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Narromine Shire Council

Section 7.11 Contribution Plan 2026

- Heavy Vehicles

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Narromine Council Section 7.11 Contributions Plan Heavy Vehicles 2026

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1 SUMMARY

1.1 Background

1.1.1 What are development contributions?

Development contributions are contributions made by those undertaking development approved under the Environmental Planning and Assessment Act 1979 (the Act).

Contributions may be in the form of money, the dedication of land or some other material public benefit (or a combination of these). The mechanisms available for development contributions are limited to:

- In the case of contributions made under Sections 7.11 or 7.12 of the Act - toward the provision or improvement of amenities or services (or the recouping of the cost of provision or improvement of amenities or services).

- In the case of contributions made under a planning agreement prepared in accordance with Sections 7.4 to 7.10 of the Act - toward public purposes.

This Plan deals with Section 7.11 contributions.

1.1.2 Section 7.11 levies

Section 7.11 of the Environmental Planning and Assessment Act 1979 enables Council to levy contributions from development for the provision of public services and amenities required because of that development. Contributions may be in the form of cash payments, transfer or dedication of land to Council, or the provision of a Material Public Benefit or Works in Kind. Note: definitions to cover these items are explained further under Section 3.

For Council to levy contributions under Section 7.11 there must be a clear nexus between the proposed development and the need for the public service or amenity for which the levy is being required and as detailed in a Contributions Plan.

This Section 7.11 Contributions Plan seeks contributions towards the additional costs of road maintenance from developments which generate frequent heavy haulage vehicle movements.

Accordingly, certain developments will be levied because of their impact on the frequency of road maintenance, determined by a consistent methodology based on heavy vehicle usage.

1.2 Purpose

The primary purpose of this Plan is to authorise the levying of contributions that will assist Council to provide public services and amenities to:

- Ensure roads are maintained in a reasonable condition for users because of damage caused by developments that generate frequent heavy haulage movements.

- Ensure the broader community is not unreasonably burdened by higher road maintenance costs resulting from developments that generate frequent heavy haulage movements by requiring these developments to contribute to these costs

The contribution may involve payment of a monetary contribution. Other purposes of this Plan are to:

- Provide an overall strategy for the coordinated delivery of public facilities and infrastructure consistent with Council's strategic plans and management plan;

- Provide a comprehensive strategy and administrative framework for the assessment, collection, expenditure, accounting and review of developer contributions towards the

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equitable provision of public services and amenities;

- Identify the additional services and amenities required to meet the demands arising from new development;

- Provide an adequate level of public services and amenities to meet demand arising from development within a reasonable time, as development occurs, and at a reasonable cost, without unduly impacting on the affordability of the proposed development;

- Ensure that the development contributions are based on reasonable estimates of cost;

- Ensure that the existing community is not unduly burdened by the provision of public services and amenities which are needed (either partly or fully) because of ongoing development in the LGA, and that there is a reasonable apportionment of cost between existing demand and new demand for public infrastructure provided by Council, and

- Ensure that contributions are fair and reasonable.

1.3 Nexus

All heavy vehicles contribute to the deterioration of road pavements. Australian Road Research Board (ARRB) research shows that an increase in the number of heavy vehicles using a road will accelerate the deterioration of a road, and lead to increased road maintenance costs being incurred by Council. The impact of heavy vehicles on the condition of road pavements has been well documented by Austroads and other authoritative sources.

Council maintains the LGA's roads at an adopted level of service. As a result of a development using heavy haulage vehicles, Council will need to undertake increased maintenance work to maintain this level of service. The extent of the increased maintenance is dependent on the heavy vehicular traffic generated by the subject development.

Increased road maintenance results in an increased drain on Council's finances. Unless the subject development provides a contribution commensurate with the increased maintenance costs, these increased costs will burden the community with providing the increased funds required by Council to maintain the existing level of service for the road network.

The purpose of the methodology used in this Plan is to ensure that heavy vehicle haulage associated with a specific development provides a fair contribution towards the additional costs incurred by Council.

The costs of keeping roads in a satisfactory condition occur in three main areas:

- Rehabilitation:
  - Regional sealed pavement rehabilitation;
  - Local sealed pavement rehabilitation, and
  - Unsealed pavement rehabilitation/gravel resheeting or gravel patching.

- Reseals
  - Maintenance reseal (i.e. regional and local roads)

- Maintenance
  - Annual routine maintenance, and
  - Heavy patching or stabilisation of selected sections.

A traffic generating development will be required to contribute a proportion of the above costs based upon the heavy vehicle Equivalent Standard Axle (ESA) impact on the regional or local road used by the heavy vehicles in question, within a given period. Developments will be required to regularly report their

haulage tonnages and the types of vehicles involved for these costs to be accurately determined.

The methodology used by the Plan to determine the contribution is based on the average annualised road maintenance costs, and the length, and type, of roads to be used by heavy vehicles associated with the subject development.

The contribution and its calculation do not apply to State Roads that are the funding responsibility of the State Government, and not Council, such as the Mitchell or Newell Highways.

The operation of this Plan will also generate the need for planning, administration and management activities associated with this Plan, to regularly review, update and manage the future provision of infrastructure.

Note: Council has adopted minimum and maximum distances to be used in the calculation of contributions. In addition, Council will apply a discount to be applied the calculated contributions in recognition of the economic and employment benefits of extractive and mining industries. It is important to consult Chapter 6 of the Plan for the detail of these provisions.

1.4 Exemptions

This Plan does not apply to:

- Extractive industries with an average annual approved output of up to and including 5,000 m^3 of solid material, or
- Other developments within an average annual approved total haulage of up to and including 5,000 tonnes of material, or
- Development located in a Local Centre, Business, or Industrial land uses zone.

1.5 Structure of the Plan

This Plan is arranged into a summary and 7 sections as detailed below:

Section 1	Executive Summary and Purpose of the Plan
Section 2	Introduction
Section 3	Operation of the Plan
Section 4	Administration
Section 5	Nexus
Section 6	Transport Facilities
Section 7	Plan Administration Costs

1.6 Summary of Contributions Rates

Contribution rate:

Table 1: Heavy Haulage Vehicle Movement Generating Development Contribution Summary

Contribution Type	Per annum rate per tonne per kilometre of road hauled material
Road maintenance	As determined by the methodology in Section 6
Plan Management and Administration	1% of the above figure
TOTAL	Total of the above as calculated

Note: these amounts are subject to indexation.

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2 INTRODUCTION

2.1 Name of the Plan

This Plan is referred to as the Narromine Shire Council Section 7.11 Contributions Plan 2026.

This Contributions Plan has been prepared in accordance with the relevant provisions of the Environmental Planning and Assessment Act 1979, as amended (the Act), the Environmental Planning and Assessment Regulation 2021 (the Regulation), the current Section 7.11 contributions practice note (https://www.planningportal.nsw.gov.au/local-infrastructure-contributions/section-711-practice-note) or its successor, relevant Ministerial Directions and Department of Planning, Housing and Infrastructure Circulars and Guidelines.

2.2 Area to Which the Plan Applies

This Contributions Plan applies to the Narromine Shire Council Local Government Area.

2.3 Types of Development to which this Plan Applies

This Plan applies to developments that generate heavy haulage vehicle movements.

Note: "development" referred to in this clause has the same meaning as in the Act.

Certain developments which use heavy vehicle haulage are **exempt** from the payments for the heavy vehicle contribution, to:

- Assist the viability of smaller local scale enterprises,
- Simplify administration of the Plan, and
- Recognise the generally higher design standards in respect of vehicle loadings of roads in business and industrial areas.

The **exempt** developments are:

- Extractive industries with an average annual approved output of up to and including 5,000m³ of solid material, or
- Other developments within an average annual approved total haulage of up to and including 5,000 tonnes of material, or
- Development located in a Local Centre, Business or Industrial zone.
- Development undertaken by or on behalf of Council, unless undertaken as a business enterprise.

2.4 Commencement of Plan

This Contributions Plan takes effect on xx xx 2026.

2.4.1 Savings and transitional arrangements

A development application which has been submitted prior to the adoption of this Plan but not determined shall be determined in accordance with the provisions of the Plan which applied at the date of determination of the application.

2.5 Relationship to other Plans and Policies

This Plan replaces the Narromine Section 7.12 Contributions Plan 2020- Heavy Vehicles. This Plan also complements the Narromine Shire Council Section 7.12 Plan and its successors.

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3 OPERATION OF THE PLAN

3.1 Method of Operation - Authorisation

In determining a Development Application or issuing a Complying Development Certificate to which this Plan applies, this Plan authorises the Council to impose a condition of consent requiring the payment of a monetary contribution in accordance with the provisions of this Plan, or in lieu thereof accept the provision of a material public benefit or works in kind.

Prior to the issue of a Complying Development Certificate for development to which this Plan applies, the issuer of the certificate must impose a condition pursuant to this Plan if such condition may be imposed.

Complying Development Certificates must be assessed and issued by Council if the developer wishes Council to consider land dedication, material public benefits or works-in-kind.

3.2 Types of Contributions

There are alternative methods of settlement of Section 7.11 developer contributions. These are as follows:

- Monetary contribution;
- Dedication of land;
- Material Public Benefit, or
- Works in Kind.

Where a developer negotiates a material public benefit (for works not in the works schedule), works in kind (for items included in the works schedule), or the dedication of land, in lieu of paying any part of the monetary contribution required under this Plan, the applicant must still pay Council's reasonable costs for the management of the Plan (plan management and administration contributions).

The Act also provides the ability for the Council to consider entering into a Planning Agreement (PA) as part of a development application or when rezoning land. Public amenities and services delivered through a PA may be in addition to, or instead of, the payment of a monetary contribution under Section 7.11.

3.3 Monetary Contribution

This Plan identifies the monetary contribution required for the maintenance of roads. The contribution amount payable will be included as a condition of consent on any development approval issued. Details of how and when the amount will be adjusted will be included in the consent as detailed in this Plan.

3.3.1 Dedication of Land

Dedication of land in lieu of monetary contributions described in this Plan will only be considered when Council deems that the land is in a location and has physical and servicing characteristics that make it suitable for the designated purpose.

All costs of dedication are to be borne by the applicant, including but not limited to, survey, legal and administration costs.

The land is to be in a condition suitable for its intended purpose cleared of all debris, weeds and waste materials. The land is to have a compliance certificate from a registered testing authority stating that the land is free from contaminated and hazardous materials and substances.

3.3.2 Works in Kind/ Material Public Benefits

A works in kind (WIK) is the undertaking of a work or provision of a facility, in lieu of the part or full payment of either a monetary contribution or the dedication of land that would normally apply. WIK are

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generally offered and assessed as part of the development application process. Applicants seeking Council's acceptance of a WIK arrangement should initially discuss such a proposal with Council officers to determine whether Council would agree to enter into such agreement, and to establish Council's requirements.

A material public benefit (MPB) may be offered by the developer in part or full satisfaction of a condition requiring the payment of a monetary contribution. A MPB may include the provision of work that is not scheduled within a Contributions Plan. Council may accept the provision of a MPB if it can be justified why it is of equivalent or greater benefit to the community compared to what has been identified under the Plan.

Such alternative development contributions arrangements may be negotiated with the Council in connection with the carrying out of development in the following circumstances:

a) Offer made to the Council as part of a development application:

If an applicant does not wish to pay a monetary Section 7.11 contribution in connection with the carrying out of development, the applicant may include in a development application for the development a proposal to carry out the works towards which a contribution or levy would otherwise have been applied.

The Council will consider the alternative arrangement as part of its assessment of the development application. If the Council agrees to the arrangement and grants consent to the application, it will impose a condition of consent requiring the works to be carried out. If the Council does not agree to the alternative arrangement, it may grant consent subject to a condition imposed under Section 7.11 requiring payment of the monetary contribution.

b) Offer made to Council following the grant of development consent:

If development consent has been granted to the carrying out of development subject to a condition under Section 7.11 requiring payment of a monetary contribution towards the cost of public amenities and public services, the applicant may request in writing that they instead provide to the Council a material public benefit in part or full satisfaction of the requirements of the relevant condition. This application should be made in the form of a formal modification of development consent made under section 4.55 of the Act.

The material public benefit may be the carrying out of work or another public benefit but not the payment of money or the dedication of land free of cost.

If the Council agrees to the applicant's request, the applicant is required to comply with the alternative arrangement and is not required, in part or whole, as relevant, to comply with the conditions imposed under Section 7.11. If the Council declines the applicant's request, the applicant will be required to comply with the requirements of the conditions imposed under Section 7.11.

In either case, in deciding whether to agree to the applicant's request, the Council will have regard to the requirements of the current Section 7.11 contributions practice note (https://www.planningportal.nsw.gov.au/local-infrastructure-contributions/section-711-practice-note) or its successor unless the subject development provides a contribution commensurate with the increased maintenance costs and may consider matters such as, but not limited to, the following:

- The need for the facility and how it achieves the outcome being sought by this Plan and the imposition of the condition;
- The purpose and objectives of this Plan and any relevant plans or strategies;
- Whether the alternative will prejudice the timing or the manner of the provision of the

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infrastructure for which the contribution was required, and

- Full details of the quantities, finishes and costings of the proposed works.

The acceptance of a WIK agreement or a MPB will be at Council's absolute discretion, and aside from any exceptional circumstances, no credits will be granted for in-kind works carried out by the developer that are more than the approved contribution amount. Where the value of the WIK, MPB or dedication of land is less than the value of the required contribution, the applicant will be required to settle the balance of the contribution by way of a monetary contribution and/or land dedication.

All works in kind will be designed and constructed in accordance with relevant Australian Standards and in accordance with prevailing adopted practice of Narromine Shire Council in relation to the relevant category of works.

3.4 Planning Agreements

An applicant may offer to enter into a Planning Agreement with the Council in connection with a development application or a rezoning application that is made for the purposes of being able to subsequently make a development application.

Provision is made for Planning Agreements under Sections 7.4 - 7.10 of the Environmental Planning and Assessment Act 1979, as amended.

Under a Planning Agreement the applicant may offer to pay money, dedicate land, carry out works, or provide other material public benefits for public purposes. The applicant's provision under a Planning Agreement may be additional to, or instead of, making contributions under Section 7.11 of the Act.

The offer to enter into a Planning Agreement, together with the draft Agreement, will generally need to accompany the relevant development or rezoning application. The Council will publicly notify the draft Agreement and explanatory note relating to the draft Agreement along with the relevant application and will consider the Agreement as part of its assessment of the relevant application. If the Council agrees to enter into the Agreement, it may impose a condition of development consent requiring the Agreement to be entered into and performed.

Council encourages the use of Planning Agreements, particularly for larger and/or more complex development.

3.5 Payment of the Contribution

3.5.1 Timing of Payment

The time of payment of contributions shall be within 28 days of receipt of a quarterly notice from the Council, stating the contribution amount pursuant to the previous quarter's heavy haulage vehicle activity.

3.5.2 Deferred or Periodic Payments

Council may consider the deferred payment of contributions or payments made by periodic instalments.

A request for deferral or periodic payment must be made in writing to Council, stating the proposed length of deferral, and may only be accepted where:

- There are valid reasons for the deferral or periodic payment;
- The deferral will not prejudice the efficiency and operation or cash flows of the Plan;
- The granting of the request for deferred payment will not jeopardise the timely provision of works or land identified within the Plan;
- A suitable bank guarantee (or equivalent security) is provided, if the request is accepted by Council;

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- The applicant intends to make a contribution by way of a planning agreement, works-in-kind or land dedication in lieu of a cash contribution and Council and the applicant have a legally binding agreement for the provision of the works or land dedication, and

- The periodic or deferred contributions are paid, including indexing, at no cost to Council.

The conditions under which Council may accept deferred payment by way of a bank guarantee are:

- The bank guarantee is by an Australian Bank;

- Indexing will be calculated from the date the contribution was due until the date of payment in accordance with the CPI indexing provisions stated in Section 3.8 of this Plan;

- The bank guarantee is for a maximum period of twelve months;

- The amount of the bank guarantee is the sum of the total contribution or the amount of the outstanding contribution at the time of deferring payment, plus an amount determined by Council to include any anticipated indexation for the next thirteen months following the date the contribution was due;

- The bank unconditionally pays the guaranteed sum to Council if Council so demands in writing, no earlier than 12 months from the provision of the guarantee or completion of the work, whichever occurs first;

- The bank must pay the guaranteed sum without reference to the applicant or landowner or other person who provided the guarantee, and without regard to any dispute, controversy, issue or other matter relating to the development consent or the carrying out of development in accordance with the development consent;

- The bank's obligations are discharged when payment to the Council is made in accordance with the approved bank guarantee or when Council notifies the bank in writing that the guarantee is no longer required, and

- Council's registration and release of bank guarantee fee is paid.

Any outstanding component of the contribution shall be indexed quarterly in accordance with the Consumer Price Index movements. Indexing will be calculated from the date the contribution was due until the date of payment.

3.6 Complying Development

Accredited Certifiers must impose a condition requiring monetary contributions in accordance with this Plan, in accordance with Section 7.11 of the Environmental Planning and Assessment Act 1979. The amount of the contribution is to be determined in accordance with the formulas contained in the Plan and the current contribution rates. The conditions imposed must be consistent with Council's standard Section 7.11 consent conditions and be in accordance with this Plan. It is the responsibility of accredited certifiers to correctly calculate the contribution and apply the Section 7.11 contribution.

3.7 Goods and Services Tax

Monetary Section 7.11 development contributions are exempt from the Federal Government Goods and Services Tax (GST).

3.8 Adjusting Contributions Rates

To ensure that the value of contributions is not eroded over time by movements in the Consumer Price Index (CPI), land value increases, the capital costs of construction of facilities and administration of the

plan or through changes in the costs of studies to support the Plan, the Council will index the contribution rates indicated in this Plan on a quarterly basis, with reviewed rates to apply from the first working day of December, March, June and September.

This Plan authorises Council to undertake these index based changes without the necessity of preparing a new or amending contributions plan.

The contribution rates will be reviewed and subsequently indexed by reference to the Construction costs by the Producer Price Index Road and Bridge Construction NSW as published quarterly by the Australian Bureau of Statistics.

In accordance with Clause 207 of the Regulation, the following sets out how Council will index contribution rates that are set out in this Plan.

When changes have occurred in the Producer Price Index Road and Bridge Construction NSW the contributions will be reviewed quarterly in accordance with the following formula:

$$\text{New Contribution Rate} = \frac{C \times CPI\ 2}{CPI\ 1}$$

where:

- C is the initial contribution rate at the time of adoption of the Plan, expressed in dollars.
- CPI 2 is the Producer Price Index Road and Bridge Construction NSW available at the time of the review.
- CPI 1 is the Producer Price Index Road and Bridge Construction NSW at the date of adoption of the Plan, or its subsequent amendment.

3.8.1 Adjusting Contributions at the Time of Payment

Contributions required as a condition of development consent will be adjusted at the time of payment.

Contribution amounts will initially be calculated and regularly updated in accordance with the terms of Clause 3.8 at the time development consent is granted. The contributions amounts included in a development consent are to be adjusted at the date of payment based on the contribution rates that are applicable at the time of the payment, and not at the date of the approval of the development.

Adjustments to the contributions amount in a consent will be made using the following formula:

$$CP = \frac{CDC + (CDC \times (CRP - CRC)}{CRC}$$

Where:

- CP is the amount of the contribution calculated at the time of payment.
- CDC is the amount of the original contribution as set out in the development consent.
- CRP is the contribution rate at the time of payment.
- CRC is the contribution rate at the time of the original consent or quarterly statement.

The current contribution rates are published by Council and are available from Council Offices.

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3.9 Reassessment of Contributions

Council may consider an application for the reassessment of the development contributions payable. This may result in the contribution being reduced, waived or modified.

Where a condition of development consent has already been imposed requiring the payment of a contribution, the applicant will need to lodge an application to review the consent in accordance with Section 8.3 of the Environmental Planning and Assessment Act 1979, as amended.

The request shall be in writing and provide sufficient information to satisfy Council of the inappropriate nature of the contribution and the implications to Council of reducing or waiving the contribution in the circumstances.

3.10 Review of the Plan

This Plan may be reviewed in full, or in part, when considered appropriate, having regard to the rate and type of development, cost of facility provision, and community response to service and facility provision.

A complete review of this Plan is anticipated every five years from the date of commencement of the Plan.

3.11 Funding and Timing of Works

The contributions made to Council under the Plan may fully or partially fund the public amenities and services identified in this Plan. The contribution rates have been determined based on the impact of the development on the need for road maintenance.

Council's ability to forward fund these services and amenities is very limited, and consequently their provision is largely contingent upon the availability of contributions. Pooling of funds to assist with the provision of infrastructure, as detailed in Section 3.12 will be considered and used when necessary.

Council will aim to spend all funds within a reasonable time and in a manner which achieves an equitable high standard of road maintenance.

The priorities for Council's maintenance works will be published in Council's Delivery Program.

3.12 Pooling of Contributions

This Plan expressly authorises monetary Section 7.11 Contributions paid for different purposes to be pooled and applied (progressively or otherwise) for those purposes.

3.13 Accountability

Financial management and accountability are important components of Section 7.11, and Council is obliged to maintain an accurate and up to date register of all Section7.11 contributions, pursuant to the Regulation.

Monetary contributions received under the authority of this Plan must be recorded and kept through a separate account specifically established for this Plan. The records must indicate the contributions received, contributions expended and must include the interest, if any, earned on invested funds for each account.

These records are updated monthly.

Separate accounting records are maintained for all Council's Section 7.11 and Section 7.12 Contribution Plans. Information on Section 7.11 accounts and funds relating to this Plan will be provided in a condensed format within Narromine Shire Council's Annual Report/s in accordance with requirements of the Regulation.

Information is also available in Council's contribution register relating to this Plan, which can be inspected at Council during normal business hours, as required by the Regulation.

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4 ADMINISTRATION OF THE PLAN

4.1 Management Costs of the Plan

There is a substantial time and cost overhead associated with this Plan and its implementation.

Accordingly, costs associated with the preparation, administration and management of this Plan will be levied on all applications which result in a contribution payable under this Plan. These costs are shown as a separate element in the rates schedule, and the method of calculation is described in Section 6 and covers the implementation review, monitoring and updating procedures set out in the Plan. In addition, costs are incurred when studies are undertaken to determine the design and costing of works as well as to review the development and demand assumptions of the Plan.

Where a MPB or WIK agreement is negotiated between a developer and the Council, the Plan Management and Administration Contribution levy will still apply. This amount will cover plan review costs and Council's costs associated with negotiating the MPB or PA and supervision of the work undertaken.

5 NEXUS AND METHODOLOGY

This section of the Plan establishes the relationship (nexus) between a development and the demand for additional public services and facilities because of that development.

The level of provision sought in this Plan is considered reasonable and consistent with Council's accepted levels of service for road maintenance. New or expanding development utilising heavy vehicle haulage will increase the need for maintenance of certain public roads. It will therefore be necessary for increased maintenance to be undertaken in response to the impact of increased heavy vehicle usage.

Table 1: Service Categories

Category	Types of Services/Facilities
Heavy Vehicle Generating Development	Road maintenance (heavy haulage vehicle impacts),
Plan Management and Administration	Management of development contributions and works, and review of the Plan.

Details of the methodology for calculating the contribution towards increased maintenance costs are attached to this Plan.

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6 HEAVY VEHICLE GENERATING DEVELOPMENT

6.1 Introduction

The contributions provided for in this Plan are required to meet the increase in road maintenance from new development within the identified Contribution Area.

The key documents supporting these works are identified below:

- Narromine Shire Council Community Strategic Plan (latest version)
- Council Operational Plan (latest version)
- Council Delivery Program (latest version)
- Council Long Term Financial Plan (latest version)
- Asset Management Plan
- Asset Management Policy 2017 Narromine Shire Council
- Bitumen and Asphalt Resurfacing Policy Narromine Shire Council
- Asset Management Strategy 2022-26 Narromine Shire Council
- Roads Asset Management Plan 2016
- Austroads Guide to Pavement Technology Part 2: Pavement Structural Design (2024)
- Australian Trucking Association – Track Impact Chart – Technical Advisory Procedure Truck Impact Chart | Australian Trucking Association

6.2 Nexus

Facilities provided for within this Plan are consistent with the Council's Community Strategic Plan (CSP) Priorities, and in particular:

Outcome 3.6: OUR ROAD NETWORK IS SAFE, WELL MAINTAINED AND APPROPRIATELY FUNDED

- Action 3.6.1 Ensure local and regional road network best meets the needs of road users and industry
- Action 3.6.3: Ensure local and regional roads are safe, well constructed and maintained

Outcome 4.3 A FINANCIALLY SOUND COUNCIL THAT IS RESPONSIBLE AND SUSTAINABLE

- Action 4.31 Operate and Manage Council in a Financially sustainable manner that meets all statutory and regulatory compliance and Council policies
- Action 4.3.2 Ensure sufficient resources to meet current and future needs of the community
- Action 4.3.3 Ensure Council's resources are monitored and well managed

A contribution is sought in the case of development that generates significant heavy haulage vehicle movements. It is well documented that heavy vehicles accelerate the deterioration of road surfaces, and lead to a requirement for more frequent and expensive remediation and maintenance works for road

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service standards are to be maintained. Accordingly, such development may be required to contribute towards the costs of the resultant more frequent maintenance regime.

6.3 Apportionment

In relation to heavy vehicle haulage contributions, the contribution rate has been calculated solely on the demand attributable to a proposed development, and as a result no apportionment has been applied.

6.4 Methodology

The purpose of this methodology is to ensure that heavy vehicle haulage associated with a specific development provides a fair contribution towards the additional costs incurred by Council because of heavy haulage traffic associated with that development.

All heavy vehicles contribute to the deterioration of road pavements. An increase in the number of heavy vehicles using a road will accelerate the deterioration of a road, and lead to increased road maintenance costs being incurred by Council. The impact of heavy vehicles on the condition of road pavements has been well documented by Austroads and other authoritative sources.

Council maintains the Local Government Area's roads at an adopted level of service specified in in its Asset Management Policy and Strategies. As a result of a development using heavy haulage vehicles, Council will need to undertake increased maintenance work to maintain this level of service. The extent of the increased maintenance is dependent on the heavy vehicular traffic generated by the subject development.

Increased road maintenance results in an increased drain on Council's finances. Unless the subject development provides a contribution commensurate with the increased maintenance costs, these increased costs will burden the community with providing the increased funds required by Council to maintain the existing level of service for the road network because of the development.

The costs of keeping roads in a satisfactory condition occur in three main areas:

- Rehabilitation:
  - Regional sealed pavement rehabilitation;
  - Rural sealed pavement rehabilitation, and
  - Unsealed pavement rehabilitation/gravel resurfacing.
- Reseals
  - Maintenance reseal (i.e., regional and local roads)
- Maintenance
  - Annual routine maintenance, and
  - Heavy patching or stabilisation of selected sections.

A traffic generating development will be required to pay a proportion of the above costs based upon the heavy vehicle Equivalent Standard Axle (ESA) impact on the regional or local road used by the heavy vehicles in question. An Equivalent Standard Axle (ESA) is defined as a Dual Tyred Single Axle transmitting a load of 80kN (or 8.2 tonne) to the pavement (Austroads).

The contribution and its calculation do not apply to State Roads that are the funding responsibility of the State Government, such as the Mitchell or Newell Highways.

6.4.1 Roads and Design Life

Council maintains a mix of sealed and unsealed roads. These roads have been subdivided into three categories for the purposes of this Plan:

- Regional sealed pavement;

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- Local sealed pavement, and
- Unsealed pavement.

Each road type has a different design life and maintenance requirements.

Austroads Pavement Design Guides contain design tables where pavement design life can be expressed in accordance with design traffic loadings (ESA). Thus, a standard life of pavement can be expressed as ESAs. This means that the life of a pavement can be expressed as the total number of equivalent axles that should pass over it prior to replacement.

The standard life (assumed design life) for the road categories above in expressed as ESA are:

- Regional sealed roads: approximately 1,000,000 ESA over 60 years
- Local sealed: approximately 1,000,000 ESA over 90 years
- Unsealed roads: approximately 100,000 ESA over 10 years

A sealed road incurs construction costs, maintenance costs and replacement of the wearing course over its design life. An unsealed road incurs ongoing costs for maintenance and gravel resheeting and heavy gravel patching, with additional work required if there is significant damage for natural events, such as flood events.

6.4.2 Maintaining the Narromine Shire Council Roads Network

Table 3: General cost of roads over their design life

Road Type	Treatment	Cost per km	How often?
Regional sealed roads	Rehabilitation	$425,000	at 60^{h} year
	Reseals (average width of 9m)	$63,000	at 10th year
	Maintenance	$2,500	annually
Local sealed roads	Rehabilitation	$250,000	at 90th year
	Reseal (average width of 7m))	$49,000	at 10th year
	Maintenance	$750	annually
Unsealed roads	Resheet	$20,000	at 10^{h} year
	Maintenance	$3,000	annually

Applicants are advised to consult with Council to determine the current costs for the above maintenance activities for the specific roads affected by their proposal, prior to assessing the likely contribution of a specific development.

Based on the Table 3 above, the <u>total cost</u> per kilometre of a regional sealed road over its assumed design life is:

$ maintenance x 54 yrs + $reseal (at 10,20,30,40,50 years) + $ reconstruction (at 60th year)
= ($2,500 x 54) + ($63,000 x 5) + ($425,000)
= $ 875,000 per km

The <u>total cost</u> per kilometre of a local sealed road over its assumed design life is:
$ maintenance x 90yrs + $ reseal (at 10, 20, 30, 40, 50,60,70,80 years) + $ reconstruction (at 90th year)
= ($750 x 81) + ($49,000 x 8) + ($250,000)
= $ 702,750 per km

The <u>total cost</u> per kilometre of an unsealed road is over its assumed design life:
$ maintenance x 9 yrs + $ resheet gravel (at 10th year)
= ($3000 x 9) + ($20,000)
= $ 47,000 per km

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6.4.3 Measuring Traffic Impacts at DA Stage

An assessment of vehicle movements generated by a development is required as part of the Statement of Environmental Effects (SEE) or Environmental Impact Statement (EIS) accompanying the proposed development application.

6.4.4 Measuring Traffic Impacts, Post DA Determination

Notwithstanding the assessment carried out at DA Stage, Council will require ongoing reporting of haulage movements and tonnages to ensure an accurate assessment of contributions towards maintaining the relevant roads.

A quarterly report will be required from the operator of the development. The quarterly report should include details of the number and type of vehicle movements over the past 3 months, including tonnages hauled and if relevant, details of the extracted volume of material will also be required, as is usually submitted annually in returns to the NSW Government Department with responsibility for mines and quarries. The documents should be audited and certified by the operating company's auditor.

Council may require confirmation of the accuracy of the operator's records at the operator's expense if Council feels there are discrepancies in the operator's records or no audited statement is provided by the development. If the confirmation process determines that the operator's records are accurate within a tolerance of 5 percent, Council will assume responsibility for the relevant expenses, such as traffic surveys, etc.

In relation to extractive industries, there is a relationship between the volume of material extracted from the ground and the vehicle movements generated. For extractive industries, generally a 30% loose volume factor is used for conversion of solid volume to loose volume and therefore, it is assumed that an average haulage truck of loose fill volume 10m³ represents 7.7m³ of solid volume extracted. Should an applicant be of the view that this volume factor is inappropriate an alternative factor may be applied provided it is justified to Council's satisfaction.

6.4.5 Method of Assessment

The impact of heavy vehicles on roads will be calculated using ESA (equivalent standard axle), which provides a widely accepted way of determining the likely damage to a road pavement from heavy vehicles. The ESA of the relevant heavy vehicles in the operator's annual return are to be calculated using the latest edition of the *Australian Trucking Association – Track Impact Chart – Technical Advisory Procedure* (at the time of writing this policy, Edition 3 dated September 2024). An alternative technical source that gives similar principles for pavement impact modelling is the *Austroads Guide to Pavement Technology*.

The calculation of contributions will be expressed as a yearly cost, calculated annually and payable quarterly.

6.4.6 Contributions Methodology Formula

This Plan applies a consistent formula to determine the contribution of heavy vehicle haulage towards road maintenance.

This formula considers:

- Use of the roads in question expressed in ESA,
- The design life of the roads, and
- The lifecycle costs of maintaining the roads.

Different road vehicles have different axle configurations and different axle load configurations. In turn, vehicle class configurations are converted to equivalent standard axles (ESA).

The Australian Trucking Association – Truck Impact Chart – Technical Advisory Procedure provides a

methodology for the identifying the ESAs for different vehicles. The Chart shown at Appendix 1 is the latest version at the date of publication of this Plan and calculations are based on this version, which would therefore need to be updated based on any new version of the Chart.

The calculation of the periodic contribution relating to any heavy haulage development is determined by calculating the aggregate impact of the subject heavy vehicle movements on each of the road types described above. Should vehicle configurations be utilised other than those stated in the Table, the applicant should consult with Council to determine the applicable ESA that applies to their vehicle category. The periodic contribution is determined by applying the following formula:

$$\$C = \frac{\$Reg \times ESA \times Reg\ length}{Reg.\ life} + \frac{\$Local\ seal \times ESA \times Local\ sealed\ length}{Local\ sealed\ life} + \frac{\$Unseal \times ESA \times Unsealed\ Length}{Unsealed\ life}$$

where:

- $C is the monetary contribution payable by the development for the relevant period (e.g., preceding quarter) in dollars
  $Reg is the standard cost of regional road per kilometre over the design, being $875,000.
- $Local sealed is the standard cost of a local sealed road per kilometre over the design life, being $702,750.
- $Unseal is the standard cost of local unsealed (gravel) road per kilometre over the design life, being $47,000.
- ESA is the total number of ESAs generated by the development in the preceding period
- Reg life is the standard life of a sealed regional road, which is 1,000,000 ESA
- Local sealed life is the standard life of a local urban or rural sealed road, which is 1,000,000 ESA
- Unsealed life is the standard life of a local gravel road, which is 200,000 ESA
- Reg length is the total length of regional sealed road travelled by the development's laden heavy vehicles estimated at the time of the development application, in kilometres
- Local urban seal Length is the total length of local urban sealed road travelled by the development's laden heavy vehicles, estimated at the time of the development application, in kilometres
- Local rural seal length is the total length of local rural sealed road travelled by the development's laden heavy vehicles, estimated at the time of the development application, in kilometres
- Unsealed length is the total length of local unsealed road travelled by the development's laden heavy vehicles estimated at the time of the development application, in kilometres

6.4.7 Approach to Measuring Traffic Impacts

Two methods can be used to calculate the impact of a specific development, based on the above - a less complex method using “generic” assumptions”, and a more complex method using only information specific to the subject development. Applicants can choose the methodology they prefer.

Method 1: Simplified

This simple method makes assumptions about the nature of the roads and vehicles used. The limitations of this method are the underlying assumptions. The assumed road is based on the proportional distances of local unsealed, local sealed and regional sealed roads that make up the Shire’s road system. The assumed vehicle is based on an assessment of vehicles typically used by extractive or mining industries, but the method can be easily adapted to other land uses by using the ESA that is most appropriate to the heavy vehicles used by that landuse/development.

Under this Method 1, contributions are to be applied by multiplying the proposed development’s annual road haulage tonnage limit by a set rate of $0.170 per tonne (see below) multiplied by the distance (km) of Council roads that make up the haulage route.

If there is no set haul route at the time of DA approval because deliveries will be made to the public as

the development's customers (e.g., a quarry), then the haul route is generally to be measured between the site and the access point on the State classified road (operated by Transport for NSW) that those heavy vehicles will likely use to get to and from the surrounding region.

In circumstances where haulage is entirely on Council's road system, the development application should identify the locations of the major customers of the transported materials, and the applicant should discuss with Council officers the most appropriate application of the levy formulae prior to lodging a development application.

The basis of this method is:

- Current Council road maintenance costs are $875,000 per km per design life for regional sealed roads, $702,750 per km per design life for local sealed roads, and $47,000 per km per design life for unsealed local roads.

- The general split of roads within the Narromine LGA is 11.6% (191 km) sealed regional roads, 41.2% (679 km) local sealed roads, and 47.2% (778 km) local unsealed roads.

- The design life for the road pavements expressed in Equivalent Standard Axle (ESA) loadings is regional sealed roads: - approximately 1,000,000 ESA over 60 years, local sealed roads: - approximately 1,000,000 ESA over 90 years, and local unsealed roads: - approximately 100,000 ESA over 10 years.

- Based on the two most likely heavy vehicle types transporting material from quarries being a three axle heavy rigid vehicle with a payload of up to 15.5 tonne and a six axle truck and trailer combination with a payload up to 33 tonnes, the relevant traffic impact values to be used in this document are 347 ESAs per 1,000 tonne delivery (three axle truck) and 290 ESAs per 1,000 tonne delivery (six axle truck and trailer). Note: this allows for a fully laden load out from its origin (e.g. quarry) as well as the unladen heavy vehicle movement back to that origin (i.e.. a round trip). The ESA figure will need to be amended for other land uses by using the ESA that is most appropriate to the heavy vehicles used by that landuse/development.

- The majority of heavy vehicle traffic is likely to be truck and trailer combinations.

Accordingly, it is considered reasonable to apply that a single maintenance cost based on the proportional split of road types in the Shire, and a traffic impact value of 319 ESAs per 1,000 tonnes for all heavy vehicle types (the average of the above ESA figures).

The difference in design life between sealed and unsealed roads is significant. As a result, the formula includes two parts, being the sealed road component combining local and regional sealed roads, and an unsealed component for the unsealed local roads.

Therefore, the generic apportioned road costs for inclusion in the formulae are calculated as follows:

- Portion of sealed road costs = 11.6% x $875,000 per km (regional) + 41.2% x $702,750 (local) per km = $101,500 per km+ $289,533 per km = $ 391,033 per km
- Portion of unsealed road costs = 47.2% x $47,000 per km = $22,184 per km

Then, the required contribution <u>per tonne</u> noting the traffic impact of the heavy vehicles at 0.319 ESAs per tonne is as follows:

Contribution <u>per tonne per km</u> = 0.319x $391,033 per km / 1,000,000 + 0.319 x $22,184 per km / 100,000.

(ESAs / tonne) x ($ / km) / (ESAs) = $ per tonne per km

= $0.125+ $0.071

= $ 0.196 per tonne per km., rounded to $0.20 per tonne per kilometre

The full contribution rate under the simplified method is $ 0.20 per tonne per km.

In recognition of the economic benefits of heavy vehicle using industries **Council has resolved to adjust the contribution such that operator is levied only 40% of the calculated contribution**, with Council meeting the remaining 60% of the additional road maintenance costs.

i.e. The adjusted contribution payable by the operator is $0.20 per tonne per kilometre x 40% = $ 0.08 per tonne per kilometre.

In addition, Council has resolved if the distance travelled to the nearest State road is less than 5 kilometres, **5 kilometres is to be specified as the minimum distance** (e.g. if the distance is 2 kilometres, 5 kilometres would be used in the formula). Conversely if the distance travelled to the nearest State road is greater than 15 kilometres, **15 kilometres is to be specified as the maximum distance** in the formula, (e.g. If the distance is 22 kilometres, 15 kilometres would be used in the formula).

Method 1 Examples

Example 1

A quarry extracting 500,000 tonnes per year with a haulage route of 2 km over the sealed and unsealed local and regional road network would be required to pay the following annual contribution:

Contribution = $0.20 x 500,000 x 5 = $ 500,000 per annum (Note: use of 5km as the minimum distance).

Adjusted contribution payable by operator = $ 500,000 per annum x 40% (i.e. 0.4) = $200,000 per annum.

Example 2

A quarry extracting 100,000 tonnes per annum over 10 km haulage route over the sealed and unsealed local and regional road network would be required to pay the following annual contribution:

Contribution = $0.20x 100,000 x 10 = $200,000 per annum.

Adjusted contribution payable by operator = $ 200,000 per annum x 40% (i.e. 0.4) = $80,000 per annum.

Method 2: Development Specific

This is a more complex method based on specific information about the subject development in relation to the Council roads to be used as haulage routes and the vehicles used by the development to transport the output of the industry. The levy does not apply to that part of the haulage road on State roads.

In circumstances where haulage is entirely on Council's road system, the development application should identify the locations of the major customers of the transported materials and the applicant should discuss with Council officers to determine the most appropriate application of the levy formulae, prior to lodging a development application.

The methodology considers the average annualised road maintenance costs, and the length and type of Council roads to be used by heavy vehicles associated with the subject development. Increased maintenance costs are calculated using the ESA loading on the road per vehicle as a proportion of the total loadings on the road. This is then converted to a total cost per tonne (1,000 kilograms) per annum over the designated route travelled by the vehicles.

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The increased costs associated with each road are calculated separately, and the total contribution payable for the development is the sum of all the calculated contribution rates for all the individual roads on the designated travel route/s that are described in the relevant Development Application, or subsequent amended information.

However, in recognition of the economic benefits of heavy vehicle using industries Council has resolved to adjust the contribution such that development is levied only 40% of the calculated contribution, with Council meeting the remaining 60% of the additional road maintenance costs.

In addition, Council has resolved if the aggregate distance travelled to the nearest State road is greater than 15 kilometres, 15 km is to be used as the maximum aggregate of distances travelled, and the distance travelled would be proportioned over the type of actual roads travelled (e.g. if the aggregate distance was 24 Km over 6 km of local unsealed road, 6 km of local sealed road and 12 km of regional sealed road, the proportions would be 25% local unsealed:25% local sealed and 50% regional sealed, which would translate into distances of 3.75 km local sealed, 3.75 km local sealed, 7.5 km regional sealed being used in the formula, to give an aggregate distance of 15 km)

If the aggregate distance travelled to the nearest State road is less than 5 kilometres, 5 km is to be used as the minimum aggregate of distances travelled, and the distance travelled would be proportioned over the type of actual roads travelled.

6.4.8 Notional examples

Note: these examples show a higher cost per tonne per kilometre than the less complex method because the examples use a higher proportion of sealed roads relative to the Shire average proportion of sealed vs unsealed roads.

Example 1

A fictitious quarry is proposed. The distance travelled on Shire roads from the quarry to the nearest State road is approximately 10 km of local sealed roads.

The applicant states that the quarry will produce 100,000 tonnes of material each year.

The haulage of the excavated material will involve three axle heavy rigid vehicles which equate to 316 ESAs per 1,000 tonnes.

Because only one type of road (local sealed) is involved, the formula is:

$$\$C = \frac{\$\text{Local sealed} \times (\text{total ESA}) \times \text{Local sealed Length}}{\text{Local sealed life}}$$

$$\$C = \frac{\$702{,}750 \times (0.316 \times 100{,}000) \times 10}{1{,}000{,}000}$$

= $222,069 per annum

Adjusted contribution payable by operator = $222,069 per annum x 40% (i.e. 0.4) = $88,828 per annum.

Example 2

A fictitious mine is proposed. The distance travelled on Shire roads from the mine to the nearest State road is approximately 5 km of regional sealed roads, 10 km of local sealed roads and 5 km of local unsealed roads. This is an aggregate distance of 20 km which is greater than the 15 kilometre maximum distance to be used in the formula (see above).

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The applicant states that the mine will produce 50,000 tonnes of material each year.

The haulage of the excavated material will involve six axle truck and trailer vehicle movements with 290 ESAs per 1,000 tonnes.

Because all three road types are involved, the formula is:

$$\$C = \frac{\$Reg \times (\text{total ESA}) \times \text{Reg length}}{\text{Reg. life}} + \frac{\$Local\ sealed \times (\text{total ESA}) \times \text{Local sealed length}}{\text{Local sealed life}}$$

$$+ \frac{\$Unseal \times (\text{total ESA}) \times \text{Unsealed length}}{\text{Unsealed life}}$$

Because the distance is 20 kilometres (greater than 15 kilometres), the distances travelled on various types of roads need to be proportioned to reflect a maximum aggregate distance no greater than 15 kilometres. In this example, the proportioning is 15/20 = 0.75

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$$\$C = \frac{\$875{,}000 \times (0.290 \times 50{,}000) \times 5 \times 0.75}{1{,}000{,}000} + \frac{\$702{,}250 \times (0.290 \times 50{,}000) \times 10 \times 0.75}{1{,}000{,}000}$$

$$+ \frac{\$47{,}000 \times (0.290 \times 50{,}000) \times 5 \times 0.75}{100{,}000}$$

= $47,578+ $76,367+$25,556
= $149,501 per annum reduced for 15 kilometres maximum.

Adjusted contribution payable by operator = $149,501 per annum x 40% (i.e. 0.4) = $59,800 per annum.

7 PLAN ADMINISTRATION COSTS

7.1 Nexus

The preparation and administration of a Section 7.11 plan require resources. Council employs staff to undertake the financial accounting of contributions and implement the Plan and its works. In addition, consultant studies and specialist advice (e.g., legal and valuation) are obtained to assist with Plan preparation, management and review.

The costs involved with administering Section 7.11 are an essential component of the efficient provision of facilities necessitated by development within the Contributions Area.

7.2 Strategy

The Plan aims to provide funds to ensure the efficient management of the Section 7.11 planning and financial processes within Council. These processes will be ongoing throughout the life of the Plan.

Council staff that are accountable for facility/service planning and delivery will be involved in reviewing and updating the Plan. This may include review of the works schedules or the latest information on community needs to ensure that facility planning is current and appropriate. This may also include engaging specialist consultants (e.g., planning and engineering specialists) to carry out studies.

7.3 Calculation of Contribution

The estimated cost of Council staff and specialist consulting assistance in the preparation, implementation, management and administration of this Plan is 1% of the value of contributions. Note: the contribution resulting from this calculation is additional to the contribution calculated from the relevant heavy vehicle haulage.

Table 4: Plan Preparation and Management Contributions

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Contributions Area	Contribution
Plan Management Administration - Heavy Vehicle Generating Development	1% of the calculated contribution

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AUSTRALIAN TRUCKING ASSOCIATION Truck Impact Chart 12 September 2016

	Configuration Code (ATA TAP)	GCM (tonnes)	Payload (tonnes)	Load Status 0%	Load Status 50%	Load Status 100%	No Trips per 1000 tonnes	ESA's per 1000 tonnes	Nom Fuel / 100 kilometres	Fuel Required per 1000k lead	Driver Requirement	Overall Length (metres)	EAM (metres)	Emissions / 1000 tonnes	Convoy Length at 60 km/h. (kilometres)	Convoy Length at 100 km/h. (kilometres)
				Calculated ESA's 4th Power												
Two Axle Rigid GML	R11	15.0	7.00	0.42	1.18	3.00	143	490	23	65780	340%	<12.5		167%	8.94	13.71
Two Axle Rigid Euro4	R11	15.5	7.63	0.43	1.34	3.57	132	529	23	60720	314%			154%	8.25	12.65
Three Axle Rigid GML	R12	22.5	13.12	0.51	1.27	3.58	77	316	28	43120	183%	<12.5		109%	4.82	7.38
Three Axle Rigid Euro4	R12	23.0	13.69	0.53	1.46	4.16	74	347	28	41440	176%			105%	4.63	7.1
Four Axle Rigid GML	R22	27.5	15.50	0.36	1.30	4.13	65	292	32	41600	155%	<12.5		105%	4.07	6.23
Five Axle Rigid GML	R23	31.0	17.62	0.35	1.19	3.44	57	217	35	39900	136%	< 12.5		101%	3.57	5.47
Six Axle Artic GML	**A123**	**43.0**	**24.04**	**1.68**	**2.59**	**5.54**	**42**	**304**	**47**	**39480**	**100%**	19.0	10.00	**100%**	**2.9**	**4.3**
Six Axle Artic HML	A123	46.0	27.04	1.68	2.59	5.54	37	268	50	37000	88%			94%	2.56	3.79
Truck & Dog (6 Axle - 45.5T Vic)	R12T12	45.5	30.00	1.64	2.49	6.31	34	271	49	33320	81%	19.0	12.50	84%	2.35	3.48
Truck & Dog (6 Axle - 48.5T NSW)	R12T12	48.5	33.00	1.64	2.64	7.70	31	290	49	30380	74%		15.50	77%	2.14	3.18
Truck & Dog (7 Axle)	R12T22	50.5	33.60	1.64	2.45	6.15	30	234	51	30600	71%		17.50	78%	2.07	3.07
Truck & Dog (20M - PBS)	R12T22	56.0	38.60	1.65	2.74	8.29	26	259	53	27560	62%	20.0	17.33	70%	1.82	2.69
Truck & Dog (20M PBS)	R12T23	57.5	40.10	1.65	2.74	8.29	25	249	55	27500	60%		18.33	70%	1.75	2.59
19M B.double GML	B1222	56.0	36.35	1.67	2.88	8.29	28	279	53	29680	67%	19.0	17.33	75%	1.94	2.87
19M B.double CML/HML	B1222	57.5	37.85	1.67	2.88	8.29	27	269	55	29700	64%			75%	1.87	2.77
B.double GML	B1233	63.0	38.84	1.69	2.80	6.91	26	224	62	32240	62%	26.0	21.00	82%	1.98	2.85
B.double HML	B1233	68.5	44.34	1.69	2.80	6.91	23	198	65	29900	55%			76%	1.75	2.52
B-triple GML	B12333	83.0	52.35	1.71	3.07	8.29	20	200	68	27200	48%	35.0	23.33	69%	1.7	2.37
B-triple HML	B12333	91.0	60.35	1.71	3.07	8.29	17	170	72	24480	40%			62%	1.45	2.02
AB-triple GML	A123T2B33	99.5	64.00	1.84	3.52	10.36	16	196	75	24000	38%	36.5/42.5 (modular)	28.83	61%	1.48	2.02
AB-triple HML	A123T2B33	108.0	72.50	1.84	3.52	10.36	14	171	79	22120	33%			56%	1.3	1.77
Type 1 R/train - GML	A123T23	79.5	48.73	1.72	3.25	8.98	21	225	68	28560	50%	36.5	22.17	72%	1.82	2.52
Type 1 R/train - HML	A123T23	85.5	54.73	1.72	3.25	8.98	19	204	72	27360	45%			69%	1.65	2.28
Type 2 R/train - GML	A123T23T23	116.0	73.42	1.76	3.91	12.42	14	199	80	22400	33%	53.5	34.33	57%	1.45	1.92
Type 2 R/train - HML	A123T23T23	125.0	82.42	1.76	3.91	12.42	13	185	83	21580	31%			55%	1.35	1.78
BAB Quad - GML	B1233T2B33	119.5	78.42	1.73	3.68	11.74	13	176	81	21060	31%	51.5	35.50	53%	1.32	1.76
BAB Quad - HML	B1233T2B33	130.5	89.42	1.73	3.68	11.74	12	162	85	20400	29%			52%	1.22	1.62

For further information contact ATA on 02 6253 6900

The B-triple; AB-triple; & the BAB-Quad are based on modular vehicle units as agreed by ATA General Council.

EAM (Extreme Axle Measurement)	Is the minimum dimensional requirement in regard to Axle Spacing Mass Schedule (ASMS) requirements for the stated Gross Combination Mass. The formula varies depending on the gross mass of the vehicle and whether the vehicle is a road train. In addition to EAM, internal axle groups must also comply to the appropriate ASMS.

* The data in this table is provided for general information and does not take into account your specific circumstances. You should obtain professional engineering advice before taking action.

Australian Trucking Association and Barkwood Consulting P/L **September 2016** **Truck Impact Chart - Modular**