

# Seal Extension Policy

## 1 INTRODUCTION

### 1.1 Our Roads

The Whakatāne District Council has a total road network of 906 km, of which 705 km is sealed and 201 km is unsealed road. The unsealed roads hierarchy includes Special Purpose Roads (SPRs), local roads, low volume roads and arterial and collector road each of which has different characteristics and serves a different purpose on the network.

As at the 7 July 2022 the lengths of unsealed roads are apportioned as follows:

Road Hierarchy	Sealed	Unsealed	Sub-Total	TOTAL
SPR - Primary Collector	37.70	26.75	64.46	
SPR - Access	3.51	12.51	16.02	<b>80.48</b>
Local Road - Access	255.34	93.04	348.38	
Local Road - Arterial	44.63	0.00	44.63	
Local Road - Local	0.00	1.06	1.06	
Local Road - Low Volume	40.49	43.09	83.58	
Local Road - Primary Collector	100.45	24.40	124.85	
Local Road - Secondary Collector	223.01	0.00	223.01	<b>825.51</b>
<b>TOTAL</b>	<b>705.14</b>	<b>200.85</b>		<b>905.99</b>

### 1.2 Purpose and Application of a Seal Extension Policy

During the 2021-31 Long Term Plan (LTP) deliberations Council resolved to fund seal extensions through the LTP period. To allocate seal extension funding in a fair and transparent manner a prioritisation mechanism is required and this policy sets out how this will be undertaken.

This policy is largely based on a previous seal extension policy (Developed in 2009) but has been updated to reflect new guidance from Waka Kotahi on the community impacts and economic assessment of seal extensions. The policy is cognisance of environmental and social factors affecting unsealed roads including road use for special purposes, dust drift from adjacent unsealed roads, health outcomes, and land use.

The Seal Extension Policy was developed as a decision making and management tool for the following purposes:

- To provide Council with a robust prioritisation mechanism for seal extensions in light of requests received each year as part of the Council’s Annual Plan and Long Term Plan processes.
- To assist in the development of the Council’s forward work programme across the 3-year and 10-year Long Term Plan cycle; and
- To assist with the application for funding from Waka Kotahi for seal extension works.

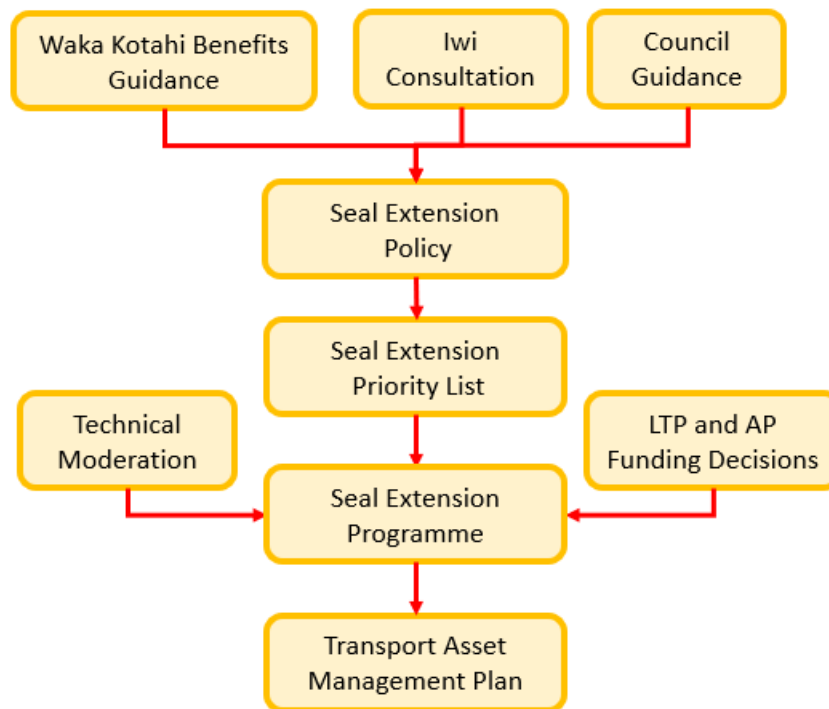


Figure 1 - Policy decision making framework

## 2 Seal Extension Policy

The seal extension policy incorporates four sections:

- Eligibility of roads for seal extension
- Unsealed roads that are excluded from prioritisation
- Seal extension prioritisation – provides a mechanism for evaluating each segment of unsealed roadway prior for the purposes of prioritisation. The evaluation is undertaken in two components: Community Exposure and Economic Evaluation.
- Policy review expectations

The number of roads that are sealed each year will be dependent on the level of funding allocated through Long Term and Annual Plan processes and is not considered within this policy. Where further community or iwi engagement is required to finalise a programme of works within an area of community interest or rohe, then that will be done prior to completing the work programme.

### 2.1 Eligibility of roads for seal extensions

**Ownership of Road** – Only formed roads that are currently owned and maintained by the Council are considered for seal extension works.

**Sealing of Maori Roads** – Maori Road lines may be eligible, on Council's express approval, if a formal application is received from the Iwi and legal provision is made for uninhibited present and future public access to the road. These are currently not included in the prioritisation mechanism but will be added in a timely manner where applications are received and approved.

**Legal Status of the Road** – Seal extensions will only proceed on roads that have a legal status. Any section of road which is in dispute will be resolved prior to any works being undertaken. Should legalisation prove difficult then the next highest scoring road section will be undertaken.

### 2.2 Roads excluded from prioritisation

Some unsealed roads are not appropriate to seal or will be sealed through alternative arrangements. Under this policy roads that will be excluded from prioritisation are:

**Roads that are often flooded** – Sealing these roads would result in a significant increase in maintenance cost as the flood waters will damage a sealed service.

**Special purpose roads** – Special purpose roads have been excluded from the prioritisation policy as these are typically funded through a separate mechanism to local roads.

**Community Support** – Where there is no, or limited, support from the local community for a road to be sealed then the road will be excluded unless there is a significant maintenance or safety benefit in providing a seal extension.

**Roads Not Servicing Residential Properties** – Roads that do not service residential properties, marae, schools, cemetery or Urupa will be excluded unless funding from Waka Kotahi is available.

## 2.3 Seal Extension Prioritisation

The prioritisation of roads for seal extensions is based on two evaluation components: community exposure and economic evaluation. These components are combined to provide a single score for ranking projects. This ranking is then subject to a technical moderation prior to being scheduled for delivery.

The prioritisation components are each assigned a weighting agreed by Council at the time this policy is adopted.

Component	Weighted Score
Community Exposure	60
Economic Evaluation	40
<b>Total</b>	<b>100</b>

The community exposure component is largely derived from the Waka Kotahi Research Report 590: “Impacts of exposure to dust from unsealed roads”<sup>1</sup>. This assessment is devised to account for community and economic impacts not covered through the standard economic evaluation procedure.

The Economic Evaluation component is based on Waka Kotahi Monetised Costs and Benefits Manual: Simplified Procedure 4: Seal Extension<sup>2</sup>. Further simplifications have been made as the Waka Kotahi economic evaluation procedures have been designed for detailed evaluation of single projects and are too detailed when assessing projects at a programme level. Consideration of safety

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<sup>1</sup> <https://www.nzta.govt.nz/assets/resources/590/590.pdf>

<sup>2</sup> <https://www.nzta.govt.nz/assets/resources/monetised-benefits-and-costs-manual/Monetised-benefits-and-costs-manual.pdf>

benefits has also been removed as an increase in safety attained by sealing a road is largely counteracted by increases in vehicle speeds.

The weighted scores provided allow for the initial prioritisation of projects however this needs to be moderated through a technical assessment to account for factors that fall outside of the prioritisation process. Factors that could impact moderation include:

- Synergies with other projects being undertaken by Council or others;
- Available budget in a given year (where two large projects are due for delivery but the combined cost is outside the annual budget, one may be delayed while a smaller project is advanced);
- Completing adjacent seals concurrently; and
- Where new information comes to light that would significantly alter the importance of sealing a road.

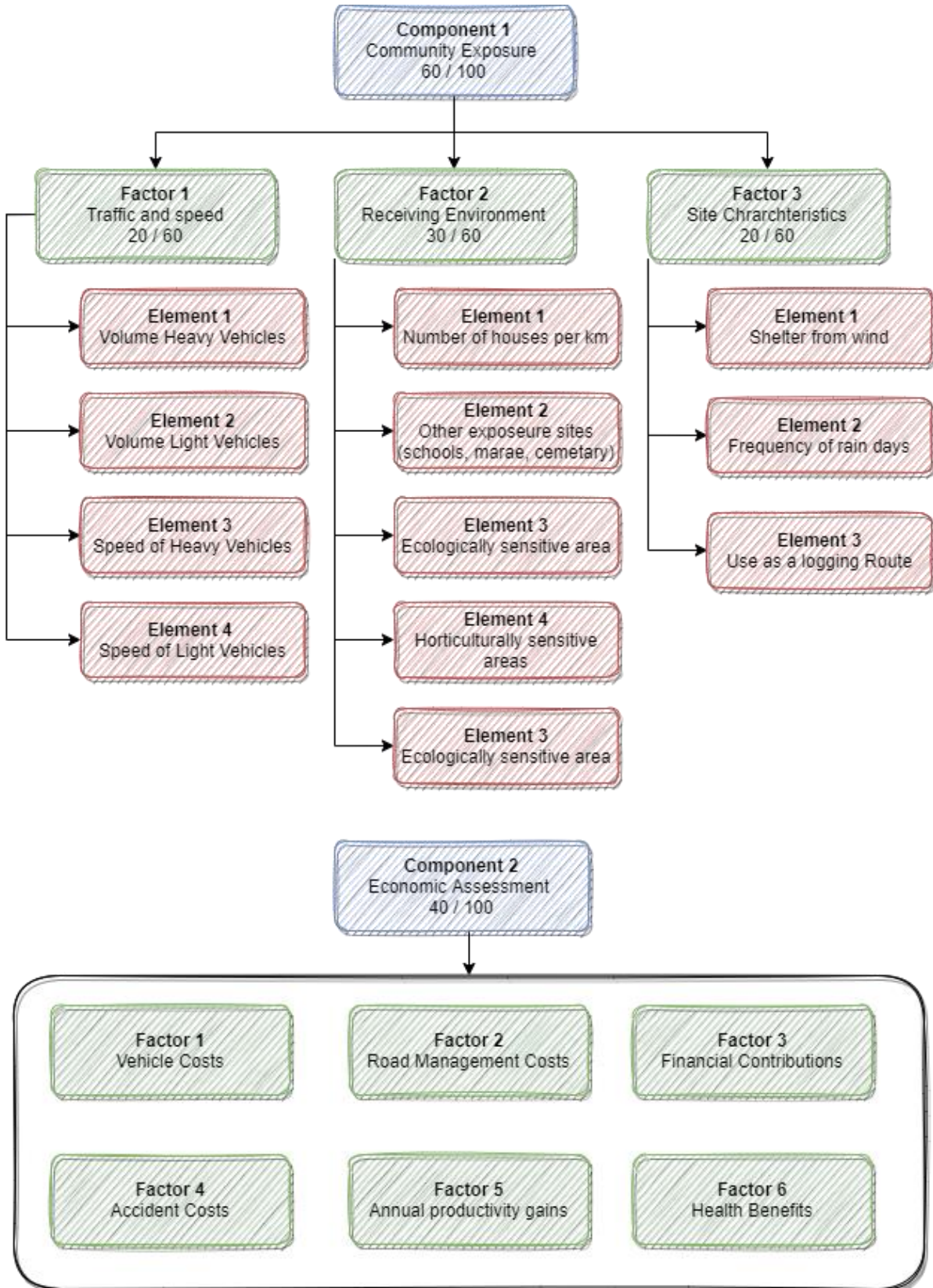


Figure 2 Components used to evaluate unsealed roads within the Seal Extension Policy

## 2.3.1 Community Exposure

Community exposure is determined using three types of factors:

**Traffic Speed and Volume** – Tells us how much dust is likely to be generated.

**Sensitive locations within 80m of the roadway** – Tells us the number of people or “things” that are likely to be impacted by the dust that is generated.

**Site Characteristics** – allows for characteristics that either exacerbate or mitigate the exposure to dust.

Under each of the three factors are a number of individual elements that are assessed and scored using the table below. These scores are added together to give a maximum possible score of 28. To align this with the weighting given to Community Exposure (60%) the score will be multiplied by 60/28 (or 2.5).

Community Exposure Score	0	1	2	3	4	5
<b>Traffic Speed and Volume</b>						
5-day AADT of HCVs	0	1-5	6-10	11-25	26-50	More than 50
Typical speed of HCVs	No HDVs	20-50 kph	>50kph			
5-day AADT of LDVs	less than 100	101-300	>300			
Typical speed of LDVs	<50	50-70	>70			
<b>Sensitive Locations within 80m of the roadway</b>						
Number of dwellings (houses/km)	0	1	2-4	5-7	8-10	more than 10
Number of locations where people are likely to be exposed. (eg schools, marae, cemetery, Urupa or hospitals)	None			1	2	3 or more
Ecologically Sensitive Areas (rare species habitats or wetlands (locations/km)	None	1-2	3 or more			
Horticultural sensitive areas such as fruit orchards greenhouses (sensitive locations/km)	None	1-2	3 or more			
<b>Site Characteristics</b>						
Shelter from wind	open plains or coastal area	some land features that slow wind	inland enclosed valley			
Frequency of rain days (>5mm)	More than 2 events per week	0-1 events per two weeks	<1 event every two weeks			
Longevity of logging route use	Not a logging Route	1-2 years	longer than 3 years			



## 2.3.2 Economic Evaluation

Economic Assessment Component contributes 40/100 of the total points applicable to the prioritisation of seal extensions.

The procedure used in this policy is a simplified version of the procedure found in the Waka Kotahi Monetised Benefits and Cost Manual. The simplifications have been made to reduce the data collection requirements and analysis. This is appropriate given that the full procedure is designed for detailed project evaluation as opposed to the prioritisation of a 10-year programme of works. Undertaking the full procedure is unlikely to significantly affect the prioritisation.

The economic assessment uses an expected rate of return of 4% and a 40-year evaluation period and takes into account the following components:

- Accident Cost Savings (ACC)
- Travel time cost savings (TTCS)
- Vehicle operating cost savings (VOC)
- Health Benefits
- Seal extension Benefits including productivity gains and comfort (SEB)
- Vehicle emission reductions (CO2)
- Change in maintenance costs (Maint)
- Cost of the extension

The BCR formula is:

### Calculating the Benefit Cost Ratio of the Project (BCR)

$$BCR = \frac{Health + TTCS + VOC + CO2 + ACC + SEB}{Cost\ of\ seal\ extension + MAINT}$$

The Benefit Cost Ratio (BCR) set to a maximum of 4. To calculate the Economic Evaluation score the BCR is weighted such that a BCR of 4 will obtain the maximum weighting (40 out of 40) while a BCR of 2 will receive half the maximum weighting (20 out of 40). The equation used for this calculation is below.

### Calculating Component 2 – Economic Assessment

$$EA = \frac{BCR \times 40}{4}$$

Further details relating to the economic assessment are included in Section **Error! Reference source not found.**

## 2.4 Policy Review and updating of prioritisation

It is anticipated that the policy will be reviewed every three-years in line with Council Long Term Plan.

The prioritisation list will be updated every three-years. Individual roads may be re-assessed from time to time, at the discretion of the Transportation Manager and where there has been significant change in land use, such as new places of work, schools, community facility or sub-divisions.

## 3 DEFINITIONS

**Waka Kotahi** – The New Zealand Transport Authority

**Special Purpose Road** – Special Purpose Roads are those roads that were accepted as such under Section 104 of the Transit New Zealand Act 1989 (now renamed as the Government Powers Act 2008).

**Roading Network** – Is the total network of roads both sealed and unsealed and associated facilities including footpaths, street lights, signage etc.

**Formed Road** – Road either sealed or unsealed that is maintained by the roading authority.

**AADT** – Annual Average Daily Traffic. This data is captured using tube counts put in place for 1-2 weeks. This data has been updated to inform the initial prioritisation of the list in July 2021.

**HCV** - Heavy Commercial Vehicle with a gross vehicle mass greater than 3.5 tonne. Typically HCVs are considered to produce 3.5 times the dust of a normal car

**LDV** – Light duty vehicles with a gross vehicle mass less than 3.5 tonne

**ECU** – Equivalent Car Unit is calculated by the addition of the AADT count and the adjusted HVM count.

**Exposure sites** – Any place where people will be exposed to dust from the roadway including: schools, marae, community halls, urupa and cemeteries, formal recreation areas and sports grounds, car parks. A school bus using an unsealed section of road is recognised as an exposure site.