

Submission to Resource Consent Application

CRC 172455, CRC 175456, CRC 172522, CRC 172523

From: Dr Stephen Gardner, Retired Medical Practitioner, of 21 Voelas Rd, Lyttelton 8082

I oppose the granting of the proposed Consents, because I have found that Compliance is unattainable, as regards the activities of the Port Company.

Whether non-Compliance is due to inability to Comply, or whether there is intention to defy Compliance, and the requirements of the District Plan, I cannot say.

But I believe that to transfer the onus of responsibility to the Commissioners hearing this Consent Application, is unreasonable.

I believe that the Commissioners should turn down the Consent Applications, but "leave the door open" to the Port Company to re-activate the Consent Applications, should the Port Company be able to demonstrate, over a period of (say six) months, that Compliance is practicable.

The documents attached to this 'front page' include the history of non-Compliance, as regards my experience of noise in the Port; Noise Testing report; Christchurch City Holdings Ltd.. the CCHL Group Holding, and a page from the Internet site.

#### TABLED AT HEARING

Application: .....

.....

Date: ..... 8 May 2017 .....

Signed



20 April 2017

Stephen Gardner

1. For many months the peaceable enjoyment of the property I manage, has been interrupted by excessive noise from ships berthed at the Oil Berth, the ships being fitted with Gas Turbines for Onboard Electricity Generation.
2. I made complaint directly to the Lyttelton Port Company, being directed by the switchboard to the Environment Officer. The noise continued. I made complaint through the Christchurch City Council Noise Management system (Job 92167121) – I was told that this was referred on, to Lyttelton Port Company, with no result.
3. I approached Debbie Hogan, Senior Policy Planner, at Christchurch City Council, who told me that Appendix 21.8.4.7 of the District Plan, Specific Purpose (Lyttelton Port) Zone (Chapter 21.8) states that “LPC have an obligation to deal with noise complaints”.
4. I approached Christchurch City Council, and my enquiry was delegated to Mr Tony Dowson, who is also on the Lyttelton Port Liaison Committee. He told me that Council has no jurisdiction here.
5. I approached Paul Hulse at Ecan, and was informed that this is not Ecan’s responsibility either.
6. I made my own investigation, commissioning noise level assessment (which demonstrated non-Compliance) and provided the results to Christchurch City Council and Ecan. I was told that the results were passed on to Lyttelton Port Company.
7. Since then, the noise problem seems to have abated somewhat. But the ship I had tested, the Stadt Provence, was in port again Easter Sunday night, and Monday.
8. I sent all the paperwork to the City Counsellor for Lyttelton, Andrew Turner, and received a response from Karlene Edwards, Chief Executive for Christchurch City Council.
9. I made Official Complaint to Christchurch City (Number 55050367) to Christchurch City Council, and was told by Rosie Jordan, Executive Assistant, that this had been referred to Lyttelton Port (!)
10. I consulted the website of Christchurch City Holdings Ltd, and read that the Port Company is a (Quote) “council-controlled trading organisation”. Because there is little evidence of Council Control, I suggested to Executive that I consult the Ombudsman, but was told that the enquiry would ‘come back’ to Executive anyway. I await decision.

#### I urge the Commissioners

1. That the Dredge be NOT FITTED with Gas turbine for electricity generation. It is proposed that the Dredge will be operating “20 hours a day” including bunkering. At an earlier part of the Hearing, it was stated that with ‘non-compliance’, that overseers would be notified “at 2am” if there was a problem. It seems likely that the Dredge will be at the Oil Berth ‘at any hour’ for the six months of the project.
2. That the Commissioners specify EXACTLY every Compliance; that they specify ACCOUNTABILITY of Port Company Personnel (notable the Environment Officer)
3. That the Commissioners specify EXACTLY the consequences of non-compliance – temporary suspension of Dredging activity, or abandonment of the Dredging.

I am grateful to the Commissioners for considering my Submission

File Ref: AC17020 – 01 – D1

27 February 2017

Mr S. Gardner  
21 Voelas Road  
Lyttelton  
CHRISTCHURCH 8082

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[office@aeservices.co.nz](mailto:office@aeservices.co.nz)

Dear Steve,

**Re: 21 Voelas Road, Lyttelton  
Noise from oil ship at berth in Lyttelton Harbour**

As requested, AES have undertaken measurements of the Stena Provence ship when it was berthed at the Oil Berth at Lyttelton Harbour, at various locations around Lyttelton. We understand that of particular concern is the noise from the on-board generator, which runs continuously while the ship is berthed.

### 1.0 Background

Guidance regarding noise from ports is available within several documents, including the New Zealand Standard NZS6809:1999 *Acoustics – Port Noise Management and Land Use Planning*.

The noise from a port is typically quantified using the  $L_{dn}$  level, which is the A-frequency-weighted day-night average sound level in decibels. This is considered as an average over 5 days, and includes a 10 dB penalty for noise produced during the night-time period.

There are legislative requirements and recommendations for buildings which are being developed near established ports, and the ports themselves. For Lyttelton Port, these are included within the Christchurch Replacement District Plan and the Port Noise Management Plan as follows:

#### Christchurch Replacement District Plan

Rule 14.4.4.4.1 of the Christchurch Replacement District Plan states:

*New habitable space or extensions to existing habitable space in the Lyttelton Port Influences Overlay shall have an internal sound design level of 40 dBA  $L_{dn}$  (5 day) with ventilating windows or with windows and doors closed and mechanical ventilation installed and operating.*

*For the purposes of this rule, the design shall achieve an internal design sound level of a habitable room, the external noise environment will be the modelled level of port noise taken from the predicted dBA  $L_{dn}$  (5 day) contour closest to the habitable room, in accordance with the methodology of NZS 6809:1999 Port Noise Management and Land Use Planning.*

We note that 21 Voelas Road is not within the Lyttelton Port Influences Overlay Area as shown on Planning Map 52 – and therefore there appears there would be no specific requirements on any new dwelling built on this site.

Port Noise Management Plan

The Port Noise Management Plan includes  $L_{dn}$  contours related to the activity from the port. The current plan is dated 2007; however, we understand that as part of the Lyttelton Recovery Plan these contours are in the process of being updated.

## 2.0 Noise measurements

Measurements were conducted during the evening period on a Wednesday at a time where there was minimal background noise to reduce interference from other sources in the area.

Details of the measurements completed in general accordance with NZS 6801:2008 Measurement of Sound and conducted on the 22<sup>nd</sup> of February 2017 are as follows:

<b>Date and time:</b>	2200 to 2300 hours on the 22 <sup>nd</sup> of February 2017
<b>Personnel:</b>	Clare Dykes, Acoustic Engineering Services
<b>Weather:</b>	Clear sky, light south west wind, mild temperature (15°C)
<b>Instrumentation:</b>	Brüel & Kjær Type 2250 Class 1 Sound Analyser (Serial Number 3008199, last calibrated 28 June 2015) Brüel & Kjær 4231 Acoustic calibrator (Serial Number 3011404, last calibrated 29 March 2016)
<b>Field calibration:</b>	The analyser was calibrated before measurements, and the calibration checked after measurements. No significant change was noted (<0.1 dB).
<b>Settings:</b>	A weighting (dBA), fast response.

During the measurement period the Stena Provence ship was located at the Oil Berth and the gas turbine generator was operating. This was a steady noise over the measurement period and was the dominant noise source in most of the measurement locations. A number of measurement positions were considered around Lyttelton, and short measurement periods were adopted due to the steady nature of the noise. The measurement locations are shown in figure 2.1 below.



Figure 2.1 – Noise measurement locations

### 3.0 Measurement results

As stated above, the noise from ports is generally considered as a five day average, with a night-time penalty applied ( $L_{dn}$ ). The measured noise levels during our site visit therefore need to be converted to an equivalent worst-case five day average in order to be compared with guidance expressed in terms of  $L_{dn}$ .

As we were able to isolate the noise source from the ship, we have calculated the resultant  $L_{dn}$  level when this is the only noise source in the area – i.e. not taking into account the other port noise. We have calculated the expected level if a ship was in port for both one or two nights out of the five days. We note that the Lyttelton Port Schedule indicates that a similar ship to the Stena Provence was in port on the 26<sup>th</sup> of February 2017 – therefore it is realistic that the ships may be within the harbour for two nights within a 'worst-case' five day period.

The actual measured  $L_{Aeq}$  levels and calculated  $L_{dn}$  levels are shown in table 3.1 below, with the highlighted position being outside 21 Voelas Road, Lyttelton.



Table 3.1 – Measured noise levels and calculated  $L_{dn}$ 

Measurement Position	Measured noise level (dB $L_{Aeq}$ )	Calculated $L_{dn}$ with a ship present one night	Calculated $L_{dn}$ with a ship present two nights
A	59	57	60
B	59	57	60
C	63	61	63
D	67	65	68
E	61	59	62
F	52	50	53
G	50	48	51

#### 4.0 Discussion of results

##### Comparison with port noise contours

As part of the Lyttelton Port Recovery Plan, Hegley Acoustic Consultants have produced a report titled *Lyttelton Port of Christchurch, Port Recovery Plan, Operational Noise Assessment*, dated November 2014, which considers the projected noise levels from future use of the port.

We have considered the predicted noise levels outlined in figure 3 of this document titled *2014 – 2024 Design Year Busy 5 Day  $L_{dn}$* , as well as the current noise contours and compared with the calculated levels based on our measurements in table 4.1 below.

Table 4.1 – Calculated  $L_{dn}$  compared to port noise contours

Measurement Position	Existing predicted port noise $L_{dn}$	Future predicted port noise $L_{dn}$	Calculated actual $L_{dn}$ with ship at Oil Berth one / two nights
A	55-60	55-60	57 / 60
B	60-65	55-60	57 / 60
C	60-65	60-65	61 / 63
D	60-65	55-60	65 / 68
E	65-70	65-70	59 / 62
F	65-70	65-70	50 / 53
G	65-70	65-70	48 / 51

We note that our calculations consider only the noise from ships at the Oil Berth, and do not consider other noise from the port that may also be present. This means that at some locations (for example E – G) noise levels will be higher than our predictions.

Table 4.1 indicates that the noise contours provide a reasonable prediction of the actual measured noise levels at 21 Voelas Road. However, consideration of the levels in other locations suggest that this is just coincidental and the noise contours do not correctly take account of noise from Oil Berth. The contours suggest noise received at 21 Voelas Road should be dominated by sound from the general port area to the east – and there is a significant disparity between the measured and predicted noise levels at location D. If the contours correctly captured noise from the Oil Berth, predicted cumulative levels would increase in the locations around 21 Voelas Road.

We consider that any 'updated' or 'future' contours should at least correctly capture the reality of what currently occurs on site, to allow appropriate mitigation to be considered for affected dwellings.

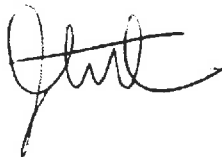
*Sleep disturbance*

The actual measured noise levels received outside 21 Voelas Road were in the order of 60 dB  $L_{Aeq}$ , which is well above the noise levels typically recommended to allow for sleeping with windows open (for example 45 dB  $L_{Aeq}$  is recommended in NZS6802:2008 and World Health Organisation *Guidelines for Community Noise*). In many situations there would be a compelling argument that noise at this level during the night time was therefore unreasonable.

However, in this case this point may be difficult to argue as the New Zealand Port Noise Standard NZS 6809:1999 is unusually permissive and refers to a possible short term night-time noise limit of 60 dB  $L_{Aeq}$  (9 hours) at the 65 dB  $L_{dn}$  noise contour – which is only just exceeded in this case. The Port would argue that the unusually high noise emissions are acceptable, given the important infrastructure role the port plays.

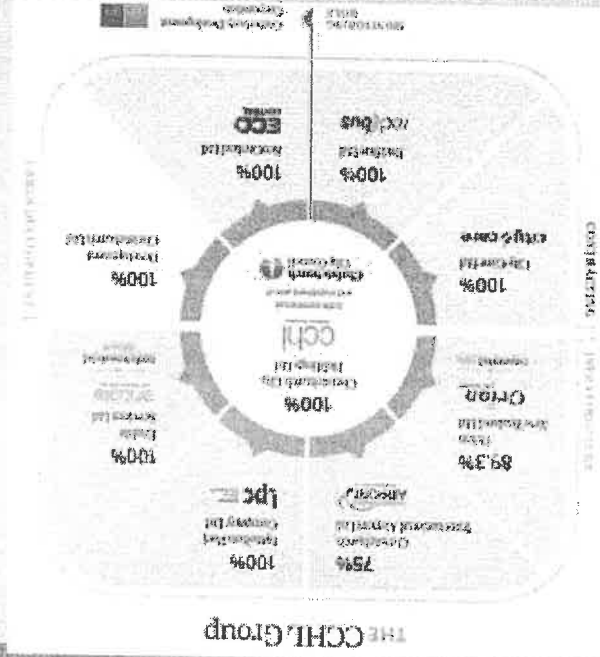
Please do not hesitate to contact us to discuss further as required.

Kind Regards,



Dr Jeremy Trevathan  
Ph.D. B.E.(Hons.) Assoc. NZPI®  
**Acoustic Engineering Services**

27 February 2017



DEVELOPMENT CHRISTCHURCH LTD (DCL)

Development Christchurch Limited is a new Christchurch City Council owned, but commercially focused development authority with a city-wide focus on urban regeneration. DCL's mandate is to catalyse new investment and development in Christchurch, thereby improving economic and social outcomes for the city. DCL's activities centre on the provision of development management and investor relations services, as well as strategic and commercial advice to Council.

DCL is currently being established. The entity has been created and identified the priority development activities it will undertake.

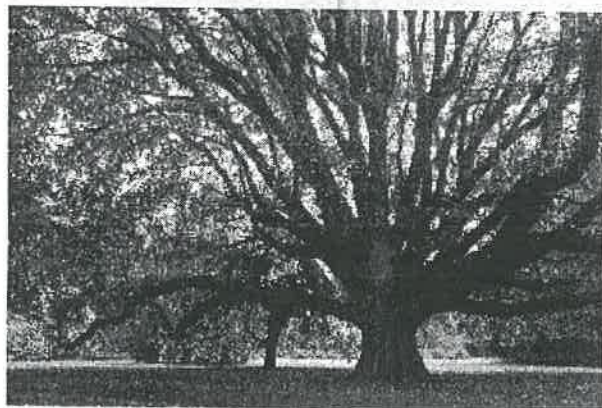




CHRISTCHURCH CITY HOLDINGS LIMITED  
A wholly-owned subsidiary of Christchurch City Council

Christchurch City Holdings Limited (CCHL) is the wholly owned investment arm of

holding shares in eight trading companies.



The trading companies (or CCTOs - "council-controlled trading organisations") own and run some of the key infrastructure of Christchurch, including electricity delivery, the port, the airport, public transport, and recycling facilities, and are critical to the regional economy.

A profile of CCHL can be found [here](#).

Watch the CCHL 20th Anniversary video.

# S 42 A Report

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Appendix 6 Report of Simon Childerhouse  
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TIDES

BIRD LIFE

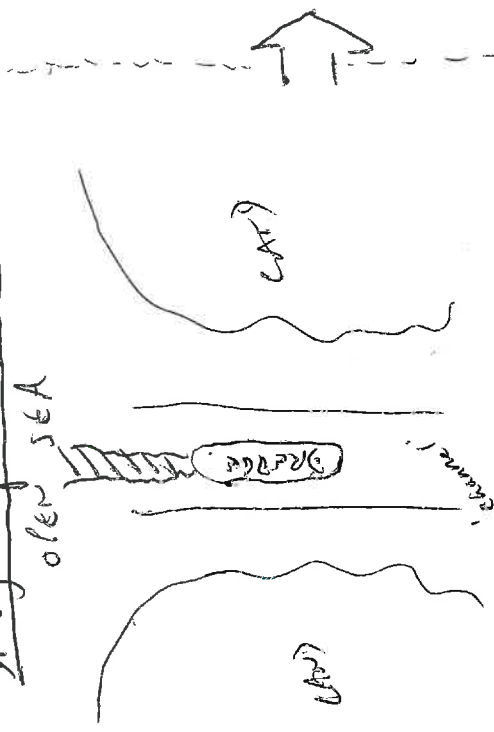
FISH LIFE / Harbour ? NURSERY

WATER TEMPERATURES

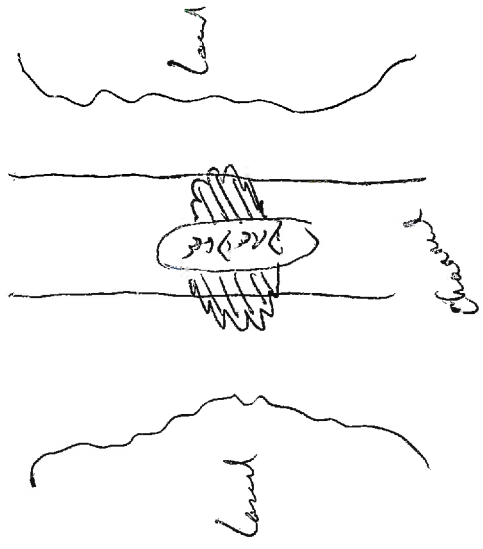
CAN DREDGE OPERATOR SEE PLUME ? NAKED EYE ? INSTRUMENTS ?  
how REAL-TIME PLUME MONITORING

SEA-GOING PLUME...

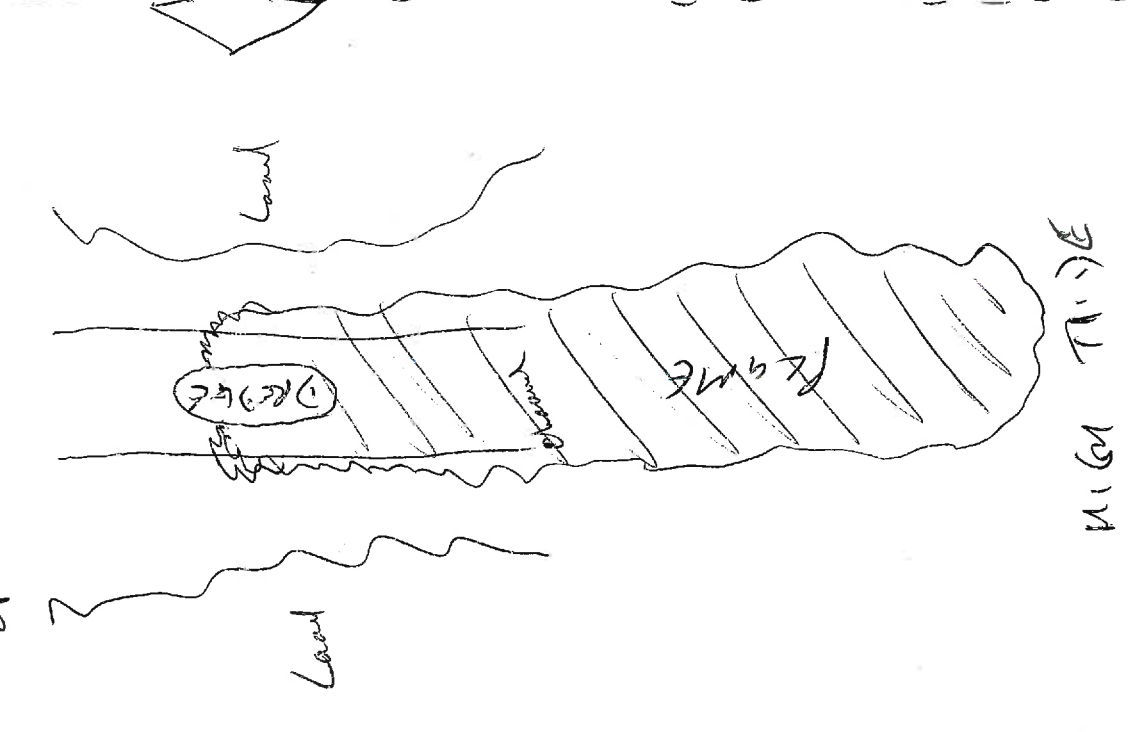
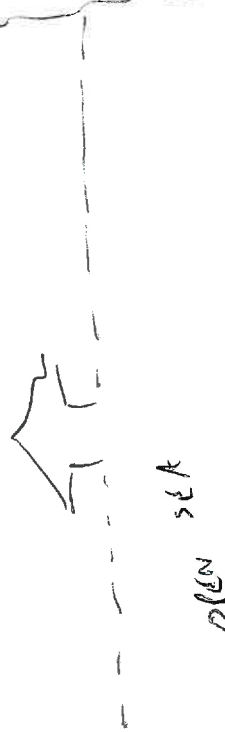
# Dredge plume and tidal flow



OUTGOING TIDE  
OVERFLOW "moderate" but "caution"

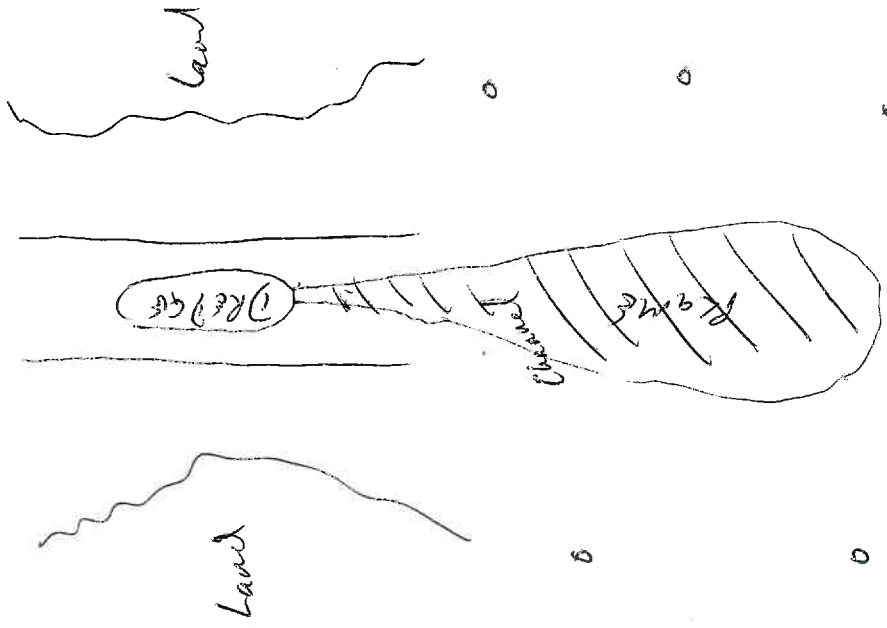


LOW TIDE  
OVERFLOW minimal



INCOMING TIDE

INCOMING TIDE  
OVERFLOW "moderate" but "caution"



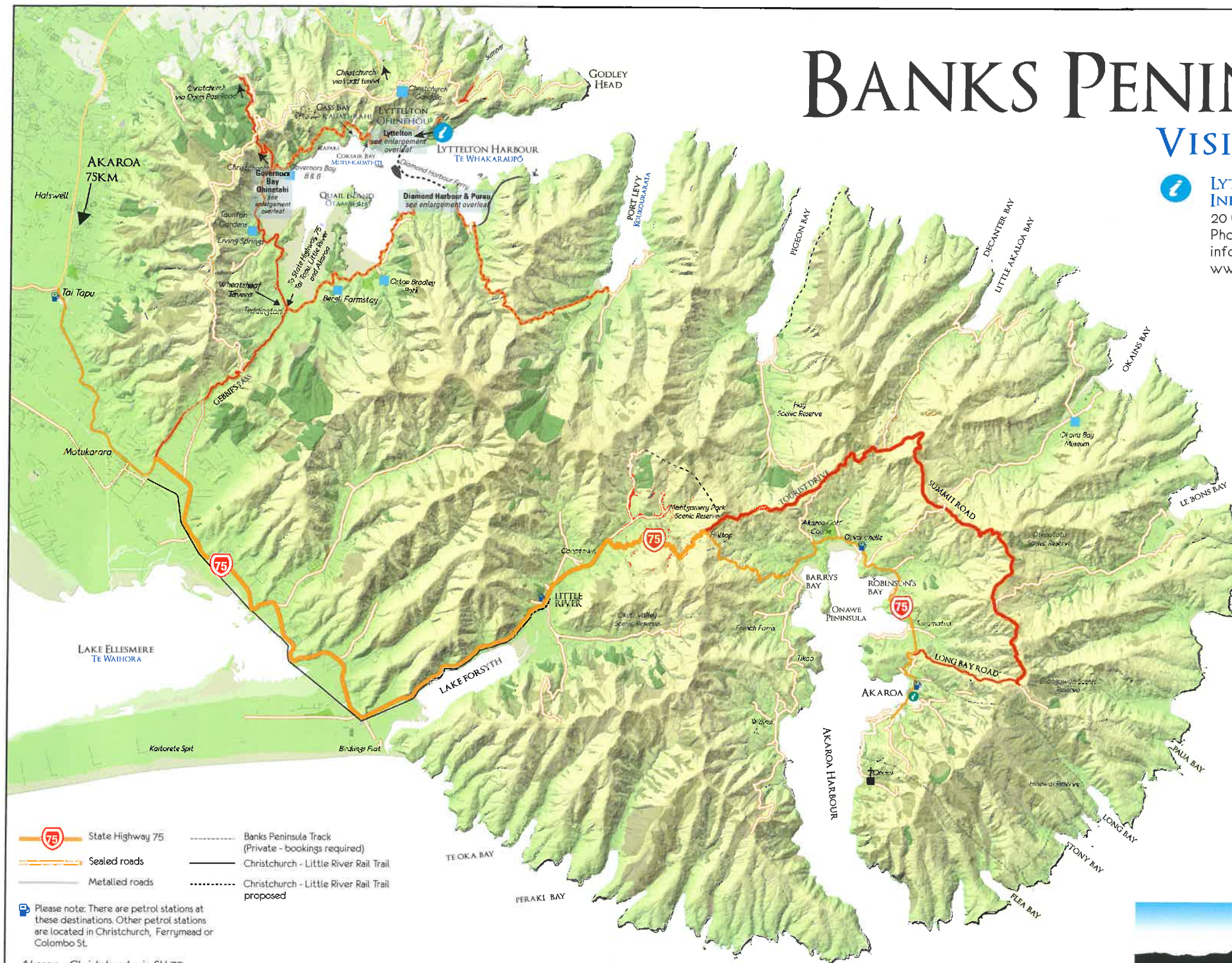


# BANKS PENINSULA

## VISITORS MAP



**LYTTELTON HARBOUR  
INFORMATION CENTRE**  
20 Oxford Street, Lyttelton  
Phone 03 328 9093  
infocentre@lyttelton.net.nz  
www.lytteltonharbour.info



### LITTLE RIVER ATTRACTIONS

Little River Craft Station  
Little River Gallery

### AKAROA ATTRACTIONS

The Giants House  
Hinewai Reserve  
Garden of Tane  
Akaroa Nature Cruise  
Guided Walks  
Akaroa Museum

- State Highway 75
- Sealed roads
- Metalled roads
- Banks Peninsula Track  
(Private - bookings required)
- Christchurch - Little River Rail Trail
- Christchurch - Little River Rail Trail  
proposed

Please note: There are petrol stations at these destinations. Other petrol stations are located in Christchurch, Ferrymead or Colombo St.

Akaroa - Christchurch via SH 75  
Little River 40 minutes, Akaroa 1.5 hours from Christchurch

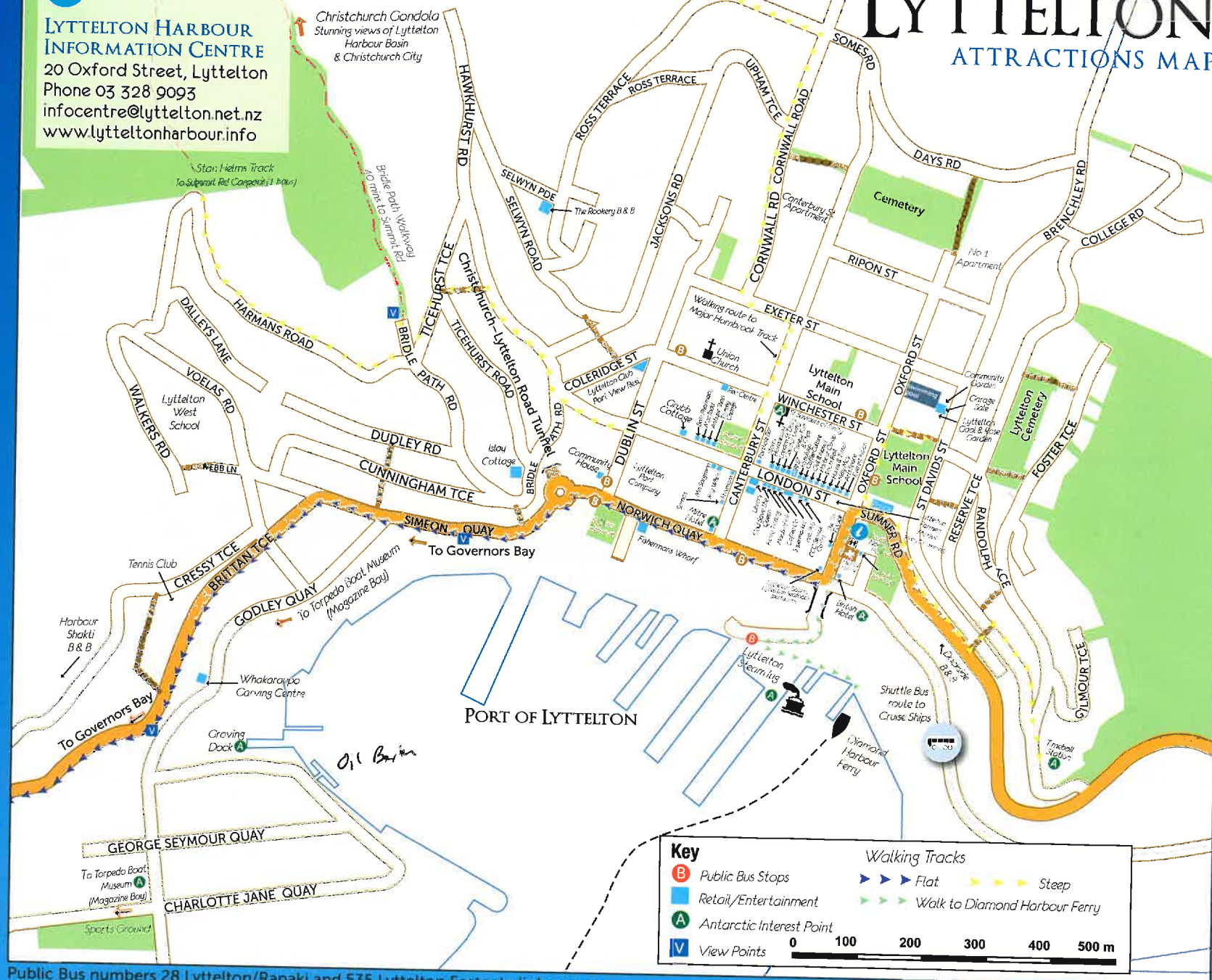




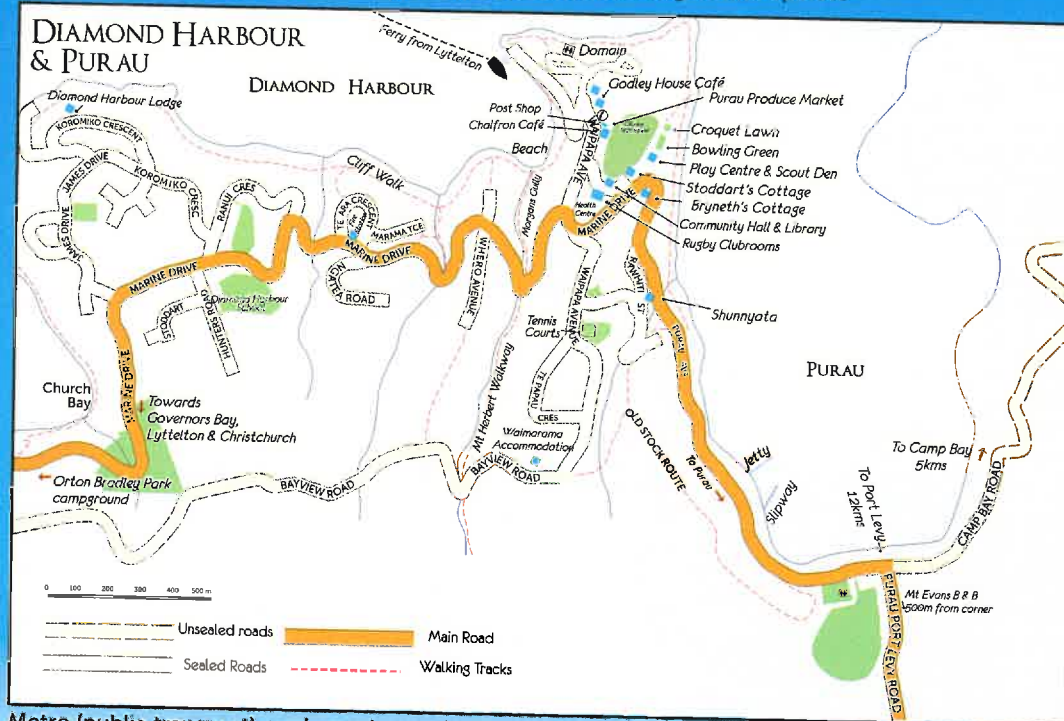


# LYTTTELTON

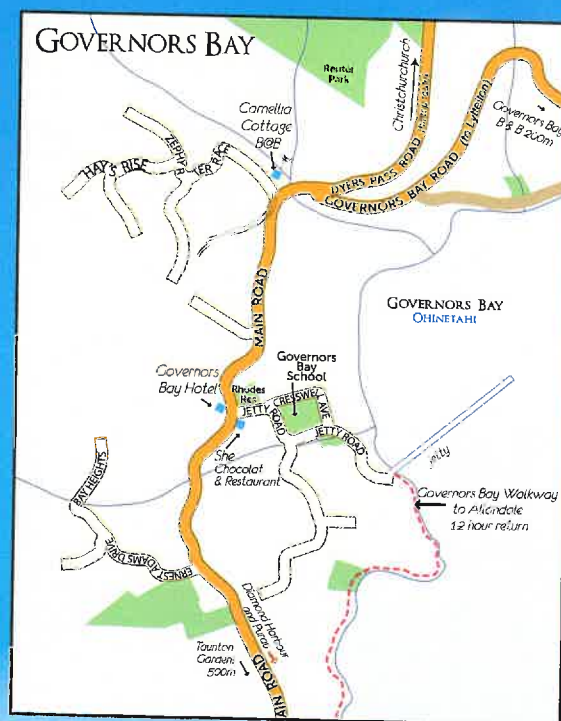
## ATTRACTIONS MAP



Public Bus numbers 28 Lyttelton/Rapaki and 535 Lyttelton Eastgate link operate



Metro (public transport) cards can be used on the Lyttelton/  
Diamond Harbour Ferry



# LYTTELTON HARBOUR

PURAU · DIAMOND HARBOUR · CHURCH BAY · CHARTERIS BAY · GOVERNORS BAY · RAKI · CASS BAY · CORSAIR BAY · LYTTLETON