

9 2011/12 Roothing Programme

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Vision, mission and values

This item is in accord with Council's Mission, Vision and Values statement as it works to support sustainable land use management and transportation, providing a quality environment and protecting those assets that contribute to community health and well being.

Local Government Act 2002 – The four well-beings

Cultural *The item has no impact on cultural significance*

Economic *This item considers the appropriate use of public funds*

Environmental *This item has no effect on environmental issues*

Social *The proposal is equitable and fair for the community*

The following pages detail the proposed operational and capital works to be carried out where block allocations of funds have been allowed in Council's estimate process.

In November 2008 the Council applied to the NZ Transport Agency (NZTA) for a three year Subsidised Land Transport Programme (LTP) 2009/2012 based upon the first three years funding detailed in the proposed Long Term Council Community Plan (LTCCP) 2009-19.

When NZTA announced the funding plan for their three year roading programme in September 2009, it reflected Government policy which was to give priority to major roading projects on the state highway network on what they call roads of national significance (RON's) such as the proposed Puhoi to Wellsford upgrade. The effect of this on Council's proposed roading programme is that some projects have not been approved for subsidy and Council's actual programme has been reduced accordingly.

The total requested NZTA subsidised roading programme for 2011/12 amounts to \$41.1 million including the Lower Harbour Bridge project at \$18.0 million, and \$1.2 million of carried over flood damage repairs.

The following programme for the 2011/2012 year has been submitted to NZTA for approval. Please note that all budgets include the NZTA subsidy when available. (NZTA Subsidised Roothing Programme for 2011/2012).

Maintenance Programme, Budget \$9.5 M

Council's maintenance programme is \$9.5 M for the 2011/12 financial year which compares to last years \$10.9M budget. Our two largest maintenance budgets for unsealed and sealed roads maintenance are under continued pressure primarily due to;

1. the average age of our road pavements and surfaces getting older, and
2. the large impact of the current logging activity on both our sealed and unsealed roads.

The following factors also are having a significant impact on our budgets and what can be achieved with these funds:

- With the reduced pavement renewals programme the average age is continuing to increase.
- The 100% subsidised Regional Development Fund works ended last year and this was allowing us to strengthen key forestry routes.
- The risk of additional works caused by flood damage or other unexpected requirements is significant and usually has to be completed from within the existing budgets.

The aim is to choose an option that will provide the least cost, long term or whole of life cost for each section of road, balancing maintenance costs, reseal and rehabilitation costs.

The Roothing team along with its contractors and consultants have two main initiatives this year to optimise performance:

3. Defects Inspection and Programming. This is the systematic and continuous collection and prioritisation of defects and then the programming of these. This is expected to create improved work efficiencies as well as ensuring that the higher priority jobs consistently get done first.
4. New Rooding Contracts and Innovation. With ongoing pressure on budgets it is essential that focus remains on how we can work smarter and more efficiently. This includes creating the right environment where knowledge is shared, ideas are encouraged and the right decisions are made every time to protect the long term life of our assets. During this year new Rooding maintenance and renewals contracts are being developed and these will ensure that the right drivers are included to encourage the right decisions and work to be done and innovation to be contributed.

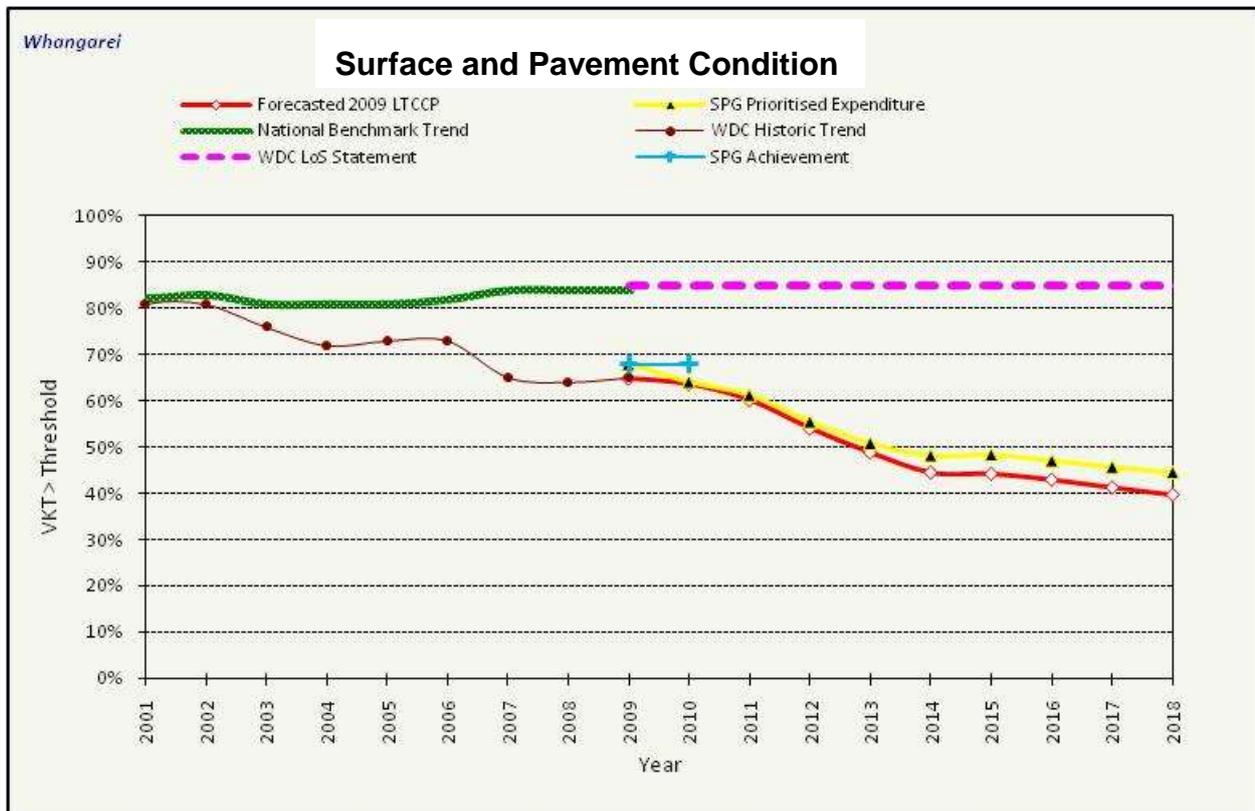
While the defects and programming initiative is currently focused on the three main maintenance contracts it is expected that the process will be trialled on other contracts during the year and then fully implemented across all of rooding maintenance contracts as they are renewed next year.

The long-term impacts of the current maintenance and renewal strategies were modelled in 2009/10. The following graph shows the predicted results with the red line being based on the original programme and the yellow line showing an optimised programme created by the Strategic Planning Group. The blue line shows actual achievement two years in and shows that we have stayed slightly ahead of target. The original improvement made from the original programme was due to a re-prioritising of funds from long term renewals into heavy maintenance. This quickly addressed a large amount of maintenance backlog issues but was only a short term catch up strategy and is not sustainable going forward.

The main reason for the condition holding steady since 2009 is that we have prioritised further funds into the maintenance budget to ensure that the roads remain in a safe and usable condition. This has been done to the detriment of some of our Capex renewals funds.

Note that this Surface and Pavement Condition measure is just one of many that rooding are tracking to monitor the condition of the roads.

During the current Asset Management Plan preparation the predictions will be remodel for the next ten years to see what impacts the current strategies and funding regimes will have.



Emergency Maintenance Programme \$1.5 million

Last year in 2010/11 Council prioritised approximately \$6.5 million of flood damage repairs and funded and completed approximately \$5.0M of these repairs during the year.

The remaining flood damage works have been reviewed and prioritised into urgent works and works that can be deferred. However the continued deference of these sites is now impacting on the routine maintenance costs on the network. The extra cost of holding these sites at a safe level for the travelling public has to be funded from our normal road maintenance budgets. This in turn means that programmed maintenance cannot be carried out and this is impacting on our ability to complete other works in full until such time as these sites can be funded for repair. Examples of deferred works are shown on the following page.

NZTA have to date approved \$1.2M of flood damage repairs, and a provision for funding of these works was made by deletions and savings in the 2010/11 years programme and this funding has been carried forward to the New Year 2011/12.

Resealing Programme, Budget \$3.55M – Proposed Programme \$3.55M

Resealing of existing sealed roads is undertaken to maintain water proofing, to protect the integrity of the road pavement, and to maintain the surface texture or skid resistance of the seal for traffic safety reasons. Generally the resealing of existing sealed roads occurs on a ten year cycle as a result of traffic loadings and deterioration of the bitumen from environmental effects.

Rising bitumen prices since 2006 have seen the Council struggling to achieve a target length of 120 km per annum as well as the growing backlog of works. Over the past five years (July 2006 – June 2011) an average length of 60km per annum has been achieved. The reseal costs have increased by 20% since July 2006.

As detailed above in the sealed road maintenance strategy, it is intended to bring the length of road treated by resealing back to 90km from 66km treated last year.

The forecast for resealing costs indicates rising prices associated with the increase in the price of petrol. At this time we are managing the network in somewhat of a holding pattern and making little impression on the backlog of outstanding works. An example of this is The Braigh in Waipu, (see following page) where the surface of the road is no longer suitable for a reseal treatment, and will need to be reconstructed. This road section has now been added to the rehabilitation programme which also has a constrained budget.

The current length of the network road sections overdue for a reseal is 200 km. This is valued at \$7.0 Million which is 2.5 times the current annual budget allocated for reseals.

The current works programme will be adjusted to match the available budget.

Rehabilitation Programme Budget \$3.4M - Proposed Programme \$3.4M

- The rehabilitation category includes both sealed and unsealed roads. A section of road can be rehabilitated because:
- It has reached the end of its design life, and/or heavy maintenance is required.
- The pavement does not have strength to carry current additional traffic loads (e.g. forestry traffic or development growth).
- It is economical to do total rehabilitation rather than just continued maintenance work (a fundable benefit cost ratio is required to justify this).
- The chosen option is to provide the least cost long term or whole of life cost for each section of road, balancing maintenance costs, reseal costs and rehabilitation costs.

Additionally on unsealed roads, a section of road can be rehabilitated to address drainage problems and prepare potential roads for future seal extensions.

Each year a selection of roads are produced for review by the roading staff from the RAMM (Road Asset Maintenance Management) Treatment Selection Report and long-term models applied to assess overall outcome as represent in the figure above.



Fertiliser Road



Otaika Valley Road



The Braigh (Waipu)



Shoemaker East (Waipu)



Dundas Road



Kamo Road

Council's total proposed rehabilitation programme for the 2011/2012 financial year is:

Rehabilitation	2009/2010		2010/2011		2011/2012	
Total Programme	Approved Programme		Approved Programme		Proposed Programme	
	(\$000's)	km	(\$000's)	km	(\$000's)	km
Pavement Rehab.	\$2,500	5.9	\$0	0	\$1,049	2.6
AWPT	\$400	1	\$3,032	8.1	\$2,347	5.8
Sub Total	\$2,900	6.9	\$3,032	8.1	\$3,396	8.4
Additional funding						
Upgrading unsealed forestry roads	\$400	7.5	\$400	5.7	\$400	5.7
Brown rocking	\$777	14	\$800	11	\$847	10
Major drainage	\$495	(incl)	\$200	(incl)	\$562	(incl)
TOTAL	\$4,572	28.4	\$4,432	24.8	\$5,205	24.1

Details of the proposed sealed roads Pavement Smoothing and AWPT projects are given below:

Sealed Roads	Length	ADT	Cost	b/c	Comment
	(km)	veh/day	(\$000's)	Ratio	
Cove Road	1.7	1,000	\$ 800	7.7	RP 14.8-16.5 (end of Cove Rd). Includes slip remedial work \$100k
Ngunguru Road	2.5	4000	\$ 875	99	Maruata Rd for 2.5km (from Huanui)
Matapouri Road	2.0	250	\$ 720	99	RP 23.0 - 25.0 (end of Matapouri Rd)
Pipiwai Road	1.3	200	\$ 500	99	RP 27.2 – 28.5 (at Wright Rd)
Kamo Road (South)	0.9	18,900	\$ 700	8.2	Mains Av to Percy St. Includes Park Ave intersection upgrade \$100k
Total	8.4		\$3,595		Includes \$100k from minor safety & \$100k from slip

Road Safety Deficiency Database

Council is using a new deficiency risk analysis database, a programme developed by NZTA, to collect information on all minor works in the district, to categorise the projects, prioritise them based on safety, crash history and risk analysis, and recommend a programme and priority for these works to fit into Councils and NZTA funded programmes.

The categories detailed in the database are shown below with the number and cost of projects currently to be completed under Council's work programmes.

Deficiency Database Outputs 2011/2012

Deficiency Type	No of projects	Ave Risk Reduction	Cost (\$000's)	Treatment
Lighting Improvements	104	30%	\$ 2,075	Upgrade lighting levels by No. of lights, spacing's and bulb replacements
Unsealed Surfaces	116	10%	\$ 2,827	Addressing gravel migrating from unsealed side road onto sealed main road by minor seal extensions
Pedestrian Safety	173	10%	\$ 9,889	Footpaths, kerbs pedestrian and pram crossings, safe school access routes
Signage Improvements	135	20%	\$ 3,278	Railway crossings, speed limits, rural route treatments, threshold signage, curve warning signs
Vulnerable Road Users	7	20%	\$ 51	Safe school access routes and crossings
Footpath and Kerb & Channel	136	10%	\$ 12,940	Kerbs for stormwater control, road safety and where kerb is required to install footpaths
Guardrails	258	10%	\$ 5,520	Guardrails for Bridge approaches
Roadside Drop-off's	21	25%	\$ 776	Guardrails for Steep drop offs adjacent to road edge
Delineation	47	30%	\$ 403	Improvements in roadmarking, RRPM's, edgemarker posts
Speed	125	20%	\$ 5,935	Speed limits, traffic calming, slow streets
Intersections	143	10%	\$ 6,190	Signs, flush medians, traffic signal upgrades, turning bays, surface treatments, sight lines
Safety Footpaths	41	10%	\$ 1,178	Install footpaths for safety reasons
Total	1306		\$51,062	

Minor Safety Improvements \$1.272 Million

The subsidised minor safety category allows for; small isolated geometric improvements, intersection upgrades, traffic calming, lighting improvements for safety, safety rails, sight benching to improve visibility, pedestrian crossings, stock underpasses and safety footpaths. Each project is limited to a maximum of \$250,000. The minor safety programme has to be approved by NZTA and meet the category funding criteria.

The projects have been identified by a number of methods such as Crash Reduction Studies, Strategy Studies, Contractor, Public and Staff Feedback. The projects have been included in the Council's new deficiency risk analysis data base and the highest ranked projects in each category have been included in the proposed works programme.

The minor safety programme has also been developed with regard to the issues raised in the NZTA Road Safety Issues Reports and works to implement the Northland Regional Road Safety Strategy which identifies the following issues for the Whangarei District:

- Alcohol (part of the Community education programme)
- Speed
- Bends
- Road factors and roadside objects
- Intersections
- Vulnerable road users

The majority of this years programme has been brought forward from last year, as last years programme was deferred due to funding constraints.

For 20011/12 the proposed programme is detailed below:

Project	Estimate (\$000's)	Comments
Traffic Calming		
Korau Road	\$ 50,000	Traffic calming in Boundary Road and Korau Road
Boundary Road	\$ 58,500	
Cairnfield Road	\$ 52,000	Platform between Mill Road and Jack Street
Cartwright Road	\$ 65,000	Platforms between Boeing Road and the end
Intersections		
Marina Road/Matapouri Road	\$ 150,000	Widen culvert to provide improved turning and pedestrian facilities at fatal accident site, TCDH improvement programme.
Robert / James	\$ 30,000	Modify intersection and roundabout to improve pedestrian facilities
Robert / John	\$ 45,000	Modify intersection and roundabout to improve pedestrian facilities
Park Ave / Moody Ave	\$ 100,000	Intersection improvements / traffic calming
Route Treatments		
Whangarei Heads Road	\$ 35,000	Crisp Road/ Parua Bay Tavern pedestrian safety improvements
Whangarei Heads Road	\$ 110,000	Fisherman's Point guard Rail installation, crash reduction
Ngunguru Road	\$ 150,000	Guard rail installation at fatal accident site.
Warning Signs/Delineation route treatment	\$ 150,000	Continuation of programme of upgrading rural road signage blackspot and high accident reduction, Phippai Rd and Russell Rd
Porowini Avenue/ Tawera Rd	\$ 250,000	Safety improvements at Tawera Rd intersection
General		
Stock underpass	\$ 10,000	Installation subsidy
Safety Information Signs	\$ 20,000	New billboards for programme to encourage truckies to reduce speed on corners
Total	\$ 1,275,500	

Bridge Replacement Budget \$0.45 million

Over recent years Council's bridge replacement programme has been concentrating on the repair or replacement of steel Armco culverts in the roading network. However this replacement programme has also been reduced over the last couple of years to offset the cost of flood damage repairs.

A review of the total bridge programme has been completed to look at priorities necessary to maintain a reasonable standard of all bridge assets including the 169 timber structures. The result of this is a reprioritisation of the programme to address substandard bridges in the network concentrating on structural issues.

The completion of this programme is subject to approval of the programme and subsidy funding from NZTA.

Proposed 2011/12 Bridge Replacement Programme

Bridge Name	BC Ratio	Age of Bridge	Total Cost \$000's	Replacement
Ngunguru footbridge	4	Unknown	\$105.0	Upgrade
Cherry Rd Bridge	4	1977	\$140.0	Upgrade
Russell Rd culvert	4	Unknown	\$130.0	Replacement
Schultz Rd Bridge (reserve project)	4	Unknown	\$140.0	Upgrade (reserve project)
Total Bridge Replacement Programme			\$515.0	

Investigative Services

The following investigation studies have been proposed as part of the 2010/11 programme:

Onerahi Bypass Designation and Mill Road /Nixon Street upgrade project feasibility report for NZTA funding application \$74,000.

Cycleways Budget \$150,000

NZTA subsidy for cycleway construction was not approved in the three year funding programme. However council has allocated \$150,000 as part of the sense of place funding, and a review of the Walking and Cycling Strategy Study is currently being undertaken as well as a review of current walking and cycling projects that enhance the sense of place project.

Lower Hatea Bridge Construction 2011/12

Funding for the Lower Hatea Bridge project has been approved by NZTA and council funding for the project has been split over 2009 to 2013. Council has budgeted to spend \$18 million plus carryovers this financial year and NZTA funding has been allocated at 50% subsidy up to a maximum of \$14.58 million for the total project. Details of budgets and expenditure for the project are shown below:

\$000's	2009/10	2010/11	2011/12	2012/13	Total
2009/19 LTCCP Budget		10,599	12,072	11,167	33,838
Revised Annual Plan budget	1,300	3,000	18,000	8,000	30,300
Expenditure/ (forecast)	1,052	338	(21,181)	(8,000)	(30,571)
Subsidy 50% (max \$14.58M)	-320	-169	-10,590	-3,501	-14,580
Net Cost to Council	732	169	10,590	4,500	15,991

Mill / Nixon St Upgrade 2010/11 budget \$0.5M (Total project cost \$5.2)

Council has budgeted \$500,000 for the commencement of the land purchase phase of the Mill / Nixon Street upgrade. The project involves road widening of Nixon Street and intersection upgrades at Mill Road and Kamo Road. The project is planned to be constructed over two years.

Non-Subsidised Capital Improvement Roading Programme – 2010/11

The following programmes are recommended for each of the Council's budget allocations:

New Footpath Construction Budget \$212,000

Council had allocated an amount of \$212,000 for new footpath construction, and it is intended to complete the Shoebridge Crescent footpath project that has been deferred from previous years.

Kerb and Channel/Shoulder Sealing Programme \$601,000

A number of projects associated with the State Highway upgrade through Whangarei are to be carried forward to the 2011/12 year. Funding for these projects was allocated in 2010/11 so no further funding provision will be required to be made in 2011/12. Delays to these projects have resulted from the time required to obtain resource consents and in some cases NZTA subsidy approval.

The proposed programme is shown below:

New Kerb and Channel Programme (2011/12) carryover projects:

Road Name	Length (km)	WDC Cost (\$000's)	Comment
Mander Park Upgrade	n/a	440.0	Upgrading of Mander Park, Wilson Ave and associated drainage works as part of the SH1 four laning upgrade projects. NZTA have already funded \$140,000 towards this work and a further \$110,000 is to be provided by NZTA to make a total project cost of \$550,000.
Fourth Ave Link Rd	100	161.0	Council share only of a subsidised project connecting Fourth Ave to Kauika Rd as part of the SH1 four laning upgrade projects (50/50% cost share with SH project).
Total	100 m	\$601.0	

Recommendation

1. That the information be received.
2. That the 2011/2012 Works Programme be confirmed.