

Appendix 1 | Key components of the Council's monitoring framework

| Monitoring programme | Information sources | Parameters monitored | Coverage | Monitoring (M) and Reporting (R) frequency |
|---|--|---|--|---|
| Community outcomes | Government, district and regional councils, sector agencies, community | A selection of key economic, social, environmental and cultural indicators under each of the seven community outcomes | Use of various existing databases and community survey data | M = varied R = 3-yearly |
| State of the environment: Our freshwater resources | Freshwater physicochemical programme | Temperature, flow, DO, BOD5, pH, conductivity, black disc clarity, turbidity, absorbances, ammonia-N, nitrate-N, total-N, DRP, total P, alkalinity, suspended solids, faecal coliform, enterococci, algal cover | 11 sites plus 3 NIWA sites | M = monthly R = annual |
| | Freshwater biological programme | Invertebrate numbers and taxa, macroinvertebrate community index | 51 sites | M = spring and summer R = annual |
| | Freshwater nuisance periphyton programme | Algal cover and type | 21 sites | M = spring, mid summer, late summer R = annual |
| | Freshwater bathing water quality programme | Faecal coliforms, E. coli, enterococci, conductivity, turbidity, number of bathers and other users | 11 sites at popular freshwater bathing spots | M = 13 samples over summer bathing season R = annual |
| | Groundwater quality programme | Conductivity, alkalinity, pH, chloride, sulphate, silica, nitrate, nitrite, ammonia, DRP, sodium, potassium, calcium, magnesium, iron, manganese, bromide, fluoride | 6 sites | M = quarterly R = annual |
| | Groundwater nitrate programme | Nitrates | 3 sites | M = monthly R = annual |
| | Groundwater level programme | Water levels | 7 sites | M = monthly, quarterly and annual R = annual |
| | Regional hydrological monitoring | Water levels and flows, rainfall, wind direction and speed and temperature | 31 telemetered sites, 24 non-telemetered water temperature sites | M = continuous R = monthly for selected sites |
| | Summary of freshwater use and availability | Natural 10 year low flow, total allocated water use, permitted water use, residual flow, residual flow as % low flow | 20 sites on key rivers and streams | M = 5-yearly R = 5-yearly |

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| | Summary of regional surface water abstraction volumes | Total volume of consented surface water abstraction in the region by industry category | Region-wide | M = annual R = annual |
| | Regional lake water quality programme | Chlorophyll-a, clarity, total phosphorus, total nitrogen, temperature | Lake Rotorangi | M = annual R = annual |
| | Riparian management water quality | Invertebrates, periphyton diversity and abundance, water temperature, bacteria, clarity, turbidity, conductivity depending on site | Kaupokonui River and Katikara, Kapoiaia and Tawhiti Streams | M = continuous, monthly or spring and summer depending on parameter R = annual |
| | Register of dams, weirs and fish passage | Location, size, type, barrier | Region-wide | M = continuous R = as required |
| State of the Environment : Our air | Ambient air quality programme – nitrogen oxides | Nitrogen oxides | 8 sites | M = monthly R = annual |
| | Ambient air quality programme – sulphur dioxide | Sulphur dioxide | 2 sites | M = monthly R = annual |
| | Benzene, toluene, ethylbenzene and xylene | Benzene, toluene, ethylbenzene and xylene | 5 site | M = 3-6 monthly R = annual |
| | Agricultural burnoffs | Visible sources of smoke, location, weather conditions, effect on amenity values | Eastern, northern and southern Taranaki | M = daily for 1 month R = annual |
| | Regional air emissions inventory | Air emissions data from resource consents plus standard emission data for various sources | Region-wide | M = 5 yearly R = 5 yearly |
| | Annual air quality monitoring | Air discharge consents, upgrades, ambient air quality, air pollution complaints, installation of wood fires | Region-wide | M = various R = annual |
| State of the Environment : Our coastal environment | Marine bathing water quality programme | Faecal coliforms, E. coli, enterococci, conductivity | 7 primary sites monitored annually 12 secondary sites monitored on a 3-year rotation | M = 13 times over the bathing season R = annual |

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| | Hard shore marine ecological programme | Habitat and species type | 6 sites | M = spring and/or summer R = annual |
| | Soft shore marine ecological programme | Habitat and species type | 4 sites | M = summer R = annual |
| | Subtidal marine ecological programme | Habitat and species type | 5 sites | M = summer R = annual |
| | Port Taranaki Water Quality Programme | Sediment quality (hydrocarbons, DDT, tributyl tin, copper, zinc, lead, arsenic and cadmium), bioaccumulation of chemicals (in mussels), intertidal ecology, invasive species, water quality (faecal coliforms, E. coli, enterococci and conductivity) and shipping movements | Port Taranaki: 7 sites (sediment quality), 3 sites (bioaccumulation plus 1 control site outside harbour), 3 sites (intertidal ecology), 3 sites (invasive species), 7 sites (water quality) | M = 2 yearly and monthly for invasive species R = 2 yearly |
| | Hard shore habitat effects programme (trial) | Habitat composition and effects on marine communities | 3 sites | M = 3 times in the year R = annual |
| State of the environment: Our land | Aerial photographic coverage | Land cover, land use | Region-wide | M = 5 yearly |
| | Hill country sustainable land use programme | Vegetation, land use, land use change, physically sustainable land use | 25 representative hill country sites | M = 5 yearly R = 5 yearly |
| | Coastal sand country sustainable land use programme | Area of bare sand, vegetation type, land use vegetation and land use change, physically sustainable land use | 4 representative sites | M = 5 yearly R = 5 yearly |
| | Soil health programme | Soil compaction, nutrient depletion (carbon, phosphate, nitrogen, sulphur, potassium, calcium, magnesium, sodium) and residual soil contamination (arsenic, cadmium, copper, lead, zinc, persistent organopesticides and herbicides), soil biological health and soil ecological diversity | Region-wide – various representative sites on ring plain and hill country soils | M = 5 yearly R = 5 yearly |
| | Pesticide residues in dairy and meat produce | DDT, DDE, dieldrin and/or others as appropriate | Region-wide data from MAF Regulatory Authority | M = 5 yearly R = 5 yearly |

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| | District council monitoring | Protected heritage sites and buildings, protected or significant trees, number of significant natural areas, number and location of consents for clearance of indigenous vegetation, number, location and area of esplanade reserves, esplanade strips and access strips, annual volume of waste generation, annual volume of wastes recycled, issues raised by network utility operators, noise in the coastal marine area | Each of the region's district councils | M = 5 yearly R = 5 yearly |
| State of the environment: Our biodiversity | Inventory of regionally significant and protected wetlands | Number, location, condition and protection status of wetlands in the Council's schedule of regionally significant wetlands | Region-wide | M = 2 yearly R = 2 yearly |
| | Department of Conservation monitoring | Number, area, type and location of protected natural areas, percentage habitat types protected, threatened species | Region-wide | M = 5 yearly R = 5 yearly |
| | QEII Trust | Number, area, habitat type covered by QEII covenants | Region-wide | M = 5 yearly R = 5 yearly |
| | Further programmes to be developed | To be developed | To be developed | To be developed |
| Compliance monitoring | Tailored compliance monitoring programmes | Various chemical, physical, biological, bacterial or viral parameters, groundwater monitoring, soil analyses, vegetation or lichen studies, flow gauging, electric fishing, dye dilution studies, biological surveys of freshwater or marine ecosystems, odour surveys, the sampling and analysis of stack particulate, gas emission or downwind ambient air and time lapse video recording of emission or outfall plumes, water abstraction (including auditing and calibration of abstraction systems), contingency and site management plans | 188 individual tailored compliance monitoring programmes involving over 1000 inspections of more than 230 consent holders and 770 resource consents (numbers may change from year to year) | M = variable depending on programme (monthly, quarterly, yearly) R = annual |
| | Agricultural monitoring programme | Compliance with consent conditions. May include sampling and analysis of various physical, chemical or biological parameters | Inspections of all 2122 dairy farms, 26 piggeries, 48 poultry farms and reinspections as required (numbers may change from year to year) | M = annual R = annual |

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| | Minor industrial operations programme | Compliance with consent conditions or Council policy and plan requirements. May include sampling and analysis of various chemical, physical or biological parameters | Inspections of over 860 minor industrial operations including hydrocarbon exploration and production sites, paint sprayers, light engineering, quarries, garages and other general industrial sites and land uses, and reinspections as required (number may change from year to year) | M = annual R = annual |
| | Once-only compliance inspection programme | Compliance with consent conditions | Region-wide small-scale installation activities (bridges, culverts etc) | M = on completion of work or commencement of consent R = following inspection |
| | Review of contingency plans | Content of contingency plans to ensure ongoing relevance and appropriateness | Review of a selection of approximately 200 operational plans | M = annual R = annual |
| | Unauthorised Incidents Register | Number of unauthorised incidents reported. Number of abatement notices and infringement notices issued and prosecutions taken. A variety of parameters sampled and/or analysed depending on the nature of the incident | Region-wide | M = continuous R = 6 weekly and annual. |
| | Public information databases | Requests for information, Council communications activities, use of Council website, public information materials produced and distributed, number of visits to the Council's freshwater lab, number and type of initiatives under the Council's environmental education programme | Region-wide | M = annual R = annual |
| Resource consent processing and administration | Resource consent database | Number and type of consent applications and consents granted, notified and non-notified, submissions lodged, application pre-hearing resolution rate, number of hearings, number of appeals lodged, result of appeals, consent processing timeline compliance, implications of regional plans, consent processing charges | Region-wide | M = annual R = annual |

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| Policy and plan effectiveness and efficiency monitoring | Community outcomes monitoring, state of the environment monitoring, compliance monitoring, resource consents processing and administration and other monitoring programmes, and community and stakeholder review | As set out in other monitoring programmes plus stakeholder comment compared to environmental results anticipated as recorded in the Council's plans | Determined by coverage of the plans | M = 5 yearly R = 5 yearly |
| Research and investigations | Applied research and investigation projects | Need for investigations, outputs from investigations, application to Council planning, policy and operations | Determined by research or investigation needs | M = during and at completion of projects R = during and at completion of projects |
| Emergency management | Seismic monitoring network | Earthquakes, earth movements, tremours | 7 sites on Egmont Volcano and surrounding area | M = continuous R = annual |
| | Incidents log and responses | Severe weather warnings (snow, hail, rain, wind), gas leaks and other incidents | Region-wide | M = continuous R = as needed, 3 monthly and annual |
| | Reports on significant emergency or hazard events | Determined by emergency or hazard | Determined by emergency or hazard | M & R = determined by emergency or hazard |
| | Survey of community awareness of natural hazards | Community awareness of natural hazards, preparedness and response | Region-wide | M = 5 yearly R = 5 yearly |
| Land management | Land management databases | Number and coverage (hectares) of comprehensive, agroforestry, riparian and conservation plans, length of proposed riparian planting (kms), number of soil conservation and riparian plants supplied, number of requests for advice and assistance | Region-wide | M = annual R = annual |

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| Pest management | Pest animal management databases | Coverage (hectares) of and number of properties in the self-help possum control programme, number of properties on which maintenance occurred, numbers of properties inspected for compliance with strategy rules, residual trap rate, number and type of enquiries for advice and information on pest animals, number of pest animals killed (in addition to initial control under the self-help programme), advice and control of other unwanted animal organisms | Self-help possum control programme: Taranaki ring plain with residual trap catch monitoring on 247 properties selected at random. Other: region-wide | M = annual R = annual |
| | Pest plant management databases | Inspection of Category A, B and C properties for compliance with strategy rules, number of Notices of Direction or other enforcement action taken to destroy or control pest plants, success of biological control agents, number of complaints on pest plants, number and type of enquiries for advice and information on pest plants, number and results of inspections of plant nursery and retail outlets, number results of direct control of eradication pest plants, advice and control of other unwanted plant organisms | Region-wide with over 1800 inspections annually, 8 field trial sites for biological control agents, 28 nurseries | M = annual R = annual |
| Land transport | Report on Regional Land Transport Strategy, Land Transport New Zealand, Transit New Zealand, district councils, NZ Police, land transport operators and users, sector agencies | Implementation of strategy objectives and use of subsidised passenger transport and total mobility schemes | Region- wide. Subsidised passenger or total mobility schemes in New Plymouth, Waitara, Inglewood, Stratford and Hawera | M = monthly and annual R= annual |
| Harbour management | Report of harbourmaster. Reports on implementation of the Taranaki Regional Oil Spill Response Plan | Navigation safety records and incidents, oil spill maintenance checks and equipment audits, training exercises, number and nature of responses to marine oil spills | Port Taranaki and approaches | M = continuous R = annual |

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| River control and flood protection | Monitoring and observation of channel characteristics and flow conditions, and asset condition, engineering and other reports, hydrological monitoring network (rainfall and river level and flow) | Condition and maintenance requirements for Council-owned or managed river control and flood protection assets, rainfall, river levels and flows, channel conditions, number and nature of responses to public requests for information and assistance on drainage and river and flood control | Region-wide for rainfall, river levels and flows (see State of the Environment Monitoring Programme), and general river channel conditions. Council-owned or managed schemes – lower Waitara River, lower Waiwhakaiho River, and central Taranaki schemes | M = continuous (rainfall river levels and flows), annual or as required R = annual or as required |
| Environmental enhancement | Reports on projects proposed or completed | Nature, size and extent of enhancement proposal, values to be protected or enhanced, cost of project (\$), number of wetlands protected | Regionally significant or important wetlands. Other aspects of the environment to be protected or enhanced | M = annual R = annual |
| Waste minimisation | Individual reports on studies, surveys or projects, annual report on activities, district councils, industry and national organisations | Dependent on project. May include type and volume of wastes generated, collected, recycled or reduced | Dependent on project | M = dependent on project and/or annual R = annual |
| Environmental attitudes | Environmental attitudes survey | Environmental issues of most importance, level of concern over issues, order of priority of council functions, perceptions of change in the environment, perceptions of environmental quality in local area and in region, what residents most like-dislike about there they live | Taranaki residents | M = 5 yearly R = 5 yearly |
| | Submissions on notified resource consents and plans | Key issues raised in submissions, type of consent application or policy document | Dependent on location of consent or coverage of policy document | M = 5 yearly R = 5 yearly |
| | Public information databases | Requests for information, Council communications activities, use of Council website, public information materials produced and distributed, number of visits to the Council's freshwater lab, number and type of initiatives under the Council's environmental education programme | Region-wide | M = annual R = annual |