

The Management of Portable Toilets in the Eastern Suburbs of Christchurch after the February 22, 2011 Earthquake.

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Abstract.

The extent of liquefaction in the eastern suburbs of Christchurch (Aranui, Bexley, Avonside, Avonhead and Dallington) from the February 22 2011 Earthquake resulted in extensive damage to in-ground waste water pipe systems. This caused a huge demand for portable toilets (or port-a-loos) and companies were importing them from outside Canterbury and in some instances from Australia. However, because they were deemed "assets of importance" under legislation, their allocation had to be coordinated by Civil Defence and Emergency Management (CDEM). Consequently, companies supplying them had to ignore requests from residents, businesses and rest homes; and commitments to large events outside of the city such as the Hamilton 400 V8 Supercars and the Pasifika Festival in Auckland were impacted. Frustrations started to show as neighbourhoods questioned the equity of the port-a-loos distribution. The Prime Minister was reported as reassuring citizens in the eastern suburbs in the first week of March that¹ "a report about the distribution of port-a-loos and chemical toilets shows allocation has been fair. Key said he has asked Civil Defence about the distribution process and where the toilets been sent. He said there aren't enough for the scale of the event but that is quickly being rectified and the need for toilets is being reassessed all the time." Nonetheless, there still remained a deep

sense of frustration and exclusion over the equity of the port-a-loos distribution.

This study took the simple approach of mapping where those port-a-loos were on 11-12 March for several areas in the eastern suburbs and this suggested that their distribution was not equitable and was not well done. It reviews the predictive tools available for estimating damage to waste water pipes and asks the question could this situation have been better planned so that port-a-loo locations could have been better prioritised? And finally it reviews the integral roles of communication and monitoring as part of disaster management strategy.

The impression from this study is that other New Zealand urban centres could or would also be at risk and that work is needed to develop more rational management approaches for disaster planning.



Figure 1: Examples of Port-a-loos in the Eastern Suburbs of Christchurch

Background

Christchurch had earlier undergone a major earthquake of magnitude 7.1 on September 4 2010 and hence was in recovery when the February 22 event occurred. Despite being a "smaller" magnitude 6.3, it was shallow with a depth of 2 Kilometres and centred only 10 Kilometres south east of the city centre and this resulted in much higher shaking intensity than the September event. This shaking intensity and the time of day 12.51pm resulted in the deaths of 181 people² (134 in just two sites) and extensive damage to buildings and infrastructure in the city centre and eastern suburbs that had been weakened by the earlier event. The cost

¹ Reported on National Television ONE NEWS 7 March 2011 downloaded on 1/4/11 from <http://tvnz.co.nz/national-news/key-says-toilet-distribution-nothing-but-fair>

² "List of deceased - Christchurch earthquake". New Zealand Police. 7 April 2011. <http://www.police.govt.nz/list-deceased> Retrieved 8 April 2011

³ http://en.wikipedia.org/wiki/February_2011_Christchurch_earthquake#cite_note-austcost-12 retrieved on 20 June 2011

for the reconstruction was provisional put at \$NZ15-16³ billion making it New Zealand's costliest natural disaster and nominally the 3rd costliest seismic disaster worldwide.⁴

The resulting liquefaction in the eastern suburbs caused bridge approaches to settle, water pipes to fracture, waste water pipes and access points to surface, roads to sink, land to shift laterally, houses and buildings to tilt and blanketed the area with foul smelling silt. The apparent need for port-a-loos was recognised on Day 1 and certainly by Day 8 (and probably sooner) they had been deemed "assets of importance" to be distributed by order of CDEM (refer to Appendix 1: The Port-a-loo Timeline). By Day 6 port-a-loos were being positioned throughout Christchurch but even by day 15, much of Aranui did not have any despite earlier assurances from the CDEM controller and the Prime Minister on Day 10. Port-a-loos became sought after "luxury" items with suburbs being warned that it could be weeks before they have a "business as usual" flushing toilet. The situation did not appear to have improved by Day 13 and the CDEM controller and the Prime Minister held public meetings to assure people that all that can be done is being done. However, by day 15-16 it seemed that the shortage of port-a-loos remained and Christchurch reportedly buys out all chemical toilets worldwide. Tempers and frustrations are now being openly expressed and the gap between the apparent policy/protocol of decision makers and the on ground reality is "uncomfortably" acknowledged. On day 23 (despite port-a-loos being assets of importance) the Member of Parliament for Christchurch Central Brendan Burns reports that he brought and distributed 9 from outside Christchurch? Two days later CDEM are reporting that they still do not have sufficient toilets and that 3,000 are on order while suppliers are reporting surplus in their yards? By now the coordination appears to be in "free fall" and by Day 90 there remain significant parts of Bexley and Aranui without flushing toilets: were the eastern suburbs "forgotten" as suggested in the media and what could or should be the management implications?

Methodology and Results

CDEM had put in place a ban on all "social research" which was not operational required⁵. This was apparently done to prevent a potential flood of researchers into the area and consequently any methodology could not

involve interviews of those affected and needed to be based in the "public domain". Hence, by default (and by necessity), the management "success" of port-a-loos studied was largely spatially based with community inputs being taken from media reports. On the one hand this is perhaps acceptable given the emergency response nature of port-a-loos and their common design features while on the other it would have been useful to relate the number of port-a-loos to the number of people in the areas and get more detailed feed back from those affected. However, the overall migration numbers from Christchurch remains contestable and any breakdown by suburb was and seems to be still unavailable. But as a first feasible step (and as a marker for later independent review of this aspect of the operational response) the field approach adopted was to map the port-a-loos in these selected areas of the suburbs and from that and the theoretical review of what was possible in terms of disaster "readiness" draw out relevant management implications. It should be noted that while this may now seem straightforward, its development and implementation at the time was not. Moreover, there was concern by the authors that the above ban by CDEM could "skew" any post disaster "lessons learnt" and hence the need to record what could be accessed nonetheless. Thus, there was a social advocacy component to this work in addition to the operational aspects.

The emergency response had the appearance of being in control and port-a-loos were being shown as mapped on the CDEM/ Environment Canterbury Regional Council (ECRC)/ Christchurch City Council (CCC) web site <http://eqviewer.co.nz/index-port-a-loos.html>. These were checked in selected areas of the eastern suburbs and in particular Aranui, Bexley and Dallington by Dr Paul Steinfort on March 11-12 (Day 17-18) with further checking field work on March 13 (Day 19). These port-a-loos were easily identifiable in the field as can be seen in figure 1 above. The peer review of this paper posed the question of how distributed and non distributed port-a-loos were distinguished in the field. This did not seem to be an issue as all port-a-loos became assets of importance and port-a-loo companies had to withdraw them from local service and supply solely as directed by CDEM. In addition, some streets in Avondale and Avonside were "residents only" and were not mapped; and it was difficult to maintain suburban boundaries when in the field and consequently typical

⁴ Scott Murdoch and Andrew Fraser (24 February 2011). "Disaster could cost insurance sector \$12bn". The Australian retrieved 20 June 2011.

⁵ Personal communication from Peter Wood CDEM July 14. But also outlined by David Johnston GNS at the July meeting of the social research group as being for all research.

⁶ Acknowledgement of Des Brosnahan for the drafting and map construction of the fieldwork

areas within suburbs (rather than full suburbs) were used for comparisons. The mapping was completed and is shown in figure 2⁶ together with the CDEM/ECRC/CCC map retrieved on the 15 March (Day 21).

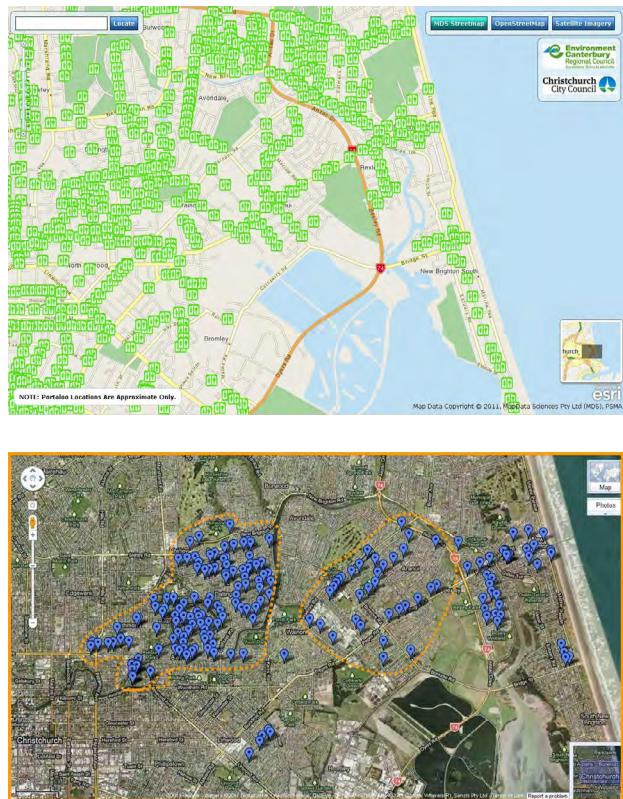


Figure 2: Port-a-loo Mapping by CDEM/ECRC/CCC (left) and actual as at 11-12 March (right)

Despite claims to the contrary, the distribution of port-a-loos had not been “fair”. There are apparent visual differences in the “port-a-loo’s per sq metre” between Bexley/Aranui (who are low) compared to Dallington and Avonside (who are high). These are estimated at around 1 port-a-loo/80,000m² for Aranui/Bexley compared to 31,000m² for Dallington/Avonside. Moreover, within each “suburb”, distribution has not been even and streets such as Gayhurst Rd in Dallington appear to have no port loos and parts/most of the badly hit Waitaki Street in Bexley have also been missed. This is also apparent in other areas outside these suburbs and for example Jolie Street in North Linwood/Bromley and Hargood Street and Cuminor Tce in the Woolston area all have many port-a-loos while the surrounding streets have none. The “asset of importance” tag does not appear to have been reflected in their distribution. Some could/would have been adjusted (based on comments in Appendix 1) but not to the extent suggested by the mapping. This would have required the moving of every

2nd port-a-loo from Aranui/Bexley to Dallington/Avonside if equity had been achieved at distribution.

It is also interesting when the “actual” are compared to the CDEM/ECRC/CCC map and it would seem that the sorts of “inequities” measured in the field are also apparent on the CDEM map. Moreover, the unevenness within each area as noted in the field is also apparent in the CDEM map. Thus, the earlier impression from people in the Eastern suburbs that there were inequities in the distribution of port-a-loos (and their sense that they may have been forgotten) does appear to be supported by both the field work and the CDEM mapping.

The Christchurch Response

What can be learned and how can the disaster management community in New Zealand move forward from this point? Risk is often described using the relationship below⁷:

$$\text{RISK} = \text{HAZARD} \times \text{VULNERABILITY}$$

Which in recent years been suggested should more accurately be⁸:

$$\text{RISK} = \text{HAZARD} \times \text{VULNERABILITY/RESILIENCE}$$

Risk= Is the probability of an event occurring, it can be calculated and results from the combination of a hazard and a vulnerability (but not normally resilience)

Hazard= Is a potential threat of an event to a community.

Vulnerability= Is a condition or predisposition; it is a set of prevailing or consequential conditions, which adversely affect the community’s/individual’s ability to prevent, mitigate, prepare for or respond to an event.

Resilience= The capacity of a community/individual to not only adjust, recover and adapt but to thrive despite its hazard or vulnerabilities. It usually involves access to resources, skills, networks or beliefs and is difficult to assess.

NB: inherent in this analysis will be the expectations of the communities/individuals or “stakeholders” (as there could/will be others beyond solely communities and individuals)

Disaster responses and management approaches generally address these 3 aspects of hazard, vulnerability or resilience. The provision of port-a-loos (and soon after chemical toilets) was a vulnerability response. Hazard response such as abandonment of certain areas is presently underway and hence the note on stakeholder

⁷ United Nations (2004): Living with Risk: A global Review of Disaster Reduction Initiatives. United Nations International Strategy for disaster Reduction, Geneva, Switzerland.

⁸ White, P., Pelling, M., Sen, K., Seddon, D., Russell, S., Few, R. (2005): Disaster Risk Reduction. A Development Concern. DFID.

expectations. Resilience (the most difficult) was evident by those that moved out of the Eastern suburbs estimated at around 60% for Aranui⁹. It was perhaps apparent in <http://www.showusyourlongdrop.co.nz/> “set up to showcase all the creative Long Drops that are popping up around Christchurch”¹⁰ and also in figure 3 below of a port-a-loo, before and after.



Figure 3: Qualitative Evidence of Resilience in Christchurch

A disaster manager's tool box

What can be learned will be summarised later but moving on with the discussion and as a counter point to the analysis above is the risk management process codified for New Zealand and outlined in figure 4¹¹ below. It suggests and represents a rational and thoughtful process with the key steps highlighted in the middle column linked on one side by the need to communicate¹² and on the other by the need to monitor; presumably at all stages of the process. Communication and monitoring are important not only to make sure that those affected are firstly informed and consulted but also that any intended outcomes do actually occur at

all levels. This didn't seem to happen with the port-a-loos but moreover, there did not seem to be the need to communicate directly with the field or with those affected an impression gained from Appendix 1 but also from being in the field. While it is not possible to communicate with all, the assurances given on Day 13 should not have been questioned so readily by simple mapping?

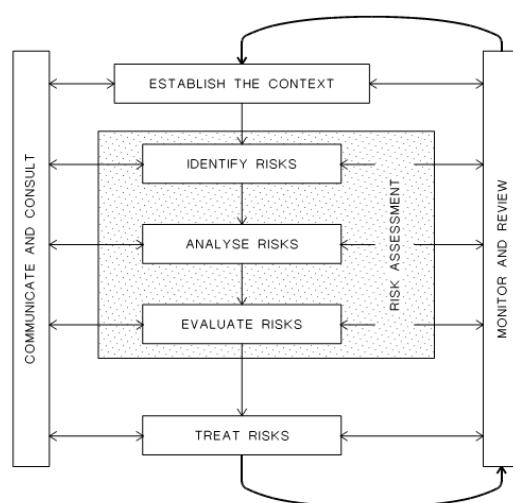


Figure 4: The risk management process

Moreover, disaster responses are phase dependent and these are most commonly expressed as the 4R model which can also come in a 3R and a 5R form¹³. The “R’s represent the different phases of Reduction, Readiness before the disaster; and Response and Recovery after with sometimes a 5th R for Reconstruction. It is usually expressed as a linear model with one phase linking into the next but has been also depicted as a circle (linking back on itself) or as a spiral suggesting a new reduced vulnerability in future disasters cycles. The port-a-loo response took 15-16 days to realise that it was not filling the gap left by the failure of the wastewater water system in several of the eastern suburbs and it would appear by Day 23 that the process was in free fall. This does happen in humanitarian responses where recovery phase solutions are inappropriately used for the response/emergency phase. Unfortunately as was the case in Christchurch it took too long to implement despite experiences from the earlier September

⁹ Unpublished work An Analysis of the Door Knocking Data for Nga Hau e Wha National Marae, Aranui Christchurch. What does it suggest for the way forward? Potangaroa R 26 April 2011

¹⁰ <http://www.showusyourlongdrop.co.nz/> retrieved 20 June 2011.

¹¹ SNZ HB 4360:2000 New Zealand Handbook Risk Management for Local Government NZ Standards Association pg 9.

¹² T. Schacher Good Engineering without Appropriate Communication doesn't lead to Seismic Risk Reduction: some thoughts about appropriate knowledge transfer tools 14th World Conference on Earthquake Engineering October 12-17, 2008, Beijing, China

¹³ Ministry of Civil Defence Emergency Management (MCDEM) (2004). National CDEM Strategy 2003-2006 pub. by the NZ Govt pp14-16

earthquake. Future emergency responses on the scale of Christchurch should perhaps use the example of the long drop (as is the standard in humanitarian responses¹⁴) and promote and distribute plans and present workshops on their construction.

Up to this point, the tool box has focused on the seemingly separate disaster phases. Stephenson et al study¹⁵ on the resilience of businesses in Auckland New Zealand however have managed to link both the before (readiness phase) to the disaster (response and early recovery phase). Their study, based on survey responses from 249 individuals from 68 different organizations, suggests that there are two distinct phases; a planning dimension that happens prior to the disaster and an adaptive capacity dimension that occurs once the disaster happens. Private organizations were more adaptive than public ones, and larger companies tended to have higher planning than smaller ones, however almost all sectors (except communications) scored higher on the adaptive dimension rather than planning. Unfortunately no public utilities companies were involved. Nonetheless, the study and the apparent response in Christchurch suggest there was minimal adaptive capacity in as far as the waste water systems.

Table 1: Dimensions of Planning and Adaptive Capacity

Planning Dimension (before)	Adaptive Capacity Dimension (after)
Planning strategies	Leadership
Participation in exercises	Staff involvement
External resources	Situation monitoring and reporting
Recovery priorities	Minimisation of silos
Proactive posture	Internal resources
	Decision making
	Innovation and creativity
	Information and knowledge

Waste water pipeline management in New Zealand

Zare et al¹⁶ would probably go further and their work suggests that if public wastewater companies in New Zealand had been involved that they would have scored low values in both the planning and adaptive capacity dimensions. Breaks in pressurised water supply pipes can be readily identified while those in essentially gravity waste water pipes cannot and the approach used by

the 4 New Zealand case studies was to wait till there was a problem. And while there are fragility or f-curves for water pipes there are apparently none for waste water pipes. Such curves give the expected damage rates for pipes of different types, sizes, age and soil condition under different peak ground accelerations or more commonly velocities that can be expected in a seismic event. Consequently, there is presently no clear engineering basis for pipe network management and planning and given the apparent lifeline status of at least main waste water lines should be disturbing. The CDEM Act 2002 section 60 stipulates that "...every lifeline utility must:

- (a) ensure that it is able to function to the fullest possible extent, even though this may be at a reduced level, during and after an emergency;
- (b) make available to the Director in writing, on request, its plan for functioning during and after an emergency;
- (c) participate in the development of the national civil defence emergency management strategy and civil defence emergency management plans;
- (d) provide, free of charge, any technical advice to any Civil Defence Emergency Management Group or the Director that may be reasonably required by that Group or the Director;
- (e) ensure that any information that is disclosed to the lifeline utility is used by the lifeline utility, or disclosed to another person, only for the purposes of this Act." None of these were seemingly achieved following the February 22 event. The lack of any engineering basis to predict the extent (and possibly the location) of damage to waste water lines probably means that alternative solutions needed to be incorporated into a response plan; port-a-loos at the scale of the Christchurch earthquake did not work.

¹⁴ UNHCR 2004. *Handbook for Emergencies* 3rd Ed 2004 Published by The United Nations High Commissioner for Refugees

¹⁵ Stephenson, A; Vargo, J, Seville, E. Measuring and Comparing Organisational Resilience in Auckland. Australian Journal of Emergency Management, The, Vol. 25, No. 2, April 2010: 27-32

¹⁶ Zare M Wilkinson S, Potangaroa R, Resilience of Wastewater Pipelines to Earthquakes: New Zealand case study COBRA Conf. Paris 2010

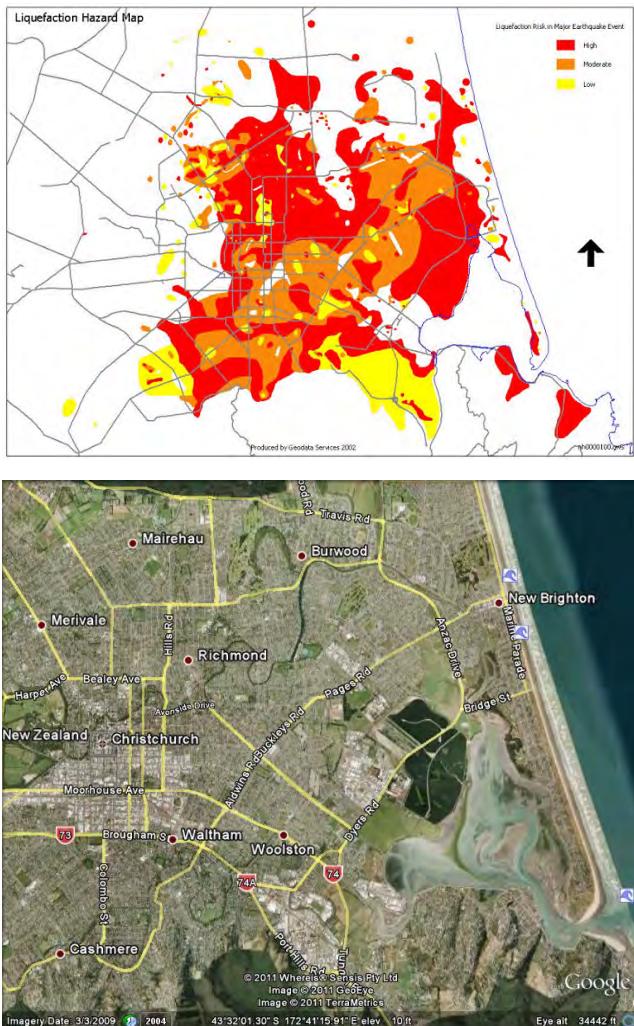


Figure 5: The extent of Liquefaction in Christchurch¹⁷ (right) and an aerial view (right). *(Aranui shown in dashed circle)

Pit latrines (or what are called longdrops in New Zealand) are recognized as one of the few emergency/response phase approaches that work¹⁸ and these probably need to be included in future emergency response plans. However, it is not clear at what scale of disaster and what level of port-a-loo supply would trigger this approach? It is clear that in an urban setting with minimal open spaces and multi-storey (residential) buildings would probably make such an approach impractical. And given the extent of potential liquefaction in Christchurch (red areas in figure 5 above) would have required extensive evacuation.

Conclusion

Disaster management still seems to be a developing area of research and understanding. Significant difficulties included the “perishable” nature of disaster data, difficulties of measuring (what to measure) and metrics (how to measure), isolating cause and effects (especially where the “causes” may have been in place well before the disaster), the difficulty to test systems and procedures without a disaster and the various assumptions or “myths” (the social context) that seem to surround such work. Perhaps one of the myths is that we are prepared and it has been surprising to the authors that a simple port-a-loo mapping exercise pulled together various research strands. It seems that the following management experiences can be carried over:

- Port-a-loos are not a timely emergency response for large scale disasters such as Christchurch post February 22 and other possibly “long drop” options need to be agreed upon.
- Nonetheless, in larger urban situations with high rise buildings and minimal open space, evacuation maybe the only option
- There is a need to better communicate the protocols and criteria for port-a-loos and in particular their allocation to specific areas such as retirement homes.
- In field monitoring is required and in particular feedback from those affected needs to be sought.
- The risks of failure of waste water systems need to be researched and in particular f-curves developed
- Unfortunately, the waste water practices in New Zealand probably mean that the experiences in Christchurch will be repeated in other urban centres.

Thus, there is the need for better assessment systems on which to base a focused management system.

¹⁷ Christchurch Liquefaction Study - Stage II ECan Report No. U02/22 Prepared for Environment Canterbury by Beca Carter Hollings & Ferner Ltd May 2002

¹⁸ UNHCR Handbook for Emergencies chapter 15

APPENDIX 1: The Port-a-loo Timeline

Feb 22 2011 6.3 Earthquake

23 February <http://www.scoop.co.nz/stories/AK1102/S00823/request-for-portable-toilets-and-petrol-in-christchurch.htm>

Day 1 Request for Portable Toilets and Petrol in Christchurch Press Release: Rural Women New Zealand

Urgent request for portable toilets and petrol to support elderly and disabled Cantabrians

In the wake of yesterday's earthquake, there is an urgent need for portable toilets at the Christchurch offices of homecare company Access Homehealth Ltd, so that it can begin operating again.

The company supports elderly and disabled clients in Christchurch and the wider Canterbury area with daily care needs. The offices of the two other Christchurch home healthcare companies (Nurse Maud and Healthcare New Zealand) are out of action. Access has offered to share its premises with these two companies so that urgent services can be co-ordinated for all their vulnerable clients, including the urgent distribution of water. If anyone can help with this request, the toilets should be delivered to Access' offices at 100 Carlisle Street, Christchurch. This is outside the restricted zone. At least six toilets are required.

Port-a-loos: 780 port-a-loos are distributed around the city. Another 250 port-a-loos are in transit nationally, and a further 963 in transit from the United States of America. Christchurch City Council has requested 30,000 chemical toilets. This is being actioned by the National Crisis Management Centre.

http://www.facebook.com/note.php?note_id=196767083685402

1-9 March Residents in the Christchurch suburb of Aranui say they have been overlooked in the rush to help other victims of the quake. <http://www.3news.co.nz/Aranui-residents-feel-ignored-by-council-in-quake-cleanup/tid/423/articleID/200403/Default.aspx>

But others don't have that choice, without water, power or sewerage they're beginning to feel fed up. Resident Christopher Murphy says he is "pissed off" at how slow progress is.

"We want toilets, we want port-a-loos you know," he says. Mr Falomalo says port-a-loos have come through but haven't been for Aranui residents. 3 News took their request directly to the mayor. "Well I think it's an outstanding response to a very difficult situation, and you know it's good enough that we had a 6.3 earthquake that's taken potentially hundreds of lives," says Christchurch Mayor Bob Parker.

COMMENTS

AM 09 Mar 2011 7:54p.m.... No one from any department or organisation has knocked on my door more than two weeks after the fact, and not having a single port-a-loo on the block for a week and a half -while being told that you should dig a hole in your yard (which you no longer have)

Floss 08 Mar 2011 8:06a.m.Losers let things happen, winners make things happen. Other areas haven't got power, water, and port-a-loos, at least all the ones in Housing Corporation Houses are getting a Holiday from their rent,

Georgie 03 Mar 2011 9:46a.m.Cashmere and Huntsbury had no port-a-loos. And we have seen no one. I mean no one.

Dallington Resident 01 Mar 2011 11:57p.m.This is an ongoing feeling that people all over Christchurch are all feeling. I live in a street in Dallington, the same applies to the treatment we have had there, many people have moved out, but again we have a strong group willing to stick it out. We have no power, no water, or sewage either, no port-a-loo's and from the start I felt that this time was going to be different. We have police presents and local groups watching out for one another, but as we all get sick and tired of waiting for something to happen we have nothing to do but vent or do it yourself. Our street has pulled together to clean our street for pickup, but 3 days since contact we have still not seen a truck to collect it. I back the comments made by the people in this story. I could list many of a problem with what is not happening, but I hope in time it does. I've noticed that streets like hills road have 5 pot-a-loo's with 300 meters of each other and then around 5 scattered either side of the road, you can understand how we get a little peeved.

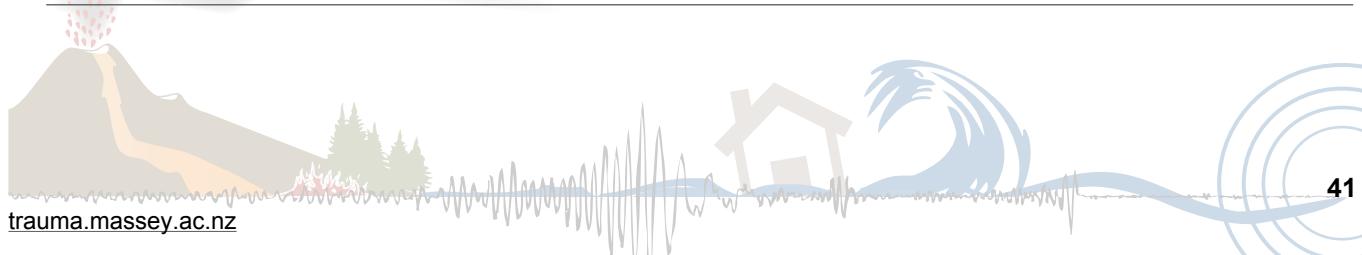
Dene 01 Mar 2011 9:50p.m. I would say that 90% of the city has seen no one. Until this morning Cashmere and Huntsbury had no port-a-loos. And we have seen no one. I mean no one. No student army. No food drops. We have no water or sewers either. Aranui is no worse, it is just full of moaners.

2 March NZ Herald Residents unable to hire temporary toilets

By Yvonne Tahana and Bernard Orsman Demand for temporary toilets in Christchurch is so high that one company is importing them from Australia - but private households won't be allowed to hire them. Hirepool operates Port-A-Loo and so far it had sent 500 to the city, chief executive Mark Powell said. It is one of a number of businesses servicing residents. Under legislation - because the units are deemed **assets of importance** - Civil Defence has to co-ordinate where the toilets go.

Staff were having a hard time explaining the company's legislative obligations to residents, rest homes and businesses who just wanted to sort sanitation problems themselves, Mr Powell said.

"We're not actually able to hire out to private citizens. Our guys are driving past people and they're being waved down by people who are yelling 'stop I need a toilet.'" "It's really hard saying 'I'm sorry I can't help.'" Mr Powell advised residents to call authorities and tell them how many people were in their street so their needs could be addressed faster. In the meantime, the company was in the process of sourcing 300 more toilets from Australia.

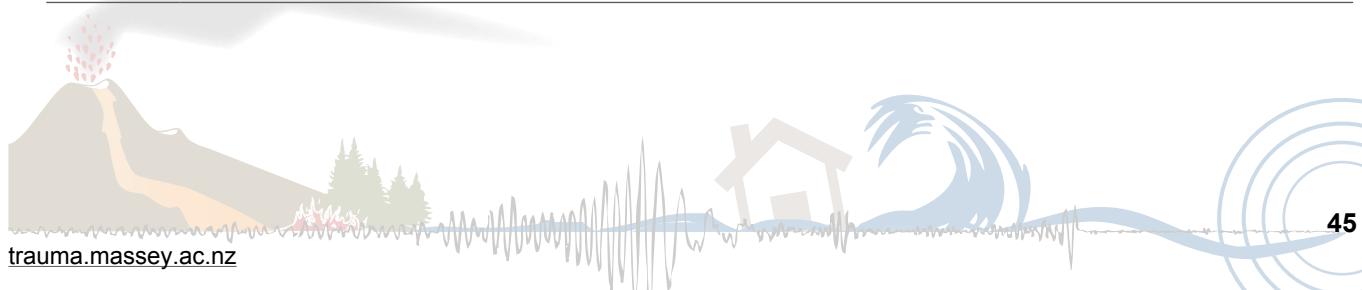


3 March	http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10709835
Day 9	<p>On the eighth day, there was wind and dust. In Dallington there is plenty of both, but Port-a-loos are much harder to find... She uses the description used by many others in the same situation: "It's like camping." The optimistic attempt to view it as an adventure is always delivered with the same fed-up shaky smile. There is little fun in "camping" with six children, aged 3 to 10, in such conditions. People don't complain about their own plights when they know that in the CBD people lie dead. "We're fine, we're alive," is a constant refrain, followed by a plaintive "but a Port-a-loo would be nice." Eight days on, the Port-a-loo wars are intensifying. In suburbs such as Bexley, Aranui, Avonside, and New Brighton, where the sludge was at its worst and power and electricity are distant memories, there are only a few Port-a-loos, some serving more than four streets.</p> <p>Port-a-loos are the new currency and reports emerge of stealth raids on Port-a-loos in other neighbourhoods and of people hiding them away on their own sections rather than sharing.</p> <p>People hear news of 900 Port-a-loos on the way, another 500 on order. But they never seem to arrive.</p> <p>Ms McFarlane knows Sumner has a good supply of Port-a-loos - and that they got them early, as did Lyttelton. "The rich people seem to get them," she says, resigned. In Bexley there is at least one consolation to living near the sewage ponds - they were among the first to have the big piles of silt on their streets carted away, reducing their dust. There are still no Port-a-loos but the bills are still getting through - it's the postie's first day back at work.</p>
3 March	http://www.nzherald.co.nz/social-issues/news/article.cfm?c_id=87&objectid=10709998
Day 9	<p>"We've had WINZ (Work and Income) and the Red Cross coming every day to see people yet you couldn't go to the toilet," said community nurse Jenny Herring. "I was piddling behind the garage. We felt very neglected in that area."</p> <p>A mother of six, Mrs. Manuleleua flagged down the toilet truck yesterday and begged the crew to position one of the 10 port-a-loos allocated to Hampshire St outside her front door. Even then, for little Rosemary, aged three, relief was not immediate - she locked herself in the unfamiliar contraption before a tearful extrication. Mrs. Manuleleua said Rosemary had had sanitary issues since last week's quake. "I had to force her to go outside in a hole in the garden."</p>
4 March	http://www.campusdaily.co.nz/read_university_news.php?title=christchurch_earthquake_relief_at_hand_for_the_eastern_suburbs_3881
Day 10	Christchurch earthquake: Relief at hand for the eastern suburbs
Assistance slow to eastern suburbs	<p>With the rescue phase over in Christchurch's central city, authorities were yesterday working to restore vital services to the city's badly hit eastern suburbs as the Government acknowledged help had been slow coming. Labour's Christchurch East MP, Lianne Dalziel, bloggers and residents of the eastern suburbs themselves have raised concerns about a lack of toilets, water and power in the wake of last week's quake. Residents of some areas had reportedly taken matters into their own hands by stealing Port-a-loos from other suburbs. While national Civil Defence controller John Hamilton yesterday said the eastern suburbs had not been forgotten and everything possible was being done to provide help, a spokesman for Earthquake Recovery Minister Gerry Brownlee acknowledged, "It is apparent, given the scale out there, that there just wasn't sufficient hardware out there, loos and the like." Early yesterday, Mr Brownlee made it clear at a Civil Defence meeting that relief for the eastern suburbs "had to be a priority". "It was agreed and they're working on it," the spokesman said.</p> <p>Prime Minister John Key said that given the significant loss of life in the central city, "it's been appropriate to prioritise that area" However, he had seen the eastern suburbs soon after the quake, and "obviously it sustained a lot more damage" than in last September's jolt. He would visit the area again today. "I understand the issues and I understand the stress completely ... The process has been slow. I think we accept that but it's not for the want of trying. I'll have a look tomorrow and ask more questions." He had sought assurances from authorities that every effort was going into helping the residents of the badly affected areas. "On the advice we've had they've been doing the best that they can." I'm confident that the resources will be applied to the east of Christchurch as rapidly as they physically can be." At Avonside, some relief had filtered in. Yesterday, power returned to many houses and the roads were largely cleared of the mountains of silt collected from the roads and gardens. However, even the arrival of 80 more Port-a-loos in Avonside and neighbouring Dallington meant residents were still relying on sparsely placed Port-a-loos along the main roads, far away from the back streets. Local resident Amie Wagenvoord said having power would make a massive difference but she was angered at reports that other suburbs got more help, faster. "They promised us that all the hardest-hit areas would be treated the same, that no one else was getting more help than others in similar situations." Two Port-a-loos had mysteriously appeared further along the road, reportedly stolen from other suburbs which had plenty. "Vigilantes! We are creating anarchy. People are driving down the roads stealing Port-a-loos - that's what it's got down to." Her husband, Scott Wagenvoord, said a friend who lived in Spreydon had told him they now had water and could use their toilets, but still had Port-a-loos on most streets. However, he felt most for Bexley and was delighted to hear they were getting individual chemical toilets. "For the last six months, they've lived what we're only just living now." He conceded there was some suburb envy and a perception the wealthier suburbs got more help, faster. "I drive home through Fendalton and they've already got spray paint on the roads indicating where potholes need fixing. "But let's not be bitter."</p> <p>AID TO THE EAST* 400 welfare and 50 search-and-rescue staff are visiting homes in the area.* 86 extra Port-a-loos were to be delivered to Avonside and Dallington yesterday.* 1200 more are due by the weekend.* 2000 chemical toilets were due to be delivered by the army tomorrow.* 30,000 more were due to arrive by Sunday.* 87 per cent of Christchurch homes had power on by yesterday.* 67 per cent had water.</p>

5 March Day 11	<p>With parts of Christchurch's wastewater network still some way from repair, residents in many areas of the city will be faced with using port-a-loos and chemical toilets for the next few weeks at least.</p> <p>Several thousand of these temporary toilets are being distributed around the city in the affected areas. While the Council acknowledges that sharing ablution facilities with strangers is not easy, it has some tips on toilet etiquette to help ease the situation.</p> <ul style="list-style-type: none">• Be tolerant.• Think of your neighbours – leave the loo how you would like to find it.• Be patient – Council staff are working around the clock to remedy the situation.• Be scrupulous about hygiene – wash hands thoroughly and have plenty of hand sanitiser available. <p>The Council also has concerns about how waste is being disposed of. Remember to follow these simple rules:</p> <ul style="list-style-type: none">• For those without any toilet services, well-wrapped solid waste can be disposed of in the red bin. Liquid waste should not be put in the bin but rather buried on-site.• Do not dump plastic bags of waste into port-a-loos. This blocks the suction pipes and can take several hours to repair.• If you are using a chemical toilet, dispose of waste at specified dump sites that are being delivered into neighbourhoods. <p>The Council has asked that residents do not dump liquid waste in the red bin as these are emptied into compactor trucks which will burst the bags and create a significant health risk.</p> <p>Port-a-loos will remain on site for some days after water is restored in case the sewer pipes are not usable. It may take a while for this damage to show.</p>
5 March Day 11	<p>The lack of a toilet is the worst of it, she says. "I get up twice a night and in the morning take a bucket down to the Port-a-Loo. It's a bucket parade but I get down there early," she says as we watch a neighbour with a red bucket heading in that direction....Last stop of the night is the disaster zone of Bracken St in Avonside which leads straight down to the Avon River. The street has huge holes and no power, water or Port-a-Loos....About 4pm and we are back at Pages Rd with the army which is using 10 trucks to deliver 4500 chemical toilets to households. The boxes come with the happy slogan: "Companion, you're never alone"For Shayne Wheble, whose two-bedroom house, which is without water and power, is hosting three adults and four children, the toilet is a welcome addition. Likewise for Aranui amputee Brian McKay, who gets his chemical toilet delivered personally by Tim Cronin, from the Fellowship Baptist Church in Kelston, Auckland.</p> <p>"Christchurch's eastern suburbs 'mobilising' after earthquake" MARTIN VAN BEYNEN stuff.co.nz</p>
7 March Day 13 Prime Minister assures Christchurch	<p>http://tvnz.co.nz/national-news/key-says-toilet-distribution-nothing-but-fair-4047445/video</p>  <p>Toilets still a talking point in quake-hit Christchurch Published: 10:18AM Monday March 07, 2011 Source: ONE News</p> <p>Authorities are still scrambling to get 30,000 chemical toilets to residents in the worst-hit suburbs of Christchurch.</p> <p>The lack of working toilets is upsetting many residents while others are having difficulty with the unfamiliar portable loos. At this morning's media briefing, Mayor Bob Parker gave a theoretical demonstration of how to operate a chemical toilet. Prime Minister John Key said a report about the distribution of port-a-loos and chemical toilets shows allocation has been fair.</p> <p>Key said he has asked Civil Defence about the distribution process and where the toilets been sent. He said there aren't enough for the scale of the event but that is quickly being rectified and the need for toilets is being reassessed all the time. A shortage of port-a-loos and chemical toilets was the top concern expressed by residents at community meetings in the eastern suburbs yesterday. Residents said they did not have enough of the toilets, and those that were available were too far away from their homes and were filled to overflowing. Authorities said the huge amount of damage underground was hampering their efforts to repair water and sewerage systems and no time could be set for completion of this. Civil Defence director John Hamilton today responded to reports of port-a-loos overflowing in the eastern suburbs, saying more will be provided from areas where they're no longer needed. "I have asked to have a review of where the port-a-loos are currently located and we will redistribute those which are no longer required because water and sewerage have returned to those properties. I suspect port-a-loos in southern and western parts of the city may be able to be relocated to the east," he said. Hamilton said officials are also looking at whether the arrangements for servicing the toilets are adequate. Mayor Bob Parker said there is no point in having all the port-a-loos out in the suburbs if they're not being looked after properly.</p> <p>"There's nothing worse than being confronted with a port-a-loo that needs a really good clean."</p> <p>Parker also denied reports that yesterday's community meetings were angry. He said he was at four of the five meetings held across the eastern suburbs and they were "tremendously positive" meetings.</p> <p>He said there are frustrations in the community around the number of port-a-loos and chemical toilets, and quake recovery arrangements, and that is completely understandable. Last week an Air New Zealand engineer even decided to show people how to make their own portable toilet if they were desperate.</p>
9 March Day 15	<p>CDEM Update #CHRISTCHURCH #EQNZ Quake Update 110</p> <p>Pot-a-loo toilet locations http://eqviewer.co.nz/index-port-a-loos.html</p> <p>Chemical toilets: 4000 are in Christchurch and are being delivered based on need. 3,500 more expected to arrive in the next week (Tuesday March 8), and another 20,000 after that.</p> <p>Heavy traffic on the roads is causing difficulties in delivering port-a-loos and chemical toilets, as well as cleaning and emptying them.</p>

9 March Day 15	http://www.prmatters.co.nz/tag/christchurch-earthquake/ However, even now I sense that the tendency to stray into the realm of un-realism is irresistible to some media, and in the process distorting the bigger picture. Possibly because of perceived injustices, port-a-loos are emerging as a symbol of this tendency. In no way do I underestimate the disappointment, discomfort and unpleasantrness of not having a flush loo. However, the reality is that in a number of areas the waste system that has served so many for so long, and so faithfully, has been destroyed. A replacement system cannot be conjured up, so holes in ground, plastic bags and chemical toilets, where there is no escaping one's own waste, are the new reality. As important as toileting facilities are, are they really the major concern of the majority of quake-affected Cantabrians at this time?
9 March Day 15	http://www.stuff.co.nz/national/christchurch-earthquake/4747675/Christchurch-earthquake-World-out-of-chemical-toilets
Long drops	Christchurch has exhausted the world's supply of chemical toilets after the devastating February 22 earthquake wreaked havoc on the city's eastern suburbs. More than 500 people from quake hit suburbs gathered in Richmond this morning, looking for answers. In silt-ridden Richmond Park, Civil Defence spokesman John Lovell told the crowd port-a-loos and chemical toilets were being distributed as quickly as possible. "We've exhausted the world's supply of chemical toilets." Lovell said 96 port-a-loos would arrive from the United States to be distributed in Christchurch's eastern suburbs this week. The focus had also shifted, from rescue and recovery in the central city, to the well-being of quake-affected communities. The website, Show Us Your Longdrop (http://www.showusyourlongdrop.co.nz/), features photos and descriptions of long drops which are adorned with decoration and practical Kiwi ingenuity.
9 March Day 15	Help on Hand from Hirepool for Christchurch Residents Wednesday, 9 March 2011, 2:26 pm Press Release: Hirepool Limited Help on Hand from Hirepool for Christchurch Residents Seeking Some Relief – Relief is on its way for Christchurch residents still without sanitation and toilet facilities following last month's devastating earthquake with Hirepool Limited increasing its commitment to the region by a further 200 portable toilets due to arrive from Australia next week. New Zealand's equipment solutions leader has sourced the additional Port-A-Loos from Onsite, its sister company in Australia, in response to an urgent request from Christchurch City Council (CCC), with whom Hirepool has established a close working relationship since the original quake first struck the Canterbury region back in September 2010.
10 March Day 16	http://www.lastwordonnothing.com/2011/03/10/christchurch-hardtack-and-the-myth-of-earthquake-preparedness/ "Only half of those who remain [in the eastern suburbs]... have power, and almost NONE have running water ... Their houses may or may not be intact. Their streets may be clear, broken, or full of silt. Or sewage. There are no showers. Or ways to wash clothes. Or to wash dishes. Or to heat the "must boil" water that is available — assuming they can make it to the nearest water truck, day after day. No refrigeration. No working toilets, and precious few port-a-loos ... The media flies over, drives past and dips into Refugee City, usually at the main welfare or water points. But they don't cover it that much. From my observations, the officials – those who are making decisions about the relief effort – seem to do likewise." Again, not the vision of hell we often see after major disasters — something closer to a really lousy camping trip, perhaps — but still a long way from what residents of a wealthy, educated country with a small population, impressive social cohesion and a great deal of technological and logistical know-how might have expected. Above all, it seems to be a vision of missing or missed communication—and that seems to be the common thread in virtually all disaster response efforts. ...Hyde writes, "they all know they have a major job on their hands out east, and are finally starting to do simple/obvious thing like redistribute port-a-loos in line with the most acute need." This makes me feel rather smug about the latrine seat I have that can snap on to a five-gallon pail—and really, really bad about the deep, abiding lack of civic-mindedness that surrounds us.
10 March Day 16	More toilets on way to Christchurch. Meanwhile, more than 40,000 temporary toilets are on their way to Christchurch as officials struggle to repair the city's heavily earthquake damaged waste water network. Civil Defence minister John Carter said 40 per cent of the city's houses are still without a working toilet, 16 days after the devastating February 22 earthquake. He said 40,131 port-a-loos and chemical toilets had been sourced, with about 5000 expected to arrive today. Suburbs in desperate need had already been delivered 1471 port-a-loos and 4800 chemical toilets, he said. "I know that for those households who cannot use their toilet there is considerable anxiety. I want to assure those people that Civil Defence is getting temporary toilets into Christchurch and out to affected people as quickly as possible." Silt build-up has caused widespread blockages in wastewater pipes in the wake of the Christchurch earthquake. It needs to be jet blasted out of pipes before damage can be fully assessed, said Mr Carter. Christchurch City Council and Defence Force staff were working to find ways to reconnect waste water to the thousands of houses in need, he said. "The earthquake on 22 February did significant damage to the waste water network throughout Christchurch. Civil Defence and Christchurch City Council staff are working as quickly as possible to assess the damage and develop both short and long-term solutions." http://www.nzherald.co.nz/christchurch-earthquake/news/article.cfm?c_id=1502981&objectid=10711449

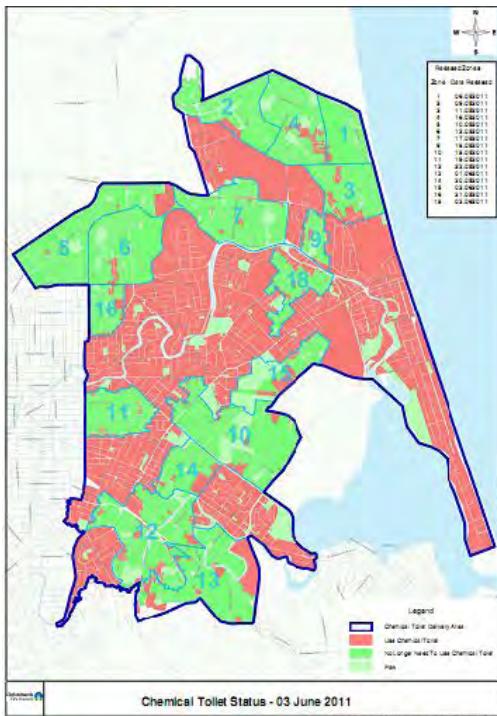
10 March Day 16	<p>While New Zealand Prime Minister John Key continues to insist that "everything that can be done is being done" to help victims of the devastating February 22 earthquake in Christchurch, thousands of people have received hardly any assistance. The <i>World Socialist Web Site</i> spoke to residents from the severely damaged eastern suburbs, where hundreds of homes remain without water, sewage or water. http://www.wsbs.org/articles/2011/mar2011/nzin-m10.shtml</p> <p>Brian Dooley, a self-employed web technician from Dallington, said his street had been given just two portable toilets. "Nobody in this area has water or sewage," he said, "and the council says it's going to take months to restore [the services]." Dooley felt that "the city is doing the best that can be done under the circumstances, but the further east you go the more people feel that they've been ignored". On Sunday Dooley attended one of several community information forums held by Civil Defence—the first local meetings since the quake hit. "About 100 to 200 people attended. People had a lot of bottled up anger," he said. "They were concerned about [the lack of] basic services. One person mentioned the servicing problems with port-a-loos, with 40 people using the same pot-a-loo."</p> <p>Magnus Koldau said that although power had been restored to his Dallington home six days after the earthquake, his family was still living without sewage and water.</p> <p>"There was lots of chaos over the distribution of portable toilets," he said. "Some roads have port-a-loos that are not being used but other streets don't have any. We have dug a hole in the back yard."</p> <p>"There has been no recovery from the two earthquakes in September and December. It is our third run," she said. "After the September quake, there were just two badly-hit suburbs without power and water 10 days afterwards. Two weeks after this quake, very few people in eastern Christchurch have power, water or toilet facilities."</p> <p>Steve Hill, a plumber from Bexley, ...voiced his immense frustration over the "lack of information and direction" provided to survivors. "No one out there is making decisions," Hill said. "No one knows where we are going. This has been going on since the September quake." He explained that "basic services are still missing from whole areas. Half of Avonside is still using portable toilets." His street had finally received port-a-loos three days before he spoke to the WSWS.</p> <p>"The biggest problem is the land slump [that has occurred], which means there are no drains, sewage or power," he explained. This had made it almost impossible for him to do his job as a plumber effectively. "The water table sits just centimetres below the land surface. Every time I dig into it, a new spurt of water immediately surfaces," he said.</p>
10 March Day 16	<p>http://www.nzdoctor.co.nz/un-doctored/2011/march-2011/10/temporary-toilets-delivered-as-fast-as-possible.aspx</p> <p>Thursday 10 March 2011, 3:45pm <i>Media release from Civil Defence minister John Carter</i> Providing temporary toilet facilities for earthquake affected Christchurch residents is being worked on urgently, Civil Defence Minister John Carter said today. "There are 40,131 temporary toilets (both port-a-loos and chemical toilets) that have been sourced to meet demand," Mr Carter said.</p> <p>"Sixteen days after the earthquake, approximately 60 percent of households in Christchurch can use their toilets. I know that for those households who cannot use their toilet there is considerable anxiety. I want to assure those people that Civil Defence is getting temporary toilets into Christchurch and out to affected people as quickly as possible."The latest information I have is that by the end of today, 1471 port-a-loos will have been delivered to the suburbs that need them. A total of 4800 chemical toilets have been delivered and are in people's houses. A further 5000 chemical toilets are expected into Christchurch today."The earthquake on 22 February did significant damage to the waste water network throughout Christchurch. Civil Defence and Christchurch City Council staff are working as quickly as possible to assess the damage and develop both short and long-term solutions. "Residents will be given information as their water is connected on how to find out if their toilet can be used. It is important to follow the instructions and advice of Civil Defence."</p>
16 March Day 22	<p>Life in the "New Normal" also has given us a new found appreciation of the basic necessities in life. Power, water from the tap and a working flushable toilet are the new luxuries now. A port-a-loo is now a popular kerbside fixture that your neighbouring streets will envy; it has now replaced swimming pools as the new chic.</p> <p>http://www.brands4tomorrow.com.au/the-%E2%80%9Cnew-normal%E2%80%9D-in-our-life-in-christchurch/</p>
17 March Day 23	<p>http://www.brendonburns.co.nz/?p=487</p> <p>Brendon Burns Today I will be helping deliver port-a-loos I have sourced from a friend in Marlborough who has rounded them up from Marlborough vineyards. Nine have arrived in Christchurch so far. I am getting them delivered to Avonside, one of the worst-hit neighbourhoods in my electorate. They arrived on Tuesday and have now been cleansed etc, and are ready for Avonside</p> <p>The spur for the story was the Prime Minister saying 10,000 homes may have to be bowled, a figure he later said was not an official estimate. The figure itself is not a huge surprise when you consider more than 3000 were in that category after September 4 and that quake was a tiddler compared to February 22. But the process for communicating such information – and the geo-tech reports which fed it – is with the communities involved and their representatives; not a post-Cabinet news conference which then leads to unacceptable extrapolation that has poleaxed some of my constituents. It's not as if there aren't enough stresses here already.</p>
18 March Day 24	<p>A k19 Mar 2011 12:31p.m. Perhaps if they put the port-a-loo's where they are actually most needed then they may get used. We had them on our street, but out pipes weren't damaged so we could use rain water to flush, which meant not needing to use the port-a-loo. Give them to the area's they need them the most!!</p> <p>http://www.3news.co.nz/Many-of-Christchurch-port-a-loos-going-unused/tabid/423/articleID/203047/Default.aspx</p>



19-20 Marc Day 25-26	<p>Civil Defence has ordered nearly 3000 portable toilets for the streets following the damage done to the sewage system in the February 22 earthquake. Mayor Bob Parker said the supply of portable toilets was still stretched. Port-a-loo's Auckland branch manager Steve Coulter said a big effort was made to truck 644 of his company's port-a-loos, plus 300 it brought in from Australia, to the quake-stricken city. But Diane Dakin, from Dakin Group, the only manufacturer of the toilets in New Zealand, said that while they were extremely busy, there was not really a shortage of portable toilets as they still had some in their yard. "We have a lot out on the street and they are not getting used." She said people were using the smaller chemical toilets -- Civil Defence has delivered nearly 17,000 of the 41,000 ordered -- but dumping the waste in the portable toilets in the street, rather than the designated chemical toilet waste dump points. "We have to put up with it," she said. The "worst nightmare" was people pulling the toilets up to their driveways or back yards.</p> <p>http://www.stuff.co.nz/the-press/news/christchurch-earthquake-2011/4788095/Port-a-loos-go-unused</p>
	<p>Comments</p> <p>Az #8 09:45 pm Mar 20 2011 When we finally got our power back on in Aranui not so long ago... we saw a news item regarding the trauma a lady in Redcliffs had experienced when her nice marble benchtop had broken. While I'm sure it might have been important to her... along with other damage sustained to her property it seems that pot-a-loo's have served one very odd function other than the one they were designed for.</p> <p>They have been a good marker for how many services have been allocated to different areas of Christchurch post quake. It felt like help (and port-a-loos) were distributed according to the perceived value (and socio-economic status) of the area and the kind of people who live there.</p> <p>I'm sure the relief centre out in Burnside had awesome toilets... it was just strange driving through there toward the airport to flee up north that we passed dozens of port-a-loos in areas with no damage ...and no queues to use them. Send them to Aranui/Wainoni. THEY STILL NEED THEM - unless of course unaffected areas would like to keep them up their driveways just in case</p> <p>Mike #7 11:18 am Mar 20 2011 This is misleading. When port-a-loos were dropped off in the early days they were dropped at the easiest places to leave them (for example the SW), not necessarily where they were needed. People didn't use them because they had sewerage. At the same time people on East side did not have anything like enough. There has been little sign of sensible coordination and this just goes to show that port-a-loos are in the wrong places. It does not mean that they are not needed elsewhere.</p> <p>Kevin #5 10:13 am Mar 20 2011 I would like to know where all these port-a-loos are driving around the brighton area haven't seen them.</p> <p>tj #2 10:29 pm Mar 19 2011 go on! civil defence / council management style in aotearoa! having have to sh^^ in a bucket for nearly ten days I bought a chem dunny from placemakers in desperation - sewage was not going to work. terse phone calls to brenden "pinkoe" burns finally delivered a result: a chem toilet arrived two days after he and his babushkas had handed these things out in the "forgotten suburbs". finally, we got one too (and the rest of our street). we had to sign for them (unlike what happened in these so-called forgotten suburbs) including a declaration we would return the chem toilet once it no longer was needed. finally, today, the port-a-loos were placed in our street..... why? We are all now shi*****g in a chem toilet? sorry, this entire "civil defence emergency" and subsequent management is joke. utter imbecilic nonsense. there is no co-ordination - no management - no rationale.</p>
21 March Day 27	<p>http://www.minpac.govt.nz/christchurch-earthquake-week-four/</p> <p>Toilets: 960 Port-a-loos arrived from the United States on Saturday and are currently being assembled. Another 200 are coming on Tuesday and will be distributed as soon as possible.</p> <p>More chemical toilets were distributed over the weekend, with a focus on Avondale, Bromley and Avonside. 17,000 toilets are expected to have been delivered by Monday 14 March.</p> <p>If you are not home when chemical toilets are being delivered a note will be left in your letter box detailing how you can obtain one. Civil Defence is working with the manufacturers to provide affected residents with information about correct use of chemical toilets and will make this available as soon as possible.</p> <p>An estimated 60 percent of households can use toilets. If you have running water you can flush the toilet sparingly. Also, please check whether the flushing of your toilet is causing any blocking or issue either on your own property or within your immediate neighbourhood - this is because, although toilets may flush, there may be breaks in the system which could cause sewage to leak into the ground or flow in to the streets. Instructions on how to use chemical toilets and how to dispose of chemical toilet waste are available at:</p> <p>http://canterburyearthquake.org.nz/2011/03/07/how-to-use-your-chemical-toilet/</p>
14 April Day 51	<p>There has been a sewer collapse on Ferry Road between Charlesworth St and the Ferry Road roundabout. Crews are on site to fix the line, and the road has been closed and traffic diverted.</p> <p>Civil Defence says the collapse was caused by ground subsidence due to the 22 February earthquake. It could take several weeks to put a temporary fix in place because it is a large sewer approximately four metres deep. Permanent fixes will be part of a programme of work planned as part of the whole city's response to the quake. The collapse has occurred in an area that was already fragile, and raw sewage from the area was being pumped directly into the Heathcote River.</p> <p>http://canterburyearthquake.org.nz/2011/04/14/ferry-road-sewer-collapse/#more-7346</p>

22 April	http://www.starcanterbury.co.nz/local/news/christchurch-two-months-after-quake/3949239
Day 59	Major infrastructure breakthroughs: <ul style="list-style-type: none">* A temporary sewerage system is in place. It is made up of 2800 port-a-loos and 31,000 chemical toilets with 525 disposal tanks and support for the 20 per cent of users experiencing sewerage issues. Civil Defence still needs everyone else in the city not directly affected to conserve water and flush sparingly to minimise their impact on the fragile infrastructure.* 97% of sewer mains are flowing to some degree.* Major progress has been made on the Christchurch Wastewater Treatment Plant, which is processing 85% of the city's wastewater. Treatment capacity is now 40%, up one third from a month ago. Six of the plant's seven primary tanks are operating; although there is less silt entering the plant, it remains fragile.
6 May	Toilets.aspx">http://www.ccc.govt.nz/homeliving/civildefence/Christchurchearthquake>Toilets.aspx
Day 73	 <p>Toilets have been distributed to the area indicated on the map because the sewers are damaged and/or full of silt. They may also be more prone to flooding in wet weather. If you have been given a chemical toilet, please use it, even if your toilet appears to be working. Chemical toilets offer privacy, security, and better hygiene. Also, because they are used inside your home, they are unaffected by the weather as winter approaches. The number of chemical toilets and disposal tanks is continually being reviewed to ensure they are in the right place and that there are enough of them.</p> <p>How to get a chemical toilet: If you are in the chemical toilet distribution area but have not received a chemical toilet, call 941 8999. Please don't call for a chemical toilet if you are outside this area.</p> <p>Emptying your chemical toilet</p> <p>Empty your chemical toilet into one of the 400 disposal tanks (see distribution map). Do not empty it into a portable (street) toilet. If a full chemical toilet is too heavy or difficult to empty, you do not have to wait until it is full. Alternatively, you can ask a friend or neighbour to help you</p>
23 May	Three months after the February 22 earthquake devastated Christchurch and nothing much has changed for some residents in the eastern suburbs of the city. When Prime Minister John Key visited the suburb of Bexley 10 days after the quake, Waitaki Street resident Tracey Bolton's biggest criticism was the lack of port-a-loos in the eastern suburbs. Today, Mrs. Bolton says not a lot has changed. "We still haven't got any sewer," she says. "We are still using a chemical toilet, but we're over it. Absolutely over having to go empty it all the time. The closest pot-a-loo to our place is probably 20 metres down the road. And the same with the container... http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10727561
Day 90	When Prime Minister John Key visited the suburb of Bexley 10 days after the quake, Waitaki Street resident Tracey Bolton's biggest criticism was the lack of port-a-loos in the eastern suburbs. Today, Mrs. Bolton says not a lot has changed. "We still haven't got any sewer," she says. "We are still using a chemical toilet, but we're over it. Absolutely over having to go empty it all the time. The closest pot-a-loo to our place is probably 20 metres down the road. And the same with the container that you empty the chemical toilet as well. She says the family chemical toilet needs to be emptied every second day. Mrs. Bolton lives with her husband and three kids, aged four, nine and 12. Her biggest concern is her nine-year-old daughter, who has type-1 diabetes, getting sick. "We can't really use port-a-loos around the community because I can't risk her getting any infections. She was in hospital last week with really bad tummy pains and a virus. That's not a good start, considering winter has not kicked in yet.

3 June
Day 101



7 June
Day 105 <http://www.watoday.com.au/breaking-news-world/effluent-for-nzs-lady-of-affluence-20110607-1fpvq.html>
The local city council announced last week that the port-a-loos would be collected as Christchurch slowly returns to a semblance of normality following the disaster. Scientists said last week that there was an almost one-in-four chance of another quake measuring 6.0 to 7.0 in the next year

13 June **Another earthquake** <http://www.kanes.co.nz/2action/1Ev/earthquake.htm>
Day 111 Reports coming in are indicating the more liquefaction than as the Feb event. There are more broken buildings in the fenced off CBD and more rocks are falling from the Sumner cliffs. No serious injuries or fatalities reported.
Buildings at risk have been closed or removed so not expecting many injuries.
The reports are saying many roads are again closed, bent, broken and flooding. The Avon River is flooding its banks in places (that makes me wonder if the whole city has tilted a little yet the tide is high). Streets are jammed as 100s of thousands of people creep home. Power was off to 54,000 homes but this will improve quickly. There is more damage to water and drain systems.
The airport is open and operating and it's a warm sunny winter day.

25 June
Day 123 The Kelly's' Landy St house is coated in dust, they have sand volcanoes in their backyard and have had to shovel silt from their property three times this year. They have not had proper sewerage since September and have lost power and water several times this year. <http://www.stuff.co.nz/the-press/news/christchurch-earthquake-2011/5191894/Earthquake-report-deals-soul-destroying-blow>