

Wellington Region Civil Defence Emergency Management Group

CDEM Group Sewage Disposal Guidelines

July 2008 – June 2011 DRAFT

Note: The Wellington Region CDEM Group Sewage Disposal Guidelines should be read in conjunction with the Wellington Region Civil Defence Emergency Management (CDEM) Group Plan 2005.



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1. Foreword

This Sewage Disposal Guide is for Emergency Management Offices and wastewater asset managers in the Wellington region, and is intended to be used as a guide for Emergency Sewage Disposal planning.

Wellington Region Territorial Authorities are encouraged to use the guide as best meets their needs.

1.1 Background

Overseas disasters such as Kobe, Japan earthquake in 1995 and Hurricane Katrina affecting New Orleans in 2005 have highlighted both the vulnerability of wastewater networks and the many practical challenges associated with the disposal of sewage in the days and weeks following after the event. In the case of Kobe, it took up to 85 days to reinstate the key elements of the wastewater network.

To reduce disease transmission it is a priority to ensure that safe disposal of sewage waste is created. This may be by means of temporary facilities but consideration must be given of people's dignity and well-being in regards to safety and privacy in adverse circumstances.

It is important to note that any building without water and/or effective means of sewage disposal is deemed as an unsafe building which may require evacuation.

A project was set up in 2005 by the Wellington Region CDEM Group to develop a guideline for the strategy and specific arrangements around the disposal of sewage during and subsequent to a major disaster for Territorial Authorities. Sanitation is one of the six critical needs identified by the CDEM Group, along with urban search and rescue, treatment and movement of the injured, health, welfare and restoration of lifelines.

This guideline is focused on the situation resulting from a major earthquake or a significant loss of power extending for more than a week i.e. causing failure of water supply as well as wastewater pumping that would lead to a 'disposal from source' (individual property) problem requiring emergency management inputs. It is considered that lesser events would be adequately handled by Territorial Authority asset managers without CDEM Group-level co-ordination.

A key focus in the early stages of a major emergency management response is supporting the affected population in place. While much of the emphasis in this guideline is given to arrangements that support people in place rather than evacuate, there are situations when emergency waste disposal immediately becomes a major problem such as in hospitals, care facilities and multi-level apartments, at emergency shelters and for people in transit.

1.2 Use of the guide

This guide has been prepared to support planning at the local level in the Wellington region.

It has been developed in a format that allows it to be used in two ways:

1. As a reference document and an exemplar of good practice for emergency sewage disposal planning.
2. As a guide that can be utilised by Territorial Authorities in the preparation of their emergency sewage disposal plans.

The guide has been separated into three distinct parts: Initial, mid-term and long-term. The Long-term response section will be leading into the recovery phase.

A sewage disposal management checklist for Territorial Authorities has been developed as part of this document, which highlights the processes that may assist with the planning and response stages including public education pre and post event. (Refer to **Appendix 1**).

1.3 Duration of guideline and review

The effectiveness of the Wellington Region CDEM Group Sewage Disposal Guidelines will be reviewed by the CDEM Group every three years or when required.

The Wellington Region CDEM Group Sewage Disposal Guidelines will be tested during Wellington CDEM Group exercises. The effectiveness of this Plan will be reported on as part of the assessment of exercises.

1.4 Authority

This guideline has been developed under the authority of the Wellington Region Civil Defence Emergency Management Group Plan and will be effective from August 2008.

2. Characteristics of Service Restoration

Characteristics of the service restoration phase, which may well continue for months after the re-establishment of water supply following a major disaster (e.g. earthquake), include:

- Service restorations being a gradual process across a network (possibly requiring the re-grading of trunk mains in liquefied areas)
- Work to reconnect/restore damaged private connections (household & commercial) will not necessarily be able to be co-ordinated with repairs to the Territorial Authority network

Some of the key factors influencing the extent of problems of sewage disposal from these events are the density of population (CBD apartments vs rural) and the socioeconomic characteristics of the affected population. Along with the time of year and prevailing weather conditions, other influencing factors in construction of temporary toilets and burying of waste are location and geology. For example:

- sandy/silty areas – able to dig (although subject to water table considerations)
- rock/clay hillsides – unable to easily dig
- CBD – no space to dig

In addition, the implications on key infrastructure such as hospitals, transport centres, business and industry areas will also need to be considered during emergency sewage disposal planning.

3. Planning Principles

The following principles were established to provide a structured approach to guide specific planning:

1. Disposal of sewage should be at source where ground conditions and other practicalities permit and in a manner that does not pose a risk to food or drinking water sources
2. Disposal of sewage should be land-based (i.e. avoid waterways and beaches) wherever possible and
 - needs to take into account established human tendencies in terms of:
 - Disposing of rubbish and waste
 - Trying to use toilet facilities (with or without flushing water)
 - Seeking shower facilities as a personal health and comfort factor (and the associated cultural/security issues)

3. Base planning on the assumption of no evacuation and maximum occupancy of residences as soon as possible
 - The outcomes of this work will address the key question of '*Can we safely support people living in the affected area?*'
4. Integrate emergency sewage advice with other public health messages on food safety, drinking water, etc
5. Support of council's focus of maintaining the confidence of the public that a workable set of arrangements are in place
6. Take a similar approach as emergency water in terms of establishing community focal points
7. Toxic trade waste as an initial priority and will need ongoing monitoring (hazardous substances link)
8. Address via 4Rs (reduction, readiness, response & recovery) approach, giving consideration to both the structural and non-structural elements

4. Public Information

It is important to include the Public Information staff in local planning processes to ensure the facilitation and distribution of essential information over the three phases indicated in these guidelines (Initial, mid-term, long-term).

Where a local state of emergency has been declared, the Group Public Information Management (PIM) should liaise with the PIMs of the Territorial Authorities and agencies affected to ensure that the information given to the media is consistent and reflects the actual situation. However, it is the responsibility of the Territorial Authorities to arrange for location specific information to be provided to the media e.g. collection, distribution points.

Generic information includes:

- not to use the toilet, (it may get blocked and overflow)
- instructions on how to use existing toilet with bags
- the construction of a long-drop
- containment and disposal
- health messages/warnings
- water conservation.

Media should have access to pre-scripted messages, so that they are able to broadcast these as soon as possible.

5. Communications

Communications will be crucial throughout the response and recovery phases. It is important that each Territorial Authority designs a communications plan that can be distributed to all agencies that would be involved with emergency sewage disposal.

A communications plan may include:

- Territorial Authority Section Managers and staff
- contract vehicles in the area,
- disposal sites,
- forms of communication (radio, cell-phone, phone)
- contact numbers

6. Public Health Information

Regional Public Health will play a major role during a major disaster and it is essential that Territorial Authorities liaise with them during both the pre-planning stages and response.

If human waste is not properly disposed of it can lead to outbreaks of diseases like typhoid and hepatitis A and polio. It is also important that sewage is disposed of carefully to prevent contamination of water supplies, and reduce the breeding of insects (flies, cockroaches) and rats, which in turn can transmit diseases. These things need to be considered when planning for emergency sewage disposal.

While environmental issues should be a concern of response agencies, planning should pay consideration to the extent of which normal environmental codes, practices, and regulations may be relaxed during a disaster to facilitate the disposal of sewage. Health and safety should be paramount where any flexibility of regulations is exercised.

Appendix 2 contains parts of the Resource Management Act relevant to Civil Emergencies.

The key public health messages that need to be reinforced are:

- Establish temporary sewage facilities at a designated site and make sure the users know how to use them safely.
- Keep food and water supplies safe by siting any on site toilets away from vegetable gardens.
- The location of temporary latrines should be downstream of wells, at least 30m from groundwater sources and at least 1.5m above the water table.

- Try to establish hand washing facilities. Where possible hands should be washed thoroughly after any contact with sewage. If there is no running water wet wipes and alcohol sanitiser can be used.
- Where possible limit the number of people and amount of contact they have with sewage e.g., allocate one person to be responsible for managing the collection and disposal of waste.
- Bleach solution (1 part liquid bleach to 10 parts water) is a good disinfectant. It can be used for disinfecting/cleaning sewage spills or leaks. A small amount of bleach can be added to a bucket toilet each day. This will help to control smells and prevent insects breeding.
- Containers or holes that are being used for the collection of faeces and urine must be kept covered. This is to minimise odours and flies.

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7. Regional Legislation and Policies

The following documents will be of use when planning for an event:

- Greater Wellington Regional Council Regional Air Quality management Plan (RAQMP)
- Greater Wellington Regional Council Discharges to Land Plan (DTLP) (In particular rules 1, 2 and 3)
- Greater Wellington Regional Council Fresh Water Plan (FWP)
- Resource Management Act (RMA)

8. Initial phase (first 7 days)

The initial phase focuses on the first week (but continuing as long as is necessary) after a significant event that affects the sewerage system.

There will be very limited access, if any, in to the region during this phase, especially the Wellington CBD and there would be few resources available. It will be essential that households and key facilities are able to manage their own sewerage facilities during this phase, by containerisation and initial storage and/or on site disposal.

The focus will therefore be on providing public information on how to get set up safe emergency sewage systems. The method of containerisation and initial storage will be dependent on the environment e.g. sandy/silty areas – able to dig; rock/clay, hillsides – unable to dig easily; CBD – no space to dig.

8.1 CBD – Apartments, hotels, key facilities (hospitals, EOC's etc)

It is likely that there will be no ground to access in the CBD to be able to dig 'long drop' toilets, so containerisation and initial storage must be provided within the premises.

This can be achieved by using existing toilets or a suitable container such as buckets with lids, lined with a large rubbish bag. If possible urine and faeces should be kept separate.

Put ½ cup of liquid bleach or disinfectant into the collection bag every morning, and if possible, put shredded bits of paper in the bag to absorb urine.

The bag is to be removed when necessary and deposited into a designated wheelie bin or skip bin (usually used for household waste in large complexes).

The bin should be covered with a lid, and lined with a thick plastic leak proof liner and situated outside, preferably in a shaded area if possible, preferably. There should be limited access for the general public and must be clearly labelled "for infectious body waste only".

The designated disposal bin will be used until advised otherwise by Local Authorities.

In **Appendix 3** is a copy of the Hotel Association's Standard Operating Procedure for plant failure – loss of sewerage.

8.2 Urban

Most urban dwellings have access to ground. However it will be dependent on the geology if it will be appropriate to dispose of the sewage in the ground e.g. rock/clay compared to soft ground

If soft ground is available the focus will be on-site disposal by using either long-drops (those physically unable to will require assistance) or utilising the bag in the toilet then burying it. Sites chosen for on-site disposal or burying should be away from food sources (e.g. vegetable and herb gardens) and water supplies (streams, wells).

To construct a long-drop, it is recommended to dig a hole up to 1 metre deep, and to cover the waste with dirt after each use, or put a secure cover over the hole. Garden lime, insecticide or disinfectant can be added to the hole each day to reduce smells and flies.

The long-drop should be used until it is full to within 300mm of ground level. When full cover it completely with soil and dig a new long drop.

If the ground is not able to be dug (rock or clay), bags in toilets and containers are to be used and a secure place such as a lined covered bin should be identified for containment, and for collection later.

If septic tanks are in use, waste can be put directly in through the external vent.

8.3 Rural

For rural areas the recommendation will be on on-site disposal, using long-drops and if in use, septic tanks where the waste can be put directly in through the external vent.

9. Mid-term response phase

The mid-term response phase is subsequent to the first 7 days. A key requirement during this phase is that at least some road access is to be established and support both mechanical and human, is available.

It must be determined by the Territorial Authority in their planning on how the waste is to be collected, either from roadside kerbs or by distributing skip bins to prime locations for self-disposal of bags. The skip bins would need to be monitored to ensure that they are not over filled and bags are sealed properly. **Appendix 4** lists suppliers of skip bins and bin liners

The collection of waste material will be dependent on the availability and demand of suitable vehicles to transport the waste in a safe hygienic manner.

Port-a-loos should be distributed to mass assembly areas or to high risk area such as the CBD or critical facilities (hospitals). *Appendix 5* lists suppliers of port-a-loos in the Wellington region.

Washing (bathing) and sewerage facilities may be established at mass assembly areas or welfare centres. Access to these facilities and the number of toilets at each site must be considered during planning. They must be sufficiently close to dwellings to allow them rapid, safe and acceptable access at all times of day and night and have easy access for those who have disabilities.

They may be segregated in to family units or separated by male and females (including children). The facility must be of technically sound design and construction, and approved by the intended users. *Appendix 6* Recommendations of Short-term local communal toilets (Sphere Project).

Appendix 7 lists websites that identify other methods of construction for communal water / sewerage facilities.

9.1 Sewage collection

The following must be considered during this planning stage:

- What are the volumes involved?
- Resources – vehicles, drivers, skip bins
- How will it be collected? (from wheelie bins, council bags)
- Where will it be disposed?
- H & S issues (including double handling)

In the mid-term phase it is anticipated that there will be some access into the affected areas, though in some cases it will only be limited.

It is likely that there will be some integration of sewage and food disposal, which will need to be taken into consideration.

Collection of waste in CBD: apartments, hotels and key facilities will primarily be by the collection of skip or wheelie bins. Households however, will be either kerbside, existing household wheelie bins or by skip bin distribution points.

Transportation will require fuel and it is important that consideration is given to the amount of fuel that will be required and how it will be accessed and distributed. Petrol stations will be disabled so prior arrangements for fuel supply must be planned for.

9.2 Health and Safety for contractors

Sewage disposal management during an emergency may impose a greater health and safety risk than in normal waste management situations. The main reasons include:

- Time constraints demand a faster work pace which can reduce risk awareness
- Limited resources placing stress on contractors/responders
- Vector-borne diseases
- Improvised method of disposal by users

Staff safety is always paramount during a recovery operation. Depending on the size of the operation, safety officers may be required to monitor the use of Personal Protective Equipment (PPE) and correct procedures.

In addition employers will need to ensure appropriate training and equipment is provided for staff. Consideration also needs to be given to offering vaccinations e.g. typhoid, Hepatitis A and polio to staff. Territorial Authorities may need to contact the Department of Labour to ensure 'best practice' is applied to pre-planning in this area.

9.3 Disposal

In a major earthquake debris disposal will be a major challenge, including sewage disposal. This is not only because of the volumes generated but also due to the potential hazards to the environment.

It is essential that Territorial Authorities plan for the emergency disposal of human waste in the form of both bagged waste and that from port-a-loos or septic tanks.

After the Kobe earthquake, in many areas there were huge piles of human waste. Kobe City disposed of the collected human waste directly into the sewage treatment facility without pre-treatment.

When planning for alternate sites for sewage disposal consideration must be given to the Resource Management Act (RMA) to get advice on feasibility and consents issues, as well as expert advice on potential pollution of water ways etc.

If the waste is to be dumped at landfills, the area must be clearly marked and appropriately fenced. In the case of sewage being transported to other treatment plants, agreements should be in place with that provider.

9.4 Temporary disposal sites

Where possible use a suitable authorised waste management site. The following issues should be considered:

- ***Sensitive environmental receptors***

Select sites away from sensitive environmental features, e.g. watercourses, groundwater source protection zones, conservation sites (e.g. sites of special scientific or cultural interest). See 4.10 *environmental concerns*

- **Drainage (containment)**

All measures must be taken to ensure sewage is not spilled in to the storm water drains to prevent pollution of waterways

- **Nuisance**

Provide control and monitoring mechanisms for birds, vermin, insects, dust, odour.

- **Flooding**

Choose sites away from floodplains.

- **Records**

Records of waste disposal at each site **must** be maintained.

9.5 Transportation

Any vehicles used to transport waste must be leak proof. Leak/spillage plans should be produced for the event of accidental release.

The effectiveness of sewage disposal will depend on the availability of contractors and vehicles, and supplies of leak proof waste bins with lids. The following are a few factors to consider:

Contractors may be assigned to sectors.

- Territorial Authorities may establish prior claim on contractors through 'Memorandums of Understanding'. Procedures and practices developed in advance to ensure speedy procurement of services.
- Vehicles used in the transportation of sewage (government, contractors and others) could be identified by an easily identifiable permit to ensure unimpeded access to disaster areas.
- Sewage is collected at designated accumulation sites. For example skip bins on street corners
- Access to disposal sites is restricted and controlled.
- Maps showing 'no go' areas, contractors, and other relevant information

10. Long term disposal of sewage

This phase forms part of the recovery phase. It likely to be almost 'business as usual' for Territorial Authorities and water/waste management agencies who are responsible for sewage disposal. However, from overseas experience restoration of normal services will take some time, and interim longer term measures may need to be established. For example the use of septic tanks and port-a-loos may need to be considered.

11. Public Education

The Civil Defence Emergency Management Act 2002 (the Act) requires each CDEM Group to promote and raise public awareness of hazards and risks and the Act itself (s.17 (1) (a) (g)).

The CDEM Group recognised the importance of public education by including a CDEM Group Public Education Strategy in its work programme outlined in the CDEM Group Plan. The Strategy has now been completed (also see report 08.633).

The National Public Education Reference Group has developed a draft National strategy and has continued to build on the mass media programme of "Get Ready, Get Thru". The CDEM Group Public Education Strategy is aligned with the National Strategy which enables the Group to effectively utilize national resources in combination with Group programmes to successfully change in the behaviour of our communities.

Public education continues to be an area of substantial focus, with a great deal of education work being conducted in the Region, both as a Group and as individual territorial authorities.

The CDEM Group Public Education Strategy is providing direction for the next three years which will enable both the Group and local authorities to continue to develop and administer more effective ways in having our communities more informed and prepared.

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Appendix 1: Territorial Authority Sewage Disposal Management Checklist

Roles and Responsibilities

- Establish an emergency sewage disposal management team (Asset Managers are key players of this team)
- Produce an Emergency Sewage Disposal Plan
- Produce a communications plan with your public education team based on key messages for emergency sewage disposal
- Ensure that sewage management planning is addressed in the territorial authority Emergency management plan

Planning

- Identify waste management contractors and the specific functions required
- Establish mutual aid agreements or Memorandum of Understanding with contractors and other Local Authorities
- Prepare Standard Operating Procedures for Waste Management drivers on expectations and default arrangements in the event of limited communications
- Ensure there are adequate supplies of council bags to cope with initial demand
- Arrangements in place for backup stocks of council or standard bags to be place
- Develop a communications plan including public information messages
- Identify community distribution points for emergency water
- Identify possible locations for local communal toilets and washing facilities and prepare a plan for establishing short-term communal toilets
- Prepare information on the design, construction and management of pit latrines and communal washing facilities
- Establish an inventory of possible resources available e.g. port-a-loos, large skip bins, wheelie bins, large bin liners
- Identify what other supporting resources are or could be available e.g. trades people to support
- Identify possible locations for intermediate bulk storage of solid human waste e.g. disused tanks, former landfills

Response

- Local incident command: Overseeing sewage disposal management activities as part of the overall disaster response.
- Implement the Emergency Sewage Disposal Plan and conduct response activities as per the plan
- Liaise with Public Health
- Ensure that there are adequate latrines available at welfare / mass assembly sites
- Establish short-term community toilets
- Monitor and track costs for reimbursement purposes (planning, administration, monitors)
- Manage reimbursement with Regional and National government (contracting, administration)
- Communicate with regional and national emergency management offices (local incident command, operations, public information staff)
- Prepare and disseminate public information messages
- Manage and oversee applicable contractors, including what duties contractors will be responsible for (contracting, operations, engineering)
- Ensure that health and safety procedures are in accordance with local/regional health and safety standards/requirements (administration, legal)
- Establish an organisational chart with names and contact numbers for distribution to the planning staff

Public Education

Prepare appropriate pre-event and post-event public education messages

- Emergency Sewage Disposal fact sheet
- Radio scripts
- Pre-planned messages:
 - Do not use water, do not flush toilets
 - Hygiene messages
 - How to use emergency toilet facilities (interior and exterior)
 - How to store on-site
 - Disposal points/methods

Emergency Sewage Disposal Plan Verification

Does your plan:

- Include priorities for the collection of sewage, including mapping critical facilities and anticipated concentrations of areas e.g. welfare centres, hotels, apartments?
- Include priorities for collection of debris? What collection options does the plan include? (you may check more than one)
 - Roadside kerb collection through existing solid waste and recycling contractors
 - Additional collection points such as large skip bins distributed to large concentrated areas
 - Collecting material at existing or temporary additional drop-off centres
 - Residents collecting and disposing directly to identified sites
 - Relying on regional or national collection contracts or staff if local resources are fully utilised
- Identify all local resources that may be available to assist with sewage collection and management?
- Identify all health aspects?
- Address monitoring of the sewage pickup sites?
- Have an environmental monitoring programme?
- Have a site closure plan?
- Have clear contracting terms on proper management of disposal sites?

Contracting

Does your plan:

- Identify at least two pre-qualified sewage/waste management contractors?
- Document how the contractor list was obtained including the solicitation of contractors with qualification requirements?

Communication and public information

Does your plan:

- Address the dissemination of information to the general public and media?
- Identify and outline alternative communication methods that can be used?
- Include pre-scripted information (e.g., flyers explaining collection and separation procedures, emergency contact information, etc)

Funding, reimbursement, monitoring and record keeping

Does your plan:

- Outline funding mechanisms for sewage disposal management?
- Include monitoring and support procedures and forms?

Appendix 2: Resource Management Act (Emergency Waste Disposal)

The Resource Management Act (RMA) is a very complex document. Below is an indicator of RMA exceptions during a Civil Defence Emergency. The sections that are included are highlighted in bold in the paragraph below. If further information is required, refer to the RMA (available from the GWRC library or consents department)

S. 9 Restrictions on use of land

(1) No person may use any land in a manner that contravenes a rule in a district plan or proposed district plan unless the activity is—

(a) Expressly allowed by a resource consent granted by the territorial authority responsible for the plan; or

(b) An existing use allowed by [section 10 or section 10A].

Editorial Note - Statutes of New Zealand

See s 4(3) of this Act as to this subsection not applying in specified circumstances.

(2) No person may contravene [section 176 or section 178 or section 193 or section 194 (which relate to designations and heritage orders)] unless the prior written consent of the requiring authority concerned is obtained.

(3) No person may use any land in a manner that contravenes a rule in a regional plan or a proposed regional plan unless that activity is—

(a) Expressly allowed by a resource consent granted by the regional council responsible for the plan; or

(b) Allowed by section [20A] (certain existing lawful uses allowed).

(4) In this section, the word **use** in relation to any land means—

(a) Any use, erection, reconstruction, placement, alteration, extension, removal, or demolition of any structure or part of any structure in, on, under, or over the land; or

(b) Any excavation, drilling, tunnelling, or other disturbance of the land; or

(c) Any destruction of, damage to, or disturbance of, the habitats of plants or animals in, on, or under the land; or

(d) Any deposit of any substance in, on, or under the land; or

[(da) Any entry on to, or passing across, the surface of water in any lake or river; or]

(e) Any other use of land—

and **may use** has a corresponding meaning.

(5) In subsection (1), **land** includes the surface of water in any lake or river.

(6) Subsection (3) does not apply to the bed of any lake or river.

(7) This section does not apply to any use of the coastal marine area.

[(8) The application of this section to over-flying by aircraft shall be limited to any noise emission controls that may be prescribed by a territorial authority in relation to the use of airports.]

S. 11 Restrictions on subdivision of land

(1) No person may subdivide land, within the meaning of section 218, unless the subdivision is—

(a) Expressly allowed by a rule in a district plan [and in any relevant proposed district plan] or a resource consent, and a survey plan relating to the subdivision has in accordance with Part 10—

(i) Been deposited by a District Land Registrar or a Registrar of Deeds; or

(ii) In the case of a subdivision by or on behalf of a Minister of the Crown, been approved by the Chief Surveyor for the purposes of section 228; or

(b) Effected by the acquisition, taking, transfer, or disposal of part of an allotment under the Public Works Act 1981 (except that, in the case of the disposition of land under the Public Works Act 1981, each existing separate parcel of land shall, unless otherwise provided by that Act, be disposed of without further division of that parcel of land); or

(c) Effected by the establishment, change, or cancellation of a reserve under [section 338 of the Maori Land Act 1993] ...; or

[(ca) Effected by a transfer under section 23 of the State-Owned Enterprises Act 1986 or a resumption under section 27D of that Act; or]

[(cb) Effected by any vesting in or transfer or gift of any land to the Crown or any local authority or administering body, (as defined in section 2 of the Reserves Act 1977) for the purposes (other than administrative purposes) of the Conservation Act 1987 or any other Act specified in Schedule 1 to that Act; or]

[(cc) Effected by transfer or gift of any land to the New Zealand Historic Places Trust or the Queen Elizabeth the Second National Trust for the purposes of the Historic Places Act 1993 or the Queen Elizabeth the Second National Trust Act 1977; or]

(d) Effected by any transfer, exchange, or other disposition of land made by an order under section 129B of the Property Law Act 1952 (which relates to the granting of access to land-locked land).

(2) Subsection (1) does not apply in respect of Maori land within the meaning of the [Maori Land Act 1993] unless that Act otherwise provides.

S. 12 Restrictions on use of coastal marine area

(1) No person may[, in the coastal marine area,]—

(a) Reclaim or drain any foreshore or seabed; or

(b) Erect, reconstruct, place, alter, extend, remove, or demolish any structure or any part of a structure that is fixed in, on, under, or over any foreshore or seabed; or

(c) Disturb any foreshore or seabed (including by excavating, drilling, or tunnelling) in a manner that has or is likely to have an adverse effect on the foreshore or seabed (other than for the purpose of lawfully harvesting any plant or animal); or

(d) Deposit in, on, or under any foreshore or seabed any substance in a manner that has or is likely to have an adverse effect on the foreshore or seabed; or

(e) Destroy, damage, or disturb any foreshore or seabed (other than for the purpose of lawfully harvesting any plant or animal) in a manner that has or is likely to have an adverse effect on plants or animals or their habitat; or

(f) Introduce or plant any exotic or introduced plant in, on, or under the foreshore or seabed[; or]

[(g) destroy, damage, or disturb any foreshore or seabed (other than for the purpose of lawfully harvesting any plant or animal) in a manner that has or is likely to have an adverse effect on historic heritage—]

unless expressly allowed [by a rule in a regional coastal plan and in any relevant proposed regional coastal plan] or a resource consent.

[(2) No person may, in relation to land of the Crown in the coastal marine area, or land in the coastal marine area vested in the regional council,—

[[a) Occupy any part of the coastal marine area; or]]

(b) Remove any sand, shingle, shell, or other natural material from the land—
unless expressly allowed by a rule in a regional coastal plan and in any relevant proposed regional coastal plan or by a resource consent.]

(3) Without limiting subsection (1), no person may carry out any activity—

(a) In, on, under, or over any coastal marine area; or

(b) In relation to any natural and physical resources contained within any coastal marine area,—

in a manner that contravenes a rule in a regional coastal plan or a proposed regional coastal plan unless the activity is expressly allowed by a resource consent or allowed by section [20A] (certain existing lawful activities allowed).

(4) [In this Act] ...

[(a) Repealed.]

(b) **Remove any sand, shingle, [shell,] or other natural material** means to take any of that material in such quantities or in such circumstances that, but for the rule in the regional coastal plan or the holding of a resource consent, a licence or profit à prendre to do so would be necessary.

[(5) The application of this section to overflying by aircraft shall be limited to any noise emission controls that may be prescribed by a regional council in relation to the use of airports within the coastal marine area.]

[(6) This section shall not apply to anything to which section **15A** [[or **15B**]] applies.]

S. 13 Restriction on certain uses of beds of lakes and rivers

[(1) No person may, in relation to the bed of any lake or river,—

(a) Use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed; or

- (b) Excavate, drill, tunnel, or otherwise disturb the bed; or
- (c) Introduce or plant any plant or any part of any plant (whether exotic or indigenous) in, on, or under the bed; or
- (d) Deposit any substance in, on, or under the bed; or
- (e) Reclaim or drain the bed—

unless expressly allowed by a rule in a regional plan and in any relevant proposed regional plan or a resource consent.]

(2) No person may—

- (a) Enter or pass across the bed of any river or lake; or
- (b) Disturb, remove, damage, or destroy any plant or part of any plant (whether exotic or indigenous) or the habitats of any such plants or of animals in, on, or under the bed of any lake or river—

in a manner that contravenes a rule in a regional plan or proposed regional plan unless that activity is—

- (c) Expressly allowed by a resource consent granted by the regional council responsible for the plan; or
- (d) Allowed by section [20A] (certain existing lawful uses allowed).

(3) This section does not apply to any use of land in the coastal marine area.

(4) Nothing in this section limits section 9.

S. 14 Restrictions relating to water

(1) No person may take, use, dam, or divert any—

- (a) Water (other than open coastal water); or
- (b) Heat or energy from water (other than open coastal water); or
- (c) Heat or energy from the material surrounding any geothermal water—

unless the taking, use, damming, or diversion is allowed by subsection (3).

(2) No person may—

- (a) Take, use, dam, or divert any open coastal water; or
- (b) Take or use any heat or energy from any open coastal water,—

in a manner that contravenes a rule in a regional plan or a proposed regional plan unless expressly allowed by a resource consent or allowed by section [20A] (certain existing lawful activities allowed).

(3) A person is not prohibited by subsection (1) from taking, using, damming, or diverting any water, heat, or energy if—

- (a) The taking, use, damming, or diversion is expressly allowed by a rule in a regional plan [and in any relevant proposed regional plan] or a resource consent; or
- (b) In the case of fresh water, the water, heat, or energy is required to be taken or used for—

- (i) An individual's reasonable domestic needs; or
- (ii) The reasonable needs of an individual's animals for drinking water,—
and the taking or use does not, or is not likely to, have an adverse effect on the environment; or
- (c) In the case of geothermal water, the water, heat, or energy is taken or used in accordance with tikanga Maori for the communal benefit of the tangata whenua of the area and does not have an adverse effect on the environment; or
- (d) In the case of coastal water (other than open coastal water), the water, heat, or energy is required for an individual's reasonable domestic or recreational needs and the taking, use, or diversion does not, or is not likely to, have an adverse effect on the environment; or
- (e) The water is required to be taken or used for fire-fighting purposes.

S. 15 Discharge of contaminants into environment

(1) No person may discharge any—

- (a) Contaminant or water into water; or
- (b) Contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; or
- (c) Contaminant from any industrial or trade premises into air; or
- (d) Contaminant from any industrial or trade premises onto or into land—

unless the discharge is expressly allowed by a rule [in a regional plan and in any relevant proposed regional plan], a resource consent, or regulations.

(2) No person may discharge any contaminant into the air, or into or onto land, from—

- (a) Any place; or
- (b) Any other source, whether moveable or not,—

in a manner that contravenes a rule in a regional plan or proposed regional plan unless the discharge is expressly allowed by a resource consent[, or regulations,] or allowed by section [20A] (certain existing lawful activities allowed).

[(3) This section shall not apply to anything to which section 15A or section 15B applies.]

S. 15A Restrictions on dumping and incineration of waste or other matter in coastal marine area

(1) No person may, in the coastal marine area,—

- (a) Dump any waste or other matter from any ship, aircraft, or offshore installation; or
- (b) Incinerate any waste or other matter in any marine incineration facility—

unless the dumping or incineration is expressly allowed by a resource consent.

(2) No person may dump, in the coastal marine area, any ship, aircraft, or offshore installation unless expressly allowed to do so by a resource consent.

(3) Nothing in this section permits the dumping of radioactive waste or radioactive matter (to which section 15C applies) or any discharge of a harmful substance that would contravene section 15B.]

S. 15B Discharge of harmful substances from ships or offshore installations

(1) No person may, in the coastal marine area, discharge a harmful substance or contaminant, from a ship or offshore installation into water, onto or into land, or into air, unless—

(a) The discharge is permitted or controlled by regulations made under this Act, a rule in a regional coastal plan, proposed regional coastal plan, regional plan, proposed regional plan, or a resource consent; or

(b) After reasonable mixing, the harmful substance or contaminant discharged (either by itself or in combination with any other discharge) is not likely to give rise to all or any of the following effects in the receiving waters:

(i) The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials:

(ii) Any conspicuous change of colour or visual clarity:

(iii) Any emission of objectionable odour:

(iv) Any significant adverse effects on aquatic life; or

(c) The harmful substance or contaminant, when discharged into air, is not likely to be noxious, dangerous, offensive, or objectionable to such an extent that it has or is likely to have a significant adverse effect on the environment.

(2) No person may, in the coastal marine area, discharge water into water from any ship or offshore installation, unless—

(a) The discharge is permitted or controlled by regulations made under this Act, a rule in a regional coastal plan, proposed regional coastal plan, regional plan, proposed regional plan, or a resource consent; or

(b) After reasonable mixing, the water discharged is not likely to give rise to any significant adverse effects on aquatic life.

(3) Where regulations are made under this Act permitting or controlling a discharge to which subsections (1) or (2) apply, no rule can be included in a regional coastal plan, proposed regional coastal plan, regional plan, or proposed regional plan, or a resource consent granted relating to that discharge unless the regulations provide otherwise; and regulations may be made prohibiting the making of rules or the granting of resource consents for discharges.

(4) No person may discharge a harmful substance or contaminant in reliance upon subsection (1)(b) or (c) or subsection (2)(b) if a regulation made under this Act, a rule, or a resource consent applies to that discharge; and regulations or rules may be made prohibiting a discharge which would otherwise be permitted in accordance with subsection (1)(b) or (c) or subsection (2)(b).

(5) A discharge authorised by subsection (1) or subsection (2), regulations made under this Act, a rule, or a resource consent may, despite section 7 of the Biosecurity Act 1993, be

prohibited or controlled by that Act to exclude, eradicate, or effectively manage pests or unwanted organisms.]

S.18 Possible defence in cases of unforeseen emergencies

[(1) Any person who is prosecuted under section **338** for an offence arising from any contravention of any of sections **9**, **11**, **12**, **13**, **14**, **15**, **15A**, and **15B** may raise any applicable defence that is referred to in section **341** or section **341A** or section **341B**.]

(2) No person may be prosecuted for acting in accordance with section **330** (which relates to certain activities undertaken in an emergency).

S. 330 Emergency works and power to take preventive or remedial action

(1) Where—

- (a) Any public work for which any person has financial responsibility; or
- (b) Any natural and physical resource or area for which a local authority or consent authority has jurisdiction under this Act; or
- (c) Any project or work [or network utility operation] for which any network utility operator is approved as a requiring authority under section 167—

is, in the opinion of the person or the authority or the network utility operator, affected by or likely to be affected by—

- (d) An adverse effect on the environment which requires immediate preventive measures; or
- (e) An adverse effect on the environment which requires immediate remedial measures; or
- (f) Any sudden [event] causing or likely to cause loss of life, injury, or serious damage to property—

the provisions of sections **9**, **12**, **13**, **14**, and **15** shall not apply to any activity undertaken by or on behalf of that person, authority, or network utility operator to remove the cause of, or mitigate any actual or likely adverse effect of, the emergency.

[(1A) Subsection (1) applies whether or not the adverse effect or sudden event was foreseeable.]

(2) Where a local authority or consent authority—

- (a) Has financial responsibility for any public work; or
- (b) Has jurisdiction under this Act in respect of any natural and physical resource or area—

which is, in the reasonable opinion of that local authority or consent authority, likely to be affected by any of the conditions described in paragraphs (d) to (f) of subsection (1), the local authority or consent authority by its employees or agents may, without prior notice, enter any place (including a dwellinghouse when accompanied by a constable) and may take such action, or direct the occupier to take such action, as is immediately necessary and sufficient to remove the cause of, or mitigate any actual or likely adverse effect of, the emergency.

[(2A) Sections **9**, **12**, **13**, **14**, and **15** do not apply to any action taken under subsection (2).]

(3) As soon as practicable after entering any place under this section, every person must identify himself or herself and inform the occupier of the place of the entry and the reasons for it.

[(4) Nothing in this section shall authorise any person to do anything in relation to an emergency involving a marine oil spill or suspected marine oil spill within the meaning of section 281 of the Maritime Transport Act 1994.]

S. 338 Offences against this Act

(1) Every person commits an offence against this Act who contravenes, or permits a contravention of, any of the following:

- (a) Sections **9**, **11**, **12**, **13**, **14**, and **15** (which impose duties and restrictions in relation to land, subdivision, the coastal marine area, the beds of certain rivers and lakes, water, and discharges of contaminants):
- (b) Any enforcement order:
- (c) Any abatement notice, other than a notice under section **322(1)(c)**:
- (d) Any water shortage direction under section **329**.

[(1A) Every person commits an offence against this Act who contravenes or permits a contravention of section **15A** or section 15C (which impose restrictions in relation to waste or other matter).]

[(1B) Where any harmful substance or contaminant or water is discharged in the coastal marine area in breach of section **15B**, the following persons each commit an offence:

- (a) If the discharge is from a ship, the master and the owner of the ship:
- (b) If the discharge is from an offshore installation, the owner of the installation.]

(2) Every person commits an offence against this Act who contravenes, or permits a contravention of, any of the following:

- (a) Section 22, which relates to failure to provide certain information to an enforcement officer:
- (b) Section 42, which relates to the protection of sensitive information:
- (c) Any excessive noise direction under section 327:
- (d) Any abatement notice for unreasonable noise under section 322(1)(c):
- (e) Any order (other than an enforcement order) made by the [Environment Court].

(3) Every person commits an offence against this Act who—

- (a) Wilfully obstructs, hinders, resists, or deceives any person in the execution of any powers conferred on that person by or under this Act:
- (b) Contravenes, or permits a contravention of, any of the following:
 - (i) Section 283, which relates to non-attendance or refusal to co-operate with the [Environment Court]:

(ii) Any summons or order to give evidence issued or made pursuant to section 41:

[(c) Contravenes, or permits a contravention of, any provision (as provided in Schedule 10) specified in an instrument for the creation of an esplanade strip or in an easement for an access strip, or enters a strip which is closed under section 237C.]

(4) Notwithstanding anything in the Summary Proceedings Act 1957, any information in respect of any offence against subsection (1) of this section may be laid by any person at any time within 6 months after the time when the contravention giving rise to the information first became known, or should have become known, to the local authority or consent authority.

S. 341 Strict liability and defences

(1) In any prosecution for an offence of contravening or permitting a contravention of any of sections 9, 11, 12, 13, 14, and 15, it is not necessary to prove that the defendant intended to commit the offence.

(2) Subject to subsection (3), it is a defence to prosecution of the kind referred to in subsection (1), if the defendant proves—

(a) That—

(i) The action or event to which the prosecution relates was necessary for the purposes of saving or protecting life or health, or preventing serious damage to property or avoiding an actual or likely adverse effect on the environment; and

(ii) The conduct of the defendant was reasonable in the circumstances; and

(iii) The effects of the action or event were adequately mitigated or remedied by the defendant after it occurred; or

(b) That the action or event to which the prosecution relates was due to an event beyond the control of the defendant, including natural disaster, mechanical failure, or sabotage, and in each case ...—

(i) The action or event could not reasonably have been foreseen or been provided against by the defendant; and

(ii) The effects of the action or event were adequately mitigated or remedied by the defendant after it occurred.

(3) Except with the leave of the Court, subsection (2) does not apply unless, within 7 days after the service of the summons or within such further time as the Court may allow, the defendant delivers to the prosecutor a written notice—

(a) Stating that he or she intends to rely on subsection (2); and

(b) Specifying the facts that support his or her reliance on subsection (2).

S. 341A Liability and defences for dumping and storage of waste or other matter

It is a defence to prosecution for an offence of contravening or permitting a contravention of section **15A** if the defendant proves that the act or omission which is alleged to constitute the offence—

(a) Was necessary—

(i) To save or prevent danger to human life; or

(ii) To avert a serious threat to any ship, aircraft, or offshore installation; or

(iii) In the case of force majeure caused by stress of weather, to secure the safety of any ship, aircraft, or offshore installation; and

(b) Was a reasonable step to take in all the circumstances; and

(c) Was likely to result in less damage than would otherwise have occurred; and

(d) Was taken or omitted in such a way that the likelihood of damage to human or marine life was minimised.]

S. 341B Liability and defences for discharging harmful substances

(1) In any prosecution for an offence against section **338(1B)** (which relates to the discharge of harmful substances, contaminants, or water, in breach of section **15B**) it is not necessary to prove that the defendant intended to commit the offence.

(2) It is a defence to prosecution for an offence against section **338(1B)** if the defendant proves that—

(a) The harmful substance or contaminant or water was discharged for the purpose of securing the safety of a ship or an offshore installation, or for the purpose of saving life and that the discharge was a reasonable step to effect that purpose; or

(b) The harmful substance or contaminant or water escaped as a consequence of damage to a ship or its equipment or to an offshore installation or its equipment; and—

(i) Such damage occurred without the negligence or deliberate act of the defendant; and

(ii) As soon as practicable after that damage occurred, all reasonable steps were taken to prevent the escape of the harmful substance or contaminant or water or, if any such escape could not be prevented, to minimise any escape.]

Appendix 3: Hotel Association Standard Operating Procedure

Plant Failure – Loss of Sewerage

IMPACT:

- No toilet flushing
- Hotel unable to function fully
- Health risk

This Standard Operating Procedure (SOP) will cover the basic steps to take to ensure raw sewage does not enter the sewerage system in the event of a major earthquake, loss of water supply or any other such event that would deem the sewerage system inoperative.

Individual hotels will need to add specific details to this SOP for the following tasks:

- staff responsibilities
- identification of suitable areas for temporary toilets
- location of suitable bins for sewage disposal
- location of emergency supplies specific to sewage disposal

Your local City Council Emergency Management Office will be able to provide guidance.

To effectively carry out the following tasks, each establishment will need to ensure the pre-checklist has been carried out.

Pre-checklist:

Suitable supplies of:

- Plastic bags to fit into toilet bowls
- 'Wheellie' or 'skip-bin' liners
- Latex gloves
- Hand sanitizer/wet wipes
- Disinfectant (Bleach)
- Mop & bucket
- Security Tape
- Pre-printed signage e.g. Toilets out of order, Body Waste Only
- Staff protective clothing – masks, gloves, disposable aprons/overalls

Staff training/awareness including:

- How to make and use temporary toilets
- Safe practice for the replacement and disposal of used bags

Locations of facilities to be used:

- Temporary toilets
- Sewage collection area

Important Health Tips:

- Ensure appropriate personal protective equipment is used when handling sewage
- Ensure strict personal hygiene is adhered to
- Dispose of used protective equipment immediately after use in normal rubbish bins
- Once wheelie/skip bin being used for sewage disposal has been emptied, spray with diluted bleach & re-line with a new liner if the situation has not been rectified
- Ensure all staff who have been assigned responsibility of sewage facilities are identified, and have appropriate medical check-ups/injections. Ensure their clothing is laundered

Emergency Procedure:

As soon as it is apparent that there has been or will be a loss of sewerage, the following steps are to be taken:

- Contact the Engineer/Supervisor/Duty Manager
- Communicate the situation to all guests and staff, advising that toilet facilities are not to be used and that alternatives are being arranged
- Place 'out of service' signage in all toilet areas that will not be used
 - The pre-printed signs are located
- If it is just your hotel that is affected, arrange facilities with another hotel for your guests
- Identify suitable area(s) for temporary toilet facilities. If possible, identify a separate urinating facility for men
 - Pre-designated areas (if applicable) are located
- Identify appropriate staff to establish and monitor temporary toilet facilities, including regular cleaning
- Locate emergency supplies specific for emergency sewage disposal.
 - Emergency supplies are located
- Set up temporary toilet facilities with the following items:
 - Bags in toilets
 - Signage
 - Bleach
 - Hand sanitiser
 - Toilet paper

- Identify bin for sewage disposal. (covered wheelie/skip bin in yard, and if possible in a shaded area)
 - Line bin with bin liner
 - Remove bags from toilets when necessary to covered bin
 - Staff to wear protective clothing such as rubber gloves, mask
 - Wash hands with soap and water if available or use wet wipes and hand sanitiser
- Listen to the radio for updated information on the situation
- Keep guests and staff informed regularly

Return to Normal Procedure:

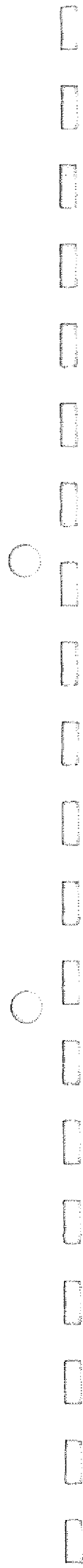
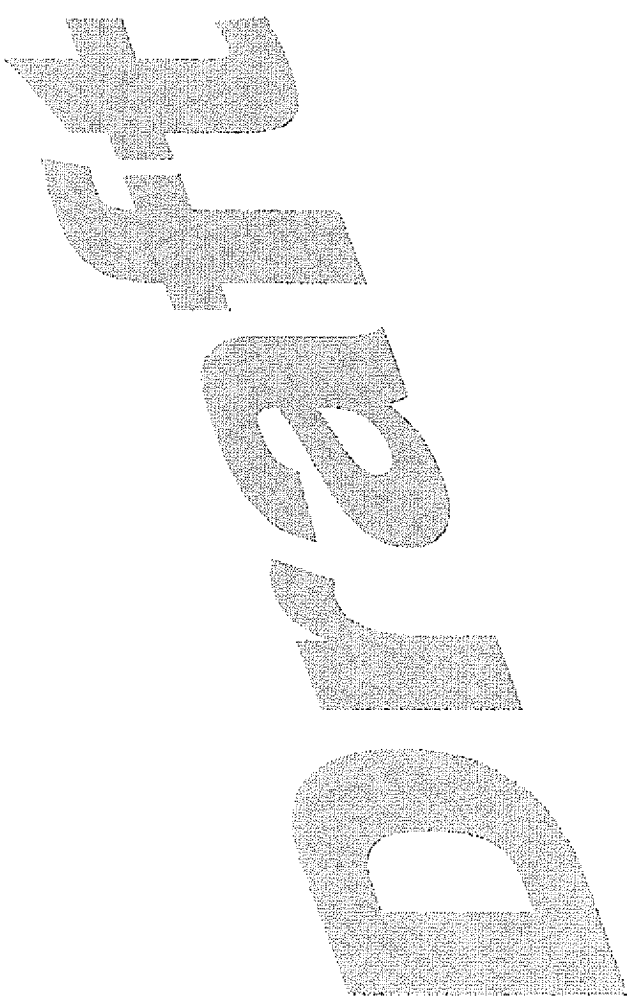
When the situation has been resolved, the following steps are to be taken:

- Contact the Engineer/Supervisor/Duty Manager
- Communicate the situation to all guests and staff, advising that toilet facilities are now operating as normal
- Remove all 'out of service' signs
 - Once the signs are collected, store them
- Remove all bags to the collection facility and if separate urinating facilities for men were used, restore this area/s to normal
- Ensure the collection bin is ready for removal, but still designated for human waste only

Appendix 4: Wellington Region Waste Disposal Companies

Company	Address	Contact Details	Website	Covered Bins	Wheellie Bins
Al's Litta Bins		577-3358 021 906-273			10
Daily Carts	PO Box 15-206 Miramar	388-7711	www.dailywaste.co.nz	10 - 15	20 - 30
Gordies Bins	13 Hiwi Crescent Titahi Bay	236-6752	www.gordiesbins.co.nz		1 - 10
Karori Bins		027 452-4624			30 - 50, 44g drums
No.1 Wheelibin Co		388-6178			
Skip.E.Bins	17A Ihakara Street Paraparau mu	04 902-5332 0800 754-748			15 - 30
Waste Management	Cnr Port Rd & Marchbanks Street	568-3550	www.wastemanagement.co.nz	20 - 30	300 - 400

Woods Waste	Seaview	475-9301	www.rubbish.co.nz	2 - 3	50	
	School Rd., Kaiwhara					



Appendix 5: Wellington Region Port-a-loo Companies

Company	Address	Contact Details	Website	Flushing	Non-Flushing
Hirepool	Cnr Taranaki & Buckle Streets	801-7801 587-0415 528-2233	www.hirepool.co.nz	30	10
Hirequip	Cnr Tory & Buckle Streets	385-1815 473-1527 569-7014 237-7065 04 298-2208	www.hirequip.co.nz	30	
Kiwi Loo Comfort Stop	Beach Rd, Te Horo, Otaki	06 364-3379 0800 549-4566		30	10
Super Loo		0800 10-99-66	www.superloo.co.nz	60	20
Spik'N'Span Toilets		526-3433 027 475-5410	www.spiknspan.co.nz	5 trailers with 5 - 10 toilets each	

Appendix 6: Short-term Local Communal Toilets¹

- Maximum of 20 people per toilet
- Use of toilets is arranged by households and / or segregated by sex
- Toilets are no more than 50 metres from dwellings, or no more than one minute's walk
- Separate toilets for women and men are available in public places
- Situated at least 30 metres from any groundwater source and the bottom of any latrine is at least 1.5 metres above the water table.
- Drainage or spillage from defecations systems does not run towards any surface water source or shallow groundwater source
- Toilets are designed, constructed and maintained in such a way as to be comfortable, hygienic and safe to use:
 - Technically sound design and construction
 - They are easy to keep clean and do not present a health hazard
 - They are accessible and easy to use by all sections of the community
 - They are lit at night if necessary for security and convenience
 - Hand washing facilities are close by
 - They minimise fly and mosquito breeding
 - They allow for the disposal of women's sanitary protection, or provide women with the necessary privacy for washing and drying sanitary protection cloths
 - They provide a degree of privacy in line with the norms of the users
- Cleaning and maintenance routines for public toilets are in place and function correctly
- People are provided with tools and materials for constructing, maintaining and cleaning their own toilets if appropriate

¹ Short Term Communal Toilets recommendations from The Sphere Project Chapter 1 Water Supply and Sanitation

Appendix 7: Emergency Latrine Websites

<http://www.lboro.ac.uk/well/resources/technical-briefs/38-emergency-sanitation-for-refugees.pdf>

<http://tilz.tearfund.org/Publications/PILLARS/Encouraging+good+hygiene+and+sanitation/PILLARS+Hygiene+W25.htm>

<http://www.metrokc.gov/health/disaster/toilet.htm>

<http://www.inthewake.org/b1latrine1.html>

http://www.searo.who.int/LinkFiles/List_of_Guidelines_for_Health_Emergency_Emergency_sanitation_-_technical.pdf

http://www.healthelinks.com/emergency_toilet.htm

Draft

