TWEED
SHIRE COUNCIL

CP32

Section 7.11 Plan

No 32 – Developer Contributions for Heavy Haulage

Version 1.0.2
Effective 15 December 2022
Indexed July 2024

CERTIFIED IN ACCORDANCE WITH

THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

AND REGULATIONS

General Manager DATE: 17 November 2022

SECTION 7.11 PLAN No 32

DEVELOPER CONTRIBUTIONS FOR HEAVY HAULAGE

Version 1

In Force: 15 December 2022
Indexed: July 2024

Version	Adopted	Description	Effective
1	17/11/2022	Contributions for Extractive Industries and /or processed quarried material and other Heavy Haulage traffic generating developments	15/12/2022
1.0.1 1.0.2		Indexation applied in accordance with Section 2.10 of this plan and the Environmental Planning and Assessment Regulation 2021.	1/7/2023-1/7/2024

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1.0 PART A – SUMMARY SCHEDULES

1.1 Summary schedule – contribution rates

Development Type	Contribution Rates Version1*	Version 1.0.2 indexed July
Extractive Industries and /or processed quarried material	$ 0.744 / tonne	$0.809 / tonne
Other Heavy Haulage traffic generating developments	$0.051/ tonne / kilometre (and trip length (km) be determined by a traffic assessment)	$0.055/ tonne / km

See Section 3.6 for more detail

Indexed in accordance with Section 2.10 of this plan and the Environmental Planning and Assessment Regulation 2021. See Appendix 2 - Indexation Calculations for more information.

1.2 Summary schedule - works program

Potential roads that will be the subject of works partly or fully funded under this plan are the roads that the Council has responsibility for. The locations of these roads are shown in Figure 1.

It is not possible for Council to specify in this plan which sections of the roads shown in Figure 1 will be upgraded or maintained using contributions collected under this plan. It is intended that works programs and application of funds collected under this plan to those works will be determined as part of Council's annual Integrated Planning & Reporting process.

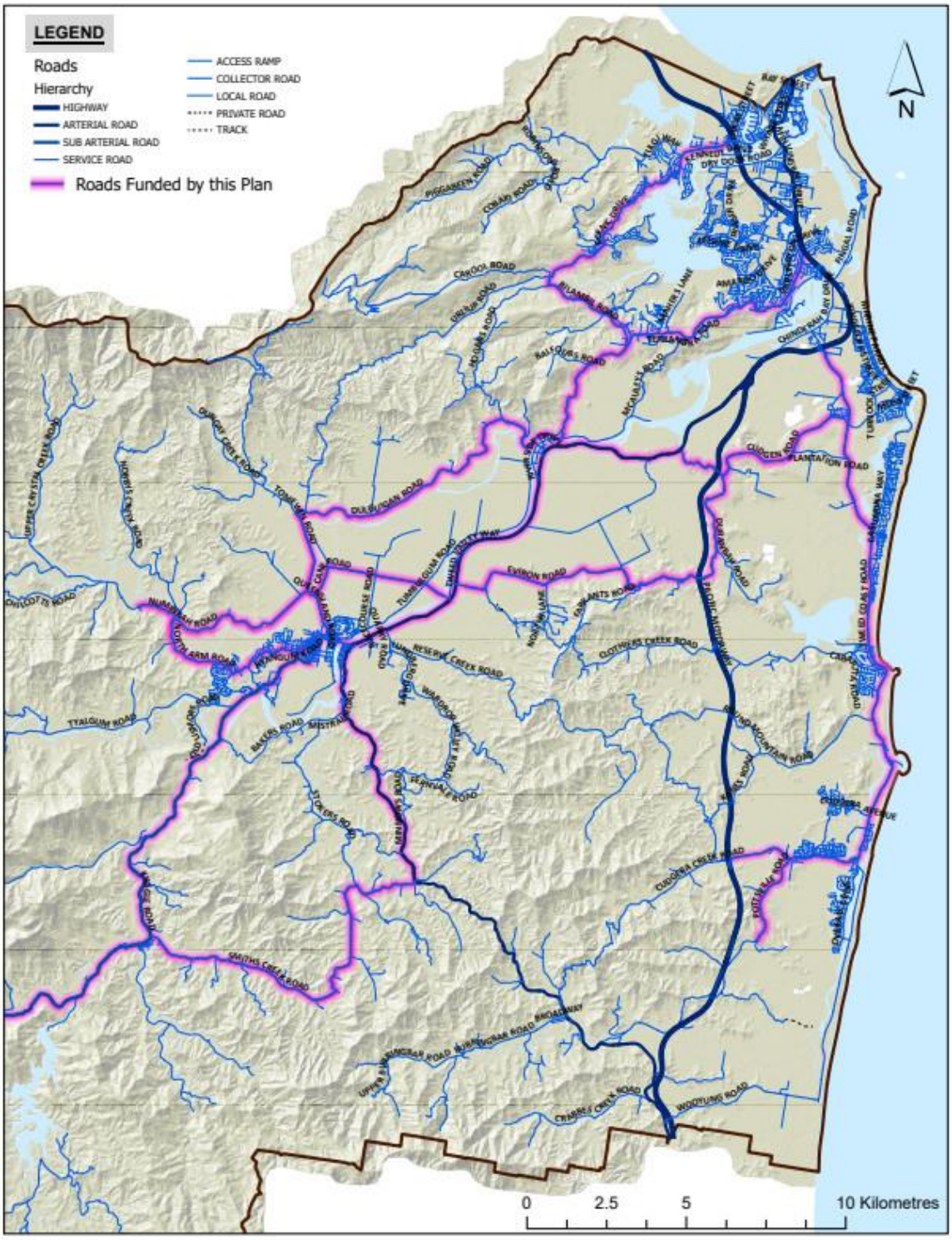

Figure 1
Roads Funded by this Plan

1.3 Published indices at time of adoption

Index	Rate	Index Date	Published
Producer Price Index (PPI) 3101 Road and bridge construction NSW (ABS)	130.2	2022-Q2	July 2022
TSC Land Index	307.32	March 2021	2021 Tweed Shire Council Revenue Policy

2.0 PART B – ADMINISTRATION

2.1 Name of this development contribution plan

The name of this Plan is *Tweed Shire Council Section 7.11 Contribution Plan No 32 – Developer Contributions for Heavy Haulage (Version 1)*.

2.2 Land to which this plan applies

This S7.11 Contribution Plan No 32 for Heavy Haulage applies to development on any land within Tweed Shire.

2.3 The Purpose of the plan

The purposes of this plan are to authorise:

- The consent authority, when granting consent to an application to carry out development to which this plan applies; or
- The Council or an accredited certifier, when issuing a Complying Development Certificate (CDC) for development to which this plan applies,

to require a contribution (under section 7.11 of the Environmental Planning and Assessment Act EP&A Act) to be made towards the provision of Local Infrastructure required as a consequence of development within the Plan area, to partly or fully fund the cost of replacement of sections of the local road network used or likely to be used by heavy haulage vehicles generated by new development as defined in this Plan.

Other purposes of this plan are as follows:

- To provide a comprehensive strategy for the administration of this Plan including the assessment, collection, expenditure accounting and review of development contributions on an equitable basis.
- To establish the relationship between the expected development and proposed Local Infrastructure (Nexus) to demonstrate that the section 7.11 contributions required under this plan are reasonable.

2.4 Development exempted from contributions under this plan

The following developments or components of developments are exempted from the requirement to make a contribution under this plan:

- Extractive industries with an average annual approved output of up to and including 5,000 cubic metres of material or product (to minimise the impact on the economic viability of smaller operations and to recognise the smaller and localised haulage associated with these developments).

- Other developments within an average annual approved total haulage of up to and including 8,000 tonnes of material, product or payloads (or equivalent) (applying the same justification as above).
- Development located in Business and Industrial Zones within the Shire under the provisions of the current Tweed Shire Council Local Environmental Plans (see Section 2.6). This makes allowance for the location of these developments on road networks designed and constructed with a higher standard. Furthermore, the large volume, various types and unpredictable loadings of vehicles generated by both development within zoned commercial and industrial areas, and vehicles operation within these areas, make collection of data for efficient and equitable determination of contributions uncertain.
- Public infrastructure to be carried out by or on behalf of Tweed Shire Council that is identified in the Works Plan of any other Tweed Shire Council S7.11 Developer Contribution Plan.

2.5 Commencement of the plan

Version 1 of this plan came into effect on 15 December 2022.

This development contribution plan has been prepared pursuant to the provisions of S7.11 of *the Environmental Planning & Assessment Act* and Part 7 of the *Environmental Planning & Assessment Regulation 2021* (EP&A Regulation*)* and takes effect from the date on which public notice of approval of the plan was published, pursuant to clause 214(4) of the EP&A Regulation*.*

2.6 Relationship with other Council Plans and Strategies

This contribution plan should be read in conjunction with the Tweed Local Environmental Plan (TLEP) 2014 (and the TLEP2000 for land shown as “deferred matters”), Tweed City Centre LEP 2012 and Shire-wide sections of Council’s Development Control Plan and other applicable Shire wide S7:11 Contribution Plans.

2.7 Definitions and standards

Definitions	
Accredited Certifier	For the purposes of the certification of Construction Certificates and Complying Development Certificates as referenced in this plan, the Accredited Certifier is the principal certifying authority.
EP&A Act	Environmental Planning and Assessment Act 1979, as amended
EP&A Regulation	Environmental Planning and Assessment Act Regulation 2021, as amended.
IPD (Implicit Price Deflator)	Index used for adjustment of construction component up to and including 2020 – refers to the value of work done (implicit price deflator); Chain Volume Measures; Engineering Construction; ABS Reference A405071T, ABS Product Number 8782.0.65.001
PPI (Producer Price Index)	Index used for adjustment of construction component from 2021 onwards – refers to ABS Producer Price Index 3101 Road and bridge construction NSW
TSC Land Index	Index used for adjustment of land acquisition costs – Tweed Shire Council Land Index, as published in Council's Management Plan and Quarterly Report.
Nexus	The relationship between the expected types of development in the area and the demand created by those developments for additional public facilities. The link between the proposed development and the increased demand for public facilities may be demonstrated through causal nexus (what), spatial nexus (where) and temporal nexus (when). **Causal nexus** requires that the need for the service or facility being levied must be a result of the development being levied. **Physical nexus** requires that the service or facility be near enough in physical terms to provide benefit to that development. **Temporal nexus** requires that the service or facility must be provided within a reasonable time.

Standards used in this contributions plan	
Extractive Industries	means the winning or removal of extractive materials (otherwise than from a mine) by methods such as excavating, dredging, tunnelling or quarrying, including the storing, stockpiling or processing of extractive materials by methods such as recycling, washing, crushing, sawing or separating, but does not include turf farming. For the purpose of this plan, extractive industry also includes mines and the processing and/or refining of extractive materials and water from springs/bores.
Quarry or quarried material, quarried product	means an extractive industry or material obtained from an extractive industry.

2.8 Timing of Contributions

Contributions will be required as a condition of development consent on applicable developments.

A contribution shall be paid to the Council on a quarterly basis at the applicable indexed rate based on the tonnage hauled for that period. Payments shall be made with a "haulage return" that discloses information including information including applicable quarter, quantities of material, tonnage rate, contribution payment and the like and be certified by a company officer. Where there has been no heavy haulage a nil return is required to be submitted. The standard conditions of consent applicable to proposed quarries are provided in Appendix 3.

2.9 Obligation of accredited certifiers

Construction Certificates:

A certifying authority must not issue a construction certificate for building work or subdivision work under a development consent unless it has verified that each condition requiring the payment of monetary contributions has been satisfied.

The certifier must ensure that the applicant provides a receipt(s) confirming that contributions have been fully paid and copies of such receipts must be included with copies of the certified plans provided to the council. Failure to follow this procedure may render such a certificate invalid.

The only exceptions to the requirement are where a works in kind, material public benefit, dedication of land or deferred payment arrangement has been

agreed by the council. In such cases, council will issue a letter confirming that an alternative payment method has been agreed with the applicant.

Complying Development Certificates:

In accordance with section 7.11 of the EP&A Act a certifying authority must impose a condition on a complying development certificate requiring the payment of a monetary contribution in accordance with this plan. The condition must be set out and be calculated in accordance with Appendix 3 of this plan.

Payment for contributions cannot be accepted by Council before Council has registered the complying development certificate in its system which will not occur until Council has received notification of the complying development certificate from the accredited certifier of the issuing of the certificate.

Failure to follow this procedure may render such a certificate invalid.

Recalculation of contributions:

Council's search fee will apply in cases where the recalculation of contribution rates is required.

2.10 Adjustment of contribution rates

To ensure that the value of contributions are not eroded over time by movements in the land value increases, the capital (construction) costs of the works and administration of the plan or through changes in the costs of studies used to support the Plan, the council will adjust the contribution rates.

The contribution rates will be adjusted in accordance with the consent condition by reference to the following specific indices:

- construction costs by the **Producer Price Index (PPI) 3101 Road and bridge construction New South Wales** as published by **the Australian Bureau of Statistics (ABS)**;
- the costs of various studies and activities required to support the strategies in the Plan by reference to the actual costs incurred by the Council in obtaining these studies

In accordance with *the EP&A Regulation*, the following sets out the means that the council will make changes to the rates set out in this plan.

For changes to the **PPI** index, the contribution rates within the plan will be adjusted on a quarterly basis in accordance with the following formula:

$$\$C_A + \frac{\$C_A \times ([\text{Current Index} - \text{Base Index}])}{[\text{Base Index}]}$$

Where

$\$C_A$ is the contribution at the time of adoption of the plan expressed in dollars;

Current Index PPI	is the **PPI** as published by the ABS available at the time of adjustment of the contribution rate;
Base Index PPI	is the **PPI** as published by the **ABS** for the date of adoption of this Plan.

Note: In the event that the Current PPI is less than the previous PPI, the Current PPI shall be taken as not less than the previous PPI.

Should either index not be published for a given year, ABS CPI (All Groups Sydney) is to be used.

2.11 Adjustments at the time of payment

The contributions stated in a consent are calculated on the basis of the S7.11 Plan contribution rates determined in accordance with this plan. The contributions payable will be adjusted and the amount payable will be calculated on the basis of the contribution rates that are applicable at time of payment in accordance with the consent condition.

The current contribution rates are published by council and are available from council offices. Should the council not validly publish the applicable contribution rates, the rate applicable will be calculated in accordance with the rate prevailing in the previous quarter.

2.12 Pooling of contributions

This plan authorises monetary S7.11 contributions paid for different purposes to be pooled and applied (progressively or otherwise) to any item in the works schedule. The priorities for the expenditure of the levies are shown in the works schedule.

2.13 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.

2.14 Contributions register and accounting

Council will maintain a register of all contributions received in accordance with Clause 217 of the Environmental Planning and Assessment Regulation 2021.

The register will be available for public inspection in accordance with the Regulation.

Council may permit the short-term transfer of funds on a priority basis. This will only be done on the basis that:

- full details of the transfer and subsequent reimbursement of funds are recorded;

- the transferred funds are returned to the relevant categories by future contributions;
- there is a reasonable expectation that future contributions will be obtained to enable reimbursement of the category from which monies have been transferred;
- the purpose for which the contributions are transferred is a purpose identified in the Works Schedule.

2.15 Review of plan

This contribution Plan will be subject to regular review by Council, to ensure that contribution levels reflect current construction costs.

Any material changes in the Plan, except for the annual adjustment of contribution amounts, will require that the Plan be amended in accordance with Clause 215 of the EP&A Regulations. This will require public exhibition of the amended Plan and consideration of submissions received.

3.0 PART C – STRATEGY PLAN AND NEXUS

3.1 Introduction

There are 5 key considerations for determining development contributions, being:

(a) Can the public infrastructure that is proposed to be funded by a development contribution be provided within a reasonable time?

(b) What will be the impact of the proposed development contribution on the affordability of the proposed development?

(c) Is the proposed development contribution based on a reasonable apportionment between existing demand and new demand for public infrastructure to be created by the proposed development to which the contribution relates?

(d) Is the proposed development contribution based on a reasonable estimate of the cost of proposed public infrastructure?

(e) Are the estimates of demand for each item of public infrastructure to which the proposed development contribution relates reasonable?

These considerations are addressed in this section by demonstrating a clear nexus between the requirement to partly or fully fund the cost of replacement of sections of the local road network used or likely to be used by heavy haulage vehicles generated by new development as defined in Section 3.2 and the wear and tear (damage) calculations detailed in Section 3.4.

3.2 Relationship between development and demand (Nexus)

This contribution plan seeks to identify a reasonable level of contribution for developments that generate heavy haulage traffic should pay to Council towards road reconstruction works. Where the consent authority is a Council, a development contribution may only be imposed on a development if it is of a kind allowed by and determined in accordance with a contributions plan, such as this plan.

This plan sets out a reasonable estimate of the cost per tonne of extractive material hauled that should be paid to Council for the cost of road reconstruction necessary as a result of the pavement damage to the local road network. This approach is based on:

- The average cost of road reconstruction due to typical heavy haulage vehicles on a tonne per kilometre rate.
- An estimated average travel distance per tonne of weight associated with the transport by typical heavy haulage vehicles on the local road network based on existing quarries and various assumptions about the heavy haulage destinations.

The reasonable contribution rate for non-extractive industry heavy haulage traffic movements will need to have regard to the nature of each development. It is considered reasonable that the assumed cost per tonne per kilometre for extractive industries applies to non-extractive industries. An assessment of the typical haulage travel distance on the local road network will be required.

The road network within the Tweed Shire (the Shire) comprises two distinctive parts from an operational and funding perspective. The first is the Highway network that traverses the Shire, being the Pacific Highway, with maintenance that is 100% funded either directly by the NSW Roads and Maritime Service (RMS). The remaining "local road network" is the responsibility of Tweed Shire Council (TSC). Some grant funding is provided by State and Federal Governments for road maintenance and upgrading of the local road network.

Roads have a design life after which they need reconstruction. Heavy vehicles can significantly reduce the life of a road. The heavy vehicles have a disproportionally greater impact on the life of roads compared to other light vehicles.

Highways are designed and constructed to accommodate heavy vehicles and the damage associated with heavy trucks is recouped through registration and general taxation.

Roads within the local road network generally have a lower design standard and are more susceptible to wear and tear associated with heavy vehicles. This results in the need for more frequent reconstruction work.

The majority of heavy haulage vehicles that impact on the local road network are associated with the haulage of materials that are quarried and/or processed for road and building construction, such as sand, road base, crushed aggregate and asphalt.

Not all quarried products are for use within Tweed Shire with some transported via local roads and then via Highways to external destinations beyond the Shire.

The use of the local road network by heavy haulage vehicles contributes to a decline in the serviceable life of these roads, thereby bringing forward the cost for renewal. The location of quarries is determined by the location of the underlying resource, and maybe some distance from the major highways and requires quarried materials to be transported via parts of the local area network. The impact of heavy haulage of quarried materials on the local road network is by its nature difficult to ascertain with any precision.

The destination and travel routes of heavy haulage vehicles varies widely depending on the location of projects being serviced.

The impact of heavy haulage associated with the non-extractive industries will also vary depending on the nature of the business.

Notwithstanding these uncertainties, it is clear that heavy vehicles have a significant impact on the life of sections of the local road network that in turn

imposes significant costs by requiring more frequent reconstruction works to ensure road safety and satisfactory levels of service for all users.

Given the above, Council could as a condition of consent require the travel routes for every heavy haulage truck movement to be logged and use the information to calculate the precise cost of the road pavement damage and commensurate reconstruction needs attributable to those movements. For accuracy this would need to be accompanied by a requirement that each quarry development had a weighbridge to determine the weight of each loaded truck.

It is considered an unnecessarily onerous approach to calculating a reasonable contribution that should be reimbursed to Council to fund reconstruction work. A more reasonable approach is to estimate the likely cost of pavement damage caused by a typical heavy haulage vehicle (per tonne per kilometres) and multiplying this cost with the assumed average trip length of a tonne of hauled material.

3.3 Administration

A surcharge of 5% to cover the costs associated with administering and updating the Plan is applied to contributions collected under this Plan.

This helps cover the following:

- costs expended by the Council for the preparation of the plan, including consultants' fees.
- cost of staff time to implement the plan,
- process and account for contributions and monitor and amend the plan.
- the processing of quarterly returns

3.4 Works program

Council will collect monetary contributions from developments that generate heavy haulage and apply the contributions toward the replacement of the local road network.

Potential roads that will be the subject of works partly or fully funded under this plan are the roads that the Council has responsibility for. The locations of these roads are shown in Figure 1.

Development that is likely to occasion significant heavy vehicle movements may be approved in any location throughout the Shire.

As a result, it is not possible for Council to specify in this plan which sections of the roads shown in Figure 1 will be upgraded or maintained using contributions collected under this plan. It is intended that works programs and application of funds collected under this plan to those works will be determined as part of Council's annual Integrated Planning & Reporting process. Cost Estimate of road reconstruction.

Developments that this CP applies to will be charged a contribution commensurate with the additional wear and tear on Council’s Road network caused by heavy

haulage vehicles for the purpose of this plan "heavy haulage" applies to the haulage by road of extractive and non - extractive material.

The contribution is a levy based on quantities, calculated as follows:

$$\$Unit = \frac{\$\text{Value of pavement consumed}_{\text{reconstruction cost}}}{\text{life of pavement}_{\text{ESAs}}}$$

and

$Value of pavement consumed $_{reconstruction\ cost}$ = cost per kilometre to rehabilitate pavement for the expected usage life of the pavement

life of pavement ESAs = life of pavement measured as a function of usage, i.e., Equivalent Standard Axles (ESA's).

Based on the computations included in Appendix 1, the *$Unit* charge to be levied under this Plan will be:

$Unit	=	$0.051 per tonne per kilometre (based on a 33-tonne payload)

where:

$Unit = heavy haulage contribution per tonne per kilometre

3.5 Contribution rates

3.5.1 Extractive Industries

A reasonable method of determining a reasonable contribution that extractive industry development should pay, is to determine a standard contribution per tonne of material hauled.

This can be determined by estimating the estimated cost of pavement damage caused by a typical heavy haulage vehicle (per tonne per kilometre) and multiplying this cost by the average trip length per tonne of hauled material.

This should be undertaken on a quarterly basis.

The estimated average cost of the damage to pavement by a typical heavy vehicle used to transport quarry material for a typical shire road is $0.051 per tonne per kilometre (See Appendix 1).

The assumed haulage distance per tonne of quarried material hauled by a heavy haulage vehicle within the local road network is 13.9 kilometres based on existing operational quarries with Tweed Shire (see Appendix 2)

$$\$Con_{-\ HEAVY} = \text{Distance} \times \$Unit \times Admin\%$$

Where:

$$\$Con_{HEAVY} \text{ - heavy haulage contribution per trip}$$

Then

$$\$Con_{-\ HEAVY} = \$0.051 \times 13.9 \times 1.05$$
$$= \$\ 0.74 \text{ per tonne}$$

And

Dist. - the average length of the haul route on Shire roads (one way, in kms)
$Unit - the unit cost of rehabilitating a road per tonne per km of the haulage route, as determined in Appendix 1
Admin% - administration levy of 5% to cover the costs of maintaining and administering this plan.

3.5.2 **Non-Extractive materials**

A reasonable method of determining the fair share of the cost that non-extractive industry development should pay, is to determine a standard contribution per tonne of material hauled. This can be determined by estimating the likely cost of pavement damage caused by a typical heavy haulage vehicle (per tonne per kilometre) and multiplying this cost by the average trip length per tonne of hauled material. The cost of pavement damage (per tonne per kilometre) assumed in Section 3.5 shall be used unless it can be demonstrated that a more appropriate cost is applicable.

The calculation of the cost by the average trip length per tonne of hauled material shall be determined for non-extractive development based on an assessment of the likely trip generation of the development.

An assessment by a traffic expert may be required by Council to assist in the determination of the likely haulage trip distance per tonne.

$$\$Con_{-HEAVY} = Distance \times \$Unit \times Admin\%$$

Where

Con_{-HEAVY}$ = $0.051 x Distance x 1.05
= $ 0.054 per tonne per Distance (km)

Distance to be determined as discussed above

3.6 Volume to Weight Conversion

The different sizes and operating strategies will determine how material that is subject to this plan is measured and/or sold. Some quarries will be sufficiently large to justify the expense of installing a weighbridge, others will measure material by volume by reference to size of trucks and/or number of loading buckets. For quarries that use volume to measure and sell material, the applicable conversion rates shall be sourced from Appendix 4. Where an applicant is of the view that the relevant conversion does not reasonably reflect the real conversion rate for the material, a certified density test may be accepted from the National Association of Testing Authority or some other like organisation acceptable to Council.

3.7 Self-Containment and Disputes

This Plan assumes particular land uses and traditional containment factors consistent with a wide range of urban forms, but not all situations can be pre-empted. From time to time, Council may receive development applications that do not fit with these assumptions. Council will assess these instances on the merit of the individual case.

Council may at its discretion agree to use a different travel distance for the purpose of this formula where there is sufficient evidence provided or obtained that indicates that there is a significant difference between the developments typical/average travel distance and the standard 14 km assumed travel distance.

Council's strong preference is towards a negotiated outcome; however, in the event that an agreement cannot be reached Council will commission a competent consultant, funded by the applicant to resolve the matter.

Appendix 1 – HEAVY HAULAGE (OF EXTRACTIVE MATERIAL)

The majority of Council's sealed roads are granular pavements comprising basecourse gravels over virgin in situ material. While this is adequate for current needs, increased traffic usage or the increased percentage of heavy haulage traffic using a road significantly reduces the life of the existing pavement.

Sealed roads will generally require pavement rehabilitation treatments to provide the additional strength for sustained heavy haulage developments. In most instances, rural pavements are strengthened by an “overlay” of additional basecourse gravel, and urban pavements may be stabilised by adding a chemical binder to the existing materials. . The wearing surface of a rural road is generally a sprayed bitumen seal, while asphalt is used in urban areas.

The Council’s works cost-estimation database currently (at May 2022) uses unit rates ranging from $60 to $120 per square metre for rehabilitation treatments to rural roads and in the order of $100 to $120 per square metre for urban roads Using $100 as the weighted average treatment value and assuming a pavement width of 8 metres (averaged over the whole shire), a typical 2-lane road would cost $400,000 per lane-kilometre to rehabilitate.

In terms of traffic load, the life of a pavement is expressed in the number of Equivalent Standard Axles (ESA's). The design ESA (DESA) is the cumulative number of loads on axle groups that cause the same damage to a pavement as a standard dual tyre axle loaded to 8.2 tonnes. Wearing surfaces such as bitumen seals and thin asphalts are not designed using ESAs as their lives are largely independent of axle loads.

Schedule 1.1 lists the calculations of design traffic ESAs for all roads included in this plan. These traffic calculations were carried out in accordance with Austroads Guide to Pavement Technology Part 2 – Pavement Structural Design 2017 and using class specific traffic load distribution tables from Queensland Department of Transport and Main Roads. A design life of 20 years for rehabilitation treatments was used in the calculations.

In summary, DESA loadings for granular pavements are calculated from Austroads 2017 section 7.4 by the use of equations numbered 30, 31, 32, 35 and 37.

From the DESA values calculated for each road in Schedule 1.1, the average DESA is 1.68×10^6. This value becomes the “life of pavement $_{ESAs}$” in the $\$Unit$ formula in section 3.5 of this Plan.

The unit cost of the damage caused by heavy haulage vehicles can then be calculated as:

$Damage	$400,000 per lane-kilometre ---------- 1.68 x 10^6 ESA's $0.238 per ESA per kilometre of road traversed

Heavy vehicles are categorised by typical axle numbers and groupings. For heavy vehicles and pavement design, axle types are categorised as:

- single axle with single tyres (SAST)
- single axle with dual tyres (SADT)
- tandem axle with single tyres (TAST)
- tandem axle with dual tyres (TADT)
- triaxle with dual tyres (TRDT)
- quad-axle with dual tyres (QADT)

The most common quarry haulage vehicle is considered to be a Class 4 tandem axle truck with 'dog' trailer.

The combination of axle groups for this vehicle is SAST (steering axle); TADT (rear truck axles); SADT (front trailer axle); and TADT (rear trailer axles). As noted above, an ESA is a measure of loadings on axle groups that produce the same pavement damage as a standard axle. Austroads 2017 calculates this from equation number 36:

$$ESA_{ij} = \left(\frac{L_{ij}}{SL_i}\right)^4$$

where

ESA_{ij} = number of repetitions of a Standard Axle which causes the same amount of damage as a single passage of axle group type i with load L_{ij}

SL_i = Standard Load for axle group type i (from Table 7.7 and Table 7.8)

L_{ij} = j^{th} load magnitude on the axle group type i

The standard loads (SL_i) for the axle groups of a truck and 'dog' trailer are:

- SAST – 5.4 tonne

- TADT – 13.8 tonne
- SADT – 8.2 tonne

The National Heavy Vehicle Regulator permits the General Mass Limit of a 6-axle truck and 'dog' trailer to be 48 tonnes, with a payload of 33 tonnes. The permitted mass limits for each axle group (L_i) of this vehicle are:

- SAST – 6.0 tonne
- TADT – 16.5 tonne
- SADT – 9.0 tonne

The number of ESAs resulting from a single fully laden truck and 'dog' trailer is then calculated as:

$$ESA = (6.0/5.4)^4 + (16.5/13.8)^4 + (9.0/8.2)^4 + (16.5/13.8)^4$$
$$= 7.1$$

Thus, each passage of a truck and 'dog' trailer causes damage to the value of:

$Unit	ESA's 7.1 ESAs x $0.238 per ESA per kilometre $1.69 per kilometre of the haulage route $0.051 per tonne per kilometre of the haul route for a 33-tonne payload

Appendix 2 – Haul lengths

Potential Heavy Haulage Road Maintenance Contributions

Extractive Industry Haul Lengths

Application Number	Description	Locality	Decision	Comment Valid Until	Max Annual Rate (Tonnes)	Capacity	Estimated Average Haul Length (km)
D95/0194	Development Application - continued use of an existing quarry	Dulguigan Road, DULGUIGAN	Approved - 4/10/1995	Now part of Hy-Tec Expired in 1996	20,304	NA	13
0041/2001 DA.02	Development Application - amendment to Development Consent 0041/2001DA for the expansion of a sand quarry and establishment of a tourist facility (recreational fishing park) (Modification)	Cudgen Road, CUDGEN	Approved - 18/11/2002	Modification	0	NA	3.5
D88/0372	Development Application - extensions to an existing hard rock quarry	Duroby Creek Road, BUNGALORA	Approved - 26/02/1990	See also D98/0212 Bulgar's Quarry not related	200,000	NA	8.7-
D95/0100	Development Application - continuing use of O'Keeffe's Quarry No. 1	Bartletts Road, EVIRON	Approved - 3/11/2000	No end date	14,000	NA	6.4-
D95/0176.02	Development Application - amendment to Development Consent D95/0176 for a sand quarry (extractive industry) (Modification)	551 Duranbah Road, DURANBAH	Approved - 8/10/2004	No end date	100,000	577,000	7.8-
D95/9441	Development Application - amendment to Development Consent D95/441 for the continuation and expansion of Sandersons Quarry	Dulguigan Road, DULGUIGAN	Approved - 27/07/1998		30,000	NA	13
0123/2001 S96	Development Application - amendment to Development Consent D96/0123 for the continuation and expansion of Brims Quarry	Quarry Road, SOUTH MURWILLUMBAH	Approved - 23/07/2002	Material exhausted No end date	100,000	NA	17-

Application Number	Description	Locality	Decision	Comment Valid Until	Max Annual Rate (Tonnes)	Capacity	Estimated Average Haul Length (km)
DA04/0162	Hy-Tec Quarry	694 Dulguigan Road TUMBULGUM	Approved 2004	2031 to 2038	300,000	NA	13
DA08/1247	Development Application - Dunloe Park sand quarry (Department of Planning Application MP06_0030)	Warwick Park Road, WOOYUNG	Approved - 24/11/2008	2035	300,000	NA	5
D98/0212	Development Application - intensification of Buglers Quarry	126 Woodfords Road, RESERVE CREEK	Approved - 18/12/1998	2018 (from D88/0372)	50,000	NA	-
D95/0203	Development Application - continuation of an existing quarry (Mudge Quarry)	494 Cobaki Road, COBAKI	Approved - 10/10/1996	No end date	10,000	NA	10.5
DA 152-6-2005)	Hansons Sands	Altona Rd CHINDERAH		No end date	500,000	NA	1.8
D91/0281.03	Action Sands	Chinderah Bay Drive CHINDERAH		24 March 2024	150,000	NA	1.2
				AVERAGE(excl. D98/0212)			**8.4**

Water Bottling Consents

Application Number	Description	Locality	Decision	Comment/Valid Until	Max Annual Rate (Tonnes)	Estimated Average Haul Length (km)
D91/0025	Development Application - establishment of a spring water bottling operation	Glengarrie Road, GLENGARRIE	Approved - 14/03/1991	4000 litres per day	1,500	15.5
D96/0373	Development Application - use of an existing shed as a spring water bottling plant	65 Slash Pine Road, GLENGARRIE	Approved - 6/11/1996	2 vehicle trips per day	1,500#	13.5
DA03/1812	Development Application - water bottling plant	109-127 Pottsville Road, MOOBALL	Approved - 29/09/2004	2 trips per day	4,000	11
DA13/0040.02	Development Application - amendment to Development Consent DA13/0040 to fitout existing building for the purpose of a spring water bottling facility (Modification)	64 Geles Road, UPPER BURRINGBAR	Approved - 31/01/2014	2 truck movements per day	20,000	18
DA16/0579.01	Development Application - amendment to Development Consent DA16/0579 for alterations and additions to water bottling facility (Modification)	2574 Kyogle Road, KUNGHUR	Approved - 31/01/2019	12 trips per weekday and 8 trips per day on Saturday, Sunday and public holidays	50,000	39
TOTAL	5					**97**
				AVERAGE		**19.4**

Appendix 3 – Complying Development Certificates

Deferred Commencement Conditions

A quantitative/volumetric survey of the site shall be undertaken by a practicing registered surveyor at the cost of the applicant/operator prior to the commencement of any site works or excavations. The survey shall be undertaken and submitted to the requirements and satisfaction of Council. An electronic copy of the survey data shall be provided in a format that can be used with subsequently surveys to determine the volume of material extracted.

Other Conditions

- A contribution shall be paid in accordance with the Tweed Shire Heavy Haulage Contributions Plan 32 current at the time of payment on a quarterly basis within one month of the end of the quarter. The quarters shall comprise 1 January - 31 March, 1 April - 30 June, 1 July - 30 September, 1 October - 31 December unless otherwise notified by Council. NOTE: At the time of the consent this requires a payment of per tonne of material hauled from the site. This rate is subject to indexing in accordance with Sections 2.10 and 2.11 of the Tweed Shire Heavy Haulage Contributions Plan 2022.

- A "remittance form" as issued by Council shall be submitted to Council for each quarter either accompanying the required payment or as a "nil" return. The information required includes applicable quarter, quantities of material, tonnage rate, contribution payment and the like and be certified by a company officer.

- A quantitative/volumetric survey shall be undertaken by a practicing registered of the surveyor prior to the commencement of the quarry and stoke piles on an annual basis and submitted to Council that provides an estimate of material removed from the site. The annual cycle shall be the financial year unless otherwise notified Council.

- An annual audit of quarry sales by volume and weight shall be undertaken by an independent auditor and submitted to Council on an annual basis. This audit shall also provide a reconciliation between the sales and the contributions that were payable under the Tweed Shire Heavy Haulage Contributions Plan to demonstrate compliance with the terms of the Consent. The annual cycle shall be the financial year unless otherwise notified Council.

- Quantitative/volumetric surveys of the site shall be undertaken periodically by a practicing registered surveyor at the cost of the applicant/operator upon written request by Council. The surveyor shall use the methodology supplied by Council to determine the weight of the extracted material and reconcile such with quarterly and annual returns. Where the survey indicates that more material has been extracted that indicated by returns, the applicant/operator shall pay a contribution in respect of the outstanding amount.

Appendix 4 – Indexation Calculations

On 1 July each year, this plan will be indexed in accordance with Section 2.11 of this plan and the Environmental Planning and Assessment Regulation 2021 using the following calculation:

Appendix 5 – Volume /Weight Conversion Rates

Volume to weight conversions for quarry materials	
Aggregate - basalt	1.4 tonnes/metre3
Road Base – chert /basalt	1.5 tonnes/metre3
Sand - siliceous	1.5 tonnes/metre3
Sand - indurated	1.8 tonnes/metre3

Appendix 6 – Plan History

Version 1.0.2 applies indexation to contribution rates in accordance with Section 2.10 of this plan and the Environmental Planning and Assessment Regulation 2021, resulting in revised contribution rates of **$0.809 / tonne** for “extractive industries” and **$0.055 / tonne / km** for “other heavy haulage”.

Version 1.0.1 applies indexation to contribution rates in accordance with Section 2.10 of this plan and the Environmental Planning and Assessment Regulation 2021, resulting in revised contribution rates of **$0.78 / tonne** for “extractive industries” and **$0.053 / tonne / km** for “other heavy haulage”.

Version 1 adopted by Council on 17/11/2022 and effective from 14 December 2022.

TWEED
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