

Remarks

- 1 10dB safety factor is adopted for compliance with NCO Statutory Criteria.
- 2 FDL of SP1900 measured in Pat Heung Depot in 2003 was adopted in the assessment. Train speed correction of $20\log(V/V_{ref})$ is applied to FDL.
- 3 $L_{max, slow}$ is calculated by adding 0.5dB(A) on top of the double passby noise level, with reference to WIL EIA
- 4 $SEL = L_{eq, passby} + 10 \log(\text{passby duration}) + 3\text{dB Head Tail Effect}$, with reference to WIL EIA
 $L_{eq, 30min} = SEL + 10 \log(\text{peak time train frequency}) - 10 \log(1800)$
* Daytime peak train frequency = 15 per 30min per direction
* Nighttime peak train frequency = 12 per 30min per direction
- 5 850 trains in both directions per day was used in the computation of $Leq(24hrs)$

Project: SCL Operational Rail Noise Assessment
NSR No.: HH9b
NSR Usage: Hotel
NSR Location: Harbour Front Horizon 海灣軒

Southbound Speed: 80 kph
Trains in 30min per Direction (day): 15
No. of Trains per Day: 850
Head-Tail Effect: 3 dB

Northbound Speed: 80 kph
Trains in 30min per Direction (night): 12

No. of Basement Floors: 0
NSR Floor: 4

	Horizontal Dist, m	Track Depth, m
Southbound	150	11
Northbound	155	11

Inferred Rockhead
21m

Descriptions	Unit																
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500
Southbound Calculation																	
FDL	dB re 1 lb/ft0.5		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
TOC	dB	N/1/2	0														
TIL	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCF	dB	Type	3	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
LSR	dB re micro-in/s * ft0.5/lb		-3.8	13.0	-14.1	-26.1	-44.3	-50.5	-68.7	-79.9	-106.6	-111.5	-106.6	-88.5	-84.0	-76.4	-77.2
Up Track Vibration Level	dB re 1 micro-in/sec		29.7	50.5	22.4	8.4	-10.8	-13.0	-28.2	-38.4	-65.1	-74.0	-70.1	-53.0	-51.5	-42.9	-46.7
Northbound Calculation																	
FDL	dB re 1 lb/ft0.5		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
TOC	dB	N/1/2	0														
TIL	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCF	dB	Type	3	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
LSR	dB re micro-in/s * ft0.5/lb		-4.5	12.7	-15.1	-27.5	-46.4	-52.9	-71.6	-83.1	-110.7	-115.3	-110.1	-91.3	-86.6	-78.5	-79.4
Down Track Vibration Level	dB re 1 micro-in/sec		29.0	50.2	21.4	7.0	-12.9	-15.4	-31.1	-41.6	-69.2	-77.8	-73.6	-55.8	-54.1	-45.0	-48.9
Total of Southbound and Northbound Calculation																	
Total Vibration Level Outside Building			32.4	53.3	24.9	10.8	-8.7	-11.0	-26.4	-36.7	-63.7	-72.5	-68.5	-51.2	-49.6	-40.8	-44.7
BCF	dB	Type	4	-7.0	-7.5	-8.0	-9.0	-10.0	-11.0	-12.0	-13.0	-14.0	-14.5	-14.5	-14.5	-14.5	-14.5
BVR - Floor to Floor	dB	Floor	4	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.6	5.4	5.2	5.0	4.0	3.0	2.0	1.3	0.7
CTN	dB			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
SAF	dB			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Predicted Noise Level	1/3 Oct (Linear), dB		35.4	55.8	26.9	11.8	-8.9	-12.4	-29.0	-40.5	-68.7	-79.0	-76.0	-59.7	-58.8	-50.6	-55.2
Predicted Noise Level	Oct (Linear), dB				55.9			-7.3			-40.5			-56.2			0.0
Predicted Noise Level	1/3 Oct (A-weighted), dB		-15.1	11.1	-12.5	-22.8	-39.1	-38.6	-51.5	-59.6	-84.8	-92.4	-86.9	-68.3	-65.4	-55.4	-58.4
Predicted Double Passby Noise Level	dB(A)		11.2														

Lmax,slow (Double Passby)	11.7	dB(A)
Leq,30min (Daytime)	3.4	dB(A)
Leq,30min (Nighttime)	2.5	dB(A)
Leq, 24hr	1.2	dB(A)

Project: SCL Operational Rail Noise Assessment
NSR No.: CH2
NSR Usage: Residential
NSR Location: Hoi Kung Court海宮大廈

Southbound Speed: 80 kph
Trains in 30min per Direction (day): 15
No. of Trains per Day: 850
Head-Tail Effect: 3 dB

Northbound Speed: 80 kph
Trains in 30min per Direction (night): 12

No. of Basement Floors: 0
NSR Floor: 1

	Horizontal Dist, m	Track Depth, m
Southbound	60	17
Northbound	65	25

Inferred Rockhead
~12m

Descriptions	Unit																
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500
Southbound Calculation																	
FDL	dB re 1 lb/ft0.5		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
TOC	dB	N/1/2	0														
TIL	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCF	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSR	dB re micro-in/s * ft0.5/lb		-7.2	-9.4	-4.9	-1.7	2.4	4.0	0.2	-2.1	-8.5	-9.0	-11.8	-8.6	-11.1	-16.1	-14.9
Up Track Vibration Level	dB re 1 micro-in/sec		29.3	31.1	34.6	35.8	38.9	44.5	43.7	42.4	36.0	31.5	27.7	29.9	24.4	20.4	18.6
Northbound Calculation																	
FDL	dB re 1 lb/ft0.5		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
TOC	dB	N/1/2	0														
TIL	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCF	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSR	dB re micro-in/s * ft0.5/lb		-12.2	-14.2	-10.8	-8.4	-3.9	-0.5	-3.3	-5.0	-12.9	-11.7	-15.8	-11.8	-14.9	-20.3	-18.9
Down Track Vibration Level	dB re 1 micro-in/sec		24.3	26.3	28.7	29.1	32.6	40.0	40.2	39.5	31.6	28.8	23.7	26.7	20.6	16.2	14.6
Total of Southbound and Northbound Calculation																	
Total Vibration Level Outside Building			30.5	32.3	35.6	36.6	39.8	45.8	45.3	44.2	37.3	33.4	29.1	31.6	25.9	21.8	20.1
BCF	dB	Type	N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BVR - Floor to Floor	dB	Floor	1	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.6	5.4	5.2	5.0	4.0	3.0	2.0	1.3	0.7
CTN	dB			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
SAF	dB			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Predicted Noise Level	1/3 Oct (Linear), dB			46.5	48.3	51.6	52.6	55.6	61.4	60.7	59.4	52.3	47.4	42.1	43.6	37.2	32.5
Predicted Noise Level	Oct (Linear), dB					56.0			64.7			60.4			46.5		34.5
Predicted Noise Level	1/3 Oct (A-weighted), dB			-4.0	3.6	12.2	18.0	25.4	35.2	38.2	40.3	36.2	34.0	31.2	35.0	30.6	27.7
Predicted Double Passby Noise Level	dB(A)			45.4													

Lmax,slow (Double Passby)	45.9	dB(A)
Leq,30min (Daytime)	37.6	dB(A)
Leq,30min (Nighttime)	36.7	dB(A)
Leq, 24hr	35.4	dB(A)

Project: SCL Operational Rail Noise Assessment
NSR No.: CH3
NSR Usage: Residential
NSR Location: Tower C, Elizabeth House 伊莉莎伯大廈C座

Southbound Speed: 80 kph
Trains in 30min per Direction (day): 15
No. of Trains per Day: 850
Head-Tail Effect: 3 dB

Northbound Speed: 80 kph
Trains in 30min per Direction (night): 12

No. of Basement Floors: 0
NSR Floor: 8

	Horizontal Dist, m	Track Depth, m
Southbound	60	15
Northbound	65	28

Inferred Rockhead
25-35m

Descriptions	Unit																
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500
Southbound Calculation																	
FDL	dB re 1 lb/ft0.5		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
TOC	dB	N/1/2	0														
TIL	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCF	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSR	dB re micro-in/s * ft0.5/lb		6.2	6.5	0.8	-8.6	-17.1	-22.1	-24.6	-30.6	-34.6	-26.9	-25.6	-21.3	-21.2	-24.2	-25.3
Up Track Vibration Level	dB re 1 micro-in/sec		42.7	47.0	40.3	28.9	19.4	18.4	18.9	13.9	9.9	13.6	13.9	17.2	14.3	12.3	8.2
Northbound Calculation																	
FDL	dB re 1 lb/ft0.5		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
TOC	dB	N/1/2	0														
TIL	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCF	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSR	dB re micro-in/s * ft0.5/lb		-13.0	-14.9	-11.7	-9.4	-4.8	-1.1	-3.8	-5.5	-13.6	-12.1	-16.4	-12.3	-15.4	-20.9	-19.5
Down Track Vibration Level	dB re 1 micro-in/sec		23.5	25.6	27.8	28.1	31.7	39.4	39.7	39.0	30.9	28.4	23.1	26.2	20.1	15.6	14.0
Total of Southbound and Northbound Calculation																	
Total Vibration Level Outside Building			42.8	47.0	40.6	31.5	31.9	39.4	39.7	39.0	31.0	28.5	23.6	26.7	21.1	17.3	15.0
BCF	dB	Type	N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BVR - Floor to Floor	dB	Floor	8	-16.0	-16.0	-16.0	-16.0	-16.0	-16.0	-16.0	-16.0	-16.0	-16.0	-16.0	-16.0	-16.0	-16.0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.6	5.4	5.2	5.0	4.0	3.0	2.0	1.3	0.7
CTN	dB			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
SAF	dB			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Predicted Noise Level	1/3 Oct (Linear), dB			44.8	49.0	42.6	33.5	33.7	41.0	41.1	40.2	32.0	28.5	22.6	24.7	18.4	14.0
Predicted Noise Level	Oct (Linear), dB					50.0			44.5			41.1			27.4		15.9
Predicted Noise Level	1/3 Oct (A-weighted), dB			-5.7	4.3	3.2	-1.1	3.5	14.8	18.6	21.1	15.9	15.1	11.7	16.1	11.8	9.2
Predicted Double Passby Noise Level	dB(A)			26.0													

Lmax,slow (Double Passby)	26.5	dB(A)
Leq,30min (Daytime)	18.3	dB(A)
Leq,30min (Nighttime)	17.3	dB(A)
Leq, 24hr	16.0	dB(A)

Project: SCL Operational Rail Noise Assessment
NSR No.: EX2
NSR Usage: Hotel
NSR Location: Renaissance Harbour View Hotel 萬麗海景酒店

Southbound Speed: 80 kph
Trains in 30min per Direction (day): 15
No. of Trains per Day: 850
Head-Tail Effect: 3 dB

Northbound Speed: 80 kph
Trains in 30min per Direction (night): 12

No. of Basement Floors: 0
NSR Floor: 4

	Horizontal Dist, m	Track Depth, m
Southbound	30	20
Northbound	30	27

Inferred Rockhead
~35m

Descriptions	Unit																
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500
Southbound Calculation																	
FDL	dB re 1 lb/ft0.5		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
TOC	dB	N/1/2	0														
TIL	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCF	dB	Type	3	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
LSR	dB re micro-in/s * ft0.5/lb		13.2	13.1	8.8	4.6	-1.2	-7.7	-11.1	-16.3	-20.7	-20.2	-20.0	-17.0	-19.3	-21.2	-23.1
Up Track Vibration Level	dB re 1 micro-in/sec		46.7	50.6	45.3	39.1	32.3	29.8	29.4	25.2	20.8	17.3	16.5	18.5	13.2	12.3	7.4
Northbound Calculation																	
FDL	dB re 1 lb/ft0.5		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
TOC	dB	N/1/2	0														
TIL	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCF	dB	Type	3	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
LSR	dB re micro-in/s * ft0.5/lb		11.9	11.9	7.4	2.3	-4.0	-10.2	-13.5	-18.8	-23.1	-21.4	-21.1	-17.8	-19.7	-21.8	-23.6
Down Track Vibration Level	dB re 1 micro-in/sec		45.4	49.3	43.9	36.8	29.5	27.3	27.0	22.7	18.4	16.1	15.4	17.7	12.8	11.7	6.9
Total of Southbound and Northbound Calculation																	
Total Vibration Level Outside Building			49.1	53.0	47.7	41.1	34.1	31.7	31.4	27.2	22.8	19.7	19.0	21.1	16.0	15.1	10.2
BCF	dB	Type	4	-7.0	-7.5	-8.0	-9.0	-10.0	-11.0	-12.0	-13.0	-14.0	-14.5	-14.5	-14.5	-14.5	-14.5
BVR - Floor to Floor	dB	Floor	4	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.6	5.4	5.2	5.0	4.0	3.0	2.0	1.3	0.7
CTN	dB			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
SAF	dB			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Predicted Noise Level		1/3 Oct (Linear), dB		52.1	55.5	49.7	42.1	33.9	30.3	28.8	23.4	17.8	13.2	11.5	12.6	6.8	5.3
Predicted Noise Level		Oct (Linear), dB				56.7			36.3			24.7			15.7		7.2
Predicted Noise Level		1/3 Oct (A-weighted), dB		1.6	10.8	10.3	7.5	3.7	4.1	6.3	4.3	1.7	-0.2	0.6	4.0	0.2	0.5
Predicted Double Passby Noise Level		dB(A)		17.0													

Lmax,slow (Double Passby)	17.5	dB(A)
Leq,30min (Daytime)	9.3	dB(A)
Leq,30min (Nighttime)	8.3	dB(A)
Leq, 24hr	7.0	dB(A)

Project: SCL Operational Rail Noise Assessment
NSR No.: EX3
NSR Usage: Hotel
NSR Location: Grand Hyatt Hotel君悅酒店

Southbound Speed: 80 kph
Trains in 30min per Direction (day): 15
No. of Trains per Day: 850
Head-Tail Effect: 3 dB

Northbound Speed: 80 kph
Trains in 30min per Direction (night): 12

No. of Basement Floors: 0
NSR Floor: 4

	Horizontal Dist, m	Track Depth, m
Southbound	30	27
Northbound	30	34

Inferred Rockhead
~50m

Descriptions	Unit																
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500
Southbound Calculation																	
FDL	dB re 1 lb/ft0.5		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
TOC	dB	N/1/2	0														
TIL	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCF	dB	Type	3	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
LSR	dB re micro-in/s * ft0.5/lb		11.9	11.9	7.4	2.3	-4.0	-10.2	-13.5	-18.8	-23.1	-21.4	-21.1	-17.8	-19.7	-21.8	-23.6
Up Track Vibration Level	dB re 1 micro-in/sec		45.4	49.3	43.9	36.8	29.5	27.3	27.0	22.7	18.4	16.1	15.4	17.7	12.8	11.7	6.9
Northbound Calculation																	
FDL	dB re 1 lb/ft0.5		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
TOC	dB	N/1/2	0														
TIL	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCF	dB	Type	3	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
LSR	dB re micro-in/s * ft0.5/lb		10.5	10.5	5.8	-0.3	-7.1	-13.1	-16.2	-21.6	-25.9	-22.8	-22.2	-18.7	-20.1	-22.4	-24.1
Down Track Vibration Level	dB re 1 micro-in/sec		44.0	48.0	42.3	34.2	26.3	24.4	24.3	19.9	15.6	14.7	14.3	16.8	12.4	11.1	6.4
Total of Southbound and Northbound Calculation																	
Total Vibration Level Outside Building			47.8	51.7	46.1	38.7	31.2	29.1	28.9	24.5	20.2	18.5	17.9	20.3	15.6	14.4	9.7
BCF	dB	Type	4	-7.0	-7.5	-8.0	-9.0	-10.0	-11.0	-12.0	-13.0	-14.0	-14.5	-14.5	-14.5	-14.5	-14.5
BVR - Floor to Floor	dB	Floor	4	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.6	5.4	5.2	5.0	4.0	3.0	2.0	1.3	0.7
CTN	dB			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
SAF	dB			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Predicted Noise Level		1/3 Oct (Linear), dB	50.8	54.2	48.1	39.7	31.0	27.7	26.3	20.7	15.2	12.0	10.4	11.8	6.4	4.6	-0.8
Predicted Noise Level		Oct (Linear), dB			55.3				33.6		22.2			14.8			6.8
Predicted Noise Level		1/3 Oct (A-weighted), dB	0.3	9.5	8.7	5.1	0.8	1.5	3.8	1.6	-0.9	-1.4	-0.5	3.2	-0.2	-0.2	-4.0
Predicted Double Passby Noise Level		dB(A)	15.3														

Lmax,slow (Double Passby)	15.8	dB(A)
Leq,30min (Daytime)	7.6	dB(A)
Leq,30min (Nighttime)	6.6	dB(A)
Leq, 24hr	5.3	dB(A)

Project: SCL Operational Rail Noise Assessment
NSR No.: EX4
NSR Usage: Studio
NSR Location: HK Academy for Performing Arts 香港演藝學院

Southbound Speed: 80 kph
Trains in 30min per Direction (day): 15
No. of Trains per Day: 850
Head-Tail Effect: 3 dB

Northbound Speed: 80 kph
Trains in 30min per Direction (night): 12

No. of Basement Floors: 0
NSR Floor: 0

	Horizontal Dist, m	Track Depth, m
Southbound	40	33
Northbound	50	35

Inferred Rockhead
20-34m

Descriptions	Unit																	
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	
Southbound Calculation																		
FDL	dB re 1 lb/ft0.5		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5	
TOC	dB	N/1/2	0															
TIL	dB	Type	2	0.0	0.0	5.0	0.0	-3.0	-14.0	-20.0	-15.0	-15.0	-13.0	-21.0	-18.0	-16.0	-12.0	-9.0
TCF	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSR	dB re micro-in/s * ft0.5/lb			-4.9	-5.6	-6.9	-7.5	-9.5	-12.6	-16.2	-16.2	-19.1	-18.7	-15.9	-16.8	-17.5	-17.4	-17.3
Up Track Vibration Level	dB re 1 micro-in/sec			31.6	34.9	37.6	30.0	24.0	13.9	7.3	13.3	10.4	8.8	2.6	3.7	2.0	7.1	7.1
Northbound Calculation																		
FDL	dB re 1 lb/ft0.5			36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
TOC	dB	N/1/2	0															
TIL	dB	Type	2	0.0	0.0	5.0	0.0	-3.0	-14.0	-20.0	-15.0	-15.0	-13.0	-21.0	-18.0	-16.0	-12.0	-9.0
TCF	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSR	dB re micro-in/s * ft0.5/lb			-10.0	-12.2	-15.8	-15.4	-19.4	-21.1	-25.2	-25.2	-30.3	-24.9	-27.2	-28.8	-28.6	-30.0	-28.6
Down Track Vibration Level	dB re 1 micro-in/sec			26.5	28.3	28.7	22.1	14.1	5.4	-1.7	4.3	-0.8	2.6	-8.7	-8.3	-9.1	-5.5	-4.1
Total of Southbound and Northbound Calculation																		
Total Vibration Level Outside Building				32.8	35.8	38.1	30.6	24.4	14.5	7.8	13.8	10.7	9.7	2.9	3.9	2.3	7.3	7.5
BCF	dB	Type	n	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BVR - Floor to Floor	dB	Floor	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.6	5.4	5.2	5.0	4.0	3.0	2.0	1.3	0.7	0.0
CTN	dB			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
SAF	dB			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Predicted Noise Level		1/3 Oct (Linear), dB		50.8	53.8	56.1	48.6	42.2	32.1	25.2	31.0	27.7	25.7	17.9	17.9	15.6	20.0	19.5
Predicted Noise Level		Oct (Linear), dB				58.6			42.7			33.5			22.1			22.8
Predicted Noise Level		1/3 Oct (A-weighted), dB		0.3	9.1	16.7	14.0	12.0	5.9	2.7	11.9	11.6	12.3	7.0	9.3	9.0	15.2	16.3
Predicted Double Passby Noise Level		dB(A)		23.9														

Lmax,slow (Double Passby)	24.4	dB(A)
Leq,30min (Daytime)	16.2	dB(A)
Leq,30min (Nighttime)	15.2	dB(A)
Leq, 24hr	13.9	dB(A)

Project: SCL Operational Rail Noise Assessment
NSR No.: AD4
NSR Usage: Hotel
NSR Location: Island Shangri-La Hotel

Southbound Speed: 60 kph
Trains in 30min per Direction (day): 15
No. of Trains per Day: 850
Head-Tail Effect: 3 dB

Northbound Speed: 60 kph
Trains in 30min per Direction (night): 12

No. of Basement Floors: 0
NSR Floor: 5

	Horizontal Dist, m	Track Depth, m
Southbound	0	48
Northbound	15	49

Inferred Rockhead
25-30m

Descriptions	Unit																
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500
Southbound Calculation																	
FDL	dB re 1 lb/ft0.5		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
TOC	dB	N/1/2	0														
TIL	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCF	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSR	dB re micro-in/s * ft0.5/lb		-3.3	-3.7	-4.6	-5.4	-7.0	-10.4	-13.9	-13.9	-16.4	-16.9	-13.1	-13.9	-14.7	-14.4	-14.6
Up Track Vibration Level	dB re 1 micro-in/sec		30.7	34.3	32.4	29.6	27.0	27.6	27.1	28.1	25.6	21.1	23.9	22.1	18.3	19.6	16.4
Northbound Calculation																	
FDL	dB re 1 lb/ft0.5		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
TOC	dB	N/1/2	0														
TIL	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TCF	dB	Type	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSR	dB re micro-in/s * ft0.5/lb		-7.0	-8.0	-9.9	-10.3	-12.8	-15.5	-19.3	-19.3	-22.8	-21.1	-19.6	-20.7	-21.1	-21.4	-21.0
Down Track Vibration Level	dB re 1 micro-in/sec		27.0	30.0	27.1	24.7	21.2	22.5	21.7	22.7	19.2	16.9	17.4	15.3	11.9	12.6	10.0
Total of Southbound and Northbound Calculation																	
Total Vibration Level Outside Building			32.2	35.7	33.5	30.8	28.1	28.8	28.2	29.2	26.5	22.5	24.8	22.9	19.2	20.4	17.3
BCF	dB	Type	n	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BVR - Floor to Floor	dB	Floor	5	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.6	5.4	5.2	5.0	4.0	3.0	2.0	1.3	0.7
CTN	dB			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
SAF	dB			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Predicted Noise Level	1/3 Oct (Linear), dB			40.2	43.7	41.5	38.8	35.9	36.4	35.6	36.4	33.5	28.5	29.8	26.9	22.5	23.1
Predicted Noise Level	Oct (Linear), dB					46.6			40.7			38.7		32.1			24.6
Predicted Noise Level	1/3 Oct (A-weighted), dB			-10.3	-1.0	2.1	4.2	5.7	10.2	13.1	17.3	17.4	15.1	18.9	18.3	15.9	18.3
Predicted Double Passby Noise Level	dB(A)			26.8													

Lmax,slow (Double Passby)	27.3	dB(A)
Leq,30min (Daytime)	20.3	dB(A)
Leq,30min (Nighttime)	19.3	dB(A)
Leq, 24hr	18.0	dB(A)