

Coastal Hazard Management Strategy: A preliminary stock-take of existing physical mitigation works in study area

Date of last update: 27 March 2015

| PHYSICAL MITIGATION WORKS |  |  |  |   |   |  |
|---------------------------|--|--|--|---|---|--|
| REF#                      | Location<br>(if relevant to a particular geographic location/vicinity) | Type/form<br>[EG: seawall/revetment; groyne; gravel barrier; nourishment; dune/barrier stabilisation; etc] | Who is responsible for works<br>[EG: council; community project; private person; other]  | Date of construction (approx)<br><i>Design lifespan (if assessed)</i>   | Significant conditions for operating<br>[EG: consent duration and other notable consent conditions if any]  | Additional comments (if any)   |
|                           | Esk Rivermouth   | Revetment (?)  | Routinely opened by HBRC   |   |   | Code of practice exists for rivermouth opening operations  |
|                           | Westshore Beach  | Renourishment Scheme (deposition)  | HBRC and NCC   | <p>Since 1987 on average 12-15 000m<sup>3</sup> pa of predominantly fine gravel sourced from Marine Parade.</p> <p>Material used to construct an artificial gravel barrier and then replenished annually.</p> <p>(Alternative source sites have included the wildlife ponds, Ahuriri Entrance, Spirit of Napier).</p> | <p>Resource consent from HBRC allows deposition of up to 30,000m<sup>3</sup> of sediment from Marine Parade source. Consent expires May 2017.</p> <p>Maximum take permitted is 50,000m<sup>3</sup> pa under NCC rules with spatially defined extraction and deposition areas.</p> | <p>Renourishment has held most of the coast seaward of where it was in 1986.</p> <p>Successful means of mitigating erosion at Westshore. However considerable debate on this and effectiveness/sustainability of ongoing renourishment.</p> <p>Result = approximately 160 residential properties not included in CHZ compared to if nourishment scheme not in operation.</p> <p>Benefits extend right up to Bay View (net northerly drift).</p> <p>Doesn't benefit Whakarire Avenue.</p> <p>PD Komar report recommends re-think about longer-term sustainability of material being sourced from Marine Parade beach.</p> <p>Need to review source of material as a first step, but longer term will need to review approach.</p> |
|                           | Westshore (Whakarire Avenue)   | Rock revetment   | NCC  | <p>1909 -1923 protection works constructed to combat erosion.</p> <p>1994 sea wall constructed of concrete rubble.</p> <p>1995 15 000m<sup>3</sup> of fine gravel and sand placed behind seawall.</p> <p>1997 sea wall was dressed with rock armour (mainly leeward side).</p>  | <p>No consent for original works but consents obtained for 1994- 1997 works.</p> <p>2013 R/C consent application now on hold by NCC to re-evaluate options.</p>   | <p>2013 NCC lodged resource consent application to HBRC for "H" shape breakwater and associated works</p> <p>Pre-hearing mediation held and expert conferencing (Stephen Priestly of BECA for NCC and Richard Reinen-Hamill for HBRC).</p> <p>Application is currently on hold by NCC to re-evaluate options.</p>  |
|                           | Ahuriri (Scapa Flow/Inner Harbour)                                     | Rock revetments  | <p>NCC responsible for dredging and shoreline protection work (repairs and rock armoury work)</p> <p>HBRC responsible for navigation safety (via Harbour Master)</p> | <p>Harbour opening pre-European</p> <p>Pre 1931 earthquake Tutaekuri River discharged keeping it clear</p> <p>Today dredging required (every 3-4 years combined with Port operations)</p> <p>Also shoreline protection work and rock armoury work on-going as required.</p>   | <p>Repair and maintenance on-going</p>  | <p>Possible to dump/pump dredged material so that it benefits Westshore, however material is generally fine sand that is readily moved by the sea.</p>   |

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|                           | Ahuriri (Hardinge Road)  | Rock revetment   |   | Long standing protection works. 2013 approximately \$400 000 spent on (deferred) repair and maintenance                         | Repair and maintenance on-going   | Prior to 2013, no work/maintenance undertaken for at least 20 years.   |
|                           | Port of Napier ('breakwater beach')                                    | Revetment, Groyne  |   |   |   | Small beach to north of groyne well used by public. Beach is generally fine sand which remains on beach as a result of shelter by Groyne. A larger beach between the groyne and PONL also gets significant public use. This beach is however within the area designated for PONL development. The beach is not a public reserve space. |
|                           | Port of Napier   | Breakwater   | Port of Napier Limited  | Long standing protection works. Ongoing maintenance and repair. Series of capital works to extend breakwater from time to time. | Regional Coastal Environment Plan permits maintenance and repair works on this existing structure.  | PONL have long term development plans for the port. If these are progressed significant investigation/ modelling will be required. This work could be aligned to long information needs for effective management of coast and therefore joint approach with Local government should be considered.                                     |
|                           | Port of Napier (southern entrance), aka 'Spur Breakwater'              | Groyne   | Port of Napier Limited  | Long standing protection work.  | Regional Coastal Environment Plan permits maintenance and repair works on this existing structure.  |  |
|                           | Port of Napier   | Fairway dredging and deposition  | Port of Napier Limited  |   | Deposition to occur within deposition areas defined in consents and RCEP. Dredged materials to be screened for key contaminants before nearshore deposition.<br><br>Multiple consents in place for maintenance dredging activities in parts of Fairway and Swinging Basin, each with different consent expiry dates, but typically 20-30y duration. | Dumping close to shore is more expensive than off shore dumping. Investigation work could be done to determine optimum dumping site(s) for dredged material to benefit the coast.  |
|                           | Marine Parade Beach  | Renourishment Scheme (extraction)  | HBRC and NCC  |   | Resource consent from HBRC allows taking up to 30,000m <sup>3</sup> of sediment per annum for Westshore Renourishment Scheme purposes.<br><br>Resource consent expires May 2017.  | Since 1993 primary source of material for the Westshore renourishment scheme.<br><br>Beach at this point experiences long term trend of accretion at a rate of 0.8m pa (expected to be 1.5 m pa if Awatoto extraction ceased).   |

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|                           |  |  |   |   |   | PD Komar report recommended re-think about longer-term sustainability of material being sourced from Marine Parade beach.  |
|                           | Ngaruroro River Mouth  |  | River mouth routinely opened by HBRC  |   |   | Code of practice exists for rivermouth opening operations  |
|                           | East Clive   | 2 groynes and sea exclusion bank   | HBRC  | Constructed around 1980   | Repair and maintenance on-going   | Effectiveness of sea exclusion bank is dependent on gravel barrier beach being the primary protection from the sea. If the integrity of the beach barrier is compromised then risk of breach of sea exclusion bank is significantly higher.  |
|                           | Tukituki Rivermouth  | Groynes  | HBRC<br>River mouth routinely opened by HBRC  | Originally constructed 1999. – concrete blocks assembled and placed.  | Riverbank protection groyne consent expires May 2044.   | Code of practice exists for rivermouth opening operations  |
|                           | Haumoana   | Sea exclusion bank and associated works  | HBRC  | Constructed probably in 1970s or 80s. Maintained as part of Haumoana drainage area by HBRC  |   | In storm events the sea overtops the beach crest. These structures provide a line of defence against flooding of Haumoana. The design standard (ie likely return period for flooding of Haumoana) is unknown. Flooding risk is increasing as integrity of gravel beach barrier is reduced. |
|                           | Haumoana (1-41 Clifton Road)   | Various ad-hoc structures and debris   | Landholders   | Various   | Refer RCEP rules re works for maintenance, upgrading, replacement etc of such structures<br>NB: some consents for more recent works may also specify limited life and expiry terms.   |  |
|                           | Clifton Motorcamp entrance   | Rock revetment/seawall   | Hastings DC   | Concrete rubble in place for many years.<br>c.2011 - Rubble removed.<br>2013 – 80m long seawall construction (in latest form) comprised of limestone boulders | Resource consent allows construction, repair, maintenance and removal of rock revetment structure.<br>Consent expires August 2018.<br>Structure to be removed and land reinstated prior to August 2018.<br>Earlier removal may be required if monitoring reveals structure worsening erosion. |  |