

Appendix 4.22A Calculation of Operational Noise Impact (Unmitigated Scenario)

NAP	ASR	Project (TME)						Non-Project		Project + Non Project		Noise Criteria, dB(A) (ANL)		Compliance (Yes/ No)	
		Max. Unmitigated Rail Noise Levels, Leq, 30min, dB(A) [1]		Max. Fixed Plant Noise Levels, Leq, 30min, dB(A) (f) [2]		Operational Noise Impact from TME, Leq, 30min, dB(A) [1]+[2]		LRT Operational Noise, Leq, 30min, dB(A) [3]		Operational Noise Impact, Leq, 30min, dB(A) [1]+[2]+[3]		Daytime/ Evening	Night-time	Daytime/ Evening	Night-time
		Daytime/ Evening	Night-time	Daytime/ Evening	Night-time	Daytime/ Evening	Night-time	Daytime/ Evening	Night-time	Daytime/ Evening	Night-time				
CG1	C	46	45	(a)		Insignificant Operational Noise Impact ^(b)		<=ANL ^(d)		70	60	Yes	Yes		
THT	C	41	40	(a)		Insignificant Operational Noise Impact ^(b)		<=ANL ^(d)		70	60	Yes	Yes		
OM1	B	53	52	(a)		53	52	52	52	56	55	65	55	Yes	Yes
OM2	B	52	51	(a)		52	51	52	51	55	54	65	55	Yes	Yes
IPS	B	59	_(e)	(a)		59	-	(c)		<=ANL	-	65	_(e)	Yes	-
OT0	B	44	_(e)	(a)		Insignificant Operational Noise Impact ^(b)		<=ANL ^(d)		65	_(e)	Yes	-		
OT1	B	62	60	(a)		62	60	(c)		62	60	65	55	Yes	No
OT2	B	58	57	(a)		58	57	52	51	59	58	65	55	Yes	No
OT3	B	52	50	(a)		52	50	52	51	55	53	65	55	Yes	Yes
OL0	B	44	_(e)	(a)		Insignificant Operational Noise Impact ^(b)		<=ANL ^(d)		65	55	Yes	Yes		
OL1	B	61	59	(a)		61	59	(c)		61	59	65	55	Yes	No
OL2	C	56	55	(a)		56	55	52	51	58	56	70	60	Yes	Yes
THRPH1b	B	55	53	(a)		55	53	(c)		<=ANL	<=ANL	65	55	Yes	Yes
THRPH2a	C	47	45	(a)		Insignificant Operational Noise Impact ^(b)		<=ANL ^(d)		70	60	Yes	Yes		
THRPH2b	B	56	54	(a)		56	54	(c)		<=ANL	<=ANL	65	55	Yes	Yes
THRPH3b	C	55	53	(a)		55	53	(c)		<=ANL	<=ANL	70	60	Yes	Yes
TE1	B	50	48	57	50	58	52	(c)		<=ANL	<=ANL	65	55	Yes	Yes
A16PH1	B	63	62	57	50	64	62	40	40	64	62	65	55	Yes	No
A16PH1a	B	63	62	57	50	64	62	50	50	64	62	65	55	Yes	No
A16PH2	B	60	58	57	50	62	59	40	40	62	59	65	55	Yes	No
A16PH3	B	45	44	57	50	57	51	(c)		<=ANL	<=ANL	65	55	Yes	Yes
A16PH4	B	46	44	57	50	57	51	(c)		<=ANL	<=ANL	65	55	Yes	Yes
A16PH4a	B	43	43	57	50	57	51	(c)		<=ANL	<=ANL	65	55	Yes	Yes
A16PH5	C	60	58	57	53	62	60	(c)		<=ANL	<=ANL	70	60	Yes	Yes
A16PH5a	B	59	58	57	50	61	58	(c)		61	58	65	55	Yes	No
A16PH5b	C	60	59	57	53	62	60	(c)		<=ANL	<=ANL	70	60	Yes	Yes
A16PH5c	B	60	58	57	50	62	59	(c)		62	59	65	55	Yes	No
A16PH5d	C	59	58	57	53	61	59	(c)		<=ANL	<=ANL	70	60	Yes	Yes
A16PH6	B	54	52	57	50	59	54	40	40	59	54	65	55	Yes	Yes
A16PH10	B	53	52	57	50	58	54	40	40	58	54	65	55	Yes	Yes
A16PH11	B	52	51	57	50	58	54	40	40	58	54	65	55	Yes	Yes
A16PH12	B	45	44	57	50	57	51	(c)		<=ANL	<=ANL	65	55	Yes	Yes
A16PH13	C	45	44	57	53	57	53	(c)		<=ANL	<=ANL	70	60	Yes	Yes
HSNPS	C	41	_(e)	(a)		Insignificant Operational Noise Impact ^(b)		<=ANL ^(d)		70	_(e)	Yes	-		
OH1	B	41	40	(a)		Insignificant Operational Noise Impact ^(b)		<=ANL ^(d)		65	55	Yes	Yes		
LMO1	B	38	37	(a)		Insignificant Operational Noise Impact ^(b)		<=ANL ^(d)		65	55	Yes	Yes		
LMO2	B	43	41	(a)		Insignificant Operational Noise Impact ^(b)		<=ANL ^(d)		65	55	Yes	Yes		
LMO3	B	46	44	(a)		Insignificant Operational Noise Impact ^(b)		<=ANL ^(d)		65	55	Yes	Yes		
GG1	B	48	47	(a)		48	47	44	44	49	48	65	55	Yes	Yes
GG2	B	47	45	(a)		47	45	44	44	49	48	65	55	Yes	Yes
STM1	B	48	47	(a)		48	47	44	44	49	48	65	55	Yes	Yes
STM2	B	46	44	(a)		Insignificant Operational Noise Impact ^(b)		<=ANL ^(d)		65	55	Yes	Yes		
RB	B	37	36	(a)		Insignificant Operational Noise Impact ^(b)		<=ANL ^(d)		65	55	Yes	Yes		
WF1	B	57	55	52	49	58	56	50	50	59	57	65	55	Yes	No
WF2	B	56	55	52	49	58	56	50	50	58	57	65	55	Yes	No
WT0b	B	49	_(e)	52	_(e)	54	_(e)	50	_(e)	55	_(e)	65	_(e)	Yes	-
WT1	B	55	53	52	49	57	55	50	50	57	56	65	55	Yes	No
WT2	B	57	55	52	49	58	56	50	50	58	57	65	55	Yes	No
WHPQ1	B	56	55	52	49	57	56	50	50	58	57	65	55	Yes	No
WHPQ2	B	57	56	52	49	58	56	50	50	59	57	65	55	Yes	No
LCCS1	B	56	_(e)	52	_(e)	58	_(e)	50	_(e)	58	_(e)	65	_(e)	Yes	-
LCCS2	B	56	_(e)	52	_(e)	58	_(e)	50	_(e)	58	_(e)	65	_(e)	Yes	-
NH1	B	53	53	52	49	55	54	50	50	57	55	65	55	Yes	Yes
SHDC1	B	57	_(e)	52	_(e)	58	_(e)	50	_(e)	59	_(e)	65	_(e)	Yes	-
TCC	B	59	_(e)	52	_(e)	60	_(e)	50	_(e)	60	_(e)	65	_(e)	Yes	-
WK1	B	53	53	52	49	56	54	50	50	57	55	65	55	Yes	Yes
WK2	B	53	52	52	49	55	54	50	50	56	55	65	55	Yes	Yes
WB0	B	48	_(e)	52	_(e)	53	_(e)	50	_(e)	55	_(e)	65	_(e)	Yes	-
WB1	B	51	51	52	49	55	53	50	50	56	55	65	55	Yes	Yes
WB2	B	51	51	52	49	54	53	50	50	56	55	65	55	Yes	Yes
RG1	B	43	43	52	49	52	50	50	50	54	53	65	55	Yes	Yes
PG1	B	46	46	52	49	53	51	50	50	55	53	65	55	Yes	Yes

Remarks:

- (a) Fixed plant noise impact is expected to be minimal in view of no direct line of sight / consideration separation distances.
- (b) Cumulative rail noise impact and fixed plant noise impact is expected to be less than or equal to ANL-10 dB.
- (c) Operational Noise from LRT is expected to be insignificant due to limited view angle / consideration separation distances to LRT operation.
- (d) Given that the operational noise from the Project is expected to be insignificant (i.e. <=ANL-10 dB), no adverse cumulative operational noise is anticipated.
- (e) No noise sensitive use is anticipated during night-time period.
- (f) If the NAP is identified to be affected by fixed plant noise from the Project, for conservative assessment approach, the respective fixed plant noise criterion is adopted for the cumulative operational noise assessment.