# Enviromental Data Risk Register, as at 16-03-2020

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|---|---|
| 16-25 Entreme Risk | (red) |
| 9-15 High Risk | (orange) |
| 4-8 Moderate Risk | (yellow) |
| 1-3 Low Risk | (green) |

| ID | Type | Outline the Risk Issue | Outline Key Scope | Who is affected | How do we communicate this | What are the organisation impacts | Likehood | Consequences | Risk Score | What is the Action Plan | QMS Linkages | Responsible | Accountable | Consulted | Informed | ReviewPeriod(Months) | ReviewConsequences |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Management | Loss of Organisational Knowledge | Delivery, Product, Service | External Customer - Contract Basis, External Customer - Other, Internal Customer-Compliance, Internal Customer-EM, Internal Customer-Operations, Internal Customer-Other, Internal Customer-Science | Documented Memo/Letter, Formal Meeting | Key Staff leave Organisation with little or no cover | 4 | 5 | 20 | Provide mechanism for increasing competencies across tasks. Develop succession plans | | Coordinators | Manager | SnrTechs-Data Scientists, Technicans | | 12 | Reviewed 16/03/2020, no changes made |
| 2 | Operational | Provision of out of spec materials | Product | Suppliers | Documented Memo/Letter, Formal Meeting | Inability to meet customer needs | 2 | 5 | 10 | Increase review of COA reports. Review Supplier OFI issues | | Manager | Portfolio Holder | | | 12 | Reviewed 16/03/2020, no changes made |
| 3 | Operational | Water quality sensor on Lake Horowhenua failing | Product | External Customer - CRI's, External Customer - Public Consumers, Internal Customer-Science | Email, Formal Meeting, Informal Discussion | Inability to meet customer needs, high interest project, weed harvesting and consent implications | 5 | 4 | 20 | Critical spares, spares in office, expectation to keep sites running. Site can be operational self logging in two days.Access issues due to threats. | | Manager | Portfolio Holder | Coordinators | | 12 | Reviewed 16/03/2020: Increased the risk scores from last year as have no telemetery on site and are missing some data. |
| 4 | Operational | Water quality sensors failures | Product | External Customer - Contract Basis, External Customer - CRI's, External Customer - Public Consumers, Internal Customer-Science | Documented Memo/Letter, Email, Formal Meeting | Inability to meet customer needs | 3 | 3 | 9 | Spare sensors and cables held in stock. Refer to SLA for response times. | | Coordinators | Portfolio Holder | Manager, SnrTechs-Data Scientists, Technicans | Contractors, Customers | 12 | Reviewed 16/03/2020, no changes made |
| 5 | Operational | Water quality sensors validated, and maintained accordance with industry best practice / NEMS | Product | External Customer - CRI's, External Customer - Public Consumers, Internal Customer-Science | Documented Memo/Letter, Email, Formal Meeting | Inability to meet customer needs | 3 | 1 | 3 | Data downgraded | | Coordinators | Portfolio Holder | Manager | Customers, SnrTechs-Data Scientists, Technicans | 12 | Reviewed 16/03/2020, no changes made |
| 6 | Operational | IVR | Delivery, Service | External Customer - Public Consumers, Internal Customer-EM, Internal Customer-Operations | Email, Formal Meeting, Web Notice Update | Inadequate warnings to public, floodgates not operated as designed, flooding to properties | 5 | 5 | 25 | New IVR system being implemented by end of october 2019 | | Manager | Coordinators | Contractors, SnrTechs-Data Scientists, Technicans | | 12 | Reviewed 16/03/2020: Increased risk, Ensure full operation before going public.This is with corporate and seems to be stalled. |
| 7 | Operational | Water level sites operational | Product | External Customer - Contract Basis, External Customer - CRI's, External Customer - Public Consumers, Internal Customer-Compliance, Internal Customer-EM, Internal Customer-Operations, Internal Customer-Science | Email, Formal Meeting, Web Notice Update | Inability to meet customer needs | 3 | 3 | 9 | Spare sensors and loggers, checks on sites to ensure sites are operational | | Coordinators | Portfolio Holder | Manager, SnrTechs-Data Scientists, Technicans | Customers | 12 | Reviewed 16/03/2020, no changes made |
| 8 | Operational | Rainfall sites operational | Product | External Customer - Contract Basis, External Customer - Public Consumers, Internal Customer-EM, Internal Customer-Operations, Internal Customer-Science | Documented Memo/Letter, Email, Formal Meeting, Informal Discussion, Web Notice Update | Inability to meet customer needs | 3 | 2 | 6 | Spare sensors and loggers, checks on sites to ensure sites are operational | | Coordinators | Portfolio Holder | Manager, SnrTechs-Data Scientists, Technicans | Customers | 12 | Reviewed 16/03/2020, no changes made |
| 9 | Management | Internal Customers unwilling to fund core network | Product, Service | External Customer - Public Consumers, Internal Customer-Compliance, Internal Customer-EM, Internal Customer-Operations, Internal Customer-Science | Documented Memo/Letter, Formal Meeting | no funding will result in the closure of stations and staff redundancy | 4 | 4 | 16 | Understand customer requirements, ensure team costs are controlled, level of service meets expectations | | Coordinators | Manager | Contractors, Customers, SnrTechs-Data Scientists, Technicans | Customers | 12 | Last Review 16-03-2020 Increased risk as this is still tied up with a Network review by our customers as part of LTP. This has been taking place since November 2018 |

| ID | Category | Risk | Type | Affected | Communication | Consequence | L | S | Score | Control | | Owner | Manager | Parties | Parties 2 | | Rev | Review Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | Operational | Structural failure causing Death or severe injury | Service | Hydrology Team, Internal Customer- Compliance, Internal Customer- EM, Internal Customer- Operations, Internal Customer- Other, Internal Customer- Science | Documented Memo/Letter, Formal Meeting | Health and Safety, Breach of management responsibility | 2 | 5 | **10** | All structures to be surveyed and reported on by a structural engineer ASAP | | Coordinators | Manager | Contractors, Customers, SnrTechs-Data Scientists, Technicans | Customers | | 12 | Reviewed 16/03/2020, no changes made |
| 11 | Operational | Environmental Archive corruption (Complete Failure / Loss of all electronic data) | Delivery, Product, Service | External Customer - Contract Basis, External Customer - CRI's, External Customer - Public Consumers, Hydrology Team, Internal Customer- Compliance, Internal Customer- EM, Internal Customer- Operations, Internal Customer- Other, Internal Customer- Science | Documented Memo/Letter, Formal Meeting | Loss of approximately ~100 million dollars of environmental data - supporting the entire organisational activates | 1 | 5 | **5** | Full redundancy to be implemented. Full implementation of National ICT Strategy | | Portfolio Holder | Manager | Contractors, Coordinators | | | 12 | Last Review 7-08-2019 No Changes made; Tane and Nathan need to provide more information |
| 12 | Operational | BCP - Failure | Service | External Customer - Public Consumers, Internal Customer- EM, Internal Customer- Operations | Documented Memo/Letter, Formal Meeting, Web Notice Update | Loss in real-time electronic data capture | 5 | 4 | **20** | Full testing (on-going) of redundant system | | Portfolio Holder | Manager | Contractors, Coordinators | Customers, SnrTechs-Data Scientists, Technicans | | 12 | Last Review 16/03/2020 Increased risk as new building is only partly operational **Failed, needs urgent review** |
| 13 | Management | Non-conformances not being reported | Product | Hydrology Team | Documented Memo/Letter, Email, Formal Meeting | inability to understand non-conforming products and potential opportunities to improve products and services. Lack of understanding around resources (Money and staff time) | 3 | 4 | **12** | Ensure there is a positive culture around non-conformance reporting and that staff understand the need and reasons behind the process | | Coordinators | Manager | Contractors, SnrTechs-Data Scientists, Technicans | | | 12 | Last Review 16/03/2020 increased risk as we have two systems and there is now incomplete reports going through the system |
| 14 | Management | Section 17a. Wider organisational reviews on services and opportunities | Delivery, Product, Service | External Customer - Contract Basis, External Customer - CRI's, External Customer - Public Consumers, Hydrology Team, Internal Customer- Compliance, Internal Customer- EM, Internal Customer- Operations, Internal Customer- Science | Documented Memo/Letter, Formal Meeting | The Hydrology team as an internal organisational activity may not exist. | 2 | 4 | **8** | | | CEO | Manager | | | | 12 | Reviewed 16/03/2020, no changes made |
| 15 | Management | Failure of internal supporting systems outside of Hydrology team's QMS: IT, HR, Finance | Delivery, Service | Hydrology Team, Internal Customer- Compliance, Internal Customer- EM, Internal Customer- Operations, Internal Customer- Science | Documented Memo/Letter, Formal Meeting | Failure within supporting infrastructure can result in reduced level of service or lost time | 4 | 2 | **8** | | | Manager | Manager | | | | 12 | Last Review 7-08-2019 Increased risk due to coronavirus and systems being pu to test, working from home etc |
| 16 | Management | Senior / Experienced Staff Retirement | Service | Hydrology Team | Documented Memo/Letter, Formal Meeting | Loss of Organisational Knowledge | 3 | 4 | **12** | | | Manager | Manager | | | | 12 | Last Review 16/03/2020 Reduced Risk. Had been increased previously as our previous manager retired. We are looking more stable at the moment. |
| 17 | Operational | Lake Horowhenua catchment data aquistion | Product | External Customer - CRI's, External Customer - Public Consumers, Internal Customer- Science | Email, Formal Meeting, Informal Discussion | Inability to meet customer needs, high interest project, weed harvesting and consent implications | 4 | 4 | **16** | Access issues due to threats. | | Manager | Portfolio Holder | Coordinators | | | 12 | Reviewed 16/03/2020, no changes made |
| 18 | Management | Local Government Politics & Policies | Delivery, Product, Service | External Customer - Public Consumers, Hydrology Team, Internal Customer- Compliance, Internal Customer- EM, Internal Customer- Operations, Internal Customer- Science | Documented Memo/Letter, Formal Meeting | Discontinuity in programmed products and services. Forced changes to customers requirements or available funding | 4 | 4 | **16** | | | Council | Manager | | | | 12 | Reviewed 16/03/2020, increased risk, government may issue directives over the pandemic, also NES may affect us. |
| 20 | Operational | Internal Calibration Schedule and sensor calibration requirements not inline with new/evolving Standards. | Product | Hydrology Team | Formal Meeting | QMS non-conformance, downgrade of product quality. Resource time lost | 4 | 3 | **12** | | | Manager | Coordinators | | | | 12 | Reviewed 16/03/2020, increased risk as was but noted we might see more downgraded data as the pandemic may limit our ability to maintain calibrations. |

| # | Category | Risk | Type | Stakeholders | Communication | Description | L | C | Score | Mitigation | | Owner | Responsible | | | | Rev | Review Notes |
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| 21 | Operational | Supplier Performance; Hydrology team and organisational preferred suppliers | Product | Hydrology Team, Suppliers | Email, Informal Discussion | non-conforming instrumentation or supplied service supporting the Hydrology team's activities. Organisational Preferred suppliers may be in conflict with the teams preferred suppliers. | 3 | 3 | 9 | Hydrology teams' Annual Preferred Suppliers Review. Feedback to organisational preferred supplier review. | | Portfolio Holder | Coordinators | | | | 12 | Reviewed 16/03/2020, no changes made. Noted we need to review the suppliers list |
| 22 | Operational | Hydrology team's Software and Systems supporting Environmental data collection and storage | Delivery, Service | Hydrology Team, Internal Customer- Compliance, Internal Customer- EM, Internal Customer- Operations, Internal Customer- Science | Documented Memo/Letter, Formal Meeting, Informal Discussion | Access or support of the Hydrology teams data systems | 3 | 3 | 9 | | | Manager | Portfolio Holder | | | | 12 | Reviewed 16/03/2020, no changes made |
| 23 | Operational | Lab Service Contracts | Delivery, Product, Service | Hydrology Team, Internal Customer- Compliance, Internal Customer- Science | Documented Memo/Letter, Email, Formal Meeting | Ability to meet national standards | 2 | 2 | 4 | | | Manager | Portfolio Holder | | | | 12 | Reviewed 16/03/2020, no changes made |
| 24 | Operational | Increased expectation for external access to environmental data | Delivery | External Customer - Public Consumers, Hydrology Team | Documented Memo/Letter, Email, Formal Meeting, Web Notice Update | increase resources (short term) and capital expenditure / investment into software and systems | 3 | 2 | 6 | increase resources (short term) and capital expenditure / investment into software and automation systems to improve data quality of external real time access | | Manager | Portfolio Holder | | | | 12 | Reviewed 16/03/2020, increased risk as customer demand for data is generally increasing |
| 25 | Management | Training and Recruitment | Service | Hydrology Team | Documented Memo/Letter, Formal Meeting | Lack of trained potential employees to support the teams' TBA's or team growth. | 3 | 2 | 6 | increase resources (short term) and capital expenditure / investment into training and development. Development of training pathway and competencies & capabilities. Link to Big5 | | Manager | Coordinators | | | | 12 | Reviewed 16/03/2020, reduced risk, we have been sussesful lately in our recuriment |
| 26 | Operational | Private Land Access | Product, Service | Hydrology Team | Documented Memo/Letter, Formal Meeting | ability to access private land which existing stations are located. Movement of stations. Discontinuity of records | 4 | 3 | 12 | Maintain good relationships with land owners - joint development of H&S requirements. Purchase land and/or access. | | Manager | Coordinators | Customers | | | 12 | Reviewed 16/03/2020, no changes made. Noted that we need to store these in asset. |
| 27 | Operational | Technology Changes | Product, Service | Hydrology Team, Internal Customer- Compliance, Internal Customer- EM, Internal Customer- Operations, Internal Customer- Science | Documented Memo/Letter, Formal Meeting | changes in technology or third party products; like telecommunications. May affect the teams ability to provide current expected services. | 4 | 2 | 8 | | | Manager | Coordinators | | | | 12 | Reviewed 16/03/2020, no changes made |
| 28 | Operational | Environmental or Bio-security controls | Service | Hydrology Team | Documented Memo/Letter, Formal Meeting | Ability to operate within the current boundaires / workplan. | 4 | 4 | 16 | M.bovis. Access agreements with property owners. | | Manager | Portfolio Holder | | | | 12 | Reviewed 16/03/2020, no changes made. This has quietened down. However we need to ensure are vehicles are cleaned at least at the start of the day. (Flow meter vehicle is the biggest risk) |
| 29 | Management | Central Government Acts and Regulations | Delivery, Product, Service | External Customer - Public Consumers, Hydrology Team, Internal Customer- Compliance, Internal Customer- EM, Internal Customer- Operations, Internal Customer- Science | Documented Memo/Letter, Formal Meeting | Discontinuity in programmed products and services. Forced changes to customers requirements or available funding | 3 | 3 | 9 | | | external | Manager | | | | 12 | Reviewed 16/03/2020, no changes made |
| 30 | Management | Disruption to our work both from moving and our work flow being partly or fully based at Kairanga | Delivery, Product, Service | External Customer - Public Consumers, Hydrology Team, Internal Customer- Compliance, Internal Customer- EM, Internal Customer- Operations, Internal Customer- Science | Documented Memo/Letter, Formal Meeting | Discontinuity in programmed products and services. Forced changes to customers requirements or available funding. Ability to operate within the current boundaires / workplan. | 5 | 5 | 25 | Up in the air as a final plan has not been presented | | CEO | Manager | | | | 12 | Reviewed 16/03/2020, no changes made |

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| 31 | Operational | Flood warning sites operational | Delivery, Service | External Customer - Public Consumers, Internal Customer- EM, Internal Customer- Operations | Email, Formal Meeting, Web Notice Update | Inadequate warnings to public, floodgates not operated as designed, flooding to properties | 3 | 4 | 12 | All flood sites on radio telemetry, BCP plan for loss of Regional house | | Manager | Coordinators | Contractors, SnrTechs-Data Scientists, Technicans | | | 12 | Reviewed 16/03/2020, no changes made |
| 32 | Operational | pandemic example: coronavirus | Delivery, Service | External Customer - Public Consumers, Internal Customer- EM, Internal Customer- Operations, Internal Customer- Science | Email, Phone, Web Notice, Zoom or Face time | Loss of staff, no ability to work at the office. Forced quarantine of staff. Inability to perform our duties. | 5 | 4 | 20 | Review BCP and ensure it also covers pandemics. Ensure masks and hand sanitier is in stock. | | Manager | Coordinators | All Ed staff | | | 12 | New Hazard, added 27-09-2020, developing story. Need to review our pandemic plan and BCP. Ensure staff PPE and remote access is all working |
| 33 | Operational | Hydrology team's Software and Systems supporting Environmental data teams flood modeling, no onsite expertise | Delivery, Service | Hydrology Team, Internal Customer- Compliance, Internal Customer- EM, Internal Customer- Operations, Internal Customer- Science | Documented Memo/Letter, Formal Meeting, Informal Discussion | Unable to predict floods properly or models stopping | 3 | 3 | 9 | Contract in place with Hydro Tasmania. | | Manager | Manager | | | | 12 | New Risk added 16/03/2020 |
| 34 | Operational | Hilltop Asset being replaced by the corporate AMIS system. Need to ensure new system kee | Delivery, Service | Hydrology Team, Internal Customer- Compliance, Internal Customer- EM, Internal Customer- Operations, Internal Customer- Science | Documented Memo/Letter, Formal Meeting, Informal Discussion | Unable to properly track calibrations and locations of items. | 3 | 3 | 9 | Work closely with assets and ensure our bussiness needs are met by any new system. | | Manager | Manager | | | | 12 | New Risk added 16/03/2020 |