

## Western Flood Protection - January 2005 flood damage costs

<b>Hutt River</b>	<b>Total Cost</b>
Access Tracks upper - Surface damage and holes – repair and re-surface.	\$3,000
Access Tracks RWA - Severe damage to surface – repair and re-surface.	\$12,000
Access Tracks lower - Damage to surface – repair and re-surface.	\$7,000
Berm damage upper - Removal of flood debris, tip fees etc.	\$3,000
Berm damage RWA - Removal of flood debris, tip fees etc.	\$8,000
Berm damage lower - Removal of flood debris, tip fees etc.	\$8,000
Hutt Car Park, opposite King Toyota - Requires a concrete nib to be installed at toe of stop-bank.	\$7,000
Ava Rail Bridge - Damage to bank, gate and track under the bridge LB, needs rock placed under bridge.	\$5,000
Toe erosion Black Creek bank - Rock needs to be placed along bank edge at toe.	\$10,000
Korokoro Debris arrestor - Scour around RB – needs rock to be placed at edges of structure.	\$10,000
Speedys Debris arrestor - Damage due to repeat flooding. There will be a temporary repair of \$3k, followed by a complete rebuilding of the arrestor (\$15k budget already available).	\$15,000
Avalon Groynes - Damage to debris fences and groyne heads, 100hrs cross blading – reinstate debris fences – repair damaged groynes (100 tonne C).	\$33,000
Avalon Groynes - Add rock heads to 5 existing fences @ 300 tonne each @ \$85 tonne.	\$127,500
Nash Street groynes - Repair to heads of groynes – 100 tonne C rock.	\$8,000
Wellington Golf Club rock line - Fill and extend 50 mtrs of eroded bank @12tonne per mtr.	\$45,000
Manor Park erosion south end - Block grid pattern – 150 mtrs @ \$400 mtr. This is only part of the repair that is required, but the balance will be discussed with the golf course as to how to fund.	\$60,000
Elbow Park gabion work - Repair to 100 mtrs of damaged netting @\$300 mtr.	\$30,000
Elbow Park upper groyne - Front of groyne severely damaged 250 tonne rock.	\$20,000
Elbow Park gabion work - Fence undermined for approx 400 mtrs, install toe rock at 5 tonne per mtr \$70 tonne placed.	\$140,000
Bridge Rd - capex job will commence in 2007/08 but need to do a temporary repair now to prevent further damage.	\$20,000
Gemstone Drive - Repair block grid pattern and fill scour.	\$10,000
Hutt River Trail - Repairs to berms and tracks.	\$10,000
<b>Total Hutt River</b>	<b>\$ 591,500</b>

<b>Otaki River</b>	<b>Total Cost</b>
Mangahanene RB rock line - concrete block work done before Xmas really lessened damage, but alignment downstream too far north, rock tail outflanked - allow 200 tonne of rock, plus earthworks to both berm and channel. Island channel now widened..	\$20,500
Above Mangahanene Island LB - holding - just, with willow poles just surviving. Difficult to manage under maintenance - minimum gravels for cross blading - rock groynes ???. Allow 100 hours D9H Dozer.	\$20,000
Campbell's LB bank edge below SH Bridge - gone again - allow 100 hours of dozer.	\$20,000
Chrystalls Main Rock Line - top corner & bottom tail peeled out, need 200 tonne, plus some earthworks and some channel works required. Extend John Ray's Contract for supply of 100 tonne smaller range.	\$13,500
Chrystalls Main Rock Line - midway - peeled out back to bank, need 200 tonne to replace and "thicken up". Extend John Ray's Contract for supply of 100 tonne smaller range.	\$12,000
Above Chrystalls Main Rock Line - Debris fences to replace front irons, plus Cross blading - allow 100 hours.	\$24,000
Haul Road from Chrystalls to Woods' - Plant Hire, Basecourse, topcourse, etc.	\$15,000
Ramsbottom/Andrews LB beach to clear and groom.	\$2,000
Waimanu Culvert crossing - extend concrete block mattress - 32 blocks.	\$2,500
Barretts' LB debris fences - outflanked at top end. Allow extension of concrete blocks and permeable groyne, and replacement of some cabling.	\$10,000
Hughes Debris Fences RB - Need those 3 fences in now - previously "On Hold".	\$8,500
Lawson/Urquhart-Hay/Thurley Clifftop Dwellers - river hard under bank - 6 days of earthworks, 3 dumpers because of haul distance, material could be short. Allow for some extra D9H Dozer work.	\$45,000
Upper Taylors rock groynes - No 7 - Re-build end. Rock on site.	\$1,000
Mansells - Lost edge planting - need new stock for 2 rows (Yeogi Poplars standing up well), plant hire to plant.	\$2,000
Mansells/Upper Taylors - cross blade necessary to ease scour on RB - allow 50 hours.	\$10,000
Whole river system - "Tiki Tour" to remove logs off beaches, clear all debris fences - allow 50 hours.	\$5,000
Extra Contract Labour - Difficulty in finding anyone that's suitable - Allow 1 Casual for 3 weeks, 9 hour days, \$25/hour.	\$3,500
<b>Total Otaki River</b>	<b>\$ 214,500</b>

<b>Waikanae River</b>	<b>Total Cost</b>
Waikanae Groyne - rock and overburden placement, left off original programme. 100 tonne ex Plimmerton, 300 m <sup>3</sup> overburden mix.	\$14,500
Waikanae Tidal Reach - resurvey selected sections - check for left bank 30 peg.	\$6,000
Otaihanga Domain Wall - repairs required (have not inspected personally) Drainage to CAPEX, cracking to EQC.	\$3,500
Otaihanga Domain to Rail & State Highway Bridges - debris to clear, as with whole river system - "Tiki Tour" to remove logs off beaches and out of edge plantings (otherwise they won't survive). Put into heaps for firewood, truck debris to Otaki for burni	\$15,000
Keene's to Howarth's LB Access Track badly eroded, needs re-build with river gravels and topcourse. Allow 2 Km and 4 m	\$22,000
Greenaway Road carpark - a lot of debris and fences to clear and repair, blocks to realign - 2 machines for a day. Replace	\$2,500
Greenaway Road LB bank erosion - large pockets of planting gone - 64 blocks, willow poles.	\$4,500
McIntyre RB edge protection works - concrete blocks and Willow poles. Check Survey Mark security. Bare banks exposed - 80 concrete blocks, lots of 4m Willow poles.	\$6,000
Falconers' RB edge protection works - berm gone, blocks remain. Add another row of blocks, plant 4 rows 3 - 6 m Willow poles, backfill with gravels, topsoil, grass.	\$12,000
Maple Lane RB rock groynes - some dismantled, more rock lost off noses. Repair shape, etc only, with some earthworks this year, wait for Linton rock next year. Allow for plant-hire for total area for both years. Total of 660 tonnes.	\$53,600
Kebbells and Edgewater - Wait for Linton rock next year. Allow for plant-hire for total areas.	\$10,000
Kebbells Weir - lost shape, rock disappeared, hardly any to recover, check design, make less steep - re-survey??	\$21,000
Kebbells LB rock line - slumping, some holes. Top-up with 50 tonne.	\$3,000
Edgewater Park to Kebbells LB rock groynes - bottom one undermined and perched, add 50 tonne.	\$3,000
Edgewater Park LB rockline - top peeled off, allow 200 tonne to top-up.	\$12,000
Sunny Glen RB rock groynes - some dismantled & outflanked, need re-building. Berm badly eroded and some earthworks filling required. Rock wall badly undermined and too steep. Wait for Linton rock next year. Allow for plant-hire for total area for both	\$10,000
Sunny Glen RB rock groynes - 5 goynes, require a total of 600 tonnes.	\$36,000
Dricon LB Permeable Groynes - undermined (channel degraded) - lower again.	\$1,000
SH Bridge Grade Control Weir - Left Bank getting outflanked again - line of double concrete blocks plus extend the mattress	\$5,500
Whole river system is showing "stress signs" at Willow-planted bank edges. Need to infill plant, but we're very short of suitable large stock. Allowance only (guestimation).	\$7,500
Track closures will be necessary while repairs and clearings carried out - with barricades. Will need advertising, semi-permanent barriers, signs, (security-manning?) Allowance only.	\$3,500
Extra Contract Labour - Difficulty in finding anyone that's suitable - Allow 1 Casual for 3 weeks, 9 hour days, \$25/hour.	\$3,500
<b>Total Waikanae River</b>	<b>\$ 255,600</b>

<b>Kapiti Watercourses</b>	
Waitohu - Askews - see photo. Require blocks, new pole planting, shift channel back into preferred alignment. Allow 3 machines for a day, 60 concrete blocks.	\$6,300
Waitohu - Cabrach Holdings Require blocks, new pole planting, shift channel back into preferred alignment. Allow 2 machines for a day, 24 concrete blocks.	\$4,000
Ngatotara culvert to clear and realign - machine for a day.	\$300
Mangaone - Walkers - channel filled with gravel, flooded road (road closed off at night) - 2 machines, 1 day.	\$700
Katihiku and Swamp Road Drains - houses had septic tanks under water URGENT. COMPLETED, DUE TO HEALTH HAZARD.	\$1,600
Waimeha Stream debris arrestor to clear, bury logs in southern sand dunes. Advise Mike Cardiff.	\$1,000
<b>Total Kapiti Watercourses</b>	<b>\$ 13,900</b>

<b>Wellington Watercourses</b>	
Pinehaven Stream. \$10,000 of this cost will be met by private landowner.	\$15,000
<b>Total Wellington Watercourses</b>	<b>\$ 15,000</b>

<b>TOTAL DAMAGES</b>	<b>\$ 1,090,500</b>
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