



OTAGO/SOUTHLAND Fuel Plan



**Emergency
Management Otago**
Te Rākau Whakamarumarū Ōtākou



**EMERGENCY MANAGEMENT
SOUTHLAND**
Te Rākau Whakamarumarū Murihiko

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1 Introduction

There are several events that could cause disruptions to the supply of fuel to the Otago/Southland region. These include disruption at the refining process, blockages of international, national and localised supply routes and or power supply issues at local distribution points. The cause of these disruptions could range between natural disasters, industrial action or terrorism and the disruption could last from hours to months.

The purpose of the Otago-Southland Regional Fuel Plan (OSRFP) is to define the actions that will be taken by the CDEM Controllers in Otago and Southland in the event of a fuel disruption and the authority for that action to occur.

Both Otago and Southland have completed interdependency studies through their Lifelines Groups. Southland's was published in 2012 and Otago's was reviewed in 2018. These documents provide some context of the relevance of fuel to the other Lifelines Utilities and should be read in conjunction with this document.

1.1 Scope

The OSRFP gives effect to the National Fuel Emergency Plan (NFEP) at the regional level covering the Otago and Southland CDEM regions.

Due to the geographical interdependencies of both the Otago and Southland Civil Defence regions during a major CDEM event, and close working ties between the Otago and Southland Regional CDEM management, it was deemed most efficient to prepare a combined fuel plan covering both regions.

The OSRFP has been prepared to detail arrangements for CDEM- critical entities to have access to fuel in a CDEM response.

1.2 Planning Framework

1.2.1 Fuel

Fuel has been identified as a key lifeline utility. Fuel is used to ensure transportation and stationary generation for electricity supply, as well as fuel for domestic and institutional operational activities such as heating, cooking and cleaning. Due to the geographical nature and location of the Otago Southland regions, the use of both helicopters and fixed winged aircraft will be a key part of any response phase. The provisioning of aviation fuel is therefore a significant factor in this OSRFP. The preparation of an aviation plan is underway which will include the provisioning of fuel for this sector.

The overall philosophy with this Plan is that business-as-usual commercial arrangements will remain in place until such time as there is a potential threat to continued supply of fuel to CDEM-Critical Customers. While there has been good cooperation from local fuel retailers,

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there has been unwillingness from the fuel companies to provide fuel supply information often citing commercial sensitivity.

It is however recognised that the fuel industry fully understands its logistics, both nationally and internationally, on a day to day basis and overall successfully manages that. The Ministry of Business, Innovation and Employment has a close relationship with the fuel industry and in a crisis, information not normally shared with CDEM Groups will become available through the network described in Section 6.3.

This makes an accurate position of fuel supply, at any point in time, in a CDEM framework impossible to determine. It is anticipated that the flow of information in a fuel crisis from MBIE will be expedited or else this lack of information in an emergency event will limit the ability of the Controller to accurately ration fuel.

This could leave the Controller no option but to impose severe and early rationing of fuel to protect supply.

Table 1 Key Legislation relating to fuel supply disruptions (National Fuel Emergency Plan 2019)

| Legislation or Plan | Notes |
|---|---|
| International Energy Agreement (IEA) Act 1976: Section 3 of the IEA Act 1976 gives the Governor-General the power to declare a “petroleum emergency” under New Zealand’s International Energy Agreement obligations. | Following such a declaration, section 4 of this Act gives the Governor-General and the Minister of Energy and Resources similar powers as those described below under the Petroleum Demand Restraint Act 1981, whilst such a petroleum emergency exists. Refer to Section 3.2 . |
| Petroleum Demand Restraint Act 1981, Section 3, 4, 5 and 7: Provides the Governor-General and the Minister of Energy and Resources (Sections 4 and 7 respectively) with the powers to make regulations to restrain the demand for petroleum products. | <ul style="list-style-type: none"> The Governor-General and Minister may give directions which prohibit or restrict the “<i>acquisition, supply, or distribution</i>” of petroleum products. Regulations under this Act may only be made when the Governor-General is satisfied that reasonably available supplies of petroleum products are, or are likely to be, insufficient to maintain stocks at normal levels in New Zealand or parts of New Zealand. |
| CDEM Act 2002 s60(a): Requires lifeline utilities to ensure that they are able to function to the fullest possible extent, even though this may be at a reduced level, during and after an emergency. (Refer to Glossary for definition of <i>emergency</i>). | Oil companies and associated distribution companies are defined as ‘lifeline utilities’ under the CDEM Act 2002, Schedule 1, Part B (7): <i>“An entity that produces, processes, or distributes to retail outlets or bulk customers any petroleum products used as an energy source or an essential lubricant or additive for motors for machinery.”</i> |

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| Legislation or Plan | Notes |
|--|---|
| <p>CDEM Act 2002 s85(1)(e): A CDEM Group may provide for the conservation and supply of food, fuel and other essential supplies.</p> | <p>A state of emergency is required to be in force in the area.</p> |
| <p>CDEM Act 2002 s90: Provides requisitioning powers of materials, equipment and supplies where considered necessary for the preservation of human life.</p> | <p>A state of emergency is required to be in force in the area. Requisitioning powers are a tool of last resort where the fuel sector fails to implement lead agency instructions and/or the measures in this Plan are inadequate to secure supply to critical customers.</p> |
| <p>CDEM Act 2002 s91: Provides powers for a Controller or Police to direct a person to stop an activity that may substantially contribute to an emergency; and to request a person to take action to limit the extent of the emergency.</p> | <p>This provides a legal basis for fuel companies to interrupt their commercial contracts allowing for greater allocations to critical customers.</p> |
| <p>National CDEM Plan Order (s59-61): Requires lifeline utilities to plan for responsibilities across the '4Rs' (reduction, readiness, response and recovery).</p> | <p>Under Plan Order Sections 60 and 61, Lifeline Utilities are required to:</p> <ul style="list-style-type: none"> • analyse hazards and risks to implement reductions strategies • plan collaboratively with CDEM Groups and lifeline utilities • provide information on network status • plan response arrangements • establish communications procedures. |

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1.3 Roles and Responsibilities

All agencies are required to have plans and procedures that enable them to perform their duties and functions outlined in this OSRFP. These duties are detailed in the National CDEM Fuel Plan and summarized in the Table below.

Table 2 Roles and Responsibilities of organisations in Fuel Sector Planning.

| Agency (or sector) | Roles and Responsibilities |
|------------------------------------|---|
| Fuel sector and lifeline utilities | <ul style="list-style-type: none"> • Have plans in place to be able to operate the organisation during and emergency to undertake response activities, albeit on a reduced scale to the organisations business as usual; • Comply with statutory requirements as covered in section 60 of the CDEM Act 2002; • Participate in CDEM exercises on an on-going basis; |
| Service Stations | <ul style="list-style-type: none"> • Maintain business continuity plans; including maintaining power back-ups or maintain alternative fuel pumping capability (where appropriate); • Participate in local CDEM planning; • Test local arrangements and participate in Local Authority CDEM exercises; |
| CDEM Otago & Southland | <ul style="list-style-type: none"> • Maintain regional CDEM fuel contingency plans; • Identify regional CDEM Critical Customers and priorities; • Support fuel sector and Local Authorities, as required for regional fuel distribution disruptions; |
| MCDEM | <ul style="list-style-type: none"> • Maintain national CDEM fuel contingency plans; • Identify national CDEM Critical Customers and priorities; • Support fuel sector and CDEM groups, as required for regional fuel distribution disruptions; |
| MBIE | <ul style="list-style-type: none"> • Maintain the Oil Emergency Response Strategy; • Manage and coordinate govt response to national fuel supply disruption; • Convene and chair NESO; • Participate in national CDEM exercises; |

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1.3.1 CDEM structure

Under the Civil Defence Emergency Act 2002, the Otago and Southland regions are required to establish CDEM groups. The two CDEM groups are made up of the following local authorities:

Otago

- Waitaki District Council
- Dunedin City Council
- Clutha District Council
- Central Otago District Council
- Queenstown Lakes District Council
- Otago Regional Council

Southland

- Gore District Council
- Invercargill City Council
- Southland District Council
- Environment Southland

The purpose of the group in each region is to ensure that prior to any emergency event, relationships are formed, and systems and plans are developed to ensure that an effective response and recovery is implemented. The relationships needed are with both internal CDEM staff and local persons and organisations who, with public assistance, manage a civil defence emergency.

1.3.2 National Fuel Emergency Plan

The National CDEM Fuel Plan 2012 was established collaboratively between MCDEM, MBIE and the oil companies and lifeline groups to plan and implement an agreed process for operating during an emergency. It lists the CDEM critical fuel users and how CDEM at a national level can support appropriate fuel distribution. The OSRFP has been developed to comply with the National CDEM Fuel plan. (See Section 1.2 of the National Fuel Plan)

s91 This Section provides powers for a Controller or member of the police to direct a person to stop an activity that may substantially contribute to an emergency; and to request a person to take action to limit the extent of the emergency¹

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National and Regional Fuel Plans have a different purpose as indicated below in Table 3

Table 3 Responsibilities of National and Regional Fuel Plans

| National Plan | Regional Plan |
|--|---|
| <ul style="list-style-type: none"> • National fuel supply overview and key risks • Government and fuel sector responsibilities • National fuel emergency planning / response framework • Fuel management measures • Critical customer sectors • Plan review and testing arrangements | <ul style="list-style-type: none"> • Overview of fuel supply chain within the region • Major stocks of fuel within the region • Regional/local hazard/impact assessments on fuel sector • Regional/local critical fuel customer list and emergency fuel demand requirements • Regional/local priority fuel retail outlets and continuity • Management of priority retail outlets including provision of security and support • CDEM Group support to regional fuel distribution networks |

There are relevant sections in the National Fuel Emergency Plan that replicate these roles and responsibilities at a national level. Section 3.1 (Planning) and Section 4.2 (Response).

1.4 Fuel Supply to Otago Southland

Bulk fuel supply into the Otago Southland region is primarily via Coastal Oil Logistics supplying motor fuel via Port Otago and Southport at Bluff.

There is a reluctance by fuel companies to provide fuel supply and usage statistics in Otago/Southland citing commercial sensitivities. However it has been established that fuel consumption across the two provinces is relatively steady month on month.

The fuel companies are very aware of this consumption and in day to day operations manage the logistics of supply to all customers. They have detailed information on supply routes and end retailers.

It is therefore difficult to determine what are priority routes for supply and what road transport restrictions will be problematic, so some assumptions are made in the assessment of the hazard.

Should Port Otago or Southport be unable to offload bulk fuel. It can be road freighted to these regions from PrimePort Timaru or Lyttelton Port of Christchurch.

In a fuel emergency the release of supply and demand information will be available through the National MCDEM Lifelines Utilities Coordinator via MBIE who will be in close contact with the fuel companies.

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1.4.1 Fuel Storage - Ports

While fuel is currently transported by road throughout the South Island. In an emergency, it is possible these normal routes would be disrupted. The most localised port facilities with storage are Timaru, Dunedin and Bluff. Table 3 lists the Current Storage Facilities and the Capacity.

It is likely that fuel from Timaru would be required for the Canterbury as well as North Otago area;

While the information in Table 3 tells of the storage capacity, it does not provide any information on the level of available supply within the specific storage facility nor does it list the supply that is contained in service stations and private storage facilities such as contractors, farmers and transport providers.

| | Timaru (Million litres) | Dunedin (Million litres) | Bluff (Million litres) |
|----------------|-------------------------|--------------------------|------------------------|
| Diesel | 20.0 | 17.9 | 14.7 |
| Light Fuel Oil | 6.3 | 4.5 | |
| Premium Petrol | 5.7 | 2.8 | 1.9 |
| Regular Petrol | 6.6 | 12.0 | 6.7 |
| Jet A1 | | 2.8 | |

Table 4 Port Storage Facilities

1.4.2 Regional Fuel Supply

New Zealand is heavily reliant on the Marsden Point Refinery for processing various types of crude oil for national distribution. A major outage at the refinery will have major consequences for New Zealand and will have implications for Otago and Southland.

The reliance on Coastal Oil Logistics Ltd (COLL) to supply bulk fuel to Ports is a possible area of disruption. There is continual refreshment of fuel supplies to both ports by sea.

Port Otago’s bulk fuel supplies are stored at the end of a long harbour at the Dunedin City terminal. Road access in the area is good for road transport. The Port does however sit on highly liquefiable land and access during a major earthquake may be compromised.

The Otago Port hinterland provides some challenges for road transport with several roads that can be affected by ice and snow during winter. Queenstown and Wanaka are around 280 kilometres from the Port.



Figure 1 National Fuel Supply Chain

| | |
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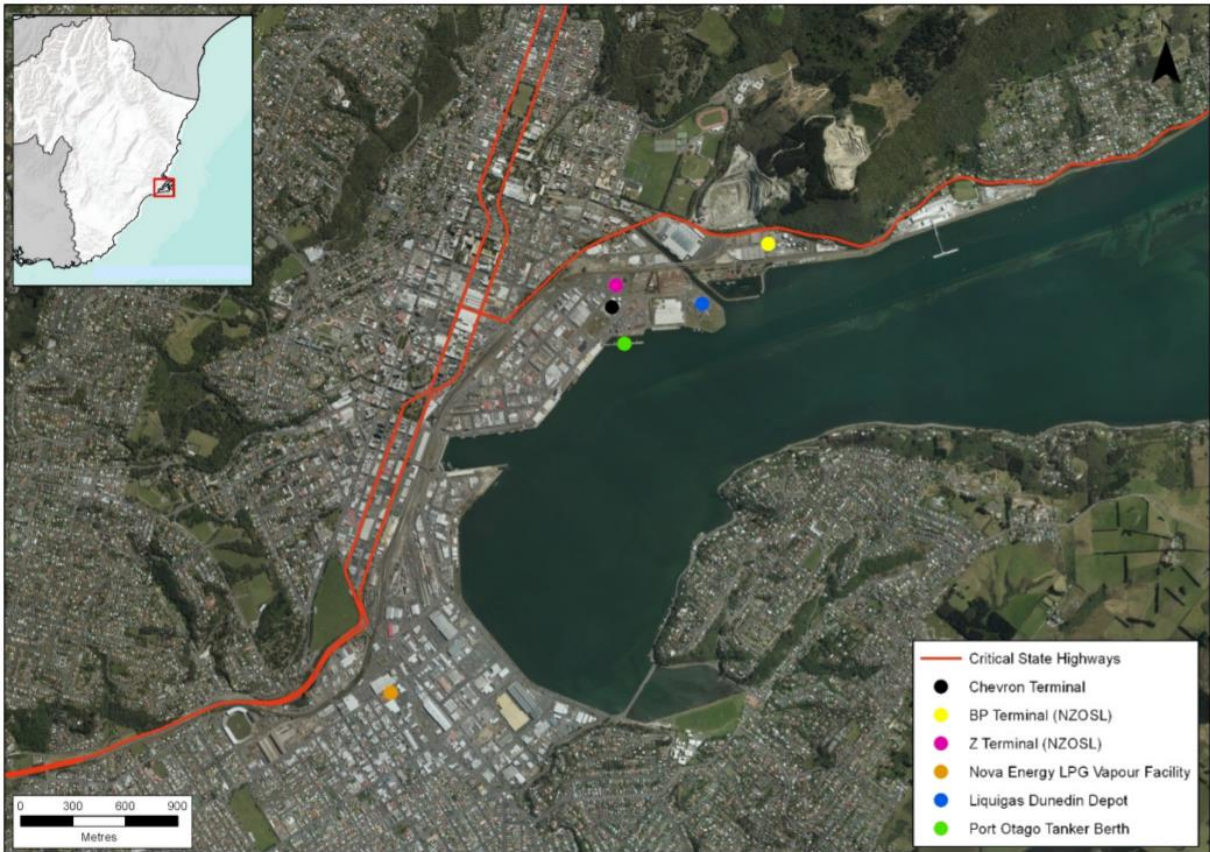


Figure 2 Port Otago's fuel installations (Otago Lifelines Programme Vulnerability and Interdependency Update of Otago's Lifelines Infrastructure 2018)

Southport's bulk supply tanks are at Bluff. Bluff is situated at the bottom of the South Island on an isthmus with one road in and out of the Port. This road has the potential to be closed for short delays with road crashes and in other situations such as tsunami, earthquake etc for a longer period. If the road tankers are able to reach Invercargill, then there are generally multiple routes to be able to supply fuel retailers. Milford Sound is the exception. It is at the end of a mountainous 120 km journey

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Figure 3 Oil Storage facilities SouthPort Bluff.

1.5 Aviation Fuel

Aviation Fuel is distributed differently to other fuel. Jet A1 is transported from Port Otago to sites in Otago and Southland. Avgas is distributed by road from Lyttelton.

| Airport Identifier | Location |
|-----------------------------|----------------------------------|
| Oamaru Airport | Robertson Rd, Hilderthorpe |
| Dunedin Airport | Airport Rd, Momona |
| Taieri Airfield | Wingatui Rd, Mosgiel |
| Alexandra Airport | Airport Rd, Alexandra |
| Wanaka Airport | State Highway 6, Wanaka |
| Queenstown Airport | Sir Henry Wigley Drive, Frankton |
| Te Anau Airport - Manapouri | Aviation Drive, Manapouri |
| Gore Airfield | Jubilee Ave, Charlton |
| Invercargill Airport | Airport Ave, Invercargill |

Table 5 Locations of Airports with refuelling facilities

There are also private fuel tanks held by smaller aviation operators. These fuel stores can be as large as 30,000 litres and are based at company operations sites. Many operators also have 1000 litre mobile tanks that can be towed to operating sites. (sourcing information on the exact location and capacity of these fuel supplies has been very challenging. At the date of publication of this Plan we have no definitive information).

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2 Prioritising Fuel to Critical Customers

This section details the actions to take in a fuel emergency according to the severity of the situation as well as how the fuel sector would begin their coordination.

2.1 Activation of arrangements

Arrangements in this Plan may be activated through the following:

- By a Group Controller in a declared state of emergency.
- Upon the declaration of a petroleum emergency by the Minister of Energy and Resources, on the advisement of MBIE, subject to cabinet decisions and the drafting of regulations and associated ministerial directions.
- Upon the advisement of MCDEM.

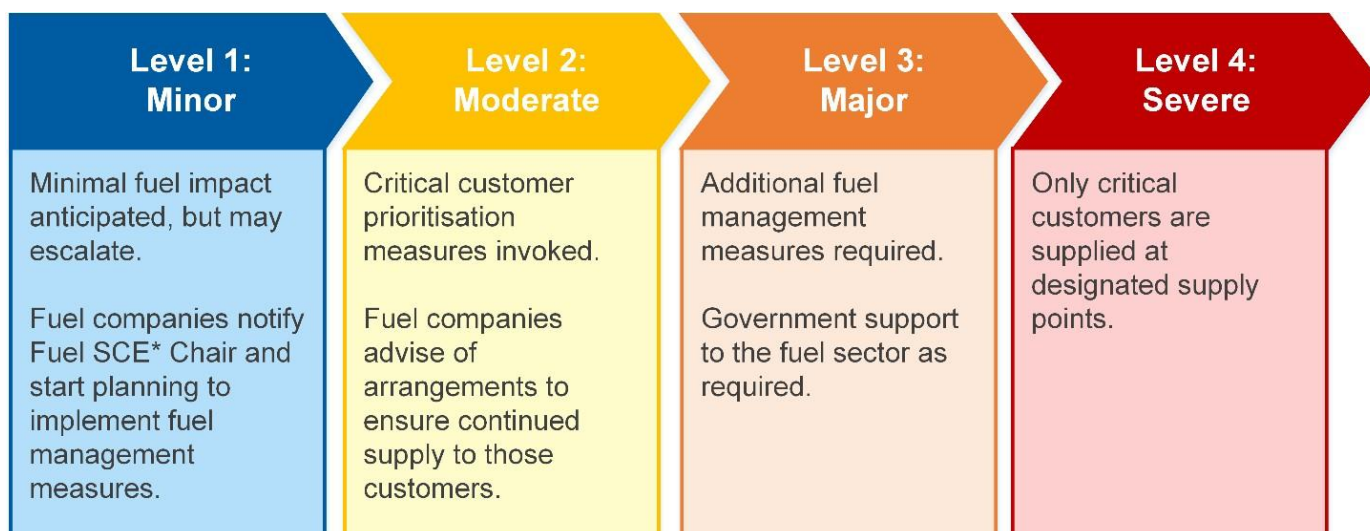
2.1.1 Escalation level

The escalation levels for a national fuel emergency are summarised in Figures below (*National Fuel Emergency Plan 2019 draft*).

An emergency may progress from one level to another or move straight to a high level (for example, a sudden, major refinery incident expected to last longer than a few days).

The lead agency shall determine when to de-escalate to lower levels or business-as-usual.

Table 6 Fuel Emergency Escalation Process (*National Fuel Emergency Plan*)



*SCE: Sector Coordinating Entity

Table 7 Fuel Supply Escalation National Level (*National Fuel Emergency Plan*)

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| Escalation Level | Fuel Sector Actions | MBIE Actions (may be part of a CDEM response) | CDEM Sector Actions* (where fuel impacts are part of wider disaster) |
|---|--|--|---|
| <p>Level 1: Minor</p> <p>Potentially escalating fuel supply disruption but minimal current impact on fuel distribution.</p> <p>Manageable within available resource.</p> <p>Minimal or no public interest.</p> | <ul style="list-style-type: none"> Logistical / supply changes, as required, to maintain fuel supply. Advise Fuel SCE Chair of potential fuel shortages. Consider and prepare for supply / demand restraint measures. | <ul style="list-style-type: none"> Activate Fuel SCE in monitoring mode. Monitor stock situation. Analyse / prepare for fuel management measures. | <ul style="list-style-type: none"> Group ECC active and monitoring local EOC activities. Group ECC to check / confirm critical customer lists to National LUC. |
| Possible state of emergency | | | |
| <p>Level 2: Moderate</p> <p>Significant impact on fuel distribution.</p> <p>Concerns about the potential availability of fuel to critical fuel customers.</p> <p>Requires some resource allocation.</p> <p>Some degree of public interest.</p> | <ul style="list-style-type: none"> CDEM Critical Fuel Customer List enacted. Supply critical fuel customers before all others. Estimate likely demand levels and re-supply options. Commercial customers and 'off- the-street' customers still serviced, albeit at a limited capacity. | <ul style="list-style-type: none"> Lead agency for fuel supply disruption is not part of an emergency under the CDEM Act 2002. Activate / Chair Fuel SCE (regardless of lead agency). Continue to monitor and assess measures. Advise Minister to activate measures if required to ensure continued supply to critical customers. Coordinate public communications. | <ul style="list-style-type: none"> State of emergency may be declared. Lead agency if part of an emergency under CDEM Act 2002. National LUC confers with Fuel SCE Chair and convene Fuel SCE teleconference. Invoke Fuel Critical Customer Prioritisation Arrangements. Coordinate government support to manage priority fuel retail outlets. |

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| Escalation Level | Fuel Sector Actions | MBIE Actions (may be part of a CDEM response) | CDEM Sector Actions* (where fuel impacts are part of wider disaster) |
|--|---|---|--|
| State of emergency | | | |
| <p>Level 3: Major</p> <p>Serious impact on fuel distribution. Resource and capacity limits full. Multi region, and/or major lifeline utilities impact. Concerns of panic buying. Requires all-of-government coordinated response. National public interest.</p> | <ul style="list-style-type: none"> • Non-market mechanisms • Implement fuel management measures as requested by lead agency through Fuel SCE (priority re-supply to designated fuel retail outlets, sale / opening hour restrictions, etc.) • Designated fuel retail outlets (or other agreed method) to supply critical fuel customers. | <ul style="list-style-type: none"> • Chair Fuel SCE. • Coordinate / monitor effect of implementation of fuel management measures. • Coordinate government support to the fuel sector. • Coordinate public communications. | <ul style="list-style-type: none"> • State of emergency is in force. • Lead agency, control and coordinate overall response. • MCDEM NCMC/NCC LUC participates in Fuel SCE. • Invoke Fuel Prioritisation Arrangements. • Support to fuel companies as required, coordinated through Fuel SCE. |
| <p>Level 4: Severe</p> <p>Major impact to fuel supply. Major national fuel impact expected to be sustained. Resource limits are exceeded. Major impact to lifeline utilities / community. International interest.</p> | <ul style="list-style-type: none"> • ‘Coordination’ for regional distribution / re-supply. • Supply critical fuel customers only. • Critical fuel customers serviced by any supplier. • Supply to non-critical customers only following | <ul style="list-style-type: none"> • As above. | <ul style="list-style-type: none"> • As above. |

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| | | | |
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| | consultation with lead agency. | | |
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During a Regional fuel shortage the following table gives an indication of the Escalation Process that should take place.

Table 8 Fuel Supply Escalation Level - Regional Level

| Escalation Level | CDEM Actions |
|---|--|
| Level 1 Minor <ul style="list-style-type: none"> Minor level incident covering isolated part of the region with adequate transport routes or the likelihood of adequate transport routes within 24 hours | <ul style="list-style-type: none"> Monitor fuel supply at the local level and report through the Logistics function |
| Level 2 Moderate <ul style="list-style-type: none"> Moderate incident covering isolated part of the region with compromised transport routes and the likelihood of these routes being compromised for a period of greater than 24 hours | <ul style="list-style-type: none"> Implement localised fuel limitations to critical customer vehicles and private vehicles of critical customer workers |
| Level 3 Major <ul style="list-style-type: none"> Major incident covering half or more of the region with compromised transport routes. And/or <ul style="list-style-type: none"> Major incident in another region which would compromise the bulk delivery of fuel to the Otago Southland region | <ul style="list-style-type: none"> Implement region wide fuel limitations to critical customer vehicles and private vehicles of critical customer workers |

2.2 Critical Customers

2.2.1 Definition

A critical customer is defined in the national fuel plan as “the organisations that are generally critical to the response operations and have reliance on fuel re-supply to carry out response activity”.

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2.2.2 **Prioritising Critical Customers**

'Priority fuel users' will continue to source fuel from, and be supplied by, their regular fuel suppliers until it is no longer possible or practicable to do so.

Some groups such as hospitals have low supply but other key operators such as helicopters or excavation contractors may not know of their personal situation until well into the response. For example, some fuel supplies may be damaged, or the fuel contaminated, while others may not have power to pump it into vehicles. The quantity of and need to replenish these private supplies will have to be a priority to establish soon into the response.

These are subject to operational change and prioritisation at the discretion of a Controller (when a state of emergency has been declared under the CDEM Act).

In a non-CDEM emergency, the list of priority fuel users is subject to Cabinet's decision and will be contained in regulations made under the Petroleum Demand Restraint Act.' (*National Fuel Emergency Plan 2019*).

The following sectors are defined as critical customers, with the right to access priority supply at nominated sites **for the purpose of continuing essential functions**:

- Health (hospitals, public health services, health emergency coordination centres, aged care facilities)
- NZDF (noting that they hold stocks for their own purposes)
- NZ Police and Fire and Emergency NZ (response to public and property health and safety)
- Ambulance Services (including medical helicopters)
- New Zealand Search and Rescue
- Civil defence emergency management (national/regional/local CDEM Group)
- Local authorities, for lifeline utility services, solid waste and other essential functions
- Lifeline utilities (major supplies of energy, transportation, telecommunications water, wastewater services)
- Corrections
- Transport and Storage of Food
- Welfare services – e.g. household goods and services, Civil Defence Centres (CDCs)
- Public transport – rail and bus.

2.2.3 **Otago Southland Critical Customers**

In any response there will be a group of organisations that are deemed to be Critical Customers irrespective of the nature of the response. There will likely be a second group of customers who may be critical for certain responses or at a different stage through any response. Contractors are likely to be critical customers but may not be needed until several days into the response. Likewise KiwiRail would be a critical customer if there was a response down the

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coastal belt of Otago Southland but not if it was in Central Otago. A category of Secondary Critical Customers is proposed for those groups.

Critical Customers

- Police
- Fire and Emergency
- DHB staff and accredited contractors
- Otago Southland CDEM staff/response personnel
- Network & Lines Companies
- Medical First Responders e.g. St John, Rescue Helicopters, Accredited GPs
- District/Regional Council Waste and Flood Water Services
- NZ Defence
- Dept of Corrections

Secondary Critical Customers

- Radio New Zealand, TV1, TV3,
- Medical Couriers
- Kiwi Rail
- Earthmoving Contractors
- Fast Moving Consumer Goods transport
- Otago Daily Times, Southland Times
- Red Cross
- LandSAR
- Dairy Company food grade tankers
- Public transport operators
- Road transport and courier operators

Critical fuel customers are required to ensure essential staff / contractors have a means of identification if they are not in a branded vehicle – either a company ID card or a letter from the company identifying them as essential staff or contractor.

2.3 Priority Fuel Retail Outlets

Service (petrol) stations and truck stops are the main point-of-sale for the public, including commercial vehicles. Fuels are also delivered in bulk to some customers, including the farming, forestry, and construction sectors. Fuel retail outlets have a variety of ownership and operating models, though all fuel is currently sourced from the four producing/importing fuel companies (Z Energy, Mobil, BP and Gull). These include:

- fuel company owned and operated
- fuel company owned and independently operated
- independently owned and operated
- independently owned and operated (branded by fuel company supplying product)

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under contract).

The major fuel companies can only control the business actions of their company owned and operated fuel retail outlets. They have little direct influence over those independents that carry their branding. They can however, provide a communication link between the lead agency in an emergency and the retail outlets that they supply.

Truck stops are typically unattended. Self-serve fuel retail outlets for all vehicle fuels are also becoming increasingly common.

Of the retailers in the Otago Southland region that responded to the fuel survey none had emergency power back up and only four had the ability to connect emergency power to their site.

At this stage, it could be argued there are no sites in the two regions that can be classed as a Priority Fuel Outlet.

Emergency Services are spread across the provinces as well and it could be argued that isolated rural fuel stations are just as much a priority as some of the urban sites.

It is therefore essential to ensure that the critical customers understand their ability to operate in a fuel emergency as outlined in Section 3.

3 Critical Customer Roles and Requirements

3.1 Critical Customers Responsibilities

Critical customers are responsible for:

- Ensuring that the staff and contractors required for critical response functions:
 - are aware of their CDEM-critical customer status
 - have suitable identification (branded cars, company ID cards and/or a signed letter on letterhead to identify themselves as a legitimate fuel purchaser in a fuel shortage), and
 - have alternative means of payment if they are unable to use their contracted fuel company (some fuel companies allow fuel cards to be used at their retail sites if EFTPOS is down).
- Reasonably conserving fuel (to the extent possible, without impacting their ability to maintain core services).
- If requested by the Controller, giving priority restoration to support bulk fuel supply (notably water supplies to depots and facilities where mains water is a requirement for them to function and roads).
- Ensuring that non-critical staff and contractors do not unnecessarily take advantage of

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priority status.

Having their own business continuity arrangements relating to fuel supply (priority supply arrangements, own stocks, etc.)

The decision to invoke fuel prioritisation should be made in consultation with the Ministry of Civil Defence Emergency Management Lifelines Coordinator with consideration of the nature and magnitude of the emergency, current fuel availability and re-supply capability and observed/anticipated consumer usage and behaviours.

Priority fuel users will continue to source fuel from, and be supplied by, their regular fuel suppliers until it is no longer possible or practicable to do so.

These are subject to operational change and prioritisation at the discretion of a Controller (when a state of emergency has been declared under the CDEM Act). In a non-CDEM emergency, the list of priority fuel users is subject to Cabinet's decision and will be contained in regulations made under the Petroleum Demand Restraint Act.

3.2 Impact on Critical Customer Operations

Health (hospitals, public health services, health emergency coordination centres, aged care facilities)

- Reliance on generators for power
- Unable to provide in home care/district nursing services
- reduction of ambulance services

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NZDF (noting that they hold stocks for their own purposes)

- Assisting any CDEM response
- Reaction to a military threat

NZ Police and Fire and Emergency NZ (response to public and property health and safety)

- Reacting to Crime and Disorder
- Security of Fuel
- Unable to do rescues
- Fire investigation compromised
- Volunteers unable to travel to place of business

Ambulance Services (including medical helicopters)

- Volunteers unable to get to place of work
- Ambulance services having to restrict operations
- Rescue helicopters in the lower South Island restricted flying operations

New Zealand Search and Rescue (Landsar)

- Staff unable to get to areas for searches (ability for public to go into areas of recreation will be compromised and may mean a drop in searches.)
- Helicopter fuel restricted

Civil defence emergency management (national/regional/local CDEM Group)

- Operations severely limited at all levels with a high reliance on fuel for all CDEM operations

Local authorities, for lifeline utility services, solid waste and other essential functions

- Rubbish removal and disposal severely compromised
- Staff ability to get to work will be compromised – work at home arrangements may need to be implemented

Lifeline utilities (major supplies of energy, transportation, telecommunications water, wastewater services)

- Repair of critical infrastructure would be hampered.
- Running of pumps and generators will be compromised

Corrections

- Staff ability to get to their place of work compromised
- Movement of prisoners restricted
- Food and supplies to facilities restricted

Transport and Storage of Food

- Major implications due to the distribution centres being outside of Otago and Southland and a heavy reliance on road transport to stock supermarkets

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- Logistics and Courier companies severely compromised

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Welfare services –

- household goods and services,
- Civil Defence Centres (CDCs)

Public transport

- Rail
- Buses
- Taxi Industry

3.2.1 Accreditation of Critical Customers

To ensure Critical Customers can access fuel, they will need to be accredited. This will either be by way of identification of a vehicle type e.g. a Fire and Emergency NZ, Police, St John branded vehicle or by the vehicles company e.g. PowerNet.

Where a Critical Customer is an individual, an accredited supplier, or operating in an unmarked vehicle, the individual will have to be accredited. This maybe by way of their company photo ID but CDEM will not be responsible for issuing accreditation documentation.

3.3 Critical Customer Fuel Requirements

Decision on Fuel Supply Prioritisation

Fuel supply and distribution should function under normal commercial arrangements as the situation allows. Within business-as-usual arrangements, fuel companies will take certain measures about allocating supplies to their contracted customers in order to continue a level of service.

In an attempt to prepare this Plan, various frequent requests have been made to all the major fuel companies seeking fuel use and distribution process of fuel in the Otago Southland regions. None of the companies were prepared to provide information siting commercial sensitivity. MBIE have advised that in an emergency, fuel flow and storage information would be made available, but this does not allow planning to occur.

In an emergency, the ontroller has a range of options from no restriction through to early and complete restrictions to all but Critical Suppliers. Intermediate stages including limited offering to non-Critical Suppliers could also be considered

The decision the Controller will make is likely dependant on the amount of information available. If there is no information the option considered may be complete restriction to all but critical

Activation Arrangements

Arrangements in this plan may be activated by a National or local directive and in conjunction with the National Fuel Plan.

National directives include;

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- Declaring an International Energy Agency fuel emergency
- Declaring a Petroleum Emergency by New Zealand central government agencies
- Activating of National Security System as advised by MBIE or MCDEM

3.2.2 Fuel Usage by Emergency Services

Table 9 Emergency Services Fuel Usage

| Fire Region | Litres consumption per week if all appliances in the region involved | Diesel/Petrol % |
|-------------------------|--|-----------------|
| East Otago | 177,161 | 87%/13% |
| Central and North Otago | 146,947 | 85%/15% |
| Southland | 172,912 | 75%/25% |
| Total | 497,020 | |

| St John Region | Normal Monthly Fuel usage |
|----------------------|---------------------------|
| Southern Region | 8615 litres |
| Hokonui Region | 5944 Litres |
| Central Otago Region | 8407 Litres |
| Total | 22,966 Litres |

| Southern District Health (Sector) | Vehicle Fuel (litres per month) |
|--|---------------------------------|
| Pool Vehicles | 27,200 (mainly petrol) |
| Home Care Support Services | 61,316 |
| This fuel usage does not include Aged Care Facilities, GP's, or Pharmacies. It also doesn't include staff travel to and from their place of work. | |

3.4 Critical Sites with Generators.

Table 10 Priority User Generator capability Otago Southland Region

| Southern District Health | Generator Fuel (litres) | Est Running Time (hours) on stored fuel |
|-------------------------------------|--|---|
| Lakes District Hospital | 5,000 | 12 |
| Dunstan Hospital | 868 | 36 |
| Southland Hospital | 15,000 | 65-70 |
| Wakari Hospital | 1,500 | 25 |
| Wakari Hospital Secure Unit | 50 | 8 |
| Dunedin Hospital | 55,000 | 95 |
| Balclutha Hospital | ? | 12 |
| Gore Hospital | 700 | 12 |
| Oamaru Hospital | 2880 | 50 |
| Southern Cross Hospital - Southland | Nil requires hire of generator | |
| Hospice Southland | Powered off Southland Hospital generator | |

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|------------------------|-------|---|
| Maniatoto Hospital | 4,200 | 4 |
| Mercy Hospital Dunedin | 5000 | 7 |

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| Civil Defence Emergency Management | Generator Fuel storage (litres) | Est Running Time (hours) on stored fuel |
|---|--|---|
| Emergency Management Southland - Invercargill | 300 | 12 |
| Emergency Management Southland – Gore (alt) | 360 | 12 |
| Emergency Management Otago - Dunedin | 1000 | 72 |
| Lakes District Council | QLDC Chambers – 250 Events Centre - 500 Wanaka Rec Centre - 3000 | 20 10 48 |
| Central Otago District Council | Nil – (2019-20 year programmed for installation) | 6 (estimated) |
| Waitaki District Council | 100 (scoping for new generator 2019) | 4 |
| Clutha District Council | 600 | 24 |

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4 Other considerations

4.1 Management of Critical Resources

There are several measures available to restrain demand. Depending of the nature of the emergency which has caused the constraint in supply individuals and organisations may have a different view about how they respond to a call to restrain demand. For example if evacuation is likely individuals are likely to want to maximise their personal supply of fuel. If an emergency requires major earthworks to be undertaken the requirement for diesel will be higher than if the supply is due to say industrial action. Table 5 indicates possible measures to restrain demand.²

Table 11 Fuel Savings Measures to be considered

| Measures | Actions | Notes |
|--|---|--|
| Voluntary Savings Advising motorists of the need to conserve petroleum and how to make savings | <ul style="list-style-type: none"> Public information coordinated by lead agency. The Energy Efficiency and Conservation Authority has done planning on this campaign and can assist. | <ul style="list-style-type: none"> People will be encouraged to reduce speed on open road, carpool, check tyres, reduce unnecessary trips, or use other transport modes. |
| Prioritising Supply to Critical Customers Fuel companies may designate lanes in fuel retail outlets or entire fuel retail outlets for critical customer use. | <ul style="list-style-type: none"> Fuel companies may designate lanes in fuel retail outlets or entire fuel retail outlets for critical customer use In an extreme shortage, only fuel stations dedicated to critical customer use may be resupplied. | <ul style="list-style-type: none"> Government support will be required to manage the critical customer management process at designated fuel retail outlets (through CDEM staff or volunteers, NZDF or Police resources). |
| Mandatory Savings Government measures could include requirement to restrict sales to non-critical customers | <ul style="list-style-type: none"> Opening hour restrictions (reduced hours, only open on alternate days). Setting maximum purchases at point of sale – either price or volume. | <ul style="list-style-type: none"> Price limits can be set at unmanned fuel retail outlets (e.g. truck stops). However, maximum purchase limits do not prevent customers from re-filling several times. |

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|--|---|--|
| | <ul style="list-style-type: none">Restricting sales into containers (to discourage hoarding). | |
|--|---|--|

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4.2 Fuel Rationing Options

4.2.1 Full Rationing

If the controller does not have fuel flow information or has compromised storage and supply routes it is recommended that if a civil defence emergency is declared, the Controller has no option but to limit the supply of fuel only to Critical Customer vehicles and private vehicles of critical customer workers. This would remain in force until the Controller had enough information that fuel supplies were at a level that could sustain normal supply demands.

Operations would have the task of updating and releasing fuel to those on the Secondary Critical Customer list at the instruction of the Controller.

Fuel would be distributed to Critical Customers from selected fuel outlets. Due to staffing requirement to authenticate that the person presenting at the fuel outlet is a critical customer it is recommended that a limited number of outlets be opened at any time. To prevent issues with unrest from those who present at the fuel outlet but are not critical customers security will be required.

4.2.2 Partial Rationing

If the Controller has information that supply is enough to satisfy the short and medium term needs of the Critical Customers excess supply may be made available to non-Critical Customers. Depending on the nature of the event and the number of outlets operating, it is possible that there would be long queues at the outlet(s) and the Controller may consider keeping an outlet solely for the Critical Customers and other outlet(s) available for the non-Critical customers.

4.2.3 No Rationing

If there is good information detailing the supply stocks and the likely future supply due to adequate storage facilities and transport routes the Controller may not impose any restrictions.

A review of the Critical Customers will occur on an annual basis and a scheduled of Critical Customers will be published on the web and made available in an emergency. This will be the responsibility of each of the regions Lifelines Groups.

4.3 Private Fuel Stores

There are several organisations who have private supplies of fuel. These include helicopter operators, earthmoving contractors, hospitals for backup electricity generation and farmers.

Despite there being localised private supplies, over the past decade there has been a reduction in the amount of fuel stored privately. The availability and ease of payment for fuel at 'fuel stops' has meant that large fuel users have opted to utilise this facility rather than carry their own supply.

Several critical customers such as police have no private storage and rely solely on commercial supply, while others such as hospitals have limited supply for electricity generation. The tables in 3.2.2 show the estimated operating time available for the hospitals in the region, using their

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backup generators based on stored fuel supply. It shows the range of self-sufficiency in the local hospitals is very low. A range of 12 to 95 hours is a small window of operating time if electricity is compromised.

There is generally no on-site fuel supply for lifeline services. Improved environmental and safety requirements for fuel storage and the availability of fuel 24 hours per day have meant that the majority of lifeline providers have no fuel storage and the remainder having storage limited to stationary engines such as pumps or generators.

The requirement for fuel supply immediately or after a relatively short time after an emergency and the Controllers inability to know what supply is in the region at any time during an emergency, further supports an early requirement to limit fuel supply other than to critical customers.

4.4 Ability to Access Private Fuel Supply

As indicated above, fuel is available in some sectors. However the ability to access that fuel during an emergency needs to be considered and mitigated. For example Otago Helicopters transfer from storage to vehicle with electric powered pumps. At the Otago Helicopter base this requires three phase power.

Critical customers with their own fuel supply need to be able to draw that fuel with their own equipment, or the response needs to ensure the correct equipment is dispatched to those critical customers early in the response. Identification of the method to transfer fuel from storage to vehicle for Critical Customers' needs to be identified and contingencies put in place if required.

4.5 Managing Distribution to Priority Customers

During a response it is likely there will be panic buying from the general public. If there is no real or imminent fuel shortage, this is not a problem and will be managed by the local distribution outlets as fuel will be available to all.

If, however, restrictions have been placed on fuel to supply to only Critical Customers, there is likely to be at best confusion, and at worst hostility. The protection of operators at staffed service stations is critical as is the vetting of whether the purchaser is a Critical Customer.

It is recommended that where there is fuel rationing (full or partial) the number of outlets available and potentially the hours of operation, is limited to allow security to be present. If there are several outlets that can open these may do so on a rotational basis with the information as to what outlet(s) that are operating

A decision will have to be made at each event as to whether self-serve unstaffed outlets are supervised, closed or allowed to be used without supervision until they run out of fuel.

4.6 Farming Community/Contractors

Depending on the time of year of the fuel shortage, there is the possibility that farmers could be considered priority customers. Farming is driven by the seasons and there will be periods

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where it is critical to their business that paddocks need to be ploughed, winter feed cut and baled or produce harvested.

The CDEM Controller may be required to make decisions about the provision of fuel in these cases as the inability to do some of these tasks at critical times can have far reaching economic and animal welfare consequences.

The advice of the Ministry of Primary Industries and farming advisory professionals may be required to seek and give advice to the rural community.

5 Public Education

5.1 Maintaining Full Tanks

In 2015, the ratio of light passenger or light commercial vehicles per capita in Southland was 890 vehicles per 1000 people and in Otago 740:1000. The current population of the two regions is approximately 320,000. Assuming the same ratio of ownership means that there is about 250,000 cars and light commercial vehicles in the two regions. Assuming on average a 50 litre fuel tank in each vehicle, there is the possibility of 12.5M litres of fuel being stored in the vehicle fleet in Otago/Southland.

It is not possible to have all vehicles full all the time, but if there was a concerted effort to have people with their tank no lower than half full, with an average of 75% full, the immediate demand on fuel would be significantly less on the non-Critical Customer group when fuel restriction are put in place. If the Otago Southland vehicle fleet was 75% full over 9M litres would be stored in the fleet itself.

If fuel restriction is used as a genuine part of the fuel management planning in Otago/Southland when a response is enacted self-responsibility, will be required. Education on having personal vehicle fuel in private vehicles could be a cornerstone of that promotion as it would also signal that fuel restrictions would be a feature of a response to all but the Critical Customer Group.

6 Document History

| Version | Date | Author | Changes |
|---------|------------|----------------|--------------|
| 1.0 | 25/06/2019 | Craig Sinclair | New document |

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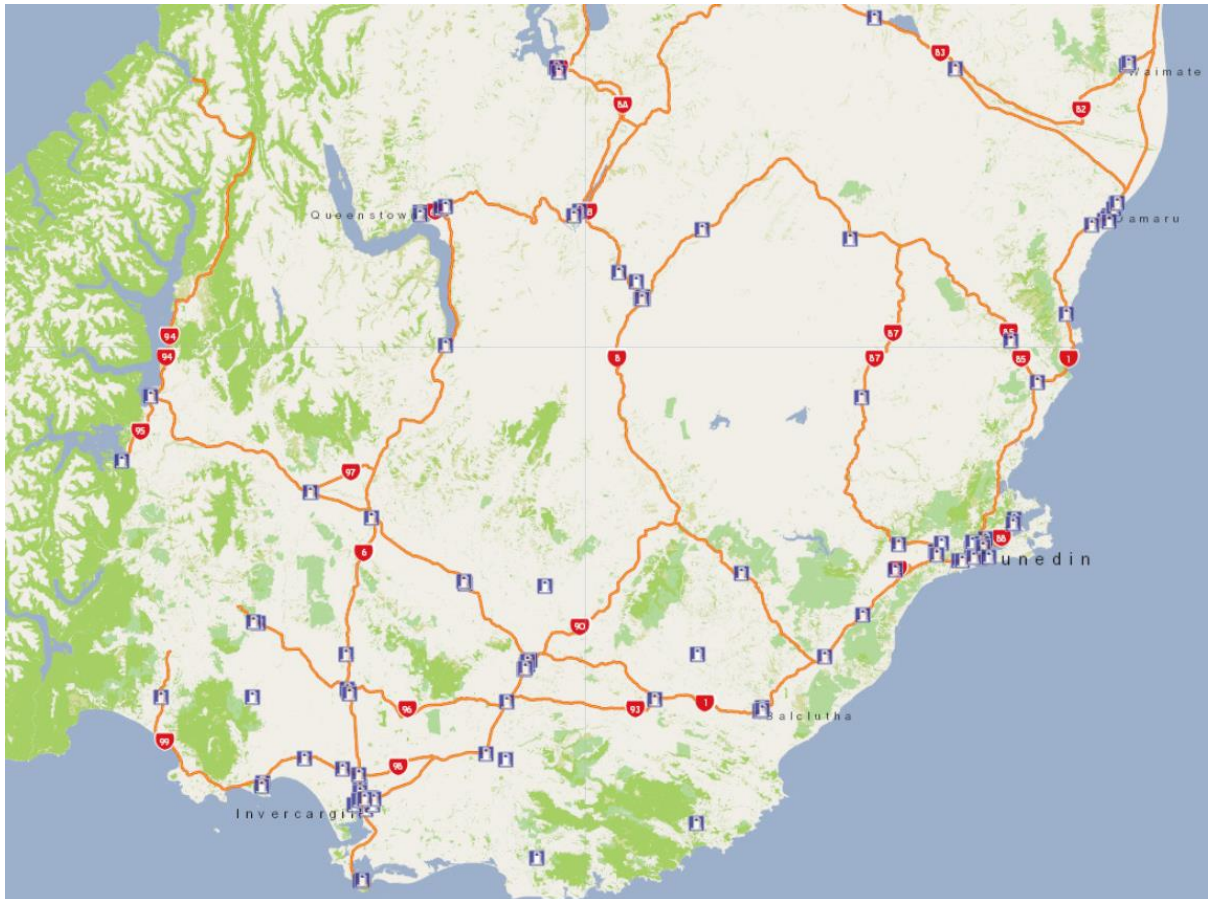
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7 Attachments

7.1 Fuel Retail Outlets Map



Location of Fuel Retail outlets Otago and Southland

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Retail Fuel Sites

| Trading Name | Address | Town/City |
|-----------------------------|-------------------------------|--------------|
| APL Waimatuku Garage | State Highway 49 | Waimatuku |
| BP 2GO Highway | 163 Tay St | Invercargill |
| BP Elles Road | 228-232 Elles Rd | Invercargill |
| BP 2GO Northroad | 52 North Rd | Invercargill |
| BP 2GO Ascot | 710 Tay St | Invercargill |
| BP 2GO Gore | 8 Railway Esplanade | Gore |
| BP Connect Queenstown | 1094 Frankton Rd | Queenstown |
| BP 2GO Balclutha | 79 Clyde St | Balclutha |
| Grant Ward Nissan | 63 Centennial Avenue | Alexandra |
| BP 2GO Cromwell | Corner Iles and Sargood Drive | Cromwell |
| BP 2GO Wanaka | 59 Ardmore St | Wanaka |
| BP Connect Mosgiel | 70-76 Gordon Rd | Dunedin |
| BP 2GO Mornington | 29-37 Mailer St | Dunedin |
| BP 2GO On Princes | 808-828 Princes St | Dunedin |
| BP Connect Southern | 52 Cumberland St | Dunedin |
| BP Connect Bays Junction | 574 Andersons Bay Rd | Dunedin |
| BP 2GO Dunedin North | 867 Cumberland St | Dunedin |
| BP 2GO Autoworld | 74 Wansbeck St | Oamaru |
| BP 2GO Oamaru | 214 Thames St | Oamaru |
| Caltex Savoy | 198 Tay St | Invercargill |
| Caltex Curson Motors Gore | 217 Main St | Gore |
| Caltex Winton Motor Centre | 290 Great North Rd | Winton |
| Caltex Avenal | 314 Dee St | Invercargill |
| Caltex Te Anau | Cnr Luxmore Dr & Bowen St | Te Anau |
| Caltex Maitaia | Main St | Maitaia |
| Caltex Wanaka | 19 Ardmore St | Wanaka |
| Caltex Queenstown | 43-45 Gorge Rd | Queenstown |
| Caltex Alexandra | 50 Centennial Ave | Alexandra |
| Caltex Kurow Auto Services | 26 Bledisloe St | Kurow |
| Caltex North End Motors | 457a Thames St | Oamaru |
| Caltex MGL Alma Motors | State Highway 1 | Alma |
| Balclutha Motors | James St | Balclutha |
| Caltex Milton | Union St | Milton |
| Caltex Anthony Motors | 254 Taieri Rd | Dunedin |
| Caltex Valley | 134 North Rd | Dunedin |
| Caltex City North | 492 Great King St | Dunedin |
| Challenge Marshalls Garage | 1 Redan St | Wyndham |
| Challenge Mossburn | 26 Devon St | Mossburn |
| Challenge Bluff | 300 Gore St | Bluff |
| Challenge Glengarry | 65 Glengarry Cres | Invercargill |
| Challenge Newfield Autos | 661 Tweed St | Invercargill |
| Challenge Riversdale | 92 Newcastle St | Riversdale |
| Challenge Lorneville Motors | Cnr SH 6 & SH 99 | Invercargill |
| Challenge Fitzroy | 247 South Rd | Dunedin |
| Challenge Dunedin | 101 Harrow St | Dunedin |

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| Challenge Andersons Bay | 2 Highcliff Rd | Dunedin |
| Challenge Ranfurly | 5 Northland St | Ranfurly |
| Challenge Outram | 13 Hollyhead St | Outram |
| Challenge Dunstan Motors | 38 Sunderland St | Clyde |

| Trading Name | Address | Town/City |
|----------------------------|---------------------------|---------------|
| Outram Garage Ltd | 13 Hollyhead St | Outram |
| GAS Edendale | 15 Seaward Rd | Edendale |
| GAS Riverton | 17 Bay Rd | Riverton |
| GAS Bluff | 174 Gore St | Bluff |
| GAS Tokanui | 3 Niagara Tokanui Highway | Tokanui |
| GAS Wallacetown | 49 Dalry St | Wallacetown |
| GAS Clydevale | 18 Dunlop Rd | Balclutha |
| GAS Lawrence | 1 Whitehaven St | Otago |
| GAS Momona | 494 Centre Rd | Otago |
| GAS Middlemarch | 20 Swansea St | Central Otago |
| GAS Hampden | 32 London St | Hampden |
| GAS Omakau | 2-4 Wilson St | Central Otago |
| Mobil Gore | 158 Main St | Gore |
| Southern Service Station | 298 Elles Rd | Invercargill |
| Waikiwi Motors | 376 North Rd | Invercargill |
| Mobil Te Anau | 80 Town Center | Te Anau |
| Northern Auto Services Ltd | St Andrew St | Invercargill |
| Z Gladstone | 455 Dee St | Invercargill |
| Z Gore | Hokonui Drive | Gore |
| Z Palmerston | 112 Ronaldsay St | Palmerston |
| Z Balclutha | High St | Balclutha |
| Z Alexandra | 105 Tarbert St | Alexandra |
| Z Oamaru | 22 Severn St | Oamaru |
| Z Valley | 248 Kaikorai Valley Rd | Dunedin |
| Z Mosgiel | Gladstone Rd | Mosgiel |
| Z Green Island | 185 Main South Rd | Dunedin |
| Z Andy Bay | 333 Andersons Bay Rd | Dunedin |

Fuel Stops

| Trading Name | Address | Town/City |
|--|---------------------|--------------|
| Allied Fuelstop Nightcaps (Transport Services) | 10 Moffatt St | Nightcaps |
| APL Fuelstop Invercargill | 101 Bond St | Invercargill |
| Allied Waikaka Fuelstop | 16 Main St | Waikaka |
| Allied Riversdale (Andrews Transport) | 2745 Waimea Highway | Riversdale |
| Allied Fuelstop Manapouri | 31 Waiau St | Manapouri |
| Allied Fuelstop Gore | 33 Aparima St | Gore |
| BP Invercargill Truckstop | Mersey St | Invercargill |
| BP Queenstown Truckstop | 131 Gorge Rd | Queenstown |
| BP Balclutha Truckstop | 40 Charlotte St | Balclutha |
| BP Dunedin Truckstop | 52 Cumberland St | Dunedin |
| McKeown Group Oamaru | Esplanade | Oamaru |

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| McKeown Gore CardFuel 24/7 | 6 Hyde St | Gore |
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| McKeown Careys Bay CardFuel 24/7 | 20 MacAndrew Rd | Dunedin |
| McKeown Bluff CardFuel 24/7 (Marine Only) | No 1 Berth, Island Harbour | Bluff |
| McKeown Wanaka CardFuel 24/7 | 73 Ballantyne Rd | Wanaka |
| McKeown Dunback CardFuel 24/7 | 1226 Dunback-Morrisons Rd | Dunback |
| McKeown Alexandra CardFuel 24/7 | 22 Chicago St | Alexandra |
| McKeown Alma CardFuel 24/7 | 285 Oamaru-Alma Rd | Alma |
| McKeown Papatowai CardFuel 24/7 | 1501 Papatowai Highway | Papatowai |
| Trading Name | Address | Town/City |
| McKeown Clinton CardFuel 24/7 | 2 Gorge Rd | Clinton |
| McKeown Riverton CardFuel 24/7 | 105 Palmerston St | Riverton |
| McKeown Nightcaps CardFuel 24/7 | 6 Sinclair Ave | Nightcaps |
| McKeown Centre Bush CardFuel 24/7 | 1857 Dipton-Winton Hwy | Centre Bush |
| McKeown Lumsden CardFuel 24/7 | 2 Diana St | Lumsden |
| McKeown Kingston CardFuel 24/7 | 3820 Kingston Rd | Kingston |
| McKeown Chemicals (Diesel fuel supplier) | 11 Broughton St | Dunedin |
| RD Petroleum Truckstop Tuatapere | 20 Orawia Rd | Tuatapere |
| Z Dee St Truckstop | 206-214 Dee St | Invercargill |
| Z Winton Truckstop | 39 Great North Rd | Winton |
| Z Gore Truckstop | Charlton Rd | Gore |
| Z Balclutha Truckstop | 36 Barnego Rd | Balclutha |
| Z Oamaru Truckstop | Pukeuri-Oamaru Rd | Oamaru |
| Z Dunedin Truckstop | Cumberland St | Dunedin |
| NPD Invercargill | 248 Bond St | Invercargill |
| NPD Mossburn | 37 Devon St | Mossburn |
| NPD Green Island - Coming Soon | 131-135 Main South Rd | Dunedin |
| NPD Port Chalmers Motors | 53 George St | Dunedin |
| NPD Waihola Motors Ltd | 24 Greenwich St | Waihola |
| NPD Oamaru | 1 Industrial Place | Oamaru |
| NPD Alexandra | 36 Centennial Ave | Alexandra |
| NPD Cromwell - Coming Soon | 167 McNulty Road | Cromwell |
| NPD Frankton | Ladies Mile Hwy | Queenstown |

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7.2 Fuel Retail Sites in Otago/Southland Survey

Questionnaires were sent out to 79 retailers across Otago and Southland 59 responded (75% response). The questionnaire looked at their ability to continue trading in a power blackout or if telecommunications were lost.

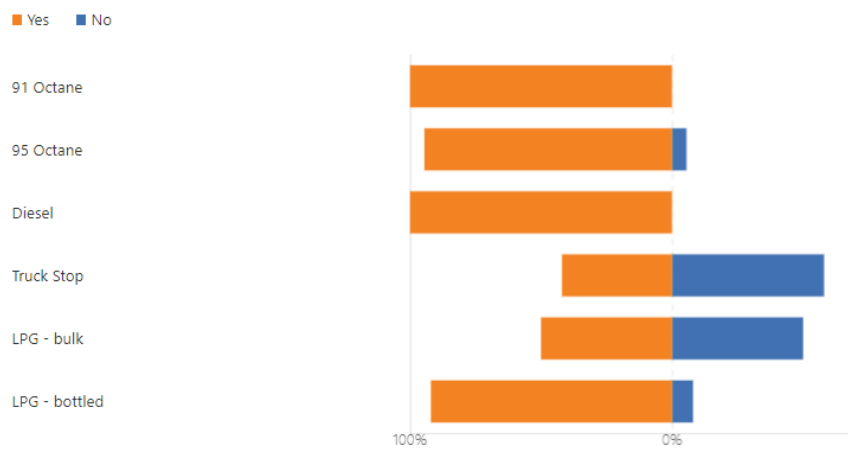
No fuel sites that responded have a back-up generator on site and only 4 were wired to take an emergency generator.

35 of the sites canvassed could operate without Eftpos connectivity.

The charts below detail the responses.

Fuel Sold on Site (tick appropriate box)

[More Details](#)



Do you have a generator onsite that is able to power your fuel pumps in a power outage?

[More Details](#)



| | |
|------------------|-------------------------------|
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| Status: Approved | Name: Plan/EMS/Fuel Plan v1.0 |

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Is your site wired to take a generator?

[More Details](#)

| | |
|-------|----|
| Yes | 4 |
| No | 51 |
| Other | 1 |



Are you able to carry on retail sales without eftpos or credit card facilities?

[More Details](#)

| | |
|-------|----|
| Yes | 28 |
| No | 30 |
| Other | 7 |



7.3 Communication Lines in A National Fuel Emergency

