

Summary of Far North District Council (FNDC) 2017-18 dust mitigation programme approved works as a least cost maintenance activity

In October the Agency agreed with FNDC that it could utilise the headroom available within its current 3 year NLTP maintenance Activity Class allocation to undertake a seal extension on Ngapitio and Pipiwai Roads as set out in their business case (approximately \$1.5 m). The sections to be sealed front residences on High HCV routes.

These sites meet the high dust risk and it is considered a good asset management response to seal these sites based on the economics and dust risk score. FNDC was able to manage this as a fiscally neutral transaction within the 3 year NLTP and hence no 'new approval' for NLTP funding was required.

Notes:

1. This approval is only for the works in the 17-18 year.
2. Any further works in the 2018-21 NLTP will be assessed on their merits.

Summary of assessment of the Business Case

The supporting Business case was well developed and used the methodology in General Circular 16/04 appropriately to determine the prioritisation. FNDC had undertaken a reasonable extensive options analysis building off their previous experiences in trialling dust mitigation measures.

The business case (for the current request) observations:

- It fits within a district wide assessment of logging routes using GC 16/04. This was a robust process.
- From this developing the appropriate intervention strategy. i.e. Dust suppression for remainder of logging cycle, house frontage seals, no action.
- It is important to show that the whole network has been assessed and the RCA is addressing the highest priority and demonstrating the RCA's strategy for lower priority sections.
- Proving most economical solution based on options.

The proposed priority sites are:

Location	Preferred Option	Treatment Length	Treatment Cost	PV Costs	NPV Cost of Sealing Option
Ngapipito Road Site 1	Sealing	2.30km	\$600,000	\$875,684	+\$657,987
Ngapipito Road Site 2	Sealing	4.11km	\$1,050,000	\$1,548,556	+\$1,192,054
Pipiwai Road Site 1	Sealing	1.29km	\$450,000	\$691,152	+\$188,865
Pipiwai Road Site 2	Sealing	2.40km	\$450,000	\$921,887	+\$715,354
TOTAL		10.1km	\$2,550,000		

Sites to be delivered in the current approved scope are Ngapitio Road Site 2 and Pipiwai Site 2

Our assessment of the proposal noted:

1. Ngapipito Rd and Pipiwai Rd are the highest priority for dust mitigation in the Far North.
2. Analysis has been carried out in line with General Circular 16/04 and RR590 (the FNDC should be contacted for copies of the business case)
3. The dust risk has been assessed as Medium, using the risk factors and scores from GC16/04. Monitoring carried out on site has allowed a comparison with Mataraua Rd, classified as a High risk in RR590. Results from the monitoring of Ngapipito Rd are generally worse than those measured at Mataraua Rd, although a smaller sample size was used. RR590 suggests that a High risk rating then be used. For Pipiwai Rd, remaining at a medium risk rating is appropriate, and RR590 recommends that in this case the high dust risk analysis is used. .
4. RR590 suggests that two possible treatments are viable, given the traffic volumes (particularly HCV) on the road. The options are sealing or application of magnesium chloride suppressant.

5. A number of other options were investigated, including grading, watercarting, wet roll and grade treatment, and use of a mixed in cement option. These options were found to be likely to be either ineffective or more expensive than either sealing or magnesium chloride suppressant application.
6. The option of sealing has a lower PV of costs than the option of using suppressant. This is largely due to the ongoing nature of the logging activity, and other HCVs such as milk tankers etc. leading to the need for annual application and refreshing of suppressant for an extended period.
7. The selection and costing of dust mitigation surface treatment is separate from pavement strengthening to cater for higher logging traffic. We did however question whether these decisions in fact independent, and does the choice of one affect the viability and delivery of the other?

We noted several factors that should be taken into account in the final decision making regards scope of works undertaken:

When considering sealing FNDC should look at the appropriate levels of service for a sealed road of the relevant classification. In many cases there is a need to deal with geometric pavement and safety audit elements BEFORE sealing. If these other elements are necessary then FNDC should consider the balance between maintenance least cost whole of life (LCWOL) and improvements. Note Low cost low risk improvements funding may be applied subject to the relevant LCLR criteria being met.

If the road is upgraded it should be to an appropriate sealed road standard for a high proportion of HCVs based on the indicative traffic mix; in doing so there should be consideration given to its fitness as an HPMV route. Note this should be in the context of the roads roles in the network. (We noted there are several bridges along the route so these will need to be considered too).



Far North District Council



Northland Regional Dust Prioritisation

Indicative Forestry Road Dust Prioritisation - Using NZTA General Circular 16/04 Matrix Assessment - 2017

Road	Maintenance Area	Route Position		Length	Houses within 80m of Road	Houses/km	Other	Traffic Volume	HCV%	(laden trucks per		Volume of HCV/day	LDV	Logging Route	Estimated Years of Logging	5 day AADT of HCV (use 7 day	Speed of HCVs (est)	5 day AADT of LDV (use 7 day	Speed of LDVs (Est)	Houses/km (use all houses)	Schools/Marae etc/km	Ecological Areas/km	Horticultural areas/km	Location of Roadway (plains/c	Frequency of Rain days	Longevity of HCV route	Overall Score	Notes	Indicative Strategy (Not yet approved by Council) - Subject to meeting General Circular 16/04 criteria	
		2016/17	2017/18																											
Ngapipito Road (Site 2)	South	8,834	13,067	4,233	7	2	1	220	34%	8	0	75	145	Y	10+	5	2	2	2	2	2	1	0	0	2	2	2	20	Through route: Logging, Dairy, Stock trucks, School Bus. Adjacent to Twin Coat Cycle Trail	House frontage seals (combined into continuous lengths where sensible)
Pipiwai Road (Site 2)	South	9,740	13,073	2,400	5	2		160	36%	49	20	69	91	Y	10+	5	2	1	1	2	1	0	0	2	2	2	18	Through route: Logging, Dairy, Stock trucks, School Bus	House frontage seals (combined into continuous lengths where sensible)	
Ngapipito Road (Site 1)	South	1,300	3,600	2,300	4	2	0	133	15%	0	0	20	113	Y	10+	3	2	2	2	2	0	0	0	2	2	2	17	Through route: Logging, Dairy, Stock trucks, School Bus	House frontage seals (combined into continuous lengths where sensible)	
Pipiwai Road (Site 1)	South	4,250	9,050	4,800	7	1		100	32%	26	13	39	61	Y	10+	4	2	2	1	1	0	0	0	2	2	2	16	Through route: Logging, Dairy, Stock trucks, School Bus	House frontage seals (combined into continuous lengths where sensible)	
Diggers Valley Road		0	3,300	3,300	14	4		150	11%	0	0	17	133	Y	5-7	3	2	1	2	2	0	0	0	2	2	2	16	Milk tanker route. Through route	House frontage seals	
Matawaia-Maromaku Road	South	0	6,400	6,400	10	2		170	15%	3	0	26	144	Y	3-5	4	2	1	1	2	0	0	0	2	2	2	16	Milk tanker route. Through route	Dust suppression for remainder of logging cycle	
Matawaia-Maromaku Road	South	16,040	19,034	2,994	5	2		170	15%	13	13	26	144	Y	3-5	4	2	1	1	2	0	0	0	2	2	2	16	Milk tanker route. Through route	Dust suppression for remainder of logging cycle	
Waoku Road	North	0	3,000	3,000	5	2		30	10%	21	10	31	-1	Y	3-5	4	2	0	2	2	0	0	0	2	2	2	16	Milk tanker route. Dead end forestry road	Dust suppression for remainder of logging cycle	
McCardle Road		3,057	4,195	1,138	3	3		155				90		Y		5	2	1	0	2	0	0	0	2	2	2	16		House frontage seals (combined into continuous lengths where sensible)	
Wright Road		0	7,738	7,738	4	1		155				90		Y		5	2	1	0	2	0	0	0	2	2	2	16		House frontage seals (combined into continuous lengths where sensible)	
Kellys Bay Road		6,011	6,467	456	4	9		80				7		Y		2	2	0	2	4	0	1	0	1	2	2	16		No strategy identified	
Pouto Road		42,506	65,814	23,308	16	1		207				64		Y		5	2	0	2	1	1	0	0	1	2	2	16		No strategy identified	
Backriver Road	North	0	8,545	8,545	22	3		101	11%	10	10	20	81	Y	5	3	2	0	2	2	0	0	0	2	2	2	15	School bus route. Through route	House frontage seals	
Haruru Falls Road	North	1,460	2,440	980	1	1		179	6%	10	22	32	147	Y	10+	4	2	1	2	1	0	0	0	1	2	2	15	Through route. Tourist route and school bus route	House frontage seals	