paper for taking notes
- Clipboard or writing surface
- A map of the site
- Weather equipment (Sunscreen, umbrella, jacket or warm coat, masking tape etc.)
- Safety equipment (road safety signs, safety vests, or other reflective materials)

Ensure that all equipment is in operational state and none of them has a fault.

Step 2: Traffic Data Collection

A Tally Sheet with 12 (13 for Class 0 being Pedestrians) road user classes will be used for manual traffic counting. It is required that manual traffic counts are classified according to the vehicle type, direction of travel and time (hour).

The Tally Sheet form used for manual traffic-counting is given in DOWH Traffic Count Tally Sheets.

This form shall be used by Tally Clerks to record the number of vehicles per hour. Upon completion of the counting period, the ticks can then be tallied and analysed back in the office.

Manual traffic count is categorised by a visual assessment of the vehicle size and configuration of axles. The 13 road user classes of vehicle categories to be tallied during the course of the traffic data collection are tabulated below.

Class	Description
Class 0	Pedestrians - People walking along the road
Class 1	Motor cycle
Class 2	Cars, Station Wagons, Sedans
Class 3	Utilities, Pick Ups, Small PMVS (<15Persons)
Class 4	Buses (25Persons), Light Trucks (Rigid Body) 2axles
Class 5	Medium Trucks (Rigid Body) 3axles
Class 6	Heavy Trucks (Rigid Body) 4axles
Class 7	Articulated Light Trucks (3 Axles)
Class 8	Articulated & Semi Trailer Trucks (4 Axles)
Class 9	Articulated & Semi Trailer Trucks (5 Axles)
Class 10	Articulated & Semi Trailer Trucks (6 Axles)
Class 11	B double (8 axles AT)
Class 12	Double & Triple Road Train (2 trailers,11 axles, 3 trailers,16 axles)

Traffic and Site Safety

Traffic safety during the Data Collection is mandatory and is the responsibility of the Officer in charge to ensure that appropriate safety measures are in place before a survey can be conducted to protect the observer at all times.

Whenever manual traffic surveys are in progress, appropriate signage should be in place for the safety of Traffic Counting Teams. The site should be inspected for safe use by supervisor who should also ensure that every tally counter wears a high visibility vests and no safety sign is removed from site until the survey is completed.

Step 3: Process Data

When the data collection period has ended and data has been collected from the field, it must be analysed and checked for accuracy. The thirteen classes tallies collected from the manual tally sheet shall be compiled and entered into its standard excel sheet. This spreadsheet shall be sent to Colleen.Jackson@pngroads.com and Remson.Maea@pngroads.com.

Initially the information shall be managed and owned by the Department of Works Asset Management Branch and held within the AWM database where it can then be disseminated to stakeholders via means of the current infrastructure managed by DoWH such as the website and intranet.

Quality Assurance

As a minimum all counts must be checked for accuracy and completeness prior to loading into the AWM database. The supplier must supply a quality check process through which each count must pass to be a successful count. As a minimum DoWH would expect that the following quality checks are completed:

- Must be a full 7 Day classified count.
- There is general balance on Directional split i.e. lane one / lane two is within +/- 5% of 100%.
- All report requirements identified in this specification are supplied in full with no missing data.

If the data collection is being undertaken by a consultant, DoWH reserves the right for one AMB staff member to join the Consultant's on-site survey team(s) for quality review purposes. The Consultant is to allow for one (only) seating place in its primary survey vehicle to accommodate an AMB staff member and shall provide a minimum of five business days notice of any change of travel dates that have been previously agreed with DoWH (eg. through approval of the Consultant's Workplan). All direct costs (eg. travel airfares, accommodation, per diems etc) incurred by a DoWH staff member accompanying the Consultant's survey team are the responsibility of the client.

Stakeholders

Stakeholder	Role
DoWH AMB	The Asset Management Branch is responsible for this specification and utilising the data for the support of programme development and further analysis.
Provincial Works Manager (PWM)	The PWM is the most senior DoWH role based in each province and should be advised of any data collection to be done on national roads in their province.

Support

Contact Remson Maea: remson.maea@pngroads.com or remsonmaea@gmail.com

Contact Coleen Jackson: colleen.jackson@pngroads.com

References and Additional Reading

Links to further support documents, manuals, publications and other content are included in the table below.

Reference Name / Description
RIMS Guideline for Traffic Counting
RIMS Traffic Counting Guide Supplement
RAMM NZ Vehicle Classification Document

What is Traffic Count data?

Traffic counts help to measure, evaluate, and classify traffic volumes across the roading network. Traffic counts underpin the formulation of traffic flow estimates, which are used as inputs to many asset management and planning processes for the network.

The locations to be counted are strategically identified and defined within the PNG DoWH Traffic Count Programme. The traffic count data collected at these locations is subsequently used to update and inform the traffic estimates applied to all road sections in the network.

The latest traffic estimate dataset is leveraged by other processes such as traffic modelling, safety studies, traffic management plans, levels of service analysis, pavement deterioration modelling, forward work programming & responding to public enquiries.

A traffic-counting programme has been established for the PNG road network, which is based on the guidelines set out by the RIMS Group. The programme includes a ‘core sample’ of roads in the network which are counted annually and a sample of roads that are counted on a 'rotational basis'.

The Data Collection Contractor (DCC) shall record traffic counts in accordance with the sites listed in the traffic-counting programme, using approved MetroCount equipment. The count data that is required to be collected includes but not limited to Traffic Volumes, Classification and Speed.

The results of the counts are imported into AWM, and the data is used to calculate the latest traffic estimate for associated road sections. These estimates add to the accuracy of other asset management and planning processes, and build up the historical information of traffic data for the network.

The basis of the counting classification is the AP-G104-23_Austroads_Extended_Vehicle_Classification_Scheme.pdf. This sets out the classification scheme and 12 vehicle classes that count data is required to be collected, refer section Step 2: Traffic Data Collection.