

20 BAY ROAD
WARRINGTON
PROPOSED LAND REZONING
A NOISE SURVEY

ON BEHALF OF MR QUENTON JOHNSTON AND MS LOUISE MARSH
24 BAY ROAD WARRINGTON

June 2021

A SOUND SURVEY

Performed by IHTO

Industrial Hearing Testing (Otago)

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EXECUTIVE SUMMARY

IHTO was engaged to conduct a sound survey at 24 Bay Road Warrington to assess the potential for noise affects associated with a private plan change to sub divide and rezone the use of the adjoining property at 20 Bay Road Warrington. LUC -2020-293

The purpose of the survey was to establish baseline and ambient sound levels at the west boundary of 24 Bay Road that is adjacent to the vehicle access of 20 Bay Road and at 28 Bay Road that overlooks the 3 Hectare site of 20 Bay Road.

The findings show that the maximum Night time (Nt) sound levels of $L_{AeqT12hrs}49dB$ (found at 28 Bay Road) are higher than the noise performance standards for a residential area (50Dt/40Nt dBA). The sound profile primarily emanates from constant ocean noise some 500 meters to the North-East and Highway noise 2-3 kilometers to the South-West. The L_{N95} most closely approximates the back ground residual sound level = $L_{N95} 37dBA$. The Time weighted Average sound levels 10pm -7am were $L_{AeqT9hr}45dB$ –

It is not possible to isolate or exclude either the the ocean noise or highway traffic noise.

Sound levels on the South West deck of 24 Bay Road were Dt - $L_{AeqT15mins}49dB$.

Sound levels were recorded for 4 light vehicles transiting up and down the vehicle access easement for 20 Bay Road from the South West deck of 24 Bay Road. TWA $L_{AeqT15mins}63dBA$ and $L_{AFmax}78dB$ – The sound profile is primarily from tyre noise over gravel, with engine noise most evident as vehicles were closest to the deck and south - west facing ranch sliding glass doors – SPL 78dBA @ 8 meters from the centre of the current car track.

The transit of medium to heavy weight Motorhomes will adversely affect the immediate neighbours of 20 Bay Road with vehicle noise. The raised seating position of Buses and Motorhomes will also impinge on the privacy of 24 Bay Road. Considering the lack of local shops, campers are likely to traverse the driveway of 20 Bay Road more frequently to travel further to find groceries or food venues increasing traffic movements along Bay road.

The amenity of the immediate neighbourhood could also be adversely affected by the operation of petrol engine electrical generators of motorhomes – as no powered sites are proposed for the motor camp. Other camper activities may also affect the tranquility of the immediate neighbourhood from group gatherings - parties and music.

Rubbish trucks and service vehicles will also need access to 20 Bay Road to maintain the site.

Construction noise from earth moving vehicles will also affect the immediate neighbours during the establishment phase. Excessive noise is to be expected while making the driveway wider and wideing the throat of Bay Road. Creation of the roading and leveling parking sites for the 60 proposed parking areas will involve diggers, bulldozers and tip trucks over a number of weeks – all of which will transit along the driveway adjacent to the Johnston and Marsh residence at 24 Bay Road.

Construction noise is better assessed by NZS 6803: 1999 Acoustics - Construction Noise

Ideally an alternative vehicle access from the Esplanade should be considered first.

A noise mitigation plan and amelioration goals should be provided by the developer and if no alternative access can be found into 20 Bay Road then Mr Johnston and Ms Marsh should be adequately compensated and permanent vehicle noise solutions implemented that are acceptable to all the property owners with shared boundaries affected by this proposal.

PROJECT DESCRIPTION

IHTO was engaged by Mr Johnston and Ms Marsh of 24 Bay Road Warrington to conduct a sound survey at the above property to assess the current noise environment and possible noise affects associated with a private plan change to sub divide and rezone the use of the adjoining property at 20 Bay Road Warrington – that currently is used as a periodic class room and occasional camp site by Kings High School known as “The Heatherly”

The purpose of the survey was to establish the Dt baseline and ambient sound levels at the west boundary that is immediately adjacent to the vehicle access of 20 Bay Road, and the Nt sound levels 10pm – 7am at 28 Bay Road (closest to the proposed redevelopment)

‘The Heatherly’ vehicle access is 75 meters along the shared boundary of Mr Johnston and Ms Marsh property 24 Bay Road and vehicular transits will pass within 8 meters of their lounge room.

The proposed rezoning will allow for access for up to 60 self contained vehicles (Camper Vans, Motorhomes and Carvans with tow vehicles) for members of the New Zealand Motor Caravan Association to park up and camp within the 3 hectre grounds at 20 Bay Road Warrington. The application allows for roading works to widen the vehicle access easement from Bay Road and preparation and leveling of 60 parking sites for Large and medium sized Motor Homes plus any ancillary trailers including towed behind secondary cars.

It is noted that there is an existing freedom camping site adjacent to The Heatherly on the opposite side of the North East boundary of 20 Bay Road – the Warrington Domain Freedom Camping area on the Esplanade is between 15 meters at its closest and on average 35 meters from The Heatherly boundary fence. An alternative crossing could conceivably be granted here , with minimum disturbance to the existing residential neighbours.

THE DUNEDIN DISTRICT NOISE ZONE PLANS

Warrington is currently zoned a Township and Settlement - residential
Noise Map 68 has been replaced by noise zoning under the 2GP 9.3.6 Noise

The Bay Road Warrington noise limits are zoned Residential and Coastal Rural

Day time 50dB $L_{AeqT15min}$

Shoulder Period 45 $L_{AeqT15mins}$

Night Time 40dB $L_{AeqT15min}$

Daytime - means the period between the hours of 7:00 am and 7:00 pm, except that where any shoulder period applies day-time is between the hours of 7:00 pm and 10:00 pm.

Night-time - means the period between the hours of 10:00 pm on any night and 7:00 am the following day.

The local area is best described as a semi-rural and residential coastal enclave with ocean and estuary ecology. The houses in the area are a mix of new builds and restored cribs.

Many sections are large enough to graze horses or sheep.

THE CURRENT NOISE ENVIRONMENT

A 12-hour night time sound sample was taken at the edge of the veranda at 28 Bay Road – that overlooks the proposed rezoning area at 20 Bay Road

Moderate weather night (4 knots wind = 2mtrs per second) and 8°C

The night time period 10pm- 7am - $N_t = L_{AeqT10hrs} 46dB$

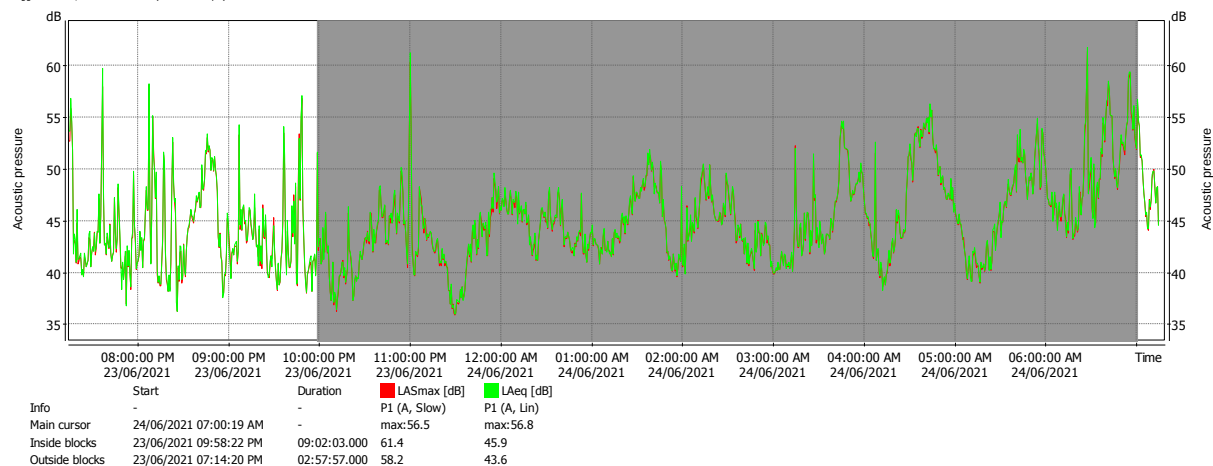
Results shown below – sound levels were between $L_{ASMin} 34dB$ and $L_{ASMax} 61dB$

Nt Highlighted below in the Grey shaded area

Nt 10pm 23/06/2021 – 7am 24/06/2021

Svan 971: Logger results

Logger results, zoom out = 37x (max envelope)



28 Bay Road Warrington – edge of rear Patio

Sound Data File 23/06/2021 Over Night

Hour	Filter	Detector	Elapsed time	Ov/LT	Ur/LT	Unit	L_{peak}	L_{max}	L_{min}	SPL	Leq
19:14:20	A	Slow	12:00:00	0.0	0.0	dBA		61.4	33.7	44.4	45.4
19:14:20	C	Slow	12:00:00	0.0	0.0	dB	93.0				
19:14:20	Z	Fast	12:00:00	0.0	0.0	dBZ	94.3	80.8	46.2		

12 Hour TWA = 45dBA (7:15pm – 7:15am)

L_{A95} 37dB approximates the residual or back ground noise constant -

Profile P1 (A, Slow)

L_n L_{Aeq} L_n spectra [dB]

L10 49.0

L95 37.0

Shoulder period 7pm -10pm = $L_{AeqT15mins} 47dB$

Night Time $N_t = 10pm - 7am = L_{AeqT9hrs} 46dB$

24 Bay Road

Measured on the deck

Sound data file #1 South-West deck 27th June 2021

L_{AeqT15mins} 49dB

Hour	Filter	Detector	Duration	L _{peak}	L _{max}	L _{min}	SPL	Leq
13:44:36	A	Slow	00:15:00		60.5	43.4	47.3	48.7
13:44:36	C	Slow	00:15:00	78.6				
13:44:36	Z	Fast	00:15:00	82.7				

Profile (A, Slow)

Ln LAeq Ln spectra [dB]

L10 50.7

L95 43.9

Sound data file #2 South-West deck 27th June 2021

Vehicle movement on driveway of 20 Bay Road – 8 meters from the centre of the roadway

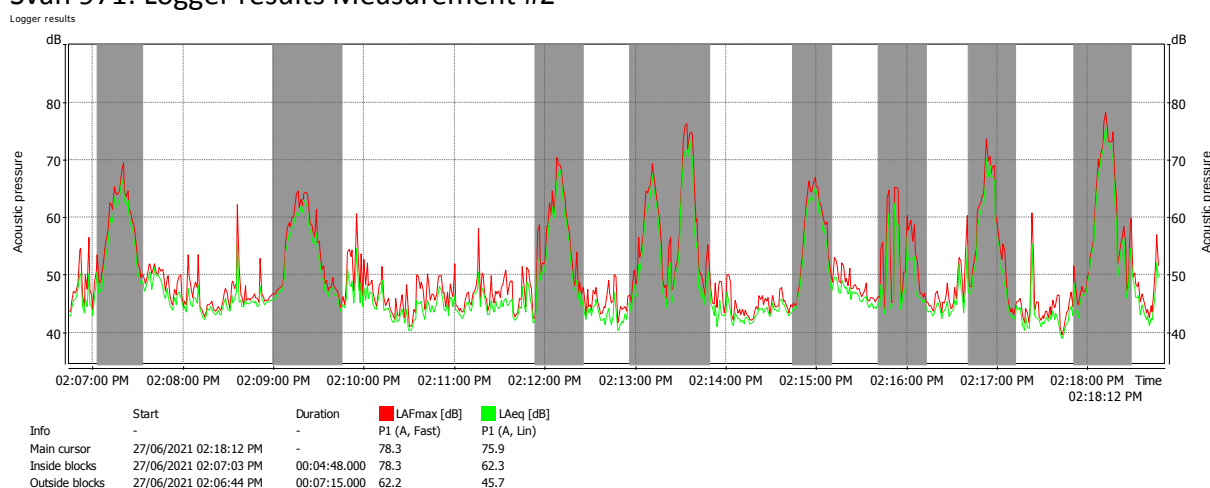
Measurement of vehicles passing by south west boundary of residence 24 Bay Road

Hour	Filter	Detector	Duration	L _{peak}	L _{max}	L _{min}	SPL	Leq
14:06:44	A	Fast	00:12:03		78.3	38.2	51.7	58.4
14:06:44	C	Slow	00:12:03	95.8				
14:06:44	Z	Slow	00:12:03	95.9				

L_{Amax} 78dB

L_{AeqT12mins} 58dB

Svan 971: Logger results Measurement #2



The above shaded bars highlight the sound levels of SUV vehicles along the driveway of 20 Bay Road – The sound profile is mainly tyre noise on gravel and engine noise at right angles to the deck at the closest point to the sliding glass doors of the lounge room of 24 Bay Road.

L_{Amax} 78dB – short Leq

TWA L_{AeqT5mins} 62dB

Methodology

Sound Meter

Sound measurements were taken with a Svan 971 Class 1 integrating/averaging sound level meter (ISLM) octave band analyser with data logging capability.

3 sound weighting parameters were recorded simultaneously (A, C & Z) in 2-time weightings (Slow dBA and dBC and fast dBA and Flat/Z).

All sound recording data was downloaded onto Svan PC++ software for later analysis and report verification.

Pre-measurement and post-measurement field calibration was performed using a CEL 284/2 field calibrator to ensure microphone conformity to class 1 standard.

The microphone was fitted with 40mm wind sock with the microphone position held at 1.5 meters to approximate the sound levels received at ear height of a person standing.

All sound measurements were taken with the SLM mounted on a survey tripod.

Applicable Standards

The sound measurements in this report are based on the following technical documents and standards.

NZS 6801:2008 - Acoustics - Measurement of environmental sound

NZS 6802:2008 – Acoustics – Environmental noise

TERMINOLOGY

Ambient or residual sound – Sound levels measured in the absence of intrusive noise

dB – Decibel unit measurement of sound - The decibel is a relative unit of measurement equal to one tenth of a bel. It expresses the ratio of two values of a power or root-power quantity on a logarithmic scale

dBA – decibel unit weighted to most closely approximate the human ear sensitivity

dBZ – decibel unit unweighted – used principally for octave or frequency differentiation

Integration period – Time weighted period that sound measurement occurs by descriptor $L_{Aeq}(T)$

L_{Amax} – The maximum A weighted sound level found during a measurement period

L_{A10} - a 10 percent average sound level equal to or exceeded for 10% of the measurement period

L_{Aeq} - is that variable noise level which would in the course of the measurement period (T), cause the same A-weighted sound energy (a network filter that approximates noise effects upon the human ear) as that due to the total noise averaged over the same period expressed with the descriptor L_{AeqT} .

Where appropriate this report may also use 15-minute sample periods for the determination of generic noise levels in select areas. ($L_{AeqT15mins}$) or short Leq for sound events of shorter duration where appropriate.

Limitations

This report was commissioned by Mr Quenton Johnston.

This noise report has been prepared by Kelven Gaskill of Industrial Hearing Testing (Otago).

This report and its findings are submitted with confidence in its accuracy and in good faith to the following named persons;

Mr Quenton Johnston

Ms Louise Marsh

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The sound meters used for this report are within current laboratory calibration.

The sound measurement protocols are current under the standard NZS 6801:2008 - Acoustics - Measurement of environmental sound.

The findings and opinions expressed in this report are relevant to the dates that the sound measurement refers and should not be relied upon to represent conditions at substantively any other times or later dates or periods of varying activity or differing weather conditions.

Opinions expressed in this document are based on the sound data collected; information gathered during noise surveying and from professional experience.

Sound measurement terminology is standardized.

If further noise measurement is performed at any substantive later date or should additional information become available which may affect this IHTO assessment, then IHTO reserves the right to review that information, assess any new sound data, modify or submit revised findings, or make further comment, at the sole discretion of the IHTO principal.

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