



Notice of Meeting and Meeting Agenda Capital Regional Hospital District Board

Wednesday, October 12, 2022

1:05 PM

6th Floor Boardroom
625 Fisgard Street
Victoria, BC

The Capital Regional District strives to be a place where inclusion is paramount and all people are treated with dignity. We pledge to make our meetings a place where all feel welcome and respected.

1. TERRITORIAL ACKNOWLEDGEMENT

2. APPROVAL OF THE AGENDA

3. ADOPTION OF MINUTES

- 3.1. [22-602](#) Minutes of the August 10, 2022 and September 21, 2022 Capital Regional Hospital District Board Meetings

Recommendation: That the minutes of the Capital Regional Hospital District Board meetings of August 10, 2022 and September 21, 2022 be adopted as circulated.

Attachments: [Minutes - August 10, 2022](#)
[Minutes - September 21, 2022](#)

4. REPORT OF THE CHAIR

5. PRESENTATIONS/DELEGATIONS

5.1. Delegations

- 5.1.1. [22-618](#) Delegation - Kathy Gillis; Representing Stop the Summit Noise Community Group: Re: Agenda Item 6.2. Summit Noise Concerns - Update

6. CONSENT AGENDA

6.1. [22-528](#) Revenue Anticipation Borrowing Resolution for Current Capital Regional Hospital District Operating Expenditures

Recommendation: The Hospitals and Housing Committee recommends to the Capital Regional Hospital District Board:
That the Revenue Anticipation Resolution be adopted to allow the temporary borrowing of up to \$10 million for current Capital Regional Hospital District operating expenditures.
(WA)

Attachments: [Staff Report: Revenue Anticipation Borrowing Resolution CRHD](#)
 [Appendix A: Revenue Anticipation Resolution CRHD](#)

6.2. [22-579](#) Summit Noise Concerns - Update

Recommendation: The Hospitals and Housing Committee recommends to the Capital Regional Hospital District Board:
That the Chief Administrative Officer be authorized to implement the proposed remediation strategy, to include a maximum expenditure amount of \$200,000 for capital modifications to resolve noise concerns at the Summit.
(WA)

Attachments: [Staff Report: Summit Noise Concerns Update](#)
 [Appendix A: Acoustical Testing Report](#)
 [Appendix B: Consultant Report](#)

7. ADMINISTRATION REPORTS

7.1. [22-595](#) Amendment to the Capital Regional Hospital District 2022-2031 Ten Year Capital Plan

Recommendation: That the Capital Regional Hospital District 2022-2031 Ten Year Capital Plan be amended and approved as submitted.
(WA)

Attachments: [Staff Report: Amendment to the CRHD 2022-2031 Ten Year Cap Plan](#)
 [Appendix A: Amended 2022-2031 CRHD Ten Year Capital Plan](#)

8. REPORTS OF COMMITTEES

8.1. [22-577](#) Lady Minto Hospital Emergency Redevelopment - Approval of Amended Capital Bylaw

Recommendation: The Hospitals and Housing Committee recommends to the Capital Regional Hospital District Board:
1. That the revised project budget be approved;
2. That the Lady Minto Hospital Emergency Redevelopment Bylaw be amended and approved as submitted;
3. That Bylaw No. 414, "Capital Regional Hospital District Capital Bylaw No. 183, 2021, Amendment No. 1, 2022" be read a first, second and third time; and
4. That Bylaw No. 414 be adopted.
(WA, 2/3 on adoption)

Attachments: [Staff Report: Lady Minto Hospital Emerg Redvlp-Cap Bylaw Amend](#)
 [Appendix A: Bylaw No. 414](#)

9. BYLAWS

10. NOTICE(S) OF MOTION

11. NEW BUSINESS

12. MOTION TO CLOSE THE MEETING

12.1. [22-612](#) Motion to Close the Meeting

- Recommendation:**
1. That the meeting be closed for Land Acquisition in accordance with Section 90(1)(e) of the Community Charter. [1 item]
 2. That such disclosures could reasonably be expected to harm the interests of the Regional District. [1 item]

13. RISE AND REPORT

14. ADJOURNMENT

Voting Key:

NWA - Non-weighted vote of all Directors

NWP - Non-weighted vote of participants (as listed)

WA - Weighted vote of all Directors

WP - Weighted vote of participants (as listed)

Meeting Minutes

Capital Regional Hospital District Board

Wednesday, August 10, 2022

1:05 PM

6th Floor Boardroom
625 Fisgard Street
Victoria, BC

PRESENT:

Directors: D. Blackwell (Chair), R. Mersereau (Acting Chair), P. Brent (EP), S. Brice, Z. de Vries (for F. Haynes) (EP), B. Desjardins (EP), C. Graham (for R. Windsor) (EP), M. Hicks, G. Holman (EP), B. Isitt (EP), J. Loveday (EP), R. Martin, C. McNeil-Smith, K. Murdoch (EP), G. Orr, C. Plant, J. Ranns, L. Seaton, D. Screech, M. Tait, N. Taylor, K. Williams, G. Young

Staff: R. Lapham, Chief Administrative Officer; N. Chan, Chief Financial Officer; L. Hutcheson, General Manager, Parks and Environmental Services; D. Elliot, Acting General Manager, Planning and Protective Services; K. Morley, General Manager, Corporate Services; T. Robbins, General Manager, Integrated Water Services; M. Lagoa, Deputy Corporate Officer; S. Orr, Senior Committee Clerk (Recorder)

EP - Electronic Participation

Regrets: Directors F. Haynes, L. Helps, R. Windsor

The meeting was called to order at 1:07 pm.

1. TERRITORIAL ACKNOWLEDGEMENT

A Territorial Acknowledgement was provided in the preceding meeting.

2. APPROVAL OF THE AGENDA

MOVED by Director Mersereau, **SECONDED** by Director Plant,
That the agenda for the August 10, 2022 Session of the Capital Regional Hospital District Board be approved.
CARRIED

3. ADOPTION OF MINUTES

3.1. [22-511](#) Minutes of the July 13, 2022 Capital Regional Hospital District Board

MOVED by Director Seaton, **SECONDED** by Director Brice,
That the minutes of the Capital Regional Hospital District Board meeting of July 13, 2022 be adopted as circulated.
CARRIED

4. REPORT OF THE CHAIR

There were no Chair's remarks.

5. PRESENTATIONS/DELEGATIONS

There were no presentations or delegations.

6. CONSENT AGENDA

There were no Consent Agenda items.

7. ADMINISTRATION REPORTS

7.1. [22-500](#) 2022 Minor Capital Projects and Equipment - Approval of Capital Bylaw

D. Elliot spoke to Item 7.1.

MOVED by Director Screech, **SECONDED** by Director Orr,

1) That the recommended 2022 Minor Capital Projects totalling \$3,750,000 be approved and expensed from the 2022 requisition;

2) That the recommended 2022 equipment grants of \$30,000 to Mount St. Mary Hospital and \$2,925,000 to Island Health be approved and expensed from the 2022 requisition.

CARRIED

MOVED by Director Screech, **SECONDED** by Director Orr,

3) That Bylaw No. 412, "Capital Regional Hospital District Capital Bylaw No. 184, 2022", be introduced and read a first, second and third time.

CARRIED

MOVED by Director Screech, **SECONDED** by Director Orr,

4) That Bylaw No. 412 be adopted.

CARRIED

8. REPORTS OF COMMITTEES

There were no Reports of Committees.

9. NOTICE(S) OF MOTION

There were no Notice(s) of Motion.

10. NEW BUSINESS

There was no new business.

11. ADJOURNMENT

MOVED by Director Plant, **SECONDED** by Director McNeil-Smith,

That the August 10, 2022 Capital Regional Hospital District Board meeting be adjourned at 1:10 pm.

CARRIED

CHAIR

CERTIFIED CORRECT:

CORPORATE OFFICER

Meeting Minutes

Capital Regional Hospital District Board

Wednesday, September 21, 2022

1:00 PM

6th Floor Boardroom
625 Fisgard Street
Victoria, BC

Special Meeting - Budget

PRESENT:

Directors: D. Blackwell (Chair), R. Mersereau (Acting Chair), J. Bateman (for M. Tait) (EP), P. Brent, S. Brice, B. Desjardins, C. Graham (for R. Windsor), L. Helps, M. Hicks, G. Holman, B. Isitt, J. Loveday, C. McNeil-Smith, R. Martin, K. Murdoch, G. Orr, C. Plant, J. Ranns, D. Screech, L. Seaton, N. Taylor, K. Williams, G. Young

Staff: R. Lapham, Chief Administrative Officer; N. Chan, Chief Financial Officer; L. Hutcheson, General Manager, Parks and Environmental Services; K. Lorette, General Manager, Planning and Protective Services; K. Morley, General Manager, Corporate Services; T. Robbins, General Manager, Integrated Water Services; R. Lachance, Senior Manager, Financial Services; B. Semmens, Manager, Financial Planning; M. Lagoa, Deputy Corporate Officer; S. Orr, Senior Committee Clerk (Recorder)

Guests: S. McCarten, M. Khaira and D. MacKay, Island Health Representatives

EP - Electronic Participation

Regrets: Directors R. Windsor, F. Haynes, M. Tait

The meeting was called to order at 1:01 pm.

1. TERRITORIAL ACKNOWLEDGEMENT

A Territorial Acknowledgement was provided in a preceding meeting.

2. APPROVAL OF THE AGENDA

MOVED by Director Plant, **SECONDED** by Director Mersereau,
That the agenda for the September 21, 2022 Session of the Capital Regional
Hospital District Board be approved.
CARRIED

3. PRESENTATIONS/DELEGATIONS

4. SPECIAL MEETING MATTERS

4.1. [22-550](#) Capital Regional Hospital District 2023-2032 Ten Year Capital Plan

K. Lorette spoke to Item 4.1.

Discussion ensued regarding extended care capital projects.

**MOVED by Director Mersereau, SECONDED by Director Murdoch,
That the Capital Regional Hospital District 2023-2032 Ten Year Capital Plan be
approved as submitted.**

CARRIED

4.2. [22-501](#) 2023 Capital Regional Hospital District Provisional Budget

N. Chan spoke to Item 4.2. and provided a PowerPoint presentation outlining the 2023 provisional budget summary.

Discussion ensued regarding:

- future partnerships with Island Health related to Mt. Tolmie property
- interest rates
- resource constraints

**MOVED by Director Mersereau, SECONDED by Director Plant,
That the 2023 Capital Regional Hospital District Provisional Budget be approved
as submitted.**

CARRIED

5. ADJOURNMENT

**MOVED by Director Brice, SECONDED by Director Loveday,
That the September 21, 2022 Capital Regional Hospital District Board meeting be
adjourned at 1:24 pm.**

CARRIED

CHAIR

CERTIFIED CORRECT:

CORPORATE OFFICER

**REPORT TO HOSPITALS AND HOUSING COMMITTEE
MEETING OF WEDNESDAY, OCTOBER 05, 2022**

SUBJECT **Revenue Anticipation Borrowing Resolution for Current Capital Regional Hospital District Operating Expenditures**

ISSUE SUMMARY

Adoption of a revenue anticipation borrowing resolution (General Purpose) authorizing borrowing up to \$10 million if required prior to receipt of requisition revenues expected in August 2023.

BACKGROUND

Section 31 of the *Hospital District Act* allows the Board to adopt a revenue anticipation resolution to borrow money if required to meet cash flow needs prior to receiving payable revenue from member municipalities and the surveyor of taxes for electoral areas. All borrowed funds must be repaid within nine months of the date of the borrowing. The last time borrowing was exercised under this authority was July 2017 for \$1.1 million to cover short term interest payments which was repaid in August upon receipt of requisition revenue.

Given the growth of the organization and increased capital activity, it is appropriate to continue implementing financial risk management tools that provide the ability to respond to both opportunities and unforeseen circumstances.

Based on best practices, staff recommend the amount within the revenue anticipation bylaw aligns to the anticipated peak, monthly cash outflow of approximately \$10 million for 2023. If required, the Capital Regional Hospital District (CRHD) will borrow funds by leveraging overdraft arrangements within current banking agreements or through the Municipal Finance Authority (MFA). Currently, the overdraft rate is 4.7% and MFA's short term borrowing rate is 3.4% (both variable rates as of September 1, 2022).

ALTERNATIVES

Alternative 1

The Hospitals and Housing Committee recommends to the Capital Regional Hospital District Board:

That the Revenue Anticipation Resolution be adopted to allow the temporary borrowing of up to \$10 million for current Capital Regional Hospital District operating expenditures.

Alternative 2

That this report be referred back to staff for additional information.

IMPLICATIONS

Financial Implications

The proposed resolution provides the CRHD access to funds as of January 2023 to cover expenditures if required, pending receipt of requisition revenue. Borrowed funds will not be

accessed unless necessary and any borrowed funds will be repaid upon receipt of anticipated revenues. Historically, the CRHD has not acted on the revenue anticipation borrowing resolution but it is a recommended fiscal risk management tool. The purpose of approving this resolution is to ensure available borrowing authority in the unlikely event funds are required to meet short term cash flow requirements.

CONCLUSION

This proposed resolution is brought forward annually for consideration. Adoption of the resolution is necessary to authorize borrowing to cover short term expenditures in 2023 if required, pending receipt of anticipated revenues.

RECOMMENDATION

The Hospitals and Housing Committee recommends to the Capital Regional Hospital District Board:

That the Revenue Anticipation Resolution be adopted to allow the temporary borrowing of up to \$10 million for current Capital Regional Hospital District operating expenditures.

Submitted by:	Rianna Lachance, BCom, CPA, CA, Senior Manager, Financial Services
Concurrence:	Nelson Chan, MBA, FCPA, FCMA, Chief Financial Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT(S)

Appendix A: Revenue Anticipation Resolution

CAPITAL REGIONAL HOSPITAL DISTRICT

RESOLUTION

Victoria, BC, October 12, 2022

No. _____

WHEREAS, pursuant to Section 31 of the *Hospital District Act*, the Board may by resolution with the approval of the Minister of Health or a person authorized by him to act on his behalf, borrow money for purposes other than capital expenditures by temporary loan such sums as the Board may deem necessary to meet the current operating expenditures for the year, including the amounts required for principal and interest falling due within the year upon any debt of the Board;

AND WHEREAS pursuant to Section 25 of the said *Act*, member municipalities and the Province are not required to make payment from taxation revenues of amounts requisitioned by a Hospital District until August 1st of each year;

AND WHEREAS it is anticipated that a maximum of \$10,000,000 of borrowed funds will be required to meet 2023 current operating expenditures of the Board including the amounts required for principal and interest falling due within the year upon any debt of the Board;

NOW THEREFORE BE IT RESOLVED that the Board of the Capital Regional Hospital District borrow pursuant to Section 31 of the *Hospital District Act* a sum not exceeding \$10,000,000 for the purpose of paying the said current operating expenditures;

AND THAT the aforesaid monies or any part thereof may be borrowed for the purpose of aforesaid by means of bank overdrafts, bankers' acceptances, or promissory notes, bearing the Corporate Seal and signed by the Chair or Acting Chair and the Treasurer or Acting Treasurer. All monies borrowed pursuant to this resolution shall be repaid within nine months of the date of the first monies borrowed pursuant to this resolution;

AND THAT the Board of the Capital Regional Hospital District hereby pledges as security for liability incurred hereby, that part of current revenues necessary to fully satisfy any liability so created and the money borrowed shall be a first charge against current revenues received.

**REPORT TO HOSPITALS AND HOUSING COMMITTEE
MEETING OF WEDNESDAY, OCTOBER 05, 2022**

SUBJECT **Summit Noise Concerns - Update**

ISSUE SUMMARY

Noise concerns from neighbourhood surrounding the Summit.

BACKGROUND

In August 2020, the Capital Regional District Board began receiving noise complaints for the Summit, located at 955 Hillside Avenue. The Summit is leased to Island Health for 25 years and has been tenanted since July 12, 2020.

Acoustical testing was completed by RWDI on September 17, 2020 and August 05, 2021. RWDI reported that noise levels are below that required by the City of Victoria noise bylaw.

At its October 13, 2021 meeting, the Capital Regional Hospital District (CRHD) Board directed staff to conduct further acoustical engineering work up to \$50,000, engage and consult with the surrounding community, and report back. On July 14, 2022 a team of acoustical engineers, CRHD staff, and Island Health met at the Summit and at two neighbourhood locations to conduct sound testing. This testing was designed in consultation with the community and they had designated community members in attendance. Acoustical engineers were able to turn on and off the individual roof top equipment and determined the unpleasant tone to be caused by the large chiller.

For the last several months CRHD has been working with consultants to determine the most efficient and effective solution and have received the acoustical testing report (Appendix A) and the consultant's report (Appendix B) regarding a remediation strategy. The acoustical testing report recommends either fully enclosing the large chiller or converting the acoustical louvers to a solid barrier wall. This report was shared with EH Price consultants which recommends the installation of an intake silencer bank on the south side of the large chiller and replacing the existing acoustical louver wall with a 13' high acoustical panel barrier as the most effective and cost efficient solution.

ALTERNATIVES

Alternative 1

The Hospitals and Housing Committee recommends to the Capital Regional Hospital District Board:

That the Chief Administrative Officer be authorized to implement the proposed remediation strategy, to include a maximum expenditure amount of \$200,000 for capital modifications to resolve noise concerns at the Summit.

Alternative 2

That the Summit Noise Concerns - Update report be referred back to staff for additional information based on Hospitals and Housing Committee direction.

IMPLICATIONS

Financial Implications

The CRHD Board had previously provided direction to undertake further testing and remediation within a budget of \$50,000, to be funded by the Administration and Feasibility Studies Reserve. To date we have spent \$11,300 and have a balance remaining of \$38,700. The equipment including the intake silencer bank and an acoustical barrier wall is estimated to cost \$92,000 not including labour and installation costs. Staff anticipate the recommended solution will cost \$200,000, including materials, installation and final engineering. These capital costs will be financed from the Summit Management Reserve, which is forecasted to have a balance of \$885,000 at December 31, 2022.

To accommodate the proposed solution, the 2022-2031 Ten Year Capital Plan, approved by the Board on March 16, 2022 and later amended on May 11, 2022, will need to be amended. The 2022 capital plan amendment to include a budget of \$200,000 for this project will be brought back to the Board for approval October 12, 2022.

CONCLUSION

After consultation with industry consultants and extensive testing on site, additional resources are required to remediate the unpleasant tone emanating from the rooftop equipment on the Summit building.

RECOMMENDATION

The Hospitals and Housing Committee recommends to the Capital Regional Hospital District Board:

That the Chief Administrative Officer be authorized to implement the proposed remediation strategy, to include a maximum expenditure amount of \$200,000 for capital modifications to resolve noise concerns at the Summit.

Submitted by:	Michael Barnes, MPP, Senior Manager, Health and Capital Planning Strategies
Concurrence:	Kevin Lorette, P. Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Nelson Chan, MBA, FCPA, FCMA, Chief Financial Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENTS

Appendix A: Acoustical Testing Report
Appendix B: Consultant Report



276-2950 Douglas Street
Victoria, BC Canada
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Tel: +1. 250.370.9302
E-mail: solutions@rwdi.com

August 2, 2022

Michael Barnes
Health and Capital Planning Strategies,
Capital Regional Hospital District 625 Fisgard Street
Victoria, BC V8W 1R7
T: 250.360.3221
mbarnes@crd.bc.ca

Re: Community Noise Measurements
The Summit at Quadra Village, 955 Hillside Avenue, Victoria, BC
RWDI Reference No. 1901644

Hello Michael,

As requested, on July 14, 2022 between 8:00 p.m. and 10:00 p.m., RWDI measured noise levels at The Summit while isolating operation of various rooftop equipment. The measurements were conducted with input from several local residents to determine which (if any) rooftop equipment is leading to community noise complaints. This report summarizes the methodology, presents our measurement results, discusses our main findings, and provides recommendations to reduce rooftop equipment noise levels.

BACKGROUND

It is our understanding that:

- In June 2016, Wakefield Acoustics (since merged with RWDI) established pre-project ambient noise levels conducted at three (3) adjacent residential locations;
- In September 2020, RWDI measured HVAC levels at four (4) residential locations;
- After the 2020 site visit, a noise control kit for the chiller was installed;
- In July 2021, RWDI measured chiller noise levels at four (4) surrounding community locations while varying the load. These measurements showed that a tone exists in the rooftop chiller, which exceeds the bylaw at 971 Market when operating at 100% load, due to the tonality clause in the Victoria Noise Bylaw. At the other three locations, measurements indicated compliance with the bylaw; and
- At least one recent noise complaint has targeted the rooftop Large Chiller as the source of noise concern in the surrounding community.

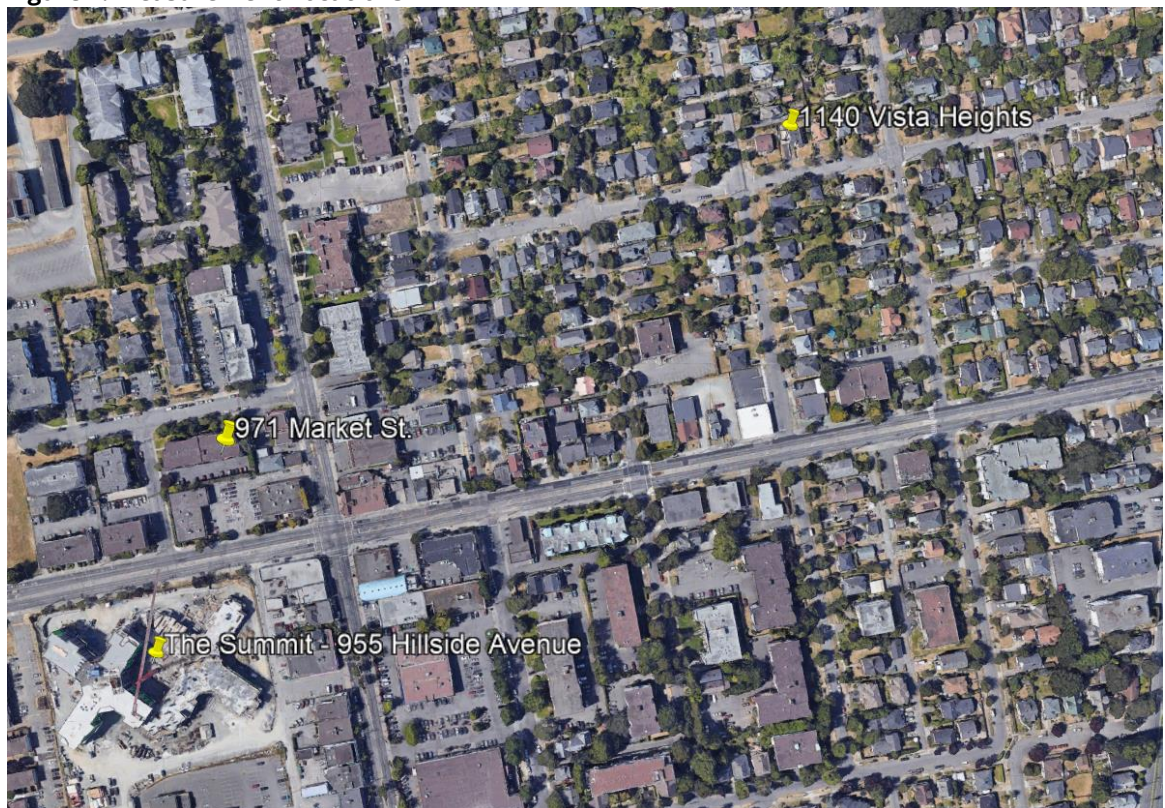


METHODOLOGY

RWDI conducted attended noise monitoring on the rooftop, as well as at two (2) community locations throughout testing. The testing procedure is outlined below. All measurement were conducted using Type 1 sound level meters which were calibrated prior to the beginning of testing. Measurements were conducted at the following locations (shown in Figure 1 below):

- 971 Market Street
- 1140 Vista Heights

Figure 1: Measurement Locations



Measurements at the residences were attended by RWDI field engineers, CRD staff, and members of the community. A predetermined list of test scenarios was established to isolate (and eliminate) rooftop equipment as a contributing factor the complaint. Community members had no prior knowledge of which equipment was running and were asked to confirm whether the noise related to the complaint was audible for any given test scenario. For each scenario, residents were asked if they could hear the noise they associate with the complaint. The response of the residents would determine whether further investigation into that equipment was required. Measurements were only taken when the residents confirmed that the noise from The Summit was audible and consistent with their noises of concern.



The test scenarios were as follows:

- Scenario #1 - Existing background noise level.
- Scenario #2 - Turn off all rooftop equipment.
- Scenario #3 - Turn on all air handling units
- Scenario #4 - Turn on exhaust fans
- Scenario #5 - Turn on the Small Chiller
- Scenario #6 - Turn on the Large Chiller (Small Chiller was turned off for this scenario)

Scenarios #1 and #2 were conducted to verify if the noise of concern is coming from The Summit. Scenarios #3 to #6 were conducted to identify the noise of concern. Closeup measurements of the rooftop equipment were taken to identify whether the HVAC equipment sound signatures correlate with the resident's noise of concern at the two community locations when audible noise from The Summit was confirmed.

MEASUREMENT RESULTS

Noise levels are presented in terms of the L90 which is defined as the sound level that is exceeded for 90% of a given time period. The L90 is generally considered to be representative of the background noise level. Since rooftop mechanical equipment operates to produce a steady and continuous noise, the L90 would best capture HVAC equipment noise levels provided that HVAC equipment noise levels are higher than other background noise (e.g., background traffic).

Measurement results are provided for both 971 Market St and 1140 Vista Heights. Please note that two residents were present at 971 Market St, and several residents were present at 1140 Vista Heights.

971 MARKET STREET

Table 1 presents the measurement results and resident's feedback at 971 Market Street.

Table 1: Measurement Results – 971 Market St.

Scenario #	Equipment	L ₉₀ (dBA)	Equipment is Audible (Yes/ Uncertain /No) ^[1]	Residents' Feedback
1	Baseline (all equipment)	51	Yes	<ul style="list-style-type: none">Residents noted a familiar tone present, but indicated that it can often be louder
2	None (background)	50 - 51	No	-
3	Air Handling Units	47	Yes	<ul style="list-style-type: none">One resident noted noise from The Summit was audible, but it was not the main noise of concern



Scenario #	Equipment	L ₉₀ (dBA)	Equipment is Audible (Yes/ Uncertain /No) ^[1]	Residents' Feedback
4	Exhaust Fans	-	Uncertain/No	<ul style="list-style-type: none">One resident was uncertain if there was a change from the previous scenario, the other resident did not believe the noise was audible from The SummitSince no change was noted, no measurements were taken
5	Small Chiller	50	Yes	<ul style="list-style-type: none">One resident believed that a familiar low tone was present, but not the main complaint noise was not present
6	Large Chiller	49 - 50	Yes	<ul style="list-style-type: none">This was immediately recognized as the main noise of concern by both residentsWhile the tone was identified as being audible, it was noted that it can often be louder

Table Notes:

[1] Based on resident's feedback.

Based on the results in Table 1 and observations made on site, we note the following:

- The main noise of concern was determined to be associated with the Large Chiller;
- It was determined through communication between RWDI field staff and rooftop measurements that the tone of interest (the main noise of concern) is a 315 Hz hum from the Large Chillers' compressors (refer to Figure 2 and discussion below);
- Based on scenarios #2 and #3, we expect that background levels (in the absence of The Summit rooftop equipment noise) to be 47 – 51 dBA during this site visit. The background levels are dominated by traffic noise which varies based on changing traffic pattern;
- In general, rooftop HVAC equipment noise from The Summit had little to no contribution to the overall L₉₀ during the site visit. However, background noise levels are expected to be lower later in the night, which may result in The Summit HVAC equipment to be more audible/measurable over background noise; and
- HVAC equipment noise from the nearby Commercial Lot (942 Hillside) was audible and may have added to the uncertainty in one of the resident's feedback, but this was not the main noise of concern.



1140 VISTA HEIGHTS

Table 2 presents the measurement results and resident's feedback at 1140 Vista Heights.

Table 3: Measurement Results – 1140 Vista Heights.

Scenario #	Equipment	L ₉₀ (dBA)	Equipment Audible (Yes/ Uncertain /No) ^[1]	Residents' Feedback
1	Baseline (all equipment)	42 - 43	Yes	<ul style="list-style-type: none">The noise of concern was audible and was described as a faint toneThe tone could not be identified on the sound level meterWhen asked to reproduce the noise of concern, the resident hummed a tone which the sound level meter could identify as 315 Hz
2	None (background)	43	No	-
3	Air Handling Units	43 - 44	No	-
4	Exhaust Fans	-	No	-
5	Small Chiller	-	No	-
6	Large Chiller	43 - 44	Yes	<ul style="list-style-type: none">Tone was audible to everyone presentWhile the tone was identified as being audible, it was noted that it can often be louderThe tone could not be identified on the sound level meterWhen asked to reproduce the noise of concern, the resident hummed a tone which the sound level meter could identify as 315 Hz

Table Notes:

[1] Based on resident's feedback.



Based on the results in Table 3 and observations made on site, we note the following:

- Rooftop measurements confirmed that the 315 Hz tone was identified to be from the Large Chiller; and
- HVAC rooftop equipment (including the Large Chiller) noise was not measurable over the existing background levels at this measurement location.

ROOFTOP AT THE SUMMIT

Rooftop HVAC noise measurements were taken to characterize the Large Chillers' acoustical spectrum. Figure 2 shows the frequency spectrum measurements taken for the Large Chiller.

Figure 2: Rooftop Measurement - Large Chiller

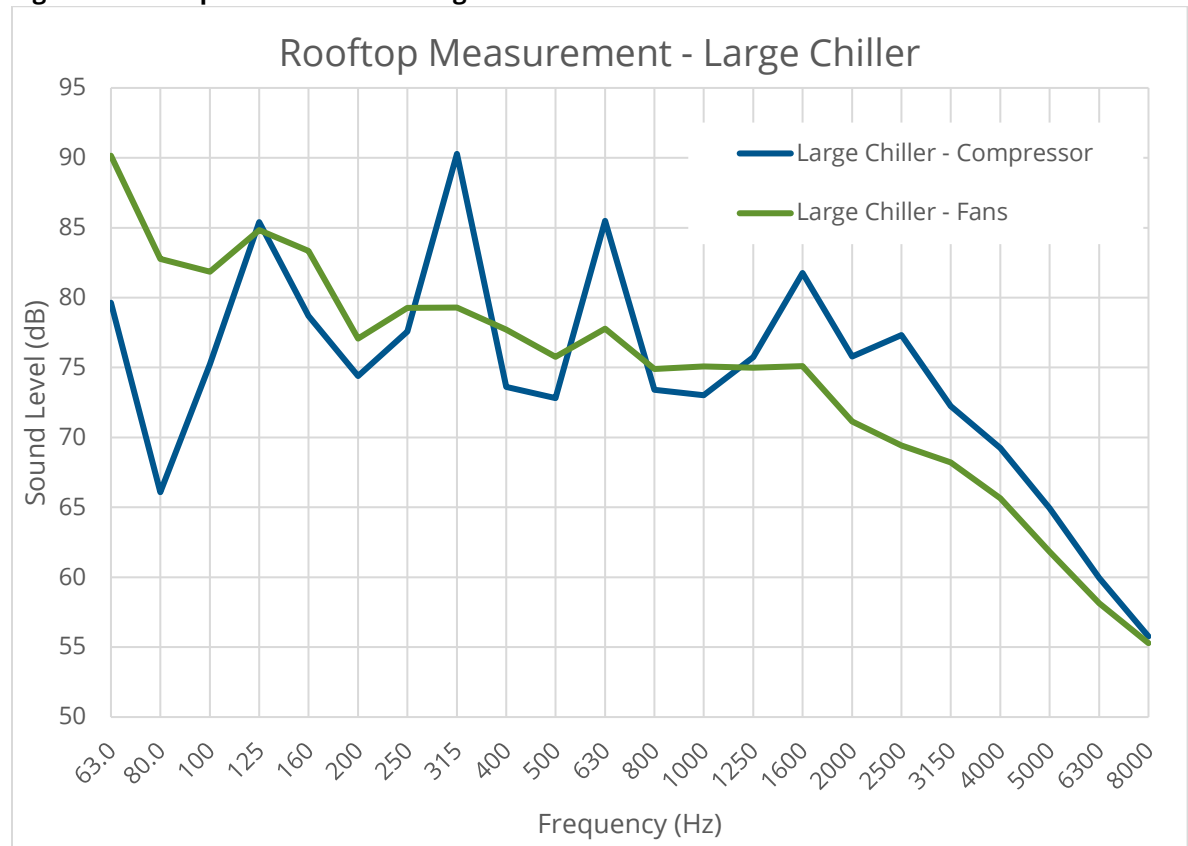


Figure 2 shows that the Large Chiller compressors emit a strong tone at 315 Hz, which continues at the next harmonic (630 Hz). It can also be seen that the 315 Hz tone was not present for the Large Chiller fans. This confirms that the tonal noise of concern is from the Large Chiller compressors.



DISCUSSION ON TONALITY

VICTORIA NOISE BYLAW DEFINITION OF TONALITY

The Victoria Noise Bylaw No. 03-012 states that a +5 dB correction applies when criteria for tonality is met. Criteria for tonality is as follows:

"In order for the tonality correction to apply if measurement is required to determine the presence of tonality, the level in the one-third octave band containing the tone, or the arithmetic average of the levels in a pair of bands containing the tone, must exceed the arithmetic average of the two adjacent bands

(i) by 3 dB or more for tones in the 500 Hz. to 16 kHz. bands,

(ii) by 5 dB or more for tones in the 160 to 400 Hz. bands,

(iii) and by 10 dB or more for tones in the 31.5 to 125 Hz. bands;"

The bylaw addresses tones by applying a correction (penalty) to the bylaw noise limits only if the noise of concern meets the bylaw's definition for tonality. It should be noted that tones may be measurable on a sound level meter but not meet the bylaw criteria for a tonal penalty. Furthermore, a tone can be audible but not measurable on a sound level meter – this occurs when background noise levels are high enough to mask the tone.

971 MARKET STREET

Measurements from August 2021 indicate that the Large Chiller noise levels at 971 Market Street meet the Victoria Bylaw's criteria for tonality when the chiller is operating at 100% load, but not at 60% load (despite a visible peak at 315 Hz). As such, the tonality penalty only applies when the chiller is operating at or close to 100% load. In view of this, the Large Chiller generally meets the bylaw noise level limits until it reaches close to 100% load.

Measurements from July 14, 2022 at 971 Market Street indicate a small visible tone at 315 Hz. This tone was audible to residents, CRD staff, and RWDI field engineers. Background noise levels during the measurements were noted to be masking the tone. As the tone did not meet the bylaw definition of tonality, noise levels were within bylaw limits during the measurement period.

1140 VISTA HEIGHTS

Measurements at 1140 Vista Heights indicate no change in L90 levels when rooftop equipment was running. In addition, the 315 Hz was not measurable over existing background noise levels. Despite having no influence on the measured noise levels, the Large Chiller and its 315 Hz tone was faintly audible to everyone on site.



RECOMMENDATIONS

We provide the following noise control recommendations:

Option 1 (Preferred Approach)

1. Enclose the Large Chiller. The enclosure should block noise from all four sides of the chiller and the roof of the enclosure should be constructed with rows of acoustical silencers. This is the best approach to ensure noise from the chiller is probably addressed at the residences.

Option 2

2. Convert the existing acoustic louvers to a solid noise barrier. The following design parameters should be implemented:
 - The barrier must be solid/continuous with no holes or gaps;
 - The barrier should extend from roof level to 1 m above the top of the unit*;
 - The side facing the unit should be absorptive; and
 - The barrier material should have a minimum rating of STC 25 - 30.

*The existing acoustic louvers includes a sizable gap at the bottom

If you plan to proceed with Option 2, we recommend that a mock-up enclosure be installed and tested prior to installation (and purchase) of the noise barrier. The test enclosure can be constructed with plywood over the existing acoustic louver framing. This would give a good indication of the expected noise reduction that can be obtained using an acoustic noise barrier.

It should be noted that while Option 2 is expected to reduce its noise level at the residences, it should be noted that due to the nature of the complaint, the audible tone is likely to persist but at a quieter level.

We note that both options likely have design challenges. During the design phase, we recommended a solid barrier for the Large Chiller which was deemed unfeasible due to design constraints (i.e., airflow, snow loading, structural requirements, etc.). We recommend consulting with the appropriate engineering disciplines to confirm the feasibility of the noise barrier design (i.e., Structural and Mechanical, etc.).



We trust that the information provided herein meets your needs at this time.

Please do not hesitate to contact us with any further questions.

A handwritten signature in black ink, appearing to read 'Curtis'.

Curtis Langley, B.Sc.
Acoustic Scientist

cc: Chris Fraser, P.Eng.

A handwritten signature in black ink, appearing to read 'Philip Tsui'.

Philip Tsui, P.Eng.
Senior Acoustical Engineer

Acoustic Analysis Report

Project

Summit Chiller Noise – Vancouver – 8.22.2022

- Analyzed Discharge and Radiated / Intake Sound Paths from CH-1,2 Chillers to specified receiver points.
- Created Summation Paths for total Sound Pressure for both receiver points.
- Propose replacing existing louver wall with an acoustic panel (4" Thick) barrier wall at 13'-0" High. As well as adding an intake silencer bank at the South side of the large chiller CH-2. See bottom page for proposal markups.

Prepared by

Adam Nedelec

Date

August 22, 2022

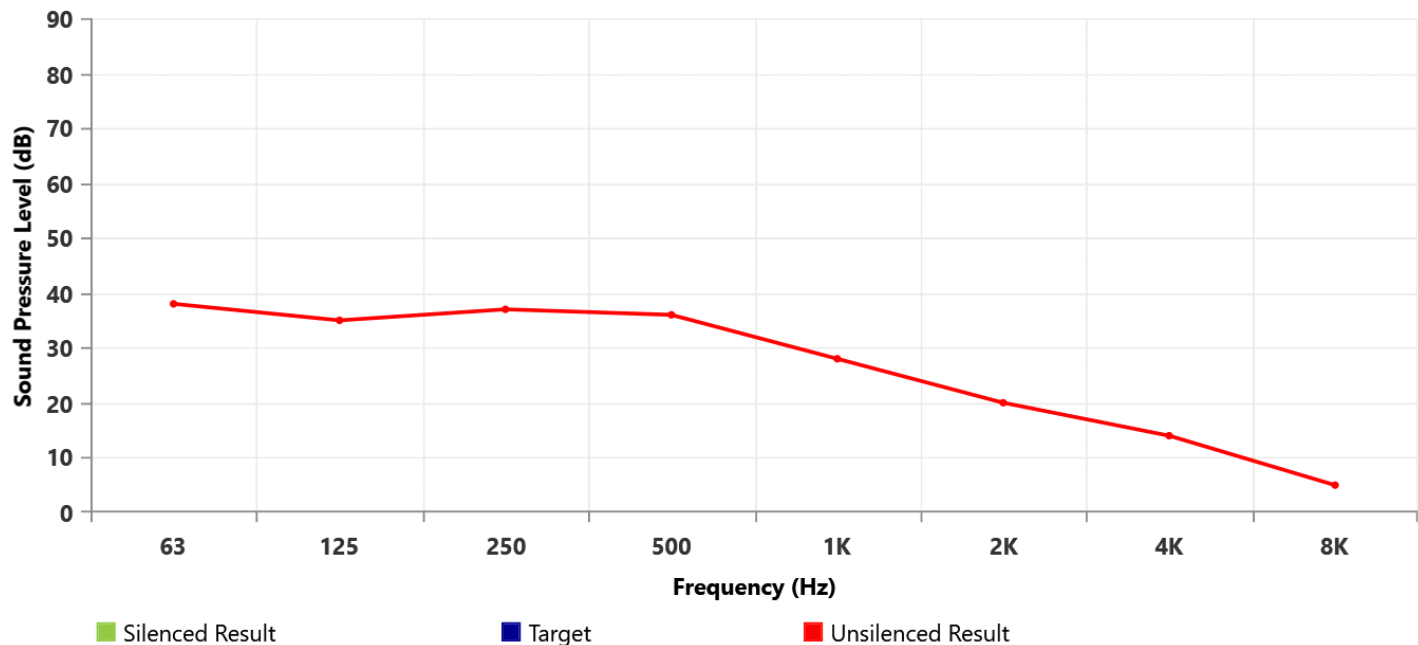
PROJECT: SUMMIT CHILLER NOISE -
VANCOUVER
LOCATION:
DATE: AUGUST 22, 2022
REVISION:

REP NAME:
REP OFFICE:
ENGINEER:
CONTRACTOR:



CH1 - DISCHARGE - 971 MARKET STREET

Element	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	Comments
Source - CH-1 - SMALL CHILLER	88	87	91	93	87	82	78	69	130 TONS 94425 CFM
Barrier - 13'-0" FREE STANDING BARRIER WALL	-10	-12	-14	-17	-19	-22	-24	-24	Price Acoustical Panels-4" Thick Solid / Solid. (156" Actual Height)
971 MARKET STREET	-40	-40	-40	-40	-40	-40	-40	-40	400'-0" AWAY AT BALCONY OF CONDOMINIUM. 45 dBA AS PER NOISE ORDINANCE FOR QUIET DISTRICT AT NIGHT TIME.
Sum	38	35	37	36	28	20	14	5	
Target:	45 dBA								
Current:	35 dBA								



PROJECT: SUMMIT CHILLER NOISE -
VANCOUVER

LOCATION:
DATE: AUGUST 22, 2022
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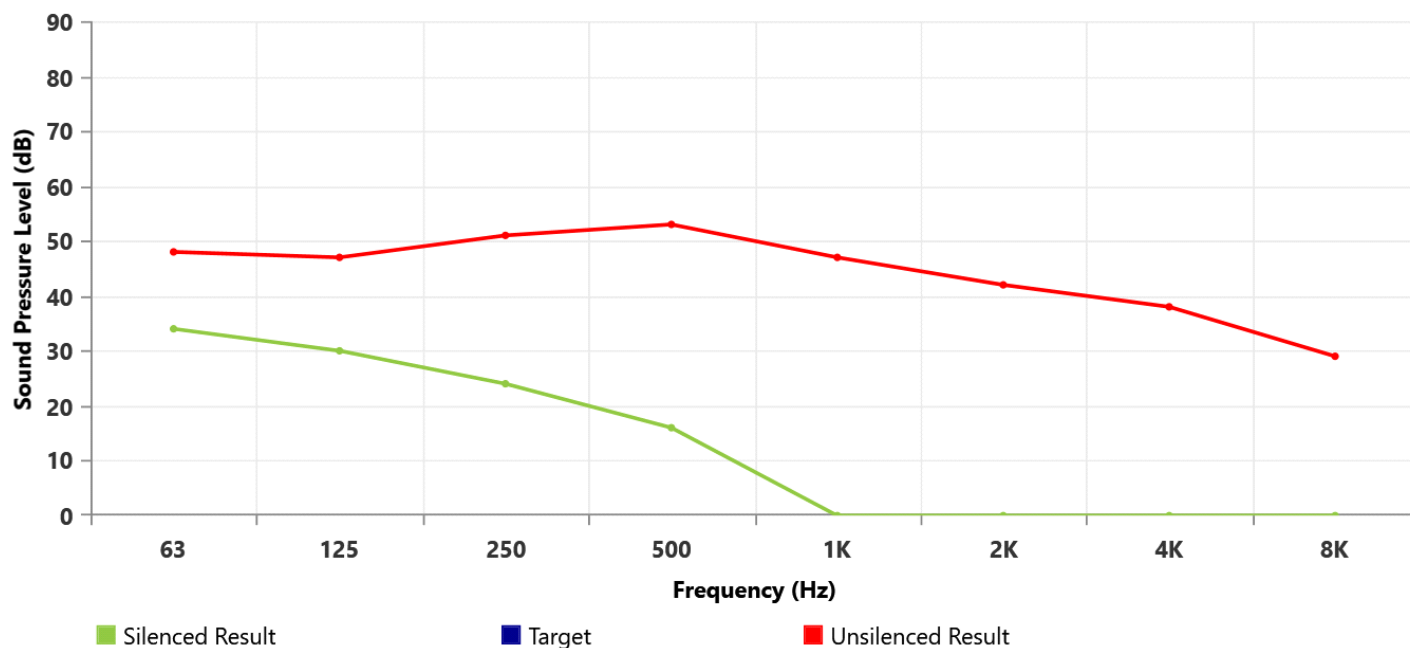
REP NAME:

REP OFFICE:
ENGINEER:
CONTRACTOR:



CH1 - DISCHARGE - 971 MARKET STREET THRU PANELS

Element	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	Comments
Source - CH-1 - SMALL CHILLER	88	87	91	93	87	82	78	69	130 TONS 94425 CFM
Acoustic Panel	-14	-17	-27	-37	-48	-56	-60	-58	AP
971 MARKET STREET	-40	-40	-40	-40	-40	-40	-40	-40	400'-0" AWAY AT BALCONY OF CONDOMINIUM. 45 dBA AS PER NOISE ORDINANCE FOR QUIET DISTRICT AT NIGHT TIME.
Sum	34	30	24	16	0	0	0	0	
Target:	45 dBA								
Current:	19 dBA								



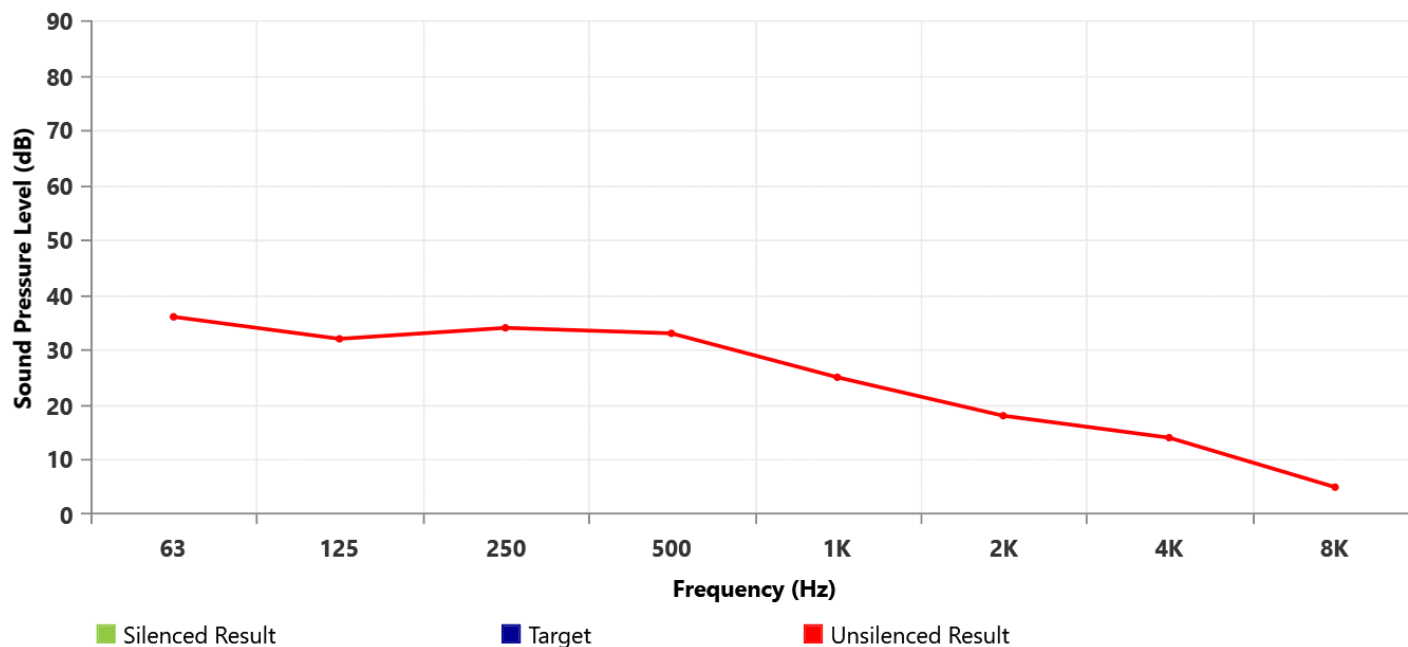
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VANCOUVER
LOCATION:
DATE: AUGUST 22, 2022
REVISION:

REP NAME:
REP OFFICE:
ENGINEER:
CONTRACTOR:



CH1 - INTAKE/RADIATED - 971 MARKET STREET

Element	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	Comments
Source - CH-1 - SMALL CHILLER	88	87	91	93	87	82	78	69	130 TONS 94425 CFM
Barrier - 13'-0" FREE STANDING BARRIER WALL	-12	-15	-17	-20	-22	-24	-24	-24	Price Acoustical Panels-4" Thick Solid / Solid. (156" Actual Height)
971 MARKET STREET	-40	-40	-40	-40	-40	-40	-40	-40	400'-0" AWAY AT BALCONY OF CONDOMINIUM. 45 dBA AS PER NOISE ORDINANCE FOR QUIET DISTRICT AT NIGHT TIME.
Sum	36	32	34	33	25	18	14	5	
Target:	45 dBA								
Current:	33 dBA								



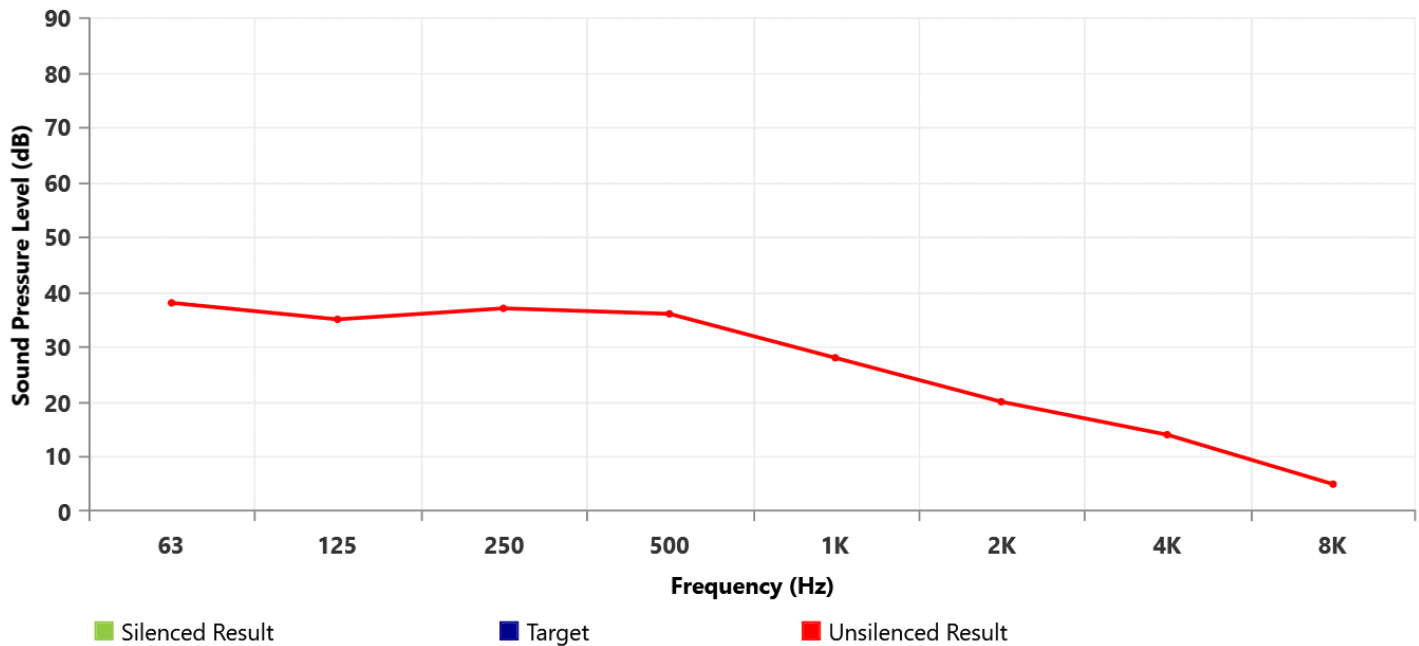
PROJECT: SUMMIT CHILLER NOISE -
VANCOUVER
LOCATION:
DATE: AUGUST 22, 2022
REVISION:

REP NAME:
REP OFFICE:
ENGINEER:
CONTRACTOR:



CH1 - DISCHARGE - 1140 VISTA HEIGHTS *FANS*

Element	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	Comments
Source - CH-1 - SMALL CHILLER	88	87	91	93	87	82	78	69	130 TONS 94425 CFM ASSUMED SPL DATA IS TAKEN AT UNIT WITH NO DISTANCE EFFECT.
Barrier - 13'-0" FREE STANDING BARRIER WALL	-10	-12	-14	-17	-19	-22	-24	-24	Price Acoustical Panels-4" Thick Solid / Solid. (156" Actual Height)
1140 VISTA HEIGHTS	-40	-40	-40	-40	-40	-40	-40	-40	1000'-0" AWAY AT 1140 VISTA HEIGHTS RESIDENTS. 45 dBA AS PER NOISE ORDINANCE FOR QUIET DISTRICT AT NIGHT TIME.
Sum	38	35	37	36	28	20	14	5	
Target:	45 dBA								
Current:	35 dBA								



PROJECT: SUMMIT CHILLER NOISE -
VANCOUVER

LOCATION:
DATE: AUGUST 22, 2022
REVISION:

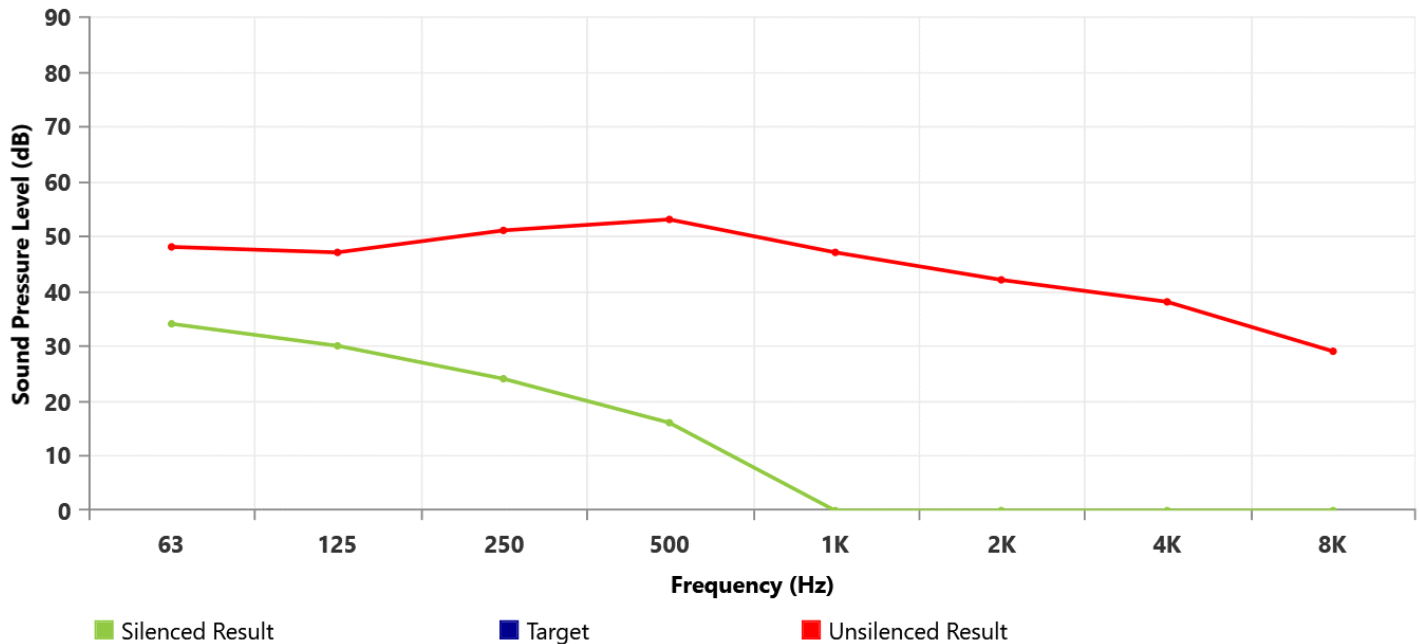
REP NAME:

REP OFFICE:
ENGINEER:
CONTRACTOR:



CH1 - DISCHARGE - 1140 VISTA HEIGHTS THRU PANELS

Element	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	Comments
Source - CH-1 - SMALL CHILLER	88	87	91	93	87	82	78	69	130 TONS 94425 CFM ASSUMED SPL DATA IS TAKEN AT UNIT WITH NO DISTANCE EFFECT.
Acoustic Panel	-14	-17	-27	-37	-48	-56	-60	-58	AP
1140 VISTA HEIGHTS	-40	-40	-40	-40	-40	-40	-40	-40	1000'-0" AWAY AT 1140 VISTA HEIGHTS RESIDENTS. 45 dBA AS PER NOISE ORDINANCE FOR QUIET DISTRICT AT NIGHT TIME.
Sum	34	30	24	16	0	0	0	0	
Target:	45 dBA								
Current:	19 dBA								



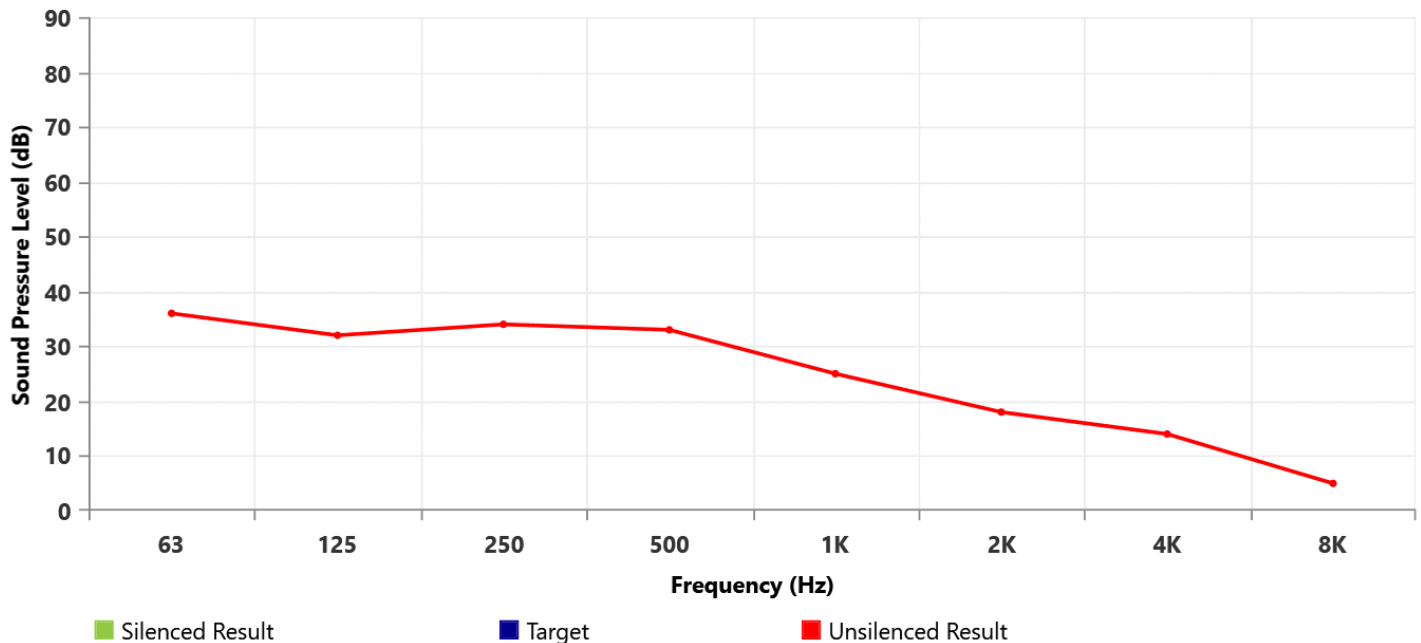
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VANCOUVER
LOCATION:
DATE: AUGUST 22, 2022
REVISION:

REP NAME:
REP OFFICE:
ENGINEER:
CONTRACTOR:



CH1 - INTAKE/RADIATED - 1140 VISTA HEIGHTS *FANS*

Element	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	Comments
Source - CH-1 - SMALL CHILLER	88	87	91	93	87	82	78	69	130 TONS 94425 CFM TAKEN AT UNIT WITH NO DISTANCE EFFECT.
Barrier - 13'-0" FREE STANDING BARRIER WALL	-12	-15	-17	-20	-22	-24	-24	-24	Price Acoustical Panels-4" Thick Solid / Solid. (156" Actual Height)
1140 VISTA HEIGHTS	-40	-40	-40	-40	-40	-40	-40	-40	1000'-0" AWAY AT 1140 VISTA HEIGHTS RESIDENTS. 45 dBA AS PER NOISE ORDINANCE FOR QUIET DISTRICT AT NIGHT TIME.
Sum	36	32	34	33	25	18	14	5	
Target:	45 dBA								
Current:	33 dBA								



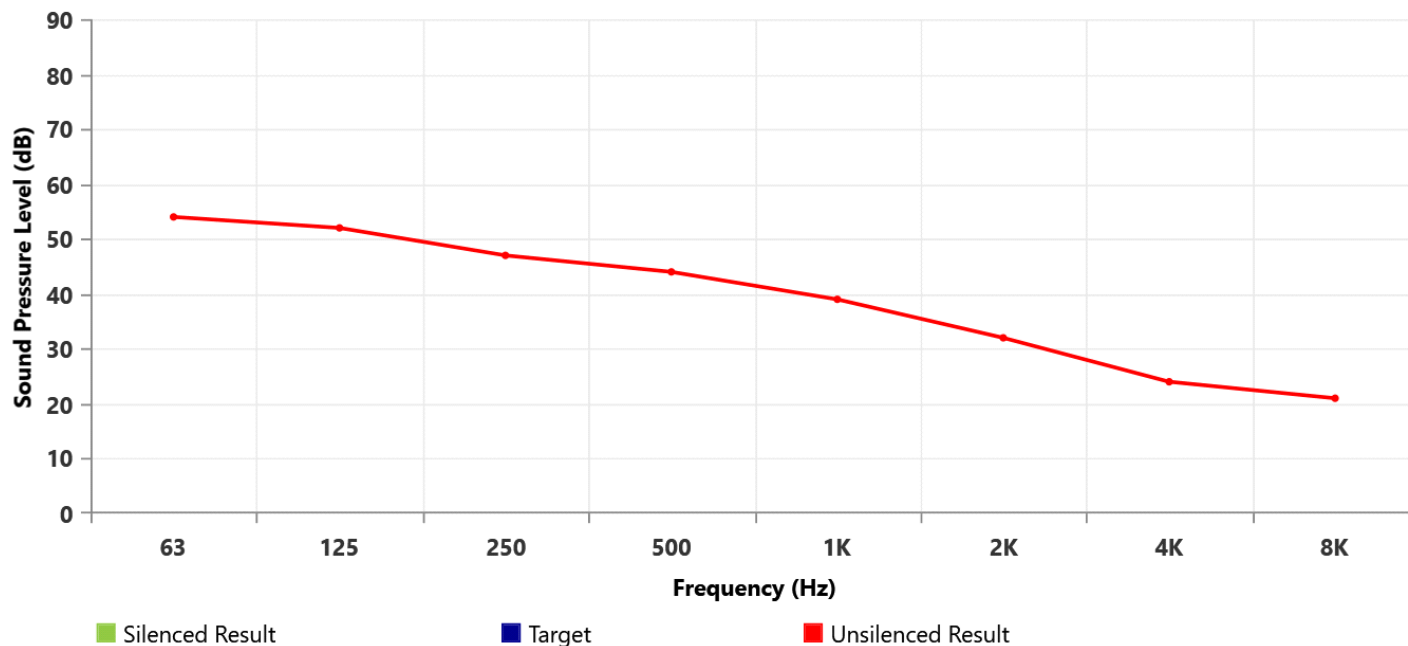
PROJECT: SUMMIT CHILLER NOISE - VANCOUVER
 LOCATION:
 DATE: AUGUST 22, 2022
 REVISION:

REP NAME:
 REP OFFICE:
 ENGINEER:
 CONTRACTOR:



CH2 - DISCHARGE - 971 MARKET STREET

Element	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	Comments
Source - CH-2 - LARGE CHILLER	104	104	101	101	98	94	88	85	250 TONS 73,624 CFM TAKEN AT UNIT WITH NO DISTANCE EFFECT.
Barrier - 13'-0" FREE STANDING BARRIER WALL	-10	-12	-14	-17	-19	-22	-24	-24	Price Acoustical Panels-4" Thick Solid / Solid. (156" Actual Height)
971 MARKET STREET	-40	-40	-40	-40	-40	-40	-40	-40	400'-0" AWAY AT BALCONY OF CONDOMINIUM. 45 dBA AS PER NOISE ORDINANCE FOR QUIET DISTRICT AT NIGHT TIME.
Sum	54	52	47	44	39	32	24	21	
Target:	45 dBA								
Current:	45 dBA								



PROJECT: SUMMIT CHILLER NOISE -
VANCOUVER

LOCATION:
DATE: AUGUST 22, 2022
REVISION:

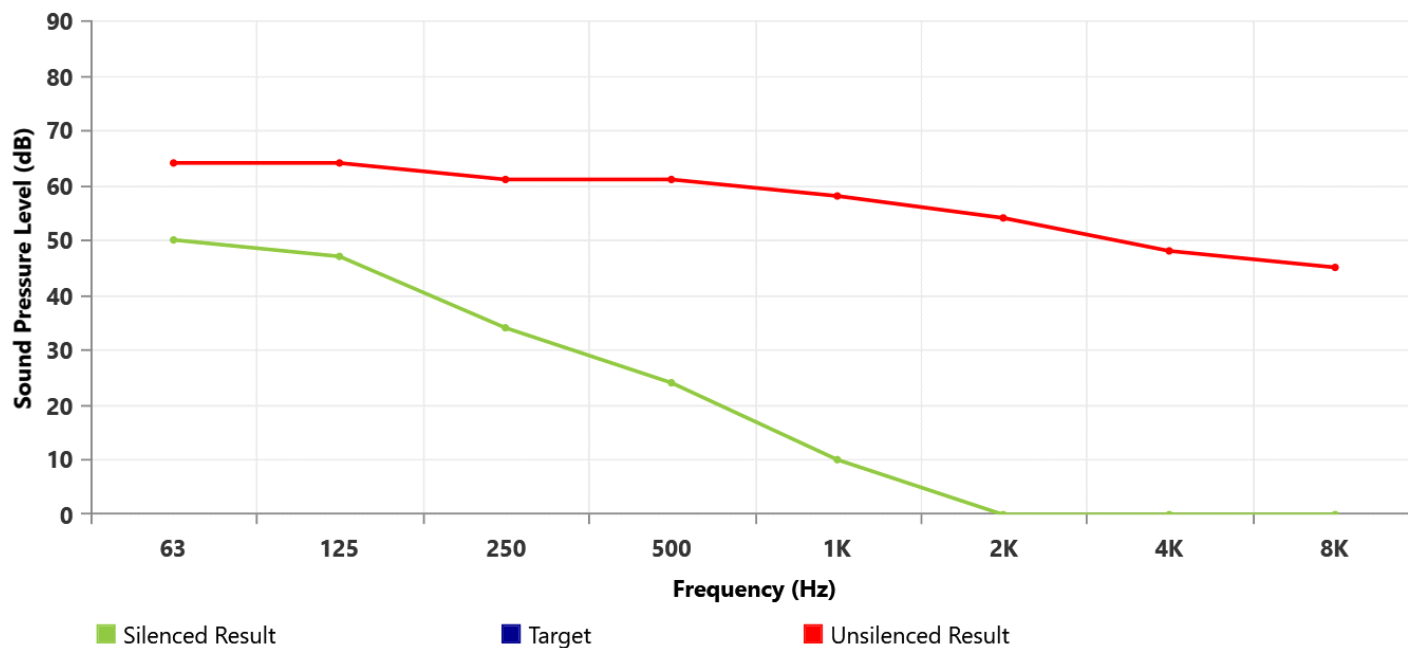
REP NAME:

REP OFFICE:
ENGINEER:
CONTRACTOR:



CH2 - DISCHARGE - 971 MARKET STREET THRU PANELS

Element	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	Comments
Source - CH-2 - LARGE CHILLER	104	104	101	101	98	94	88	85	250 TONS 73,624 CFM TAKEN AT UNIT WITH NO DISTANCE EFFECT.
Acoustic Panel	-14	-17	-27	-37	-48	-56	-60	-58	AP
971 MARKET STREET	-40	-40	-40	-40	-40	-40	-40	-40	400'-0" AWAY AT BALCONY OF CONDOMINIUM. 45 dBA AS PER NOISE ORDINANCE FOR QUIET DISTRICT AT NIGHT TIME.
Sum	50	47	34	24	10	0	0	0	
Target:	45 dBA								
Current:	33 dBA								



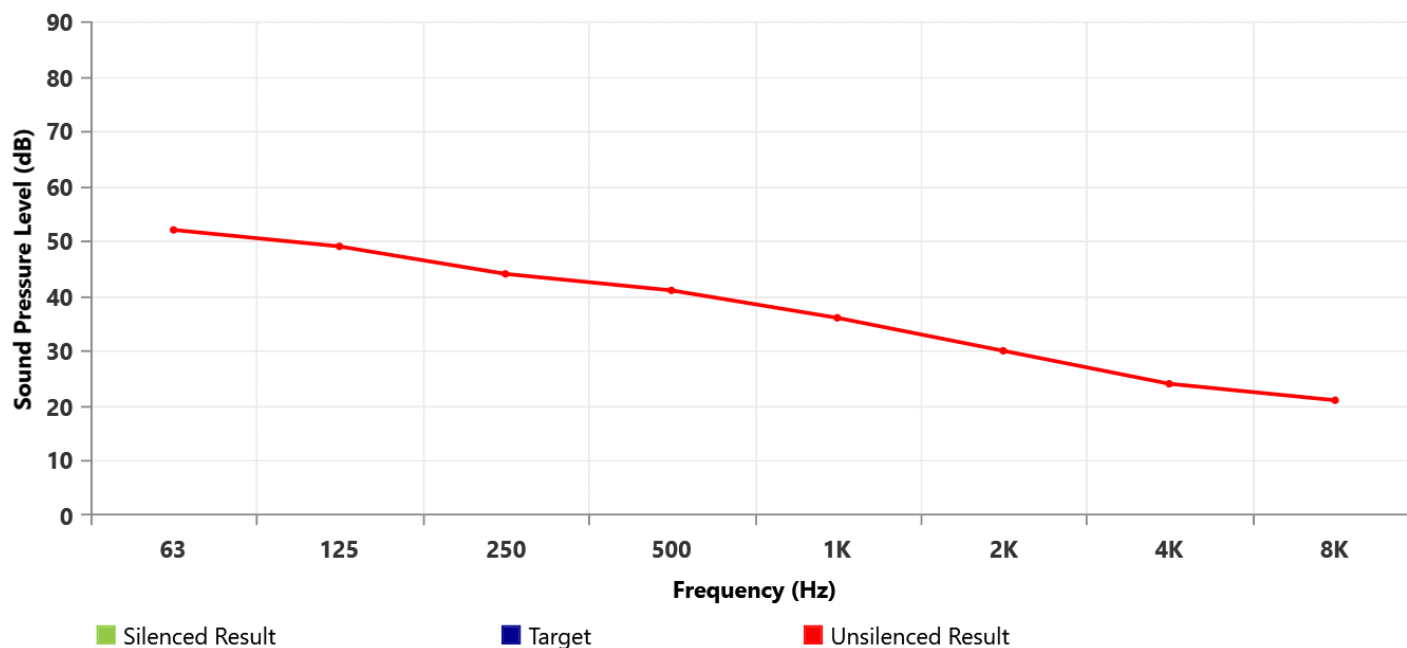
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VANCOUVER
LOCATION:
DATE: AUGUST 22, 2022
REVISION:

REP NAME:
REP OFFICE:
ENGINEER:
CONTRACTOR:



CH2 - INTAKE/RADIATED - 971 MARKET STREET

Element	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	Comments
Source - CH-2 - LARGE CHILLER	104	104	101	101	98	94	88	85	250 TONS 73,624 CFM TAKEN AT UNIT WITH NO DISTANCE EFFECT.
Barrier - 13'-0" FREE STANDING BARRIER WALL	-12	-15	-17	-20	-22	-24	-24	-24	Price Acoustical Panels-4" Thick Solid / Solid. (156" Actual Height)
971 MARKET STREET	-40	-40	-40	-40	-40	-40	-40	-40	400'-0" AWAY AT BALCONY OF CONDOMINIUM. 45 dBA AS PER NOISE ORDINANCE FOR QUIET DISTRICT AT NIGHT TIME.
Sum	52	49	44	41	36	30	24	21	
Target:	45 dBA								
Current:	42 dBA								



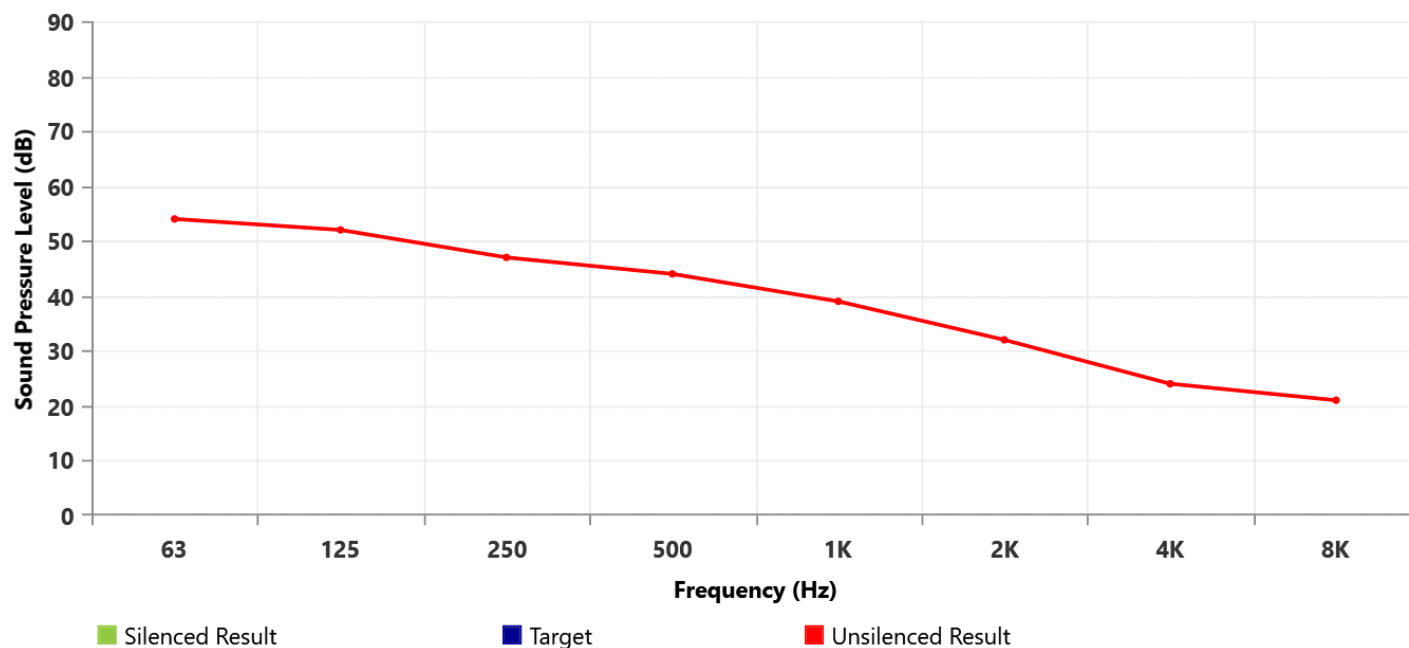
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VANCOUVER
LOCATION:
DATE: AUGUST 22, 2022
REVISION:

REP NAME:
REP OFFICE:
ENGINEER:
CONTRACTOR:



CH2 - DISCHARGE - 1140 VISTA HEIGHTS *FANS*

Element	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	Comments
Source - CH-2 - LARGE CHILLER	104	104	101	101	98	94	88	85	250 TONS 73,624 CFM TAKEN AT UNIT WITH NO DISTANCE EFFECT.
Barrier - 13'-0" FREE STANDING BARRIER WALL	-10	-12	-14	-17	-19	-22	-24	-24	Price Acoustical Panels-4" Thick Solid / Solid. (156" Actual Height)
1140 VISTA HEIGHTS	-40	-40	-40	-40	-40	-40	-40	-40	1000'-0" AWAY AT 1140 VISTA HEIGHTS RESIDENTS. 45 dBA AS PER NOISE ORDINANCE FOR QUIET DISTRICT AT NIGHT TIME.
Sum	54	52	47	44	39	32	24	21	
Target:	45 dBA								
Current:	45 dBA								



PROJECT: SUMMIT CHILLER NOISE -
VANCOUVER

LOCATION:
DATE: AUGUST 22, 2022
REVISION:

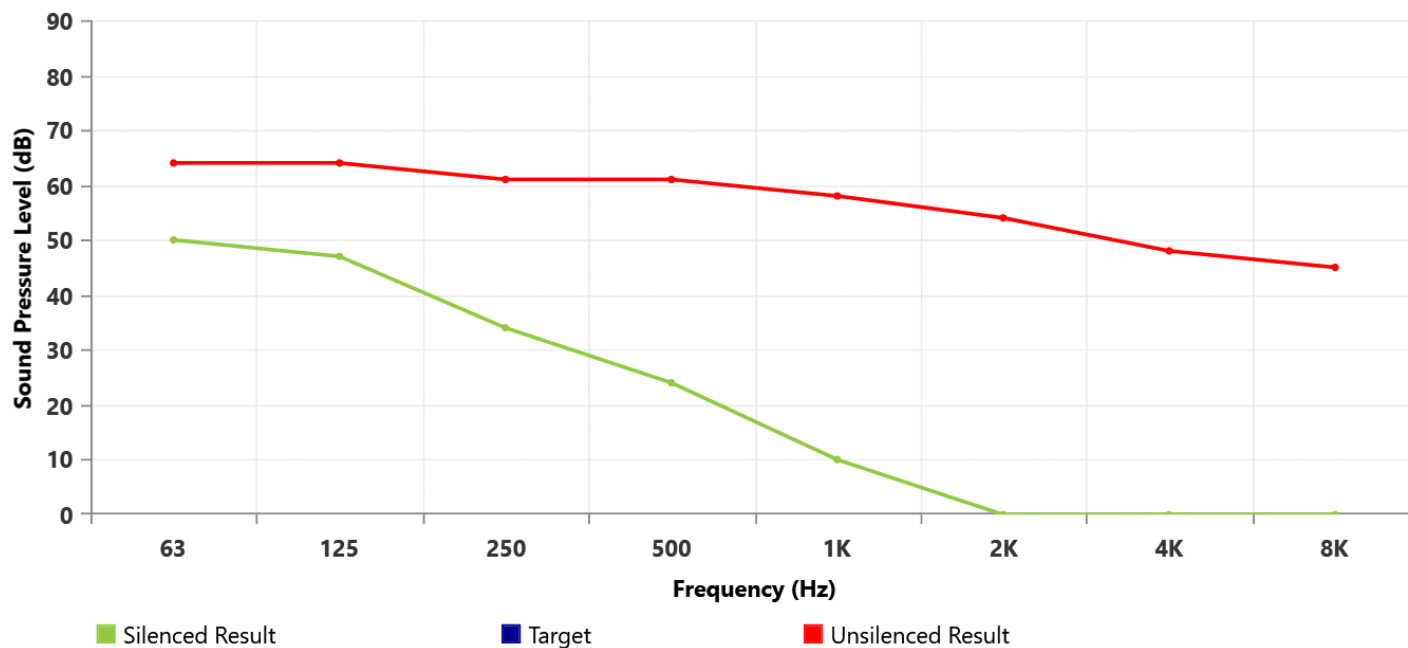
REP NAME:

REP OFFICE:
ENGINEER:
CONTRACTOR:



CH2 - DISCHARGE - 1140 VISTA HEIGHTS THRU PANELS

Element	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	Comments
Source - CH-2 - LARGE CHILLER	104	104	101	101	98	94	88	85	250 TONS 73,624 CFM TAKEN AT UNIT WITH NO DISTANCE EFFECT.
Acoustic Panel	-14	-17	-27	-37	-48	-56	-60	-58	AP
1140 VISTA HEIGHTS	-40	-40	-40	-40	-40	-40	-40	-40	1000'-0" AWAY AT 1140 VISTA HEIGHTS RESIDENTS. 45 dBA AS PER NOISE ORDINANCE FOR QUIET DISTRICT AT NIGHT TIME.
Sum	50	47	34	24	10	0	0	0	
Target:	45 dBA								
Current:	33 dBA								



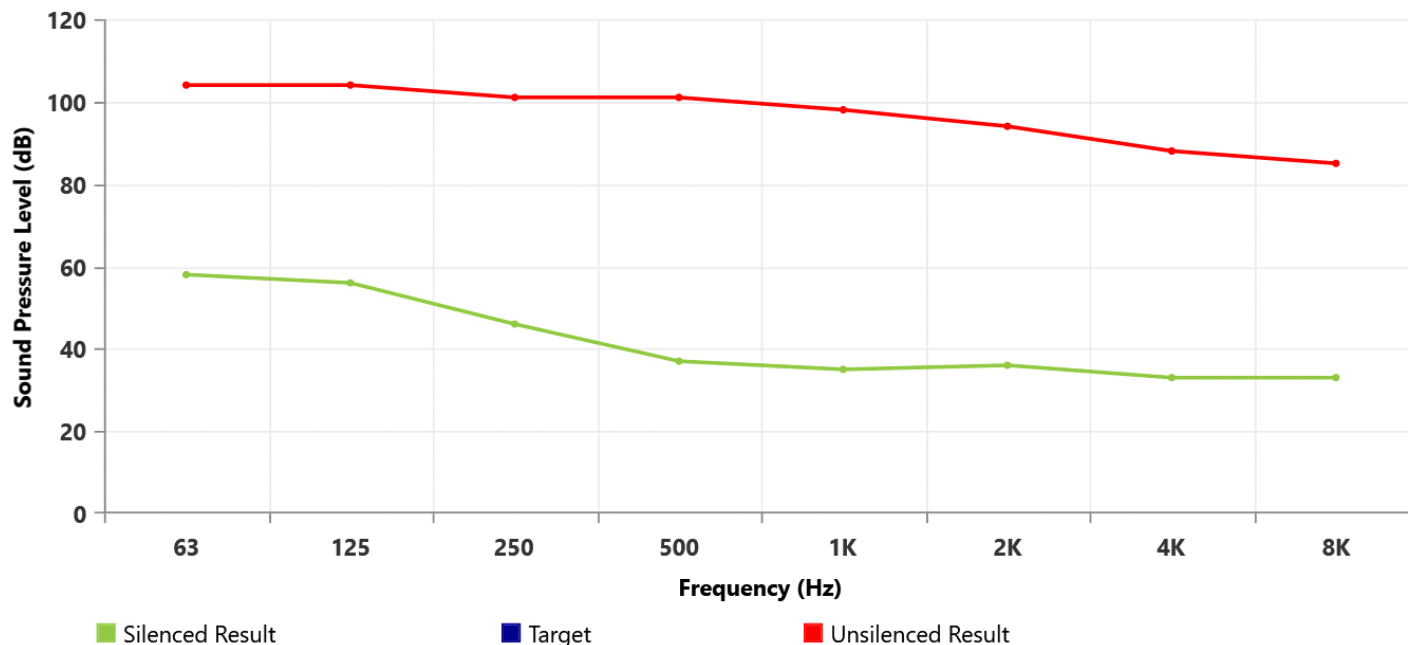
PROJECT: SUMMIT CHILLER NOISE -
VANCOUVER
LOCATION:
DATE: AUGUST 22, 2022
REVISION:

REP NAME:
REP OFFICE:
ENGINEER:
CONTRACTOR:



CH2 - INTAKE/RADIATED - 1140 VISTA HEIGHTS FANS

Element	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	Comments
Source - CH-2 - LARGE CHILLER	104	104	101	101	98	94	88	85	250 TONS 73,624 CFM TAKEN AT UNIT WITH NO DISTANCE EFFECT.
Silencer - CH-2 INTAKE	-6	-8	-15	-24	-23	-18	-15	-12	RH36/4D
Silencer (regen.) - CH-2 INTAKE	63	49	45	47	54	59	60	55	
1140 VISTA HEIGHTS	-40	-40	-40	-40	-40	-40	-40	-40	1000'-0" AWAY AT 1140 VISTA HEIGHTS RESIDENTS. 45 dBA AS PER NOISE ORDINANCE FOR QUIET DISTRICT AT NIGHT TIME.
Sum	58	56	46	37	35	36	33	33	
Target:	45 dBA								
Current:	45 dBA								



PROJECT: SUMMIT CHILLER NOISE -
VANCOUVER

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REP NAME:

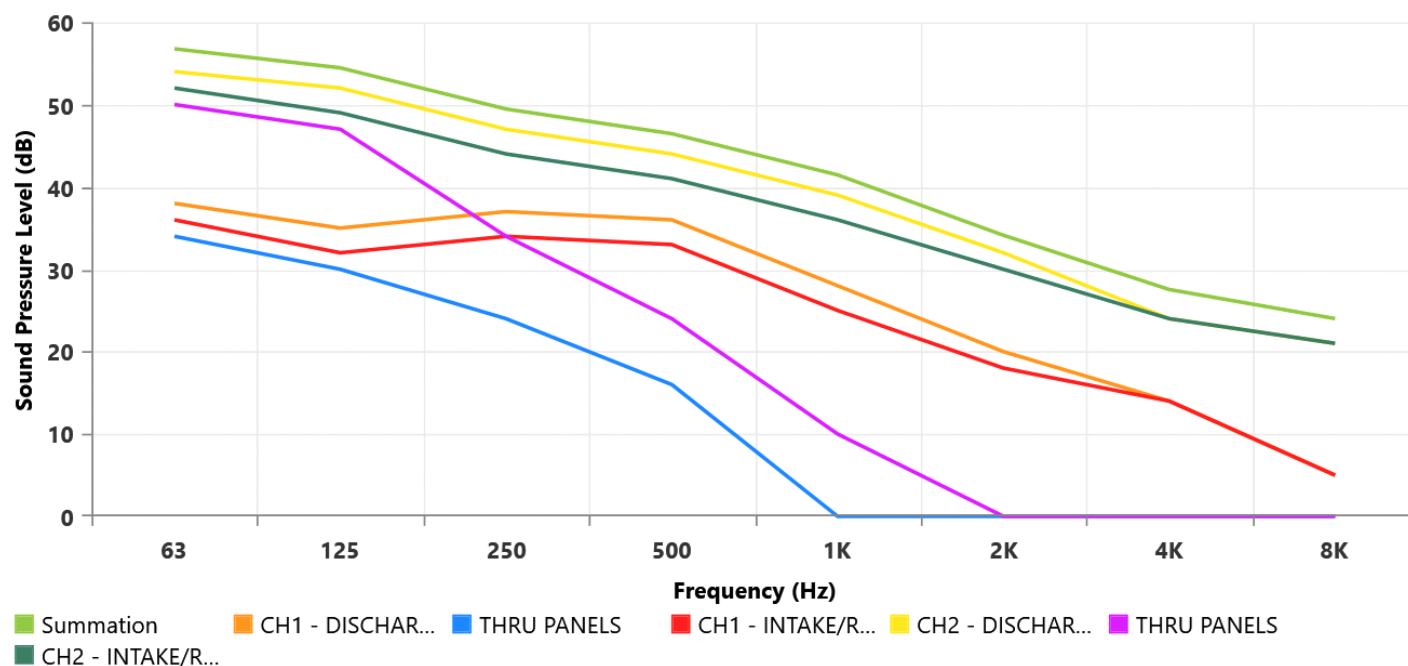
REP OFFICE:
ENGINEER:
CONTRACTOR:



TOTAL SOUND PRESSURE @ MARKET (CH1+CH2) ~ 400FT

STANDALONE BARRIER WALL ALONG
WITH INTAKE SILENCER BANK ON ONE
SIDE OF CH-2.

Path	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz
CH1 - DISCHARGE - 971 MARKET STREET	38	35	37	36	28	20	14	5
CH1 - DISCHARGE - 971 MARKET STREET THRU PANELS	34	30	24	16	0	0	0	0
CH1 - INTAKE/RADIATED - 971 MARKET STREET	36	32	34	33	25	18	14	5
CH2 - DISCHARGE - 971 MARKET STREET	54	52	47	44	39	32	24	21
CH2 - DISCHARGE - 971 MARKET STREET THRU PANELS	50	47	34	24	10	0	0	0
CH2 - INTAKE/RADIATED - 971 MARKET STREET	52	49	44	41	36	30	24	21
Sum	57	54	49	46	41	34	28	24
Target:								
Current:	47 dBA							



PROJECT: SUMMIT CHILLER NOISE -
VANCOUVER

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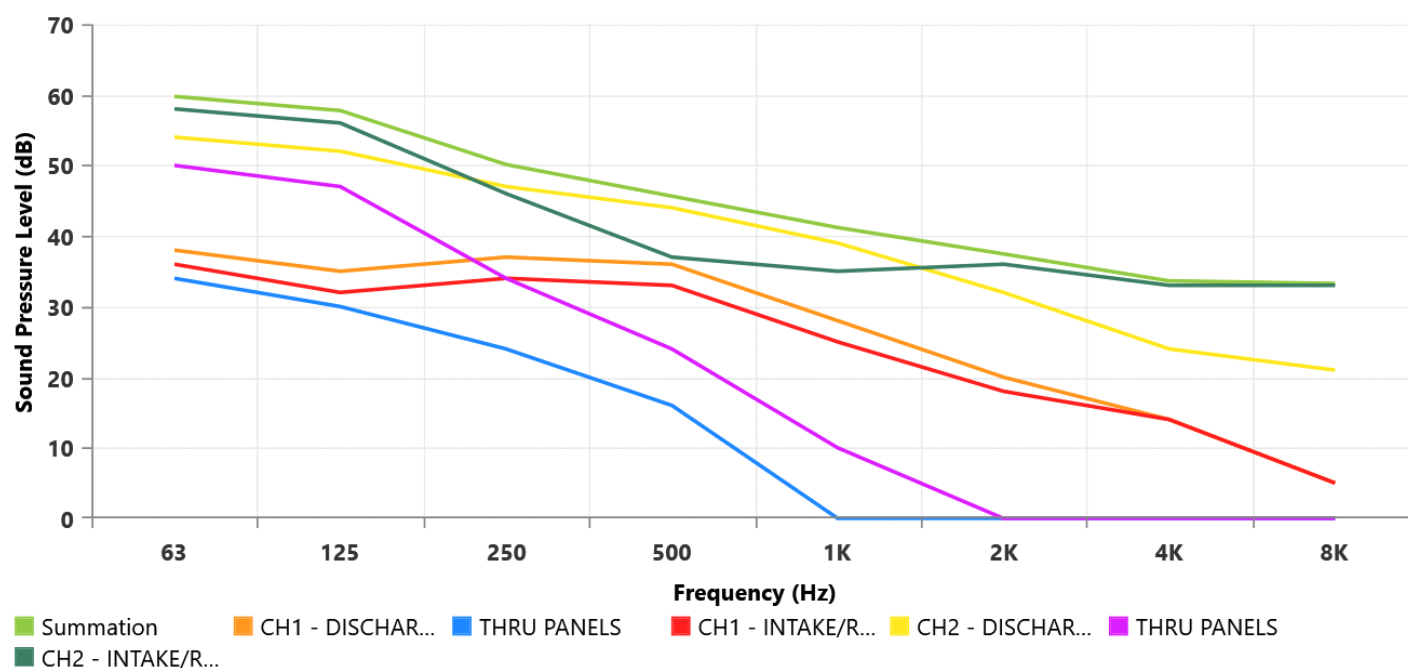
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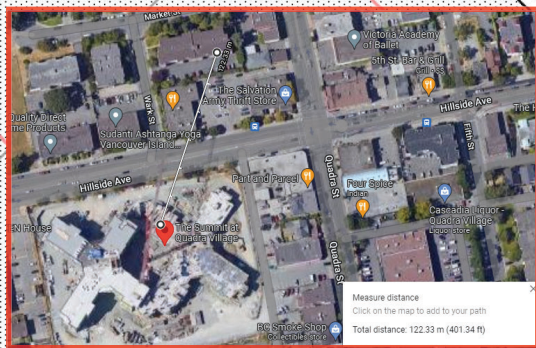


TOTAL SOUND PRESSURE @ 1140 VISTA (CH1+CH2) ~1000FT

STANDALONE BARRIER WALL ALONG
WITH INTAKE SILENCER BANK ON ONE
SIDE OF CH-2.

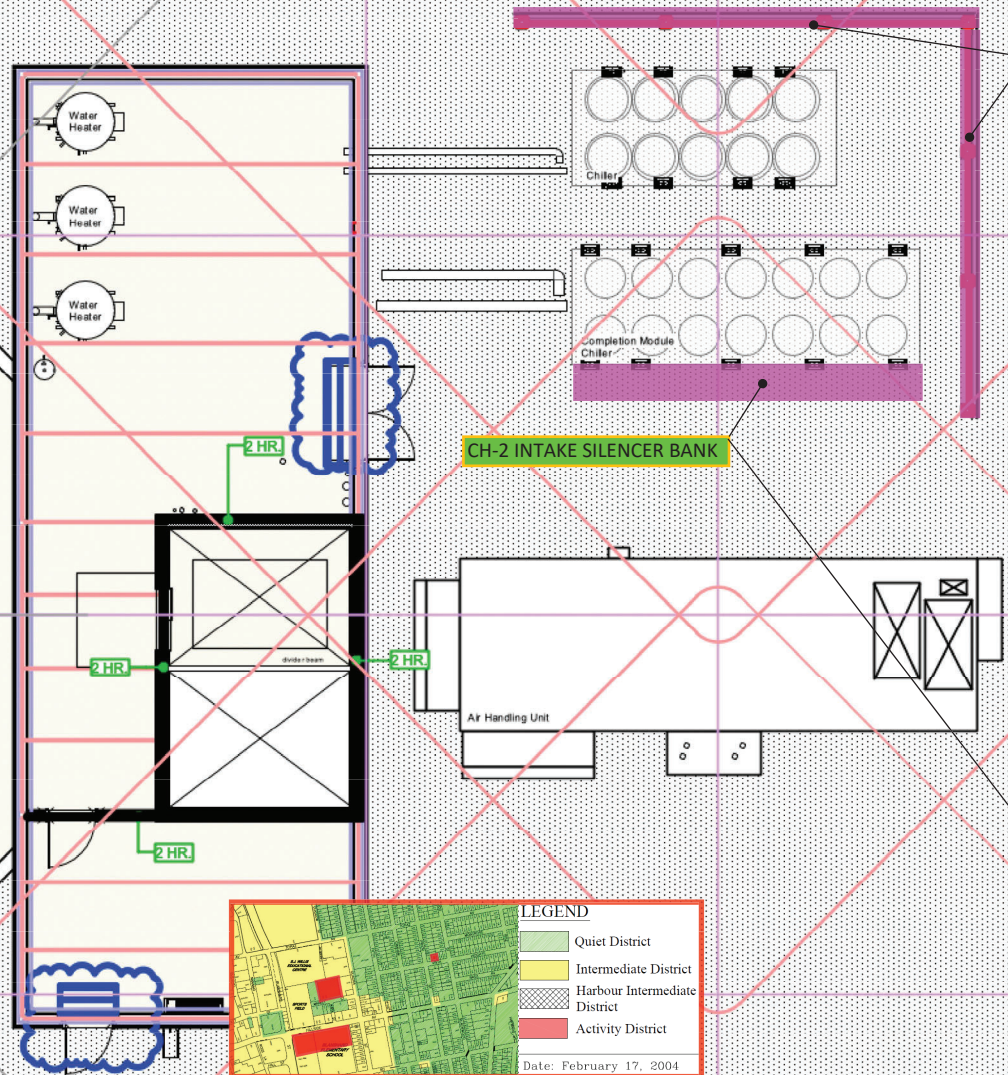
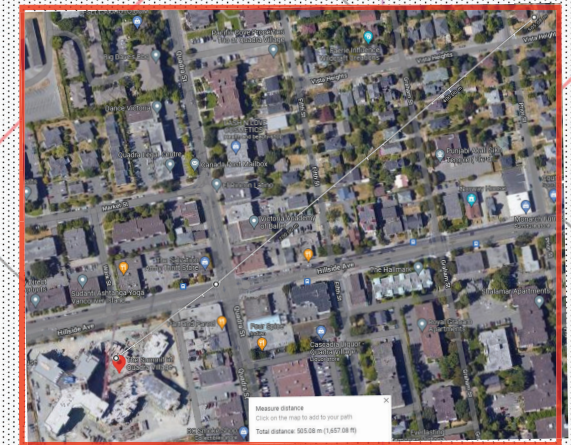
Path	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz
CH1 - DISCHARGE - 1140 VISTA HEIGHTS	38	35	37	36	28	20	14	5
CH1 - DISCHARGE - 1140 VISTA HEIGHTS THRU PANELS	34	30	24	16	0	0	0	0
CH1 - INTAKE/RADIATED - 1140 VISTA HEIGHTS	36	32	34	33	25	18	14	5
CH2 - DISCHARGE - 1140 VISTA HEIGHTS	54	52	47	44	39	32	24	21
CH2 - DISCHARGE - 1140 VISTA HEIGHTS THRU PANELS	50	47	34	24	10	0	0	0
CH2 - INTAKE/RADIATED - 1140 VISTA HEIGHTS	58	56	46	37	35	36	33	33
Sum	60	58	50	46	41	37	34	33
Target:								
Current:	49 dBA							





PROPOSAL:

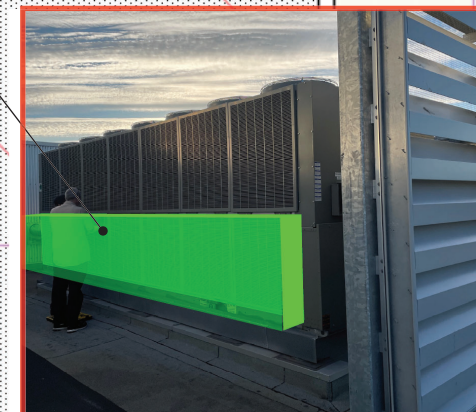
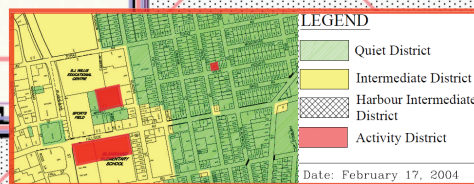
- 1.) REMOVE LOUVER WALL / REPLACE WITH ACOUSTIC PANEL BARRIER WALL AT 13' HEIGHT (2" FROM TOP OF ROOF)
- 2.) INCLUDE INTAKE SILENCER BANK ON CH-2 SOUTH-SIDE.



Schedule B
Summary of Districts' Permitted Noise Levels

NOISE SOURCE DISTRICT	NOISE RECEIVER DISTRICT	NOISE RECEIVER DISTRICT							
		QUIET		INTER-MEDIATE		HARBOUR INTER-MEDIATE		ACTIVITY	
		Day	Night	Day	Night	Day	Night	Day	Night
QUIET	QUIET	55	45	55	50	55	50	60	60
INTER-MEDIATE	INTER-MEDIATE	60	50	60	55	60	55	65	65
HARBOUR INTER-MEDIATE	HARBOUR INTER-MEDIATE	60	50	60	55	60	55	65	65
ACTIVITY	ACTIVITY	60	55	65	60	67.5	60	70	70

Table 1: Equivalent Sound Level (L_{eq}) Limits (expressed in dBA) for sound or noise created and received in the "Quiet", "Intermediate" and "Activity" Noise Districts



The Su
Partial
21-10-0



Noise Control Submittals

Job Name: The Summit Noise Barriers

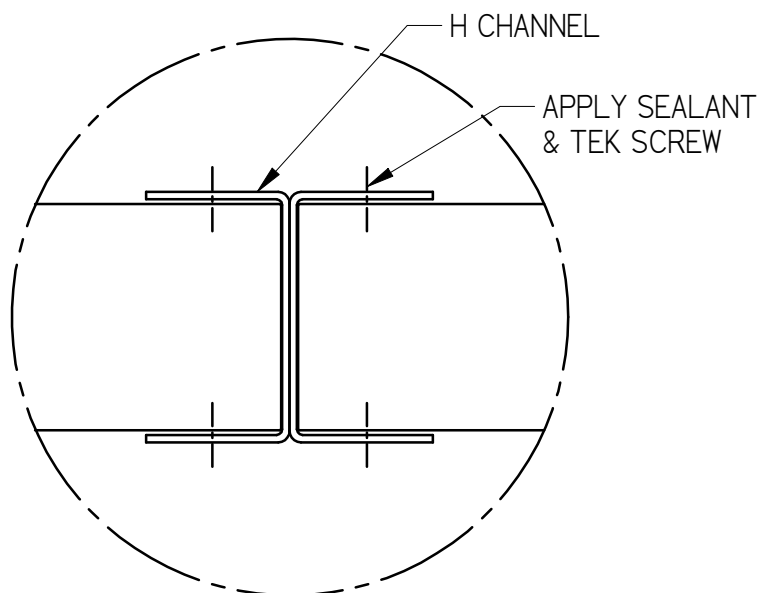
Date Printed: 9/8/2022

Spec Section: 15 - HVAC

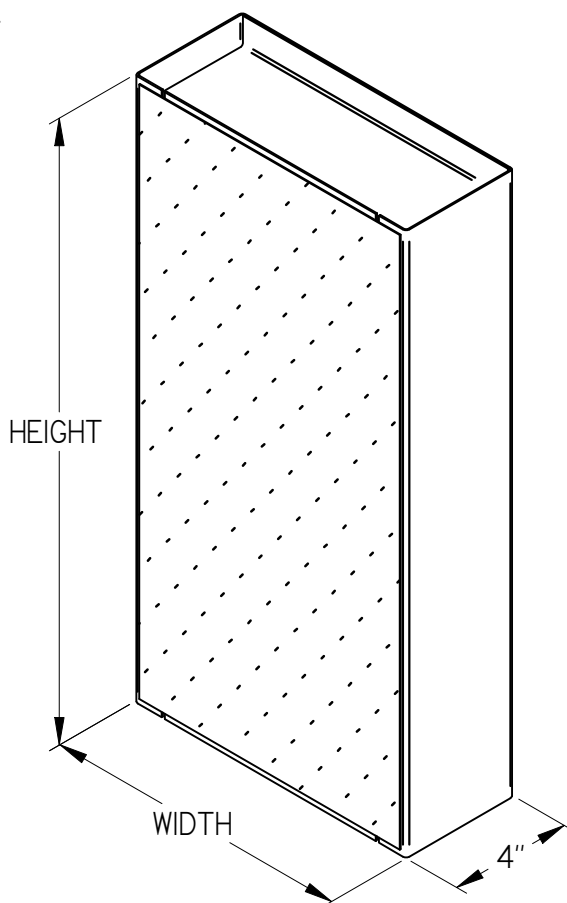
Contact: 475 Tennyson Place
Victoria, BC V8Z 6S8

All-In-One
Detailed Submittal Schedule
Noise Control

#	Qty	Model	Tag	Width (in)	Height (in)	Length (in)	Direction	Flow (CFM)	Vel. (FPM)	PD (in. w.g.)	Installed PD (in. w.g.)	63	125	250	500	1K	2K	4K	8K	Target Design Criteria	Const. Type	Material	Perf. Liner	Line Instructions
1	1	AP	AP-PNL BRR WALL																					PANELS AND FLASHING LINE. 4" H-Channel Acoustic Panels, 18 Gauge Galvanneal (Painted) Solid Casing, 22 Gauge Galvanized Perforated Liner, Glass Fiber Acoustic Media, c/w Trims and Mounting Channels, Hardware, Caulk and Assembly Drawings. (Approx. Total Panel Area = 724 sqft). Exact location and size of openings TBD at submittal approval. L-SHAPED BARRIER WALL. SCALED AT 3" L AND 312" L BY 156" HIGH. OUTER CASING TO BE POWDER COATED (IN-HOUSE COLOR) FREIGHT ALLOWED.
Const Notes: P																								
	1	RH 6/40	CH-2 INTAKE	245.00	28.00	36.00	Reverse	3624	15	0.15	0.24	6	8	15	24	23	18	15	12	dB(A)-45 Receiver	CL1	G	P22	CH-2 - INTAKE SILENCER BANK. FREIGHT ALLOWED.
Const Notes: Galvanized, CL1 (22 GA), 22GA Perf Liner, Fiberglass, Inlet: 2" Slip, Outlet: 2" Slip, Mastic Filled Seams																								



CONNECTION DETAIL



STANDARD CONSTRUCTION:

- 18 GAUGE GALVANIZED OUTSIDE FACE
- 22 GAUGE GALVANIZED PERFORATED INSIDE FACE
- FIBERGLASS ACOUSTIC MEDIA
- 4" NOMINAL WALL THICKNESS
- APPROXIMATELY 6.5 P.S.F.

Transmission Loss (dB) Measured at Octave Band Center Frequencies							Overall
Model	125 Hz	250Hz	500Hz	1 kHz	2 kHz	4 kHz	STC
QLP4	17	27	36	47	56	60	39
Absorption (Coefficient) Measured at Octave Band Center Frequencies							
Model	125 Hz	250Hz	500Hz	1 kHz	2 kHz	4 kHz	NRC
QLP4	0.71	1.29	1.18	1.05	0.98	0.89	1.10

☐ APPROVED FOR CONSTRUCTION

SIGNED:

DATE:

ALL METRIC DIMENSIONS () ARE SOFT CONVERTED. IMPERIAL DIMENSIONS ARE CONVERTED TO METRIC AND ROUNDED TO THE NEAREST MILLIMETER.

PROJECT: The Summit Noise Barriers

ENGINEER:

CUSTOMER:

SUBMITTAL DATE: 9/8/2022

SPEC. SYMBOL: AP-PNL BRR WALL

05/12/2014

PRICE

QUIET-LINE
ACOUSTIC PANEL
4" THICK
H CHANNEL

Dimensions

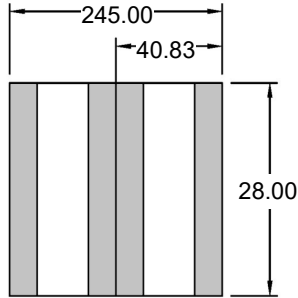
Quantity: 1
Weight (lb): 710

Bank

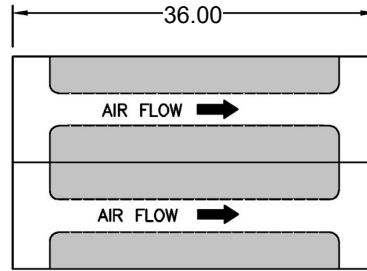
Width (in.): 245.00
Height (in.): 28.00
Length (in.): 36.00

Components

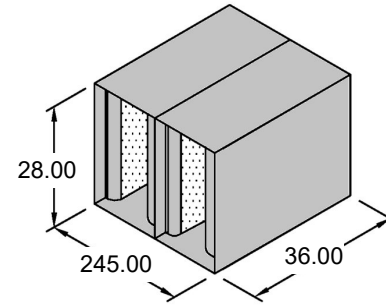
Quantity: 6
Width (in.): 40.83
Height (in.): 28.00



END VIEW



TOP VIEW



ISO VIEW

Images are generic representations of and not to scale. The actual configuration may not be shown.

Performance

Air Volume (cfm): 73624
Air Velocity (fpm): 1545
Air Direction: Reverse
Pressure Drop (in.w.g.): 0.15
Installed PD (in.w.g.): 0.24

Dynamic Insertion Loss (dB)

63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
6	8	15	24	23	18	15	12

Construction

Casing: 22 GA Galvanized
Perforated Liner: 22 GA Galvanized

Acoustic Media: Glass Fiber

Inlet Connection: 2" Slip

Outlet Connection: 2" Slip

Notes

- Price silencer material has flame spread classification < 25 and smoke development rating < 50 when tested in accordance with ASTM E84, UL723 and NFPA255.
- System effects assume sharp inlet at the silencer inlet and fan at the silencer outlet.
- All manufacturers must provide acoustic calculations for relevant sound paths verifying 45dBA is achieved.
- Price silencers consist of ASTM A653(M) steel casings and liners.
- Price silencers are tested in our NVLAP-Accredited sound lab.
- Performance data is derived from ASTM E477-13.
- Silencer bank shall be structurally supported by Others.
- Silencer shipped in multiple components for assembly by Others.
- Complete with mastic filled seams.
- Customer to confirm all dimensions.

PROJECT: The Summit Noise Barriers

ENGINEER:

DESCRIPTION: Rectangular High Velocity Silencer

RH/S/I/36.00/4/D/I/245.00/28.00/40.83/28.00/6/20.42/12.0/CL1/G/F//S2/S2/0.00//LL//P22////0.00/0.00/0

CUSTOMER:

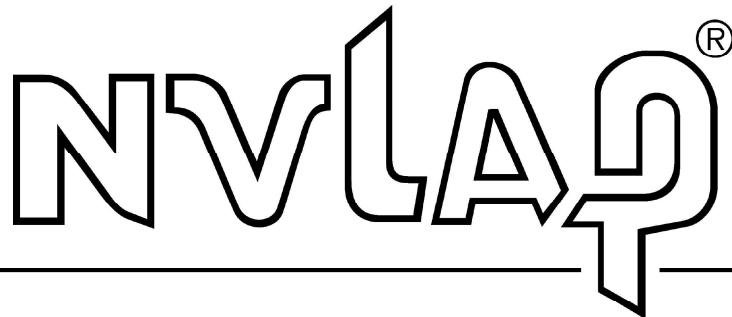
UNIT OF MEASURE: Imperial

SUBMITTAL DATE: 9/8/2022

PRICE QUOTE NO: Q22-008579

DRAWING REVISION:

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 200874-0

Price Sound Laboratory

Winnipeg, Manitoba
Canada

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

Acoustical Testing Services

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

2022-05-24 through 2023-06-30

Effective Dates



A handwritten signature in blue ink, reading "Dana S. Laman".

For the National Voluntary Laboratory Accreditation Program

**REPORT TO CAPITAL REGIONAL HOSPITAL DISTRICT BOARD
MEETING OF WEDNESDAY, OCTOBER 12, 2022**

SUBJECT **Amendment to the Capital Regional Hospital District 2022-2031 Ten Year Capital Plan**

ISSUE SUMMARY

The 2022-2031 Capital Regional Hospital District (CRHD) Ten Year Capital Plan which was approved on October 27, 2021, and amended on May 11, 2022 requires additional amendment.

BACKGROUND

The CRHD Board approved the 2022-2031 CRHD Capital Plan (Appendix A) on October 27, 2021 and amendment on May 11, 2022. The plan is derived from Island Health's healthcare capital priorities and represents the CRHD's ongoing capital commitments, anticipated new capital expenditures, and the related revenue requirement. A Capital plan amendment is required to implement consultants recommended remediation to the Summit rooftop equipment to address an unpleasant sound emanating from the large chiller. Staff are seeking approval of the capital plan amendment to authorize resources to install an intake silencer bank on the south side of the large chiller and replace the existing acoustical louver wall with a 13' high acoustical panel barrier.

ALTERNATIVES

Alternative 1

That the Capital Regional Hospital District 2022-2031 Ten Year Capital Plan be amended and approved as submitted.

Alternative 2

That the Amendment to the Capital Regional Hospital District 2022-2031 Ten Year Capital Plan report be referred back to staff for additional information based on Board direction.

IMPLICATIONS

Financial Implications

The CRHD Board had previously provided direction to undertake further testing and remediation within a budget of \$50,000, to be funded by the Administration and Feasibility Studies Reserve. To date we have spent \$11,300 and have a balance remaining of \$38,700. The equipment including the intake silencer bank and an acoustical barrier wall is estimated to cost \$92,000 not including labour and installation costs. Staff anticipate the recommended solution will cost \$200,000, including materials, installation and final engineering. These capital costs will be financed from the Summit Management Reserve, which is forecasted to have a balance of \$885,000 at December 31, 2022. Procurement of the recommended equipment is expected to commence in the fourth quarter of 2022. On October 12, 2022, the Board will consider the proposed chiller modifications and a maximum expenditure budget of \$200,000. In order to carry out these modifications, the 2022-2031 Ten Year Capital Plan, approved by the Board on October 27, 2021, and later amended on May 11, 2022, must be amended and is presented in Appendix A.

CONCLUSION

A Capital plan amendment is required to implement consultants recommended remediation to the Summit rooftop equipment to address an unpleasant sound emanating from the large chiller.

RECOMMENDATION

That the Capital Regional Hospital District 2022-2031 Ten Year Capital Plan be amended and approved as submitted.

Submitted by:	Michael Barnes, MPP, Senior Manager, Health and Capital Planning Strategies
Concurrence:	Kevin Lorette, P. Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Nelson Chan, MBA, FCPA, FCMA, Chief Financial Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENTS

Appendix A: Amended CRHD 2022-2031 Ten Year Capital Plan

CAPITAL REGIONAL HOSPITAL DISTRICT CAPITAL PLAN For Years 2022 to 2031 Amended at October 12, 2022											APPENDIX A										Page 1 of 2
Project Type / Status	Project Description	Year	Facility / Site	CBL Bylaw #	CRHD Share (%)	CRHD Share Total Project (\$)	Debt Term (Yrs)	Total Project Budget (\$)	Estimated Completed at Year-End (\$)	Total Project Remaining Balance (\$)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	10-Year Total
Major Project - Approved	James Bay Urgent and Primary Care Centre	2020	547 Michigan St.	174	30%	1,500,000	5	5,000,000	2,300,000	100,000	100,000	-	-	-	-	-	-	-	-	-	100,000
Major Project - Approved	Beacon Community Services Expansion	2020	Victoria - Various	175	30%	1,350,000	5	4,500,000	4,231,000	269,000	269,000	-	-	-	-	-	-	-	-	-	269,000
Major Project - Approved	Victoria Urgent and Primary Care Centre	2020	Victoria - Pandora Avenue	177	30%	1,500,000	5	5,000,000	4,650,000	100,000	100,000	-	-	-	-	-	-	-	-	-	100,000
Major Project - Approved	Greater Victoria Urgent and Primary Care	2021	Victoria	182	30%	1,499,592	5	4,998,639	3,800,000	1,198,639	1,198,639	-	-	-	-	-	-	-	-	-	1,198,639
Major Project - Approved	Greater Victoria Urgent and Primary Care	2021	Esquimalt	181	30%	886,414	5	2,954,713	2,654,713	300,000	300,000	-	-	-	-	-	-	-	-	-	300,000
Major Project - Approved	Emergency Department ¹	2021	Lady Minto Hospital	183	29%	3,000,000	10	10,340,000	560,000	9,780,000	2,500,000	7,280,000	-	-	-	-	-	-	-	-	9,780,000
Major Project - Planned	Medical Device Reprocessing Department Expansion	2022	Victoria General Hospital		30%	1,272,000	5	4,240,000	-	4,240,000	1,212,000	3,000,000	28,000	-	-	-	-	-	-	-	4,240,000
Major Project - Planned	High Acuity Unit	2022	Victoria General Hospital		30%	975,000	5	3,250,000	-	3,250,000	3,225,000	25,000	-	-	-	-	-	-	-	-	3,250,000
Major Project - Planned	High Acuity Unit	2022	Royal Jubilee Hospital		30%	4,695,000	15	15,650,000	-	15,650,000	600,000	6,000,000	9,050,000	-	-	-	-	-	-	-	15,650,000
Major Project - Planned	Pneumatic to Electric Controls Conversion	2022	Gorge Road Hospital		30%	883,800	5	2,946,000	-	2,946,000	147,300	2,356,800	441,900	-	-	-	-	-	-	-	2,946,000
Major Project - Possible	New Long Term Care (306 beds)	2022	South Island - Royal Bay		30%	61,500,000	15	205,000,000	-	205,000,000	600,000	14,000,000	60,000,000	60,000,000	40,000,000	30,400,000	-	-	-	-	205,000,000
Major Project - Possible	Energy Centre Replacement	2022	Victoria General Hospital		30%	5,505,000	15	18,350,000	-	18,350,000	1,017,500	7,340,000	7,340,000	1,835,000	817,500	-	-	-	-	-	18,350,000
Major Project - Possible	Routine Capital Investment Project(s)	2023	Royal Jubilee Hospital		30%	9,066,000	15	30,220,000	-	30,220,000	-	1,000,000	100,000	3,120,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	1,000,000	30,220,000
Major Project - Possible	Routine Capital Investment Project(s)	2023	Victoria General Hospital		30%	11,736,000	15	39,120,000	-	39,120,000	-	5,000,000	5,000,000	3,120,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	1,000,000	39,120,000
Major Project - Possible	Outpatient Rehabilitation Program	2022	Gorge Road Hospital		30%	900,000	5	3,000,000	-	3,000,000	600,000	2,400,000	-	-	-	-	-	-	-	-	3,000,000
Major Project - Possible	Mental Health & Substance Use Residential Program	2022	To be determined		30%	600,000	5	2,000,000	-	2,000,000	900,000	1,100,000	-	-	-	-	-	-	-	-	2,000,000
Major Project - Possible	Pembroke Mental Health Substance Use Center	2022	Victoria Health Unit-Cook Street		30%	6,600,000	15	22,000,000	-	22,000,000	100,000	400,000	1,500,000	7,000,000	12,000,000	1,000,000	-	-	-	-	22,000,000
Major Project - Possible	Child Youth Mental Health Stabilization Unit	2023	Victoria General Hospital		30%	2,250,000	10	7,500,000	-	7,500,000	-	250,000	2,750,000	4,000,000	500,000	-	-	-	-	-	7,500,000
Major Project - Possible	Energy Centre Replacement	2023	Saanich Peninsula Hospital		30%	2,400,000	10	8,000,000	-	8,000,000	-	200,000	1,500,000	4,000,000	2,300,000	-	-	-	-	-	8,000,000
Major Project - Possible	New Long Term Care (50 beds)	2023	Greater Victoria - TBD		30%	9,900,000	15	33,000,000	-	33,000,000	-	300,000	4,000,000	12,000,000	12,000,000	4,700,000	-	-	-	-	33,000,000
Major Project - Possible	Oak Bay Lodge Redevelopment	2023	Former Oak Bay Lodge Site		30%	90,000,000	15	300,000,000	-	300,000,000	-	100,000	1,000,000	5,000,000	35,000,000	60,000,000	70,000,000	70,000,000	58,900,000	-	300,000,000
Major Project - Possible	Relocate SSI MHSU Integrated Team	2023	Salt Spring Island		30%	600,000	5	2,000,000	-	2,000,000	-	300,000	1,700,000	-	-	-	-	-	-	-	2,000,000
Major Project - Possible	Pre-admission Clinic Consolidation (RJH & VGH)	2024	To be determined		30%	600,000	5	2,000,000	-	2,000,000	-	300,000	1,700,000	-	-	-	-	-	-	-	2,000,000
Major Project - Possible	Electronic Health Record	2024	South Island - TBD		30%	900,000	5	3,000,000	-	3,000,000	-	-	3,000,000	-	-	-	-	-	-	-	3,000,000
Major Project - Possible	Peninsula Primary Care Centre ¹	2024	Saanich Peninsula Hospital		30%	900,000	5	3,000,000	-	3,000,000	-	-	1,500,000	1,500,000	-	-	-	-	-	-	3,000,000
Major Project - Possible	SPH Acute Core Renovation ¹	2024	Saanich Peninsula Hospital		30%	1,500,000	5	5,000,000	-	5,000,000	-	-	2,500,000	2,500,000	-	-	-	-	-	-	5,000,000
Major Project - Possible	Elevator Refurbishment	2024	Victoria General Hospital		30%	630,000	5	2,100,000	-	2,100,000	-	-	1,050,000	1,050,000	-	-	-	-	-	-	2,100,000
Major Project - Possible	Convert obsolete 480 distribution system with 600V	2024	Royal Jubilee Hospital		30%	600,000	5	2,000,000	-	2,000,000	-	-	1,000,000	1,000,000	-	-	-	-	-	-	2,000,000
Major Project - Possible	VGH Pediatric Intensive Care Unit	2025	Victoria General Hospital		30%	1,500,000	5	5,000,000	-	5,000,000	-	-	-	250,000	2,250,000	2,250,000	250,000	-	-	-	5,000,000
Major Project - Possible	10G Fibre Expansion (IMIT)	2025	Royal Jubilee Hospital		30%	900,000	5	3,000,000	-	3,000,000	-	-	-	1,500,000	1,500,000	-	-	-	-	-	3,000,000
Major Project - Possible	RJH DT Cooling System Replacement	2025	Royal Jubilee Hospital		30%	600,000	5	2,000,000	-	2,000,000	-	-	-	-	250,000	1,250,000	500,000	-	-	-	2,000,000
Major Project - Possible	QAC Electrical Distribution \$2m	2025	Queen Alexandra		30%	600,000	5	2,000,000	-	2,000,000	-	-	-	-	200,000	1,200,000	600,000	-	-	-	2,000,000
Major Project - Possible	Endoscopy - create 4th Procedure Room	2025	Royal Jubilee Hospital		30%	600,000	5	2,000,000	-	2,000,000	-	-	-	-	200,000	1,200,000	600,000	-	-	-	2,000,000
Major Project - Possible	Surgical Day Care Unit Renovation	2026	Victoria General Hospital		30%	3,180,000	10	10,600,000	-	10,600,000	-	-	-	-	100,000	500,000	5,000,000	5,000,000	-	-	10,600,000
Major Project - Possible	Intensive Care & High Acuity Unit Redevelopment ³	2026	Victoria General Hospital		30%	11,700,000	15	39,000,000	-	39,000,000	-	-	-	-	250,000	2,500,000	15,000,000	15,000,000	6,000,000	250,000	39,000,000
Major Project - Possible	Restorative Health Center	2026	To be determined		30%	60,000,000	15	200,000,000	-	200,000,000	-	-	-	-	250,000	2,500,000	25,000,000	50,000,000	50,000,000	50,000,000	177,750,000
Major Project - Possible	Morgue Expansion	2026	Victoria General Hospital		30%	600,000	5	2,000,000	-	2,000,000	-	-	-	-	150,000	1,500,000	350,000	-	-	-	2,000,000
Major Project - Possible	Memorial Pavilion Mechanical System Upgrade	2026	Royal Jubilee Hospital		30%	3,000,000	10	10,000,000	-	10,000,000	-	-	-	-	150,000	3,000,000	3,000,000	3,000,000	850,000	-	10,000,000
Major Project - Possible	Electrical Infrastructure Upgrade	2026	Lady Minto Hospital		30%	3,000,000	10	10,000,000	-	10,000,000	-	-	-	-	150,000	3,000,000	3,000,000	3,000,000	850,000	-	10,000,000
Major Project - Possible	Westshore Mental Health Team	2027	Westshore		30%	974,700	5	3,249,000	-	3,249,000	-	-	-	-	-	100,000	1,800,000	1,349,000	-	-	3,249,000
Major Project - Possible	Phase 2 of ED Redevelopment: Imaging Suite	2028	Lady Minto Hospital		30%	1,500,000	5	5,000,000	-	5,000,000	-	-	-	-	-	-	150,000	2,000,000	2,000,000	850,000	5,000,000
Major Project - Possible	Endoscopy - create 4th Procedure Room	2028	Victoria General Hospital		30%	600,000	5	2,000,000	-	2,000,000	-	-	-	-	-	-	150,000	1,500,000	350,000	-	2,000,000
Major Project - Possible	Child Youth and Family Services Redevelopment	2028	To be determined		30%	30,000,000	15	100,000,000	-	100,000,000	-	-	-	-	-	-	250,000	12,500,000	25,000,000	25,000,000	62,750,000
Major Project - Possible	Administrative Building Decant/Eric Martin Pavilion Asbestos Abatement	2028	Royal Jubilee Hospital		30%	1,470,000	5	4,900,000	-	4,900,000	-	-	-	-	-	-	150,000	1,500,000	1,750,000	1,500,000	4,900,000
Major Project - Possible	Long Term Care (50 beds)	2029	Lady Minto Hospital		30%	15,000,000	15	50,000,000	-	50,000,000	-	-	-	-	-	-	-	200,000	800,000	5,000,000	6,000,000
Major Project - Possible	Multidisciplinary Pain Clinic	2029	Royal Jubilee Hospital		30%	900,000	5	3,000,000	-	3,000,000	-	-	-	-	-	-	-	250,000	1,750,000	1,000,000	3,000,000
Major Project - Possible	Operating Room Upgrade	2030	Victoria General Hospital		30%	1,500,000	5	5,000,000	-	5,000,000	-	-	-	-	-	-	-	-	250,000	1,500,000	1,750,000
Major Project - Possible	(VASC/CARD) Hybrid OR	2030	Royal Jubilee Hospital		30%	1,620,000	5	5,400,000	-	5,400,000	-	-	-	-	-	-	-	-	250,000	2,000,000	2,250,000
ISLAND HEALTH TOTAL*						362,993,506		1,210,318,352	18,195,713	1,189,272,639	12,869,439	51,351,800	105,159,900	108,525,000	121,067,500	123,150,000	134,100,000	175,299,000	158,750,000	89,100,000	1,079,372,639
CRHD SHARE of ISLAND HEALTH MAJOR PROJECTS - including inflation in future years ²											3,836,082	15,342,168	31,678,170	32,758,200	36,669,750	37,435,500	40,974,600	53,581,494	48,517,500	27,252,600	328,046,064

CAPITAL REGIONAL HOSPITAL DISTRICT CAPITAL PLAN For Years 2022 to 2031 Amended at October 12, 2022											APPENDIX A											Page 1 of 2
Project Type / Status	Project Description	Year	Facility / Site	CBL Bylaw #	CRHD Share (%)	CRHD Share Total Project (\$)	Debt Term (Yrs)	Total Project Budget (\$)	Estimated Completed at Year-End (\$)	Total Project Remaining Balance (\$)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	10-Year Total	
Minor Project - Requested	Minor Capital Projects Current Budget Year	2022	Various		40%	3,750,000	N/A	9,375,000	-	9,375,000	9,375,000	-	-	-	-	-	-	-	-	-	9,375,000	
Minor Project - Anticipated	Minor Capital Projects Future Budget Years	2023-2031	Various		40%	33,750,000	N/A	84,375,000	-	84,375,000	-	9,375,000	9,375,000	9,375,000	9,375,000	9,375,000	9,375,000	9,375,000	9,375,000	9,375,000	84,375,000	
Minor Equipment Grants	CRHD Section 20 Equipment Grants	2022-2031	Various		100%	29,550,000	N/A	29,550,000	-	29,550,000	2,955,000	2,955,000	2,955,000	2,955,000	2,955,000	2,955,000	2,955,000	2,955,000	2,955,000	2,955,000	29,550,000	
Non-Traditional Project	Non-Traditional Projects Grants (Suspended 2015-2024) - expensed annually	2025-2031	Various		100%	7,000,000	N/A	7,000,000	-	7,000,000	-	-	-	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	7,000,000	
CRHD Project	Hillside/Kings Licensed Residential Care Facility	2022	950 Kings Rd.		100%	15,000,000	15	15,000,000	-	15,000,000	-	500,000	2,500,000	6,000,000	6,000,000	-	-	-	-	-	15,000,000	
CRHD Project	Regional Housing First Program (RHFP) Contribution - \$10M contribution from reserve	2021	TBD		100%	10,000,000	N/A	10,000,000	-	10,000,000	10,000,000	-	-	-	-	-	-	-	-	-	10,000,000	
CRHD Project	Oak Bay Lodge - Demolition	2021	2251 Cadboro Bay Rd.	178	100%	5,109,237	5	5,109,237	1,985,691	3,123,546	3,123,546	-	-	-	-	-	-	-	-	-	3,123,546	
CRHD Project	Summit Scheduled Capital Replacements	2022	955 Hillside Ave.	160	100%	1,200,000	N/A	1,200,000	-	1,200,000	400,000	200,000	200,000	200,000	200,000	-	-	-	-	-	1,200,000	
CRHD Project	Summit Chiller Modifications	2022	955 Hillside Ave.	160	100%	200,000	N/A	200,000	-	200,000	200,000	-	-	-	-	-	-	-	-	-	200,000	
CRHD TOTAL						105,559,237		161,809,237	1,985,691	159,823,546	26,053,546	13,030,000	15,030,000	19,530,000	19,530,000	13,330,000	13,330,000	13,330,000	13,330,000	13,330,000	159,823,546	
PROJECT TOTAL - before inflation						468,552,743		1,372,127,589	20,181,404	1,349,096,185	38,922,985	64,381,800	120,189,900	128,055,000	140,597,500	136,480,000	147,430,000	188,629,000	172,080,000	102,430,000	1,239,196,185	
Inflation ²	2.00%	- excluding approved/pending Capital Bylaws								16,634,980	-	29,000	434,000	669,000	1,165,000	1,635,000	2,482,000	3,305,980	2,975,000	1,742,000	14,436,980	
PROJECT TOTAL - including inflation										1,365,731,165	38,922,985	64,410,800	120,623,900	128,724,000	141,762,500	138,115,000	149,912,000	191,934,980	175,055,000	104,172,000	1,253,633,165	
CRHD SHARE TOTAL ESTIMATED ANNUAL CAPITAL CASH FLOW										431,419,610	24,264,628	22,547,168	41,083,170	46,663,200	50,574,750	45,140,500	48,679,600	61,286,494	56,222,500	34,957,600	431,419,610	

General Notes

- *Rules for debt borrowing period (amortization) are based on total project cost: \$2-5M 5yrs; \$5-12.5M 10yrs; >\$12.5M 15yrs
- **Potential start dates depend on annual prioritization process and funding availability from Ministry of Health, CRHD and other funding sources. As a result, start dates are preliminary and may change.
- ¹Project will be primarily funded by the Hospital Foundation
- ²Inflation is calculated at a rate of 2% for years 2022-2031 and applied to forecasted projects if applicable (approved bylaws, current year projects and land acquisitions are not subject to inflation)
- ³If this project does not proceed, a renovation to the Intensive Care Unit will be required

VIHA Project Type / Status Legend:

Major Project - Approved	Capital Borrowing Bylaw has been approved; project values greater than \$2 million
Major Project - Planned	Island Health has received approval from Ministry of Health; project values greater than \$2 million
Major Project - Possible	Island Health is planning to proceed subject to necessary approvals; project values greater than \$2 million
Major Project - Other	Projects not yet identified; to recognize health care needs and technology are continuously changing
Minor Project - Requested/Anticipated	Current and future year minor projects with values in the range of \$100,000 to \$2 million, up to maximum of \$9.375 million
Non-Traditional Projects	Non-traditional project funding
Minor Equipment Grants	HD Act Section 20 minor equipment grants
CRHD Project	CRHD capital initiatives

**REPORT TO HOSPITALS AND HOUSING COMMITTEE
MEETING OF WEDNESDAY, OCTOBER 05, 2022**

SUBJECT **Lady Minto Hospital Emergency Redevelopment – Approval of Amended Capital Bylaw**

ISSUE SUMMARY

To approve the revised Lady Minto Hospital Emergency Redevelopment Budget and Amended Capital Bylaw.

BACKGROUND

At the July 13, 2022 Capital Regional Hospital District (CRHD) Board meeting the Board approved providing a 30 percent cost overrun for the Lady Minto Hospital Emergency redevelopment project up to a maximum of \$738,000. This brings the total CRHD share to a maximum of \$3,738,000.

Located at 135 Crofton Road on Salt Spring Island, the existing Emergency department located within the hospital was built approximately 60 years ago. The proposed redevelopment includes a new Emergency department and a dedicated area for a Medical Imaging department. The project will expand the current health care wing taking over a portion of the south-west lot.

The Lady Minto Emergency Redevelopment project has been identified on CRHD capital plans since 2013. This project is the first significant renovation at Lady Minto Hospital since 2005. It will support the identified need for additional treatment rooms, new triage admitting area, dedicated emergency room entrance, and supply and equipment storage.

Staff are requesting approval of a revised project budget and Bylaw amendment.

ALTERNATIVES

Alternative 1

The Hospitals and Housing Committee recommends to the Capital Regional Hospital District Board:

- 1) That the revised project budget be approved;
- 2) That the Lady Minto Hospital Emergency Redevelopment Bylaw be amended and approved as submitted;
- 3) That Bylaw No. 414, “Capital Regional Hospital District Capital Bylaw No. 183, 2021, Amendment No. 1, 2022” be read a first, second and third time; and
- 4) That Bylaw No. 414 be adopted.

Alternative 2

That the Lady Minto Hospital Emergency Redevelopment – Approval of Amended Capital Bylaw report be referred back to staff for additional information.

IMPLICATIONS

Financial Implications

The project will be funded in partnership with the CRHD, the Lady Minto Hospital Foundation and Island Health. On March 24, 2021, the CRHD Board approved the 2021-2030 Amended Capital

Hospitals and Housing Committee – October 5, 2022
Lady Minto Hospital Emergency Redevelopment – Approval of Amended Capital Bylaw 2

Plan which included the Lady Minto Project at a total project cost of \$10,340,000 and a maximum CRHD contribution of \$3,000,000. The Capital Expenditure and Borrowing Bylaw was subsequently approved by the Board on September 8, 2021. On July 13, 2022, the CRHD Board approved a motion with notice that the CRHD will contribute 30% of the unforeseen cost overrun for the new Emergency Room at Lady Minto Hospital. The revised total project cost is \$12,800,000 and the CRHD's total share has increased by \$738,000, to a maximum of \$3,738,000.

The revised project budget and CRHD share are reflected in the 2023-2032 Ten Year Capital Plan that was approved by the Board on September 21, 2022. The remaining project costs will be cash flowed over years 2022-2023 and the CRHD share will be debt serviced through the Municipal Finance Authority. The cost of debt servicing the additional CRHD contribution of \$738,000 is included in the 2023 CRHD Provisional Financial Plan.

In order to fulfill the increased CRHD commitment, the original Capital Expenditure and Borrowing Bylaw must be amended and is presented in Appendix A. Based on the revised project cost, and in alignment with CRHD guidelines, the debt term has also been extended to 15 years for the remainder of the project.

CONCLUSION

The Lady Minto Hospital Emergency Redevelopment project addresses the need to enhance emergency care services on Salt Spring Island. With approval of a CRHD \$3,738,000 Capital Expenditure and Amended Borrowing Bylaw, Island Health can proceed with the planned redevelopment to accommodate long term preservation of quality health care on the Gulf Islands.

RECOMMENDATION

The Hospitals and Housing Committee recommends to the Capital Regional Hospital District Board:

- 1) That the revised project budget be approved;
- 2) That the Lady Minto Hospital Emergency Redevelopment Bylaw be amended and approved as submitted;
- 3) That Bylaw No. 414, "Capital Regional Hospital District Capital Bylaw No. 183, 2021, Amendment No. 1, 2022" be read a first, second and third time; and
- 4) That Bylaw No. 414 be adopted.

Submitted by:	Michael Barnes, MPP, Senior Manager, Health and Capital Planning Strategies
Concurrence:	Kevin Lorette, P. Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Nelson Chan, MBA, FCPA, FCMA, Chief Financial Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENTS

Appendix A: Bylaw No. 414, "CRHD Capital Bylaw No. 183, 2021, Amendment No. 1, 2022

CAPITAL REGIONAL HOSPITAL DISTRICT BYLAW NO. 414

**A BYLAW TO AMEND BYLAW NO. 409, "CAPITAL REGIONAL HOSPITAL DISTRICT
CAPITAL BYLAW NO. 183, 2021"**

The Board of the Capital Regional Hospital District in open meeting assembled enacts as follows;

1. Bylaw No. 409, "Capital Regional Hospital District Capital Bylaw No. 183, 2021" is hereby amended by:
 - a) Deleting Schedule "A" in its entirety and replacing it with the attached Schedule "A";
 - b) Deleting Section 2 in its entirety and replacing it with the following:

"2. The Board authorizes and approves the borrowing of a net sum not exceeding \$3,738,000 upon the credit of the District by issuance and sale of securities in a form and manner agreed to by the Municipal Finance Authority of British Columbia. The term of the securities and the repayment of the principal and interest shall be over a term not to exceed FIFTEEN years".
2. This Bylaw may be cited for all intents and purposes as the "Capital Regional Hospital District Capital Bylaw No. 183, 2021, Amendment Bylaw No.1, 2022".

READ A FIRST TIME THIS	DAY OF	, 2022
READ A SECOND TIME THIS	DAY OF	, 2022
READ A THIRD TIME THIS	DAY OF	, 2022
ADOPTED THIS	DAY OF	, 2022

Chair

Corporate Officer

SCHEDULE “A”

Bylaw No. 414

CAPITAL REGIONAL HOSPITAL DISTRICT

CAPITAL BYLAW NO. 183, 2021, AMENDMENT BYLAW NO. 1, 2022

NAME OF PROJECT	PROJECT DESCRIPTION	PROJECT NUMBER	AMOUNT COVERED BY CRHD BYLAW	AMOUNT COVERED BY PROVINCE/ISLAND HEALTH	OTHER SHARE: LADY MINTO HOSPITAL FOUNDATION	TOTAL PROJECT OR EQUIPMENT COST
Lady Minto Hospital	Emergency Redevelopment	C183-21-01	\$3,738,000	\$1,000,000	\$8,062,000	\$12,800,000