

# STAFF REPORT

**TO:** Chairman & Members, Engineering Services Committee  
**FROM:** Roger Ashworth  
**REFERENCE:** TDC 120  
**DATE:** 6 April 2005  
**SUBJECT:** Flood Damage

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## PURPOSE

To seek the Committee's approval to:

- 1 Make application to Land Transport NZ for flood damage funding;
- 2 To utilise existing Council disaster reserves to complete flood damage works

## BACKGROUND

A rain event occurred on the morning of 25 March 2005 with the largest falls recorded in the Nelson Lakes area affecting St Arnaud, Black Valley Stream and the Motupiko and Upper Motueka catchments.

Heavy rainfall of lesser intensity in the Cobb, Tapawera and Motueka West areas also caused some localised damage. Reports of 200 mm plus over a four hour period have been received. The extent of damage and debris movement in the Upper Motupiko and flooding in the lower catchment support this high intensity.

### Affected Areas

#### Roading

Set out below is a description of the affected areas. The total estimated cost of the roading-associated flood damage is **\$350,000**.

#### Wai-iti Valley Road

Debris caught up on central pier of Hiwipango Bridge

#### Stock Road

Major slip

## ***Kerr Hill Road***

Janson Bridge over Motueka River:

- Rock protection on right abutment has slumped. Place 50 m<sup>3</sup> of rock (500 mm – 1.0 m)
- Scour hole under settlement slab on right abutment. Pour 1 m<sup>3</sup> of concrete to form a plug at base and backfill with compacted free draining hardfill. Replace sealed road surface.
- Replace slumped gabions on downstream side of right abutment with terramesh retaining wall.
- Remove logs from against central piers and willows from beneath bridge on left bank.
- Reinstate concrete weir downstream of the bridge using large quarry rock. This should be carried out under a separate contract.

Numerous small slips to be cleaned up with excavator and trucks.

Large slip has come off forestry area. Road was closed for several hours while material was removed. The gully upstream will need to be cleared for approximately 30 metres to reduce the risk of further road closures during even average rainfall.

Steep water table has been scoured by excessive volume of water and needs to be reconstructed using small rock to help stabilise the channel.

Water table full and numerous culverts blocked

## ***Korere - Tophouse Road***

Motupiko River Bridge (Lower) has debris lodged against a pier and the rock protecting the true right approach to the bridge has been outflanked by the river. This needs to be recovered and placed against the new bank alignment and a further 100 m<sup>3</sup> of rock added.

Numerous small slips to be cleaned up with excavator and trucks.

Approximately 1 km of watertable and scouring along edge of seal to be repaired.

Brough's Creek culvert has been badly restricted by logs across the entrance.

Motupiko River has eroded the true right bank adjacent to the road. The creek bank is right at the edge of the seal. 60 m<sup>3</sup> of rock protection is required.

A double culvert near the intersection with Waireka Road has a build up of gravel and trees at the entrance. Clear with an excavator.

Motupiko River Bridge (Upper) has some willow branches lodged against the upstream side. Power saw and labour to clear.

## ***Waireka Road***

A side creek has broken out of its bed and covered the road with gravel in parts and scoured the road with large gravel in other parts. This unsealed road needs to be reformed using the gravel deposited by the creek and topped off with a layer of basecourse. The total length is 200 metres. The creek bed also needs to be reconstructed to reduce the risk of further break out.

Both approaches to the bridge over Motupiko River have been washed out

and the river bed has dropped by an estimated 1 – 1.5 metres. A check is being made to determine the depth of the abutments foundations. If bearing is found to be inadequate, underpinning of the cylinders will be required to restore the bridge capacity. A check has been carried out on the waterway capacity of the bridge and this has been confirmed as being adequate for a Q100 event. The estimates given are \$40,000 to restore the approaches and \$100,000 to underpin the bridge foundations.

### ***Hinetai Road***

Motueka River has eroded into the road and 100' m<sup>3</sup> of rock is required to hold the river in place and prevent further erosion.

### ***Tapawera-Baton***

Edge of roads scoured and seal damage, both sides of road.  
Gravel washed off LHS of road  
Culvert 44 blocked  
Slip on LHS of road, approx 15m<sup>3</sup>.  
WT full on LHS  
Culvert 58 blocked with silt

### ***Upper Stanley Brook***

Scoured water table, road also requires grading

### ***Cotterell Place***

Repair broken culvert

### ***North Road***

Reinstatement of two sections of shoulder/seal loss totalling 100mx1mx0.6m

### ***88 Valley Road***

Whole road needs grading due to various amounts of water damage  
Scoured edge of road,

### ***Quail Valley Road***

Whole road needs grading due to various amounts of water damage  
River scoured out edge of road on RHS

### ***Graham Valley Road***

Maintenance metal scoured off road  
Several small slips and blocked culverts up to Flora Carpark

### ***Graham Valley North Branch***

Clear upstream of concrete splash at start then clear creek overflow at end

### ***Pine Hill Road***

4-5 small individual slips to be cleaned up with excavator and trucks.

### ***Stringer Road***

Maintenance metal scoured off road

### ***Hoddy Road***

Scouring and several blocked culverts  
Road requires sweeping on both sides

### ***Bronte Road West***

Maintenance metal scoured off road, not urgent.

### ***Moss Road***

Maintenance metal scoured off road  
Road requires sweeping at the corner with Riwaka-Sandy Bay Road

### ***Shaggery Road***

Minor scouring of maintenance metal

### ***Rocky River Road***

Minor scouring, requires maintenance metal

### ***Herring Stream Road***

Requires maintenance aggregate and cyclic grade, minor

### ***Big Pokororo Road***

Minor scouring, also requires grading and potholes filled in ASAP

### ***Community Road***

Minor scouring, requires maintenance aggregate spread over clay patches, 1 or 2 six-wheeler loads, trucks only as very slippery

### ***Old Coach Road***

Minor scouring, requires maintenance aggregate spread over clay patches, trucks only as very slippery

### ***Lindup Road***

Maintenance aggregate required, truck only

### ***Braeburn Road***

Minor scouring and blocked culvert at start of Moutere Highway. 2m<sup>3</sup> of maintenance metal to be dug out of water table at outlet opposite

### ***Holdaway Ford Road***

Moutere Highway side has major scour again, needs rock and creek diversion

### ***Moutere Highway***

Culvert 119 outside EMS 2387 is full. 1.8m diameter creek needs to be dug out.

### ***Rosedale Road***

Urgently requires maintenance aggregate over first 5kms, plus spread over the saddle on various spots to cover clay: 4 or 5 truck and trailer loads  
Needs grading urgently as has potholes and corrugations on Moutere side

### ***Pearse Valley South***

Requires a grade  
Requires 8m<sup>3</sup> of 200 diameter rock to reinstate water tables  
4 blocked culverts need to be cleared – blocked with silt

### ***Borlase Avenue***

Repair scour and place rock to inlet and outlet (9m<sup>3</sup>)

### ***Motueka River West Bank Road***

Scour of Graham Valley Bridge, 2m<sup>3</sup> of 200 diameter rocks

### ***Motueka Highway***

Slip at McCleans  
2 pine trees which have fallen are standing vertical in water table, need removing

### ***Kaiteriteri-Sandy Bay Road***

Small slips

Road needs sweeping at corner with Sandy-Marahau Road

### ***Toko Ngawa Drive***

Small slips

### ***Supplejack Valley***

Several small slips reported

Shoulder scour to be fixed

### ***Central Road***

Shoulder scour to be fixed

### ***Dominion Road***

Shoulder scour to be fixed

### ***Hall Road***

CSR – Slips on road

CSR - Drains need cleaning

### ***Robinson Road***

CSR – mud on road at entrance to Transfer Station. Road slippery, needs to be cleaned off

### ***Wildman Road***

CSR – water out to centreline of road

### ***Haycocks Road***

CSR – drain along eastern side needs cleaning out, especially near Aniseed valley turnoff

### ***Mamaku Lane***

CSR – metal washed off road

### ***Lodder Lane***

CSR – hole has developed as a result of collapsed pipe, in berm between #'s 45 and 47

***Westdale Road***

Road requires sweeping

***Higgs Road/Citrus Grove Corner***

Road requires sweeping

***Stephens Bay Road***

Road requires sweeping

***Rowling Road***

Road requires sweeping

***Murchison Area***

***Tophouse Road***

Culvert No.1 has been completely buried with gravel and a major cleanout of this area is required.

Culvert No.2 has been completely buried with gravel and a major cleanout of this area is required.

Clean up slip material and reform water tables

Replace metal that has been washed off road

Clean out ford and replace downstream bed control

***Lake Road***

Clear away debris and repair damaged seal area.

Sealing not included.

***Holland Street***

Re-metal road due to 50% loss of aggregate

***Kerr Bay Road***

Repair approaches to washed out bridge

Excludes seal coat.

***Alpine Meadows Drive***

Clean up slips from watertable and road.

***Robert Street***

Re-metal and grade due to 50% aggregate loss

## **Golden Bay Area**

### **Cobb Valley Road**

Remove trees and slips from road

### **Lammas Road**

Repair washout

### **Rameka Creek Road**

Clear slips from water table and road.

## **State Highway 60**

Remove debris from road and water table following storm event

Remove tree and debris from road following storm event

## **Rivers**

The following list of sites prepared by Sicon staff details the general extent of river issues in the 508B Contract area:

Upper Motueka, above the Golden Downs golf course the river broke away again from the main river adjacent to the power crossing to Goldpine's yard and ran over the fairways to a depth of up to 1.5 m in places. An inspection of the breakaway point was carried out by Network Tasman and TDC Asset Engineer on 4 April 2005. Network Tasman has agreed to fund a substantial rock protection and berm strengthening process that will have benefits to the Golf Club. At this stage I have identified active erosion sites at the following substantial places on the Upper Motueka.

RD 67.500 RB	Weyerhauser	150 m embayment
RD 67.000 LB	Ex Barry Higgins	80 m erosion
RD 65.550 RB	Cameron	75 m embayment
RD 63.525 LB	Baigent	75 m embayment
RD 62.300 LB	Hubbard	45 m erosion
RD 57.150 RB	Rodgers	50 m erosion
RD 56.700 LB	Higgins	40 m erosion
RD 56.350 RB	Chambers	30 m erosion
Sub total		545 m

In the Motupiko there are substantial erosion sites are at ,

RD 12.400 RB	Eyles/TDC	35 m erosion
RD 12.100 LB	Foulshams	60 m erosion
Sub Total		95 m

There are a range of other sites where 10-20m of protection will be needed It is likely that more sites will come to light in the next day or so as water levels drop and



landowners check out their frontages. As is normal with floods of this size the amount of washed out willow and other debris that litters the beaches is substantial.

St Arnaud - Black Valley Stream left its banks in several locations. Considerable debris aggraded sections and localised flooding occurred. A lot of this is within DoC land and they have sought advice on how to remedy the situation pointing out that they have a lack of funds to do so.

### **Rivers Estimate**

The costs of the listed works are currently being refined. A range of additional small jobs are still being reported, and those already listed that need more detailed onsite design/scheduling, need to be finalised. However the current cost estimates have sufficient accuracy, based on current contract rates, for a request for funding from the Classified River Asset Protection Fund to cover the restoration works is needed.

Some of the work includes "River Z" applications and the 50% landowner portion has been deducted. Works being totally funded by private individuals, or enterprises, has also been omitted. Works of a general river maintenance nature that are deemed not to be urgent, or at risk of developing further problems in the likelihood of us experiencing a flood during the upcoming winter, have also be removed from the reported inspection lists.

The total estimate stands at \$195,000.

### **RECOMMENDATIONS**

**That:**

- 1 Council apply to Land Transport NZ for flood damage funding totalling \$350,000 (local share \$178,500);**
- 2 Funding of \$195,000 be provided from the Classified River Asset Protection Fund.**

R Ashworth  
Transportation Manager