

## **TDC Civil Defence Emergency Management Contractor Report**

This report has been compiled for a number of projects undertaken as a contractor to Taupo Civil Defence Emergency Management (CDEM) by Doug Wilcox. The contracted projects are listed and reported against as follows:

1. Emergency Operating Centre Review and Risk Assessment Re: Relocation of Support Services
2. Civil Defence BGAN Satellite Fit for Purpose Review
3. Civil Defence Origen Software Review
4. Disaster Recovery Taupo DC Symposium – Programme Design
5. Emergency Management TDC MOUs Review

### **1. Emergency Operating Centre Review and Risk Assessment Re: Relocation of Support Services**

A risk plan has been developed identifying issues arising from the closedown of the Taupo Office and the relocation of its staff. The Risk and Mitigation Plan is attached at the end of this report. One of the biggest risks identified in the Risk Mitigation Plan is finding an appropriate facility that may be needed for a major CDEM event that also experiences a mains power outage (worst case scenario). The facility will need to be:

1. IL4 compliant (Importance Level 4 – as described in the building code) for seismic activity to be used as a post-disaster emergency facility, and
2. Equipped with back-up power generation, while being
3. Large enough to cater for a maximum of:
  - 72 TDC Staff - EOC staff (Currently 41 working in split shifts), Lifelines Staff (9), PIMs Customer Services (8), Building Management Officers (7), Psycho-social Staff (7); and
  - External emergency agency staff as required during the response. (ie. From Police, FENZ, Ambulance, Lakes DHB, SARs, NZRT6, etc.)

There are currently 2 council-owned buildings that are IL4 compliant and can be used in an EOC activation. Other buildings are being identified within, and external, to Council as other potential facilities during a CDEM event. All IEP seismic test results below are expressed as a “% of the New Building Standard” or “% NBS”. A score below 34% NBS is classified as earthquake prone, a score below 67% NBS is classified as an earthquake risk. The ideal IL4 score is 67% NBS or greater.

#### **Taupo District Council-owned facilities:**

Current facilities with IL4 Compliance and Back-up Generators:

- Front half of the Rifle Range Building – IL4 Score = 100% NBS; small capacity (approx. 20 people)
- Taupo Great Lake Centre – IL4 Score = 96% NBS; there is an issue of insufficient space if also needed as a Civil Defence Centre for public shelter and welfare.

Potential large facilities with no IL4 Compliance but has Back-up Generator

- Taupo Events Centre (TEC) – IL3 Compliant = 227% NBS, budgeted in Long Term Plan (LTP) for IL4 Compliance seismic assessment, heating is provided geothermally and is not connected to backup generator but is also being budgeted in the LTP for the geothermal bore pumps to be connected.
- Taupo Library – IL2 Compliant = 97% NBS, could be an alternative venue but requires IL4 assessment and compliance.

Potential large facilities NOT HAVING IL4 Compliance nor Back-up Generators:

- Taupo Parks Depot – IL2 Compliant = 95% NBS

- Owen Delany Park Grandstand/Offices – no seismic assessment information is current - original NZS 3604 (2001) bracing schedule calculations (earthquake and wind) available, but no earthquake strengthening information evident since NZS 3604 (2011) has come into place, that introduced “good ground” soil ultimate bearing capacity increase from 100kPa to 300kPa as a consequence of the Canterbury Earthquakes.

Facilities not owned by Council worth considering:

Taupo Hospital – IL4 Compliant = 34%NBS, (Seismic strengthened in 2012 by BECA), assume backup generator

Taupo-nui-a-Tia College Design and Innovation Centre – IL3 Compliant built 2011/12 under the new building standard (NBS), unknown if it has backup generator

Old Taupo Exchange Building (Whakaipo St) – no seismic assessment evidence

TDC CDEM will continue to look at other buildings/facilities that may fit the 3 critical criteria to host EOC operation during a power outage CDEM event. Note the facilities listed above differ to Community-led Centres such as the Methodist Presbyterian Church in Rifle Range Rd, Omori Community Hall, Kinloch Hall, Rangitaiki Community Hall, etc.

The other risk to note, all seismic reports undertaken by a consulting engineer on the TDC facilities listed above have been assessed under what is called an “Initial Evaluation Procedure (IEP)”. In all cases, it is recommended by the engineer that a Detailed Seismic Assessment (DSA) should be undertaken to gain a more accurate measure. It is unsure if Council would consider this an issue, given the consequences in the public eye, if facilities have been promoted as IL4 compliant and were to suffer major structural damage, or more seriously, loss of life.

On the other hand, irrespective of the above, there is a protocol in place immediately following an event resulting in potential building damage. The appropriate experts (building inspectors and/or structural engineers) will assess the building to be “fit for use” before anyone can enter the premises, including IL4 complying buildings.

Backup Generators and testing protocols:

Testing of all permanent facility generators are undertaken on a monthly basis, coordinated by the Facilities Management team. This include generators in the following locations:

- Taupo Office
- Turangi Service Centre
- Mangakino Service Centre
- Taupo Great Lake Centre
- Taupo AC Baths/Events Centre

Monthly checks include:

- “Manual” monthly start-up of generators (opposed to Auto-start)
- Checking oil and fuel levels (a protocol exists of fuel levels being equal to or above 85% full at all times to avoid excessive water condensation and risk of fuel line of filter blockages)

Servicing of all permanent facility generators are undertaken on a 6-monthly basis:

- “Auto-start” test of generators. ie. Disable mains power to each facility to test automatic startup of generators to simulate a power outage event.
- Servicing of generators as required from maintenance checks
- Check oil and fuel levels and filter.

## **Current Emergency Operating Centre (EOC) setup**

The current EOC is setup in the Rifle Range Building. The biggest issue is its limited size, especially given only the front half of the prefab building has IL4 status. The key is to improve the usage of the space available and a re-format of the furniture will occur over the next months to achieve this. PCs are intended to be replaced with laptops over this period and will also declutter and clear up desk space.

The CDEM team have been busy recruiting new staff for the EOC and numbers have increased, currently standing at 41 for the EOC. This is critical especially in prolonged declaration events when shifts are required to operate the EOC. Training is being scheduled for CDEM base foundation and intermediate courses. CIMS 2 and 4 training for EOC Staff is also programmed in mid-November and is a pre-requisite to working in the EOC. Emergency Management Software, EMIS, training is also being developed by Waikato CDEM Group and we will be notified of these roll-out dates in the coming month. Once a large enough number of EOC staff have completed these courses, TDC CDEM will focus on rolling out event scenario training for EOC operation.

The CDEM Administrator (who has been seconded from the Customer Services Team for 12 months) has been busy updating contact lists and revamping display boards in the EOC holding critical contact information. A large status whiteboard has also been developed and will be used alongside the existing LED monitor for GIS mapping display. During EOC operation, it is also our desire to have the emergency management system projected on the wall displaying messages, responses, allocated tasks and actions electronically in real-time for all to see.

## **New Emergency Operating Centre (EOC) as part of the Council Office rebuild**

The ideal scenario in the future is to incorporate an EOC as part of the rebuild of TDC's main office building. There is an essential regulatory compliance to be met in the building to achieve this. As mentioned earlier, the EOC needs to be constructed to meet IL4 standard.

On a recent visit to Waikato CDEM Group, we had the opportunity to tour their new purpose-specific Civil Defence building, which is still under construction but nearing completion. A key note of feedback from our host, the Waikato CDEM Group Controller, was in relevance of a fully IL4 designed building versus an IL2/IL4 sectioned building. In a seismic event, IL2 building sections will shake more vigorously than IL4 building sections. There is little difference in cost when taking into account the specific engineering design and construction required between the IL2/IL4 building interfaces compared with a fully IL4 compliant building. When asked to clarify, their new build has IL2/IL4 building transitions, expensive specific engineering was required to cope with the different movement rates of the building sections. Even in the design process, the challenge is segregating the IL2 parts of the building from the IL4 components to facilitate safe differential movement of the whole building while also minimizing the number of transitional areas in its design.

Some clever functional design elements were incorporated at the Waikato Group's new headquarters, including a large open space divided by two sliding acoustic wall partitions. So depending on the scale of CDEM event, the EOC could be sized appropriately while during business-as-usual times be divided into 2 or 3 rooms for multi-purpose activities such as for training and meeting rooms. The Hamilton Citysafe closed circuit TV (CCTV) network have surveillance monitors setup in a separate 24hr accessible room in the new building. This adds value to CDEM by providing situational awareness across the city during an event. Audio visual technology is setup throughout the building to once again maintain situational awareness internally to staff no matter where they are in the building, including in the staff kitchen facilities. AV feeds can be controlled to any LED monitor from the main server room. Showers, changing rooms and lockers are also available. A separate PIMs and communications/media room is also provided. Without stating the obvious, backup generator is a must-have during CDEM events that also cause a power outage to the building. A fixed satellite terminal for backup telecommunications will be mounted on the roof.

In terms of TDC's future building, currently AV smart technology such as smart projectors can allow multiple user collaboration across multiple pcs, laptops, smart devices; internally and remotely while displaying these in the EOC across multiple split screens for relatively low cost. But given a projected build completion of 3-5 years' time, AV hardware technology will be vastly advanced. The critical design is having the appropriate AV and data port/wifi hotspot infrastructure and/or IT cabling in place across the building to connect future hardware.

An EOC wishlist has been submitted to BECA during the early stages of design of the Taupo Office Rebuild Project.

## **2. Civil Defence BGAN Satellite Fit for Purpose Review**

BGAN Explorer 700 was provided to local CDEM's by the Ministry of Civil Defence and Emergency Management (MCDEM) and is primarily used to provide internet and phone connection for EOC if there is telecommunication loss via normal Telco services (ie. that can occur during a lengthy power outage event). Its secondary use can be for times during a CDEM event, where there is no telecommunications in affected remote locations.

All of the CDEM sector BGANs (50 devices), of which the Taupo BGAN is one, have been put on a collective Shared Corporate Allowance Plan (SCAP) which effectively means cheaper costs to all. Each BGAN on this data plan has an annual capped data allowance.

BGAN Explorer 700 - Fastest send or receive streaming speed is up to 492Kbps. This internet speed is slow and of the greatest concern. An internet speed test was undertaken on the BGAN in the TDC Carpark Compound, 2pm, Friday 21/7/17 with the following results: download speed 120Kbps; upload speed 140Kbps.

BGAN Coverage Map guideline for set-up of antenna: Point NW-to-NNW at 38-40 degrees from the horizon to connect to 1-4 Asia Pacific Satellite.

### Example Guidelines on Internet Speeds:

For the average household of two or three people, slowest connection that's reasonable for viewing websites, watching the occasional video clip and sending/receiving email is around 3-5 Mbps (ie. 3000 – 5000Kbps).

To stream video from Netflix or a similar service, as an example Netflix provides specific recommendations for streaming video including:

- 3 Mbps for standard definition (SD) video,
- 5 Mbps for high definition (HD) video, and
- 25 Mbps for ultra high definition (4K) video.

For small offices with a handful of employees, commonly recommend an Internet connection of at least around 10 Mbps and sometimes faster connections depending upon their needs.

Taupo District Council Internet Speed (test undertaken 11.30am 18/7/17) from Speedtest.net

90.69Mbps download speed

94.43Mbps upload speed

### Satellite Terminal Alternatives

CDEM at Ruapehu District Council use a provider called Wireless Nation for their satellite data plan and hardware. This option is very favourable based on the affordability of their data plans and higher data speeds compared to the BGAN package offered by MCDEM. Wireless Nation utilize the Optus satellite and VSAT technology which provides a high speed satellite data service. The hardware is more up-to-date and data speeds are up to 10Mbps receive/1 Mbps send. The directional setup of the satellite dish has to be accurate to maintain connectivity – pointing in a NW direction at a 45 degree angle from the horizon. A proposal has been provided by Wireless Nation with hardware/data

plan pricing and details. In our opinion, they offer the best option we have researched. Their 36 month term, 30GB monthly "Best Effort" 10MB/1MB data plan is half the price of the current BGAN SCAP data plan paid to MCDEM by TDC.

IPStar have a number of telco providers who offer satellite terminals and data plans. Rural telco provider, Farmside offer an affordable device but their IPStar data plan is more expensive and obtaining a satellite connection is less reliable than the BGAN Explorer 700, especially in hilly terrain and/or between buildings. Feedback has been given that IPStar hardware is also becoming outdated. FENZ used a satellite terminal with high speed IPStar data plan in their Hazmat Mobile Command and Control Vehicles. But this device and their specific and dedicated data plan is very expensive. Their satellite terminal technology and data for these vehicles is currently up for tender by RFP.

There are other satellite phone and satellite voice/SMS/broadband providers such as Pivotal who provide affordable and flexible data plans. But similar to the BGAN, data speeds are limited.

The Satellite telco industry is a rapidly evolving business. In the next 5 years, the technology and data speeds available will be vastly improved offering more cost effective, reliable and higher speed satellite packages. I would recommend pursuing the Wireless Nation Hardware and Data Plan to replace the existing BGAN this will be a more cost effective option with speedier performance in the current market.

### **3. Civil Defence Origen Software Review**

In the past, Taupo District Council (TDC) has used Origen EMS (now called Decisionz EMS) as the emergency management software. A year ago, the broader range of Origen software was acquired by Datacom, except for the emergency management software that stayed with the original owner. It has been challenging at times communicating with the sole owner and this has raised a serious risk by continuing with this system. It has taken a 12 month, adhoc communication process to obtain an appropriate license agreement that outlined the support and training provision that comes with the software and its cost. The support and training costs detailed in the license agreement are expensive.

EMIS was developed by MCDEM a number of years ago. Its first version release received lots of critical feedback by CDEMs that resulted in a Version 2 upgrade. Further critique of Version 2 has resulted in a concurrent version upgrade that will be released in mid-2018. Version 3 promises to be more intuitive than what currently exists, in the meantime, Version 2 can be used by TDC at no cost from MCDEM until the new version release. Training costs are also covered by a grant funding allocated via a previous Resilience Fund application that had not been utilised by TDC.

A Hawkes Bay Group CDEM debrief of the Napier/Taupo snow event in August 2017 provided an opportunity to receive an EMIS demonstration. Hawkes Bay CDEM group have modified EMIS to meet their needs during an EOC event. They recognized that EMIS had strengths in certain areas such as task response and actions allocation alongside the use of the reporting templates they developed such as sitrep forms, status reports, etc. They have tweaked and refined the EMIS system to maximize its use during an event across their EOC team. The demonstration proved it was as simple as Origen EMS to use. The EMIS trainer contracted by MCDEM (who is Hawkes Bay based) has now setup our EMIS portal using the same Hawkes Bay template. Hawkes Bay Group have also shared their 19 template CIMS forms. These are currently being used to help review the Waikato CDEM Group forms that will be rolled out across the Waikato region's local CDEMs.

A recent visit to Ruapehu District Council uncovered that they do not use an Emergency Management software system. Most of their EOC operation is paper-based with the exception of using their generic RFS system, by Datacom, for the EOC messaging system, GIS mapping for situational awareness and a TV for broadcasting live news channels. They believe they can communicate their decision-making more quickly, especially to external agencies, this way whereas an EMS system, such as EMIS does not have the intuitive nature in its messaging portal to achieve this. Our judgment is reserved on this approach until we receive further training on the EMIS system and its capabilities in the modified form adopted by Hawkes Bay CDEM Group.

In mid-August the GIS-Mapping project manager from Waikato Regional Council (WRC) visited TDC and provided a progress update demonstration of the Arch-GIS based mapping system specifically

being developed for Waikato region CDEMs. The mapping system will provide far greater situational awareness based on the broader and more real-time mapping datasets it will access. It will use datasets from NZTA, NZ Statistics and other Govt and non-Govt agencies. It will also map data received in real-time from Arch-GIS based apps collected on smart devices by CDEM staff on the ground during an event response – such as Survey123 app data gathered by Civil Defence teams during the April 2017 Edgumbe flooding event.

The WRC project manager was seeking TDC GIS-mapping and Civil Defence staff interest and early feedback on the mapping system progress-to-date. This mapping system will be fully developed and rolled out in mid-to-end of 2018 to GIS Mapping staff across interested Councils while further progress updates will be presented during its continued development.

#### **4. Disaster Recovery Taupo DC Symposium – Programme Design**

The following notes have been collated from other Business Continuity Management/Planning workshop reference material and staff discussions to broadly shape the design of a symposium. It is meant to promote thought and discussion around the potential format of the symposium. Especially now this event has been delayed until 2018.

- a) The CDEM risks in our region (pictorial shots of some of the damage incurred – ie. Pengxin Calving Shed, areas of concern – ie. Hipaua Geothermal area, flooding pics of Tauranga Taupo river, previous volcanic eruption images – 2012 Mt Tongariro Te Maari Crater, 1995 Mt Ruapehu Crater Lake, 1974 Mt Ngauruhoe)  
Guest speaker – GNS Wairakei volcanologist, Brad Scott?
  
- b) Impacts on business (use real examples from emergency events where possible): Loss of utilities – gas, electricity, potable water supply, wastewater/stormwater and disposal, telecommunications, road networks, supply chain distribution – supermarket, petrol/fuel supplies.
  
- c) Outline Waikato Group Annual Plan Strategic Objectives including BCP engagement
  - Support Business Resilience - emergency response and recovery
  - Waikato Hazard and Risk Plan
    - i. Drought – ie. 2012/13 North Island drought
    - ii. Pandemic (Animal) – ie. Foot and mouth disease outbreak
    - iii. Pandemic (Human) – 2009 Influenza A, H1N1 “swine flu” epidemic
    - iv. Tsunami - Lake Taupo shishing or relocating coastal communities to Taupo area affected by Tsunami
    - v. Volcanic (Ashfall only) – 1995 eruption of Mt Ruapehu
    - vi. Volcanic (Caldera unrest) – Taupo Volcanic Centre
    - vii. Volcanic (Caldera Eruption) – 180AD Eruption of Lake Taupo
    - viii. Volcanic (Eruption) – Eruptions of Ngauruhoe (1974), Ruapehu (1995), Tongariro (2012)
    - ix. Geothermal ground activity – Reporoa 2005
    - x. Earthquake – Magnitude 6-7 expected in region
    - xi. Infrastructure Failure
    - xii. Land instability – ongoing land deformation in Taupo
    - xiii. River flooding – Tauranga Taupo and Tongariro rivers
    - xiv. Severe Storm (Tropical cyclone or Snow event) – 2009 Taupo/Napier highway snow event
    - xv. Dam Break – Hinemaiaia, Aratiatia, Atiamuri, Whakamaru, Maraetai
    - xvi. Fire (Structure)
    - xvii. Fire (Vegetation)
    - xviii. Hazardous substance incident
    - xix. Land instability (landslide)
    - xx. Mass casualty incident (land/air/sea)

**d) Potential Guest speakers**

- Private Insurers such as AON Insurance – available business and disaster recovery insurance policies
- EQC – available compensation
- Bank reps - Rural (Rabobank?) and Urban
- Social support services - a central point for access to all social services in the District
- Community information services such as community law
- Supply chain speakers such as supermarkets, petrol stations, power and telco reps
- Temporary accommodation services – ie. Welfare team (Veronica King) and/or tours of GLC/TEC as CD centres and CDEM EOC operation.

**e) Reference Material to cover:**

Business Continuity Management (BCM) Planning

- Clearly defined, documented and approved BCM planning process framework
- Primarily concerned with Mission Critical Activities
- Externally coordinated with service and supply chains of the organisation
- Internally integrated with all parts of the organisation
- Is the BCM and BCP planning approach standardised with frameworks, templates, sample plans and minimum standards

Business Continuity Plan (BCP)

- Identified and clearly defined BCPs for all Mission Critical Activities
- All parts of the Business Impact Analysis (BIA) is covered, including resource recovery requirements and Risk Analysis
- A clearly defined business continuity response for the disruption event is in place that covers solutions, resume of business and recovery until normal business operation is in place
- Emergency response procedures are in place - including simulated response training that may also include links to other organisations – such as emergency services
- Effective notification, invocation and escalation processes are captured in the BCP and simulated training exercises

**f) BCP Parts**

Roles/Responsibility/Accountability and Authority

- Clearly defined roles and includes backup personnel

Key Supporting Information

- Contains mandatory instructions, advice, process, procedure or guidelines concerning key supporting information

Human Resource Issues

- Clearly identify key members of staff (according to their roles, skillsets, knowledge and experience) including a process to ensure their availability
- Contains mandatory instructions, advice, process, procedure or guidelines concerning staff welfare, counselling, casualties and fatalities

Communication

- Contains mandatory instructions, advice, process, procedure or guidelines concerning internal and external communications

#### Documents/Forms/Checklists

- Maintain and operate an up-to-date task list – clearly identifies mandatory and discretionary tasks/sub-tasks, accountable individuals, task deadlines
- Auditable process for tracking and recording the completion of BCP tasks
- Provide up-to-date contact lists (internal and external) from emergency contacts of staff personnel to key suppliers and stakeholders
- A sitrep, status report and response log

#### External organisations

- An emergency services liaison officer appointed
- Maintain a database of contacts from regulatory/statutory and official agencies
- Coordination plan to assist local authorities, utilities services and other relevant providers

#### PR and Media

- Clearly defined process for dealing with media/PR, identify media liaison responsibility during an event

#### Recovery

- Has a recovery plan been developed to reinstate Mission Critical Activities for the organisation

I would recommend using this information as a starting point to confirm a final programme design for the symposium. Alongside this should be planning milestones to organize event logistics including compiling an invitation database and communications plan for the event 2018.

### **5. Emergency Management TDC MOUs Review**

Having obtained the current 2 MOU documents Taupo DC has with Rotorua District Council and the South Waikato District Council (only pdf available). An editable MOU has been re-developed and updated following dialogue with both Hawkes Bay CDEM Group and Ruapehu District Council CDEM.

The MOU has no binding commitment beyond forming a goodwill relationship between Taupo DC and other CDEM groups to share best practice, information, templates and in the advent of a CDEM event share human and equipment resources.

Only one change has been made to the original MOU document currently in place. This was based on advice from Hawkes Bay CDEM Group that a protocol now exists where human personnel from an outside CDEM Group can only be utilized by Taupo DC upon the approval from MCDEM. This has been reflected in an existing clause by adding MCDEM.

The new MOU is currently with Ruapehu District Council for feedback and entering into this agreement with Taupo DC. The South Waikato DC and Rotorua DC are yet to be contacted to update the existing MOUs. The intention is to finalise the MOU draft with Ruapehu DC and use this template to establish MOUs with the other CDEM groups.

The greater goal is to have established MOUs in place with all Taupo DC boundary local CDEM. A final MOU template document will be presented once feedback is received by Ruapehu DC.



**Risk Register – EOC/CDEM setup during relocation/rebuild of Taupo Office building, 72 Lake Terrace**

#	Potential Risk/Issues	Risk Scale	Action/Resolution	Residual Risk
1	TDC UFB fibre-optic cable requires power supply to have phone/internet telecommunications operating.	Medium	Have backup contingency for power and telco outages such as: <ul style="list-style-type: none"> <li>Generators,</li> <li>Uninterrupted Power Supply (UPS) devices for IT servers,</li> <li>Solar-powered chargers for smart devices,</li> <li>Satellite terminals/Satellite phones.</li> <li>Backup telecommunications such as older non-smart phones (large battery life – up to 1 week when fully charged),</li> <li>Also check if copper wire phone connections still exist and use corded phones that utilise “power-over-the-phoneline”.</li> </ul>	Low
			TDC back-up generator facilities will be available (Rifle Range Building, Taupo Events Centre, Great Lake Centre-incl Taupo Library, Turangi office, Mangakino office). Uninterrupted Power Supply devices are available in IT server rooms.	Low
			New staff relocation facilities are an issue during a power outage and essential staff will need to relocate to TDC facilities with generators as required. CDEM have VHF Radio network across the Taupo District with weekly radio checks scheduled, 1 BGAN Satellite terminal (data and phone connectivity) and 2 Iridium Satellite phones.	Low
2	IT server connectivity from existing Taupo office to EOC/CDEM prefab building will be disconnected.	High	New fibre cable will be installed directly from main fibre-optic cable to CDEM prefab building that will provide connection to main server relocated to the Taupo Events Centre.	Low – due to the risk being eliminated

3	Main fibre-optic cable and/or the fibre cable supplying EOC/CDEM prefab is damaged by contractors during demolition.	Medium	Demolition of the building may not yet occur, if it does, the current construction/demolition site is the size of the building footprint.  Ensure this hazard is identified in the hazard risk register of the principal contractor for the demolition if it proceeds.	Low
4	Back-up Generator connection to existing main IT server will be disconnected.	High	IT Server is relocated to Taupo Events Centre has back-up generator and automatic switch-over in place if a power outage occurred	Low – due to the risk being eliminated
5	Existing Mains Power supply connection to Rifle Range EOC/CDEM building switchboard being disconnected is imminent due to closure of the Taupo office building.	High	Mains Power supply will be routed directly to EOC/CDEM prefab building	Low – due to the risk being eliminated
6	Landline Telecommunications feed to EOC/CDEM building from the Taupo Office building will be disconnected.	High	Direct telco connection to the EOC/CDEM prefab will also be provided via the new fibre-optic cable.	Low – due to the risk being eliminated
7	Impact of Office-demolition construction site to EOC/CDEM operations, ie. limited carparks during EOC events?	High	No impact. Decision yet to be made about the demolition of the building, if it proceeds, demolition will only affect the current building footprint. The carpark compound remains operational throughout.	Low
8	Civil Defence Centres – Great Lake Centre and Taupo Events Centre, are their back-up power generators connected to the entire complex as redundancy against mains power outages?	High	Great Lake Centre's entire complex including the Taupo Library is connected to a back-up generator (400 KVA).	Low
			Taupo Events Centre has power back-up generator (400 KVA) for everything except heating, which is provided by geothermal bore. There is a contingency LPG gas line (polyethylene line with some flexibility) that exists and	Medium

			investigative work is also being done to create a power-feed via a generator to the pumps in-situ for the geothermal bore	
9	Lifelines team – The essential Infrastructure Management and Utilities staff don't have back-up power generator connection at relocated facility 14 Ruapehu St if their services are required during a power outage CDEM event?	Medium	Must relocate and would recommend the Great Lake Centre OR	Low
			Install a 3-phase socket for a generator at the new Ruapehu St facility (TDC-Facilities have portable generators 3 x 60KVA available). This may be an issue being a leased property	Medium-Low
10	PIMs team – Customer Services, as the public interface, don't have back-up power generator connection at relocation facility, 46 Horomatangi Street if their services are required during a power outage CDEM event?	Medium	Must relocate and would recommend the Great Lake Centre OR	Low
			Install a 3-phase socket for a generator at the new Horomatangi St facility (TDC-Facilities have portable generators 3 x 60KVA available)	Medium-Low
11	CDEM Event becomes too large to operate EOC from the Prefab building.	Medium	Relocate the EOC to the Great Lake Centre – A choice of breakout rooms and office space to operate and house Customer services/Lifelines staff	Low
12	Rifle Range Building - only the front half of the main prefab building is IL4 compliant.	Medium	Can only expand to limited parts of the Prefab building for a bigger CDEM event OR relocate to Great Lake Centre	Low
13	Insufficient TDC facilities that are IL4 compliant with back-up generator capability to host 31 TDC Staff (Lifelines Staff, Building officers, Public Information Staff and Psycho-social Staff) outside of 41 EOC TDC Staff and other EM agency personnel during a major power outage CDEM event, without affecting welfare provision setup at Civil Defence Centres (GLC/ TEC).	High	GLC is IL4 compliant. Currently has an IEP (Initial Evaluation Procedure) seismic grade A (>80% NBS) = 96% NBS at IL4.  Is a detailed seismic assessment required?	Medium
			TEC is IL3 compliant. Currently has an IEP (Initial Evaluation Procedure) seismic grade A (>80% NBS) = 225% NBS at IL3.  Re-assess for IL4 and if complies, is a detailed seismic assessment then required?	High

14	Opportunity to utilise Taupo Library due to its connection to the GLC backup generator but it is not assessed for IL4 compliance.	Medium	Taupo Library is IL2 compliant. Currently has an IEP (Initial Evaluation Procedure) seismic grade A (>80% NBS) = 97% NBS at IL2.  Consider re-assessing for IL4 compliance.	Medium
15	EOC activation and startup will be slower due to required TDC staff now relocated across a greater number of facilities in Taupo.	Low	Important to also practice EOC activation in regular training scenarios.	Low

**Staff required to relocate during a power outage CDEM event**

41 EOC TDC Staff maximum to call upon to operate in shifts if needed

31 other TDC essential staff, as listed below:

- 9 Lifelines Staff
- 8 Public Information (Customer Services Staff)
- 7 Building Management Officers
- 7 Psycho-social Services Staff

AND the ability to accommodate other emergency management agency staff (ie. Police, Fire, Ambulance, Lakes DHB, SAR, NZRT6, etc)