

UPDATED ANNEXURE A TO SIIRI WILKENING'S FIRST SUPPLEMENTARY EVIDENCE OF 28 FEBRUARY 2011

Sector 1

COURT REF:  
 REGISTRAR:

DATE: 8/3/11

Activity	Noisiest Equipment	Est. total duration	Closest receivers	Noise level at closest receiver w/o mitigation $L_{Aeq(t)}$ dB	Exceeds daytime criterion 70 dB $L_{Aeq}$	Exceeds night-time criterion 60 dB $L_{Aeq}$	Potential mitigation options ('within designation' mitigation)	Potential exceedance with mitigation in designation <sup>1</sup>	
								Day	Night
Retaining walls and filling for widening	Hydraulic excavator Concrete vibrator	~12 months	Patton Ave (~20m), Marewa St (~20m), Titoki St (~25m).	76	Yes	N/A	<ul style="list-style-type: none"> <li>temporary construction noise barriers</li> <li>choice of low noise equipment</li> </ul>	No	N/A
Road Milling	Road Milling Machine	~12 months	Millich Tce (~25m) and McCormack Rd (~25m)	71	Yes	Yes	<ul style="list-style-type: none"> <li>installation of traffic noise barriers shall be programmed for construction early in the construction period, if practicable.</li> <li>temporary construction noise barriers</li> </ul>	No	No
Road Construction and surfacing	Asphalt paver Concrete vibrator	~12 months	Millich Tce (~25m) and McCormack Rd (~25m)	81	Yes	Yes	<ul style="list-style-type: none"> <li>installation of traffic noise barriers shall be programmed for construction early in the construction period, if practicable.</li> <li>localised screening around noisy equipment or screening at property boundaries</li> <li>no structural mitigation possible</li> </ul>	No	Possibly
Noise barrier construction	Vibration piling rig Auger drilling rig	< 4 weeks	Millich Tce, Patton Ave (~10m).	86	Yes	N/A		Yes (short duration)	N/A
Cut-and-cover Construction	Vibration piling rig Auger drilling rig	~12 months	Titoki St (~40m)	74	Yes	N/A	<ul style="list-style-type: none"> <li>construction should be performed underneath the cover as early on in the construction period as possible</li> <li>excavation should be performed from underneath the capping, if practicable.</li> </ul>	No	N/A

<sup>1</sup> This does not include mitigation outside designation, e.g. installation of ventilation, offer of temporary relocation, further consultation and communication, which would be implemented in cases of exceedance.

## Sector 3

Activity	Noisiest Equipment	Est. total duration	Closest receivers	Noise level at closest receiver w/o mitigation $L_{Aeq}(t)$ dB	Exceeds daytime criterion 70 dB $L_{Aeq}$	Exceeds night-time criterion 75 dB $L_{Aeq}$	Potential mitigation option	Potential exceedance with mitigation in designation <sup>2</sup>	
								Day	Night
Pad footing or pier construction	Drill Rig Concrete Vibrator Excavator	~6 months	Rosebank Industrial estate (~15m)	80	Yes	Yes	<ul style="list-style-type: none"> <li>○ schedule works for night-time temporary construction noise barriers</li> <li>○ localised screening around noisy equipment or screening at property boundaries</li> </ul>	Yes/No depending on height of activity	
Precast segment delivery, launching, installation and tensioning	Hydraulic jacks Grinder Concrete vibrators	~6 months	Rosebank Industrial estate (~15m)	75	Yes	No	<ul style="list-style-type: none"> <li>○ schedule works for night-time temporary construction noise barriers</li> <li>○ localised screening around noisy equipment or screening at property boundaries</li> </ul>	No	
Span finishing, barrier installation	Grinder Jack hammer	~6 months	Rosebank Industrial estate (~15m)	75	Yes	No	<ul style="list-style-type: none"> <li>○ schedule works for night-time temporary construction noise barriers</li> <li>○ localised screening around noisy equipment or screening at property boundaries</li> </ul>	No	
Surfacing	Asphalt spreader	~6 months	Rosebank Industrial estate (~15m)	73	Yes	No	<ul style="list-style-type: none"> <li>○ schedule works for night-time temporary construction noise barriers</li> <li>○ localised screening around noisy equipment or screening at property boundaries</li> </ul>	No	

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This does not include mitigation outside designation, e.g. installation of ventilation, offer of temporary relocation, further consultation and communication, which would be implemented in cases of exceedance.



## Sector 5

Activity	Noisiest Equipment	Est. total duration	Closest receivers	Noise level at closest receiver w/o mitigation $L_{Aeq}(t)$ dB	Exceeds daytime criterion 70 dB $L_{Aeq}$	Exceeds night-time criterion 60 dB $L_{Aeq}$	Potential mitigation option	Potential exceedance with mitigation in designation <sup>3</sup>	
								Day	Night
Contiguous bored piling	Vibration piling rig Drilling rig	~8 months	Waterbank Cres (Ramp 2 ~ 60m) Montrose St (Ramp 4 ~ 60m)	70	No	Yes	<ul style="list-style-type: none"> <li>o schedule works to be distant from residences at night-time</li> <li>o temporary construction noise barriers</li> </ul>	No	Yes/No depending on height of activity
Pad footing or pier construction	Drill Rig Rock Breaking	~16 months	Waterbank Cres (Ramp 2 ~ 60m) Montrose St (Ramp 4 ~ 60m)	74	Yes	Yes	<ul style="list-style-type: none"> <li>o schedule works to be distant from residences at night-time</li> <li>o temporary construction noise barriers</li> <li>o schedule works so no rock breaking at night time</li> </ul>	Yes/No depending on height of activity	Possibly
Precast segment delivery, launching, installation and tensioning	Grinder Concrete vibrators	~16 months	Waterbank Cres (Ramp 2 ~ 60m) Montrose St (Ramp 4 ~ 60m)	66	No	Yes	<ul style="list-style-type: none"> <li>o schedule works to be distant from residences at night-time</li> <li>o schedule noisiest works for daytime only</li> </ul>	No	No
Span finishing	Grinder Jack hammer	~8 months	Waterbank Cres (Ramp 2 ~ 60m) Montrose St (Ramp 4 ~ 60m)	66	No	Yes	<ul style="list-style-type: none"> <li>o schedule works to be distant from residences at night-time</li> <li>o schedule noisiest works for daytime only</li> </ul>	No	No
Surfacing	Asphalt spreader	~8 months	Waterbank Cres (Ramp 2 ~ 60m) Montrose St (Ramp 4 ~ 60m)	64	No	Yes	<ul style="list-style-type: none"> <li>o schedule works to be distant from residences at night-time</li> <li>o schedule noisiest works for daytime only</li> </ul>	No	No
Yard 6 - Waterview Tunnel Contractor	Hydraulic excavator Concrete Batch Plant	5 years	Waterbank Cres (~50m)	68	No	Yes	<ul style="list-style-type: none"> <li>o solid site hoarding acting as construction noise barrier</li> <li>o layout of yard to move noisy processes as far from residences as practicable</li> <li>o full enclosure of concrete batch plant</li> </ul>	No	No

## Sector 6

Activity	Noisiest Equipment	Est. total duration	Closest receivers	Noise level at closest receiver w/o mitigation $L_{Aeq}(t)$ dB	Exceeds daytime criterion 70 dB $L_{Aeq}$	Exceeds night-time criterion 60 dB $L_{Aeq}$	Potential mitigation option	Potential exceedance with mitigation in designation <sup>4</sup>	
								Day	Night
Retaining Wall Structure (west bound)	Vibration piling rig Auger drilling rig Drilling rig	~8 months	Sutherland Road (25m)	78	Yes	N/A	<ul style="list-style-type: none"> <li>o temporary construction noise barrier</li> <li>o scheduling of works in consultation with residents</li> </ul>	Yes	N/A
Construction of additional lanes	Rock Breakers/Picks Concrete vibrator Asphalt paver	~4 months	Sutherland Road (25m)	77	Yes	Yes	<ul style="list-style-type: none"> <li>o temporary construction noise barriers</li> <li>o scheduling of works in consultation with residents</li> <li>o no rock breaking at night</li> </ul>	Yes	Yes
Noise Barriers	Auger drilling rig Boom cranes	< 4 weeks	Sutherland Road (~10m)	82	Yes	N/A	<ul style="list-style-type: none"> <li>o no structural mitigation possible</li> </ul>	Yes	N/A
Yard 5- Meola Creek Road Builder Yard	Material handling	~12 months	Great North Road (~20m)	66	No	Yes	<ul style="list-style-type: none"> <li>o solid site hoarding acting as construction noise barrier</li> <li>o layout of yard to move noisy processes as far from residences as practicable</li> </ul>	No	No



## Sector 7

Activity	Noisiest Equipment	Est. total duration	Closest receivers	Noise level at closest receiver w/o mitigation $L_{Aeq}(t)$ dB	Exceeds daytime criterion 70 dB $L_{Aeq}$	Exceeds night-time criterion 60 dB $L_{Aeq}$	Potential mitigation option	Potential exceedance with mitigation in designation <sup>5</sup>	
								Day	Night
Great North Road Realignment	Rock Breakers/Picks Concrete vibrator Asphalt paver	~4 months	Oakley Ave (~10m) Alford St (~10m)	85	Yes	Yes	<ul style="list-style-type: none"> <li>o schedule works to be distant from residences at night-time</li> <li>o temporary construction noise barriers</li> <li>o no rock breaking at night</li> </ul>	Yes	Yes
Retaining wall structure	Drilling rig	~16 months	Oakley Ave (~30m) Alford St (~30m)	74	Yes	Yes	<ul style="list-style-type: none"> <li>o schedule works to be distant from residences at night-time</li> <li>o temporary construction noise barriers</li> </ul>	Yes/No depending on height of activity	Yes (short duration)
Excavation	Excavator	~8 months	Oakley Ave (~30m) Alford St (~30m)	72	Yes	Yes	<ul style="list-style-type: none"> <li>o schedule works to be distant from residences at night-time</li> <li>o temporary construction noise barriers</li> <li>o construction should be performed underneath the cover as early on in the construction period as possible</li> <li>o excavation should be performed from underneath the capping, if practicable.</li> </ul>	No	Yes (short duration)
Tunnel Roof Construction	Boom Crane	~8 months	Oakley Ave (~20m) Alford St (~20m)	73	Yes	Yes	<ul style="list-style-type: none"> <li>o schedule works to be distant from residences at night-time</li> <li>o temporary construction noise barriers</li> </ul>	No	Yes (short duration)
Vent Building	Soldier piling	~12 months	Oakley Ave (~20m)	80	Yes	Yes	<ul style="list-style-type: none"> <li>o schedule works to be distant from residences at night-time</li> <li>o schedule noisiest work for daytime only</li> <li>o temporary construction noise barriers</li> <li>o schedule noisiest works for school holidays</li> </ul>	Yes (short duration)	Yes (short duration)
Yard 7 - Oakley Creek Reserve Tunnel Construction	Material handling	5 years	Alford Street (~50m)	65	No	Yes	<ul style="list-style-type: none"> <li>o solid site hoarding acting as construction noise barrier</li> <li>o layout of yard to move noisy processes as far from residences as practicable</li> </ul>	No	No

## Sector 9

Activity	Noisiest Equipment	Est. total duration	Closest receivers	Noise level at closest receiver w/o mitigation $L_{Aeq}(t)$ dB	Exceeds daytime criterion 70 dB $L_{Aeq}$	Exceeds night-time criterion 45 dB $L_{Aeq}$	Potential mitigation option	Potential exceedance with mitigation in designation <sup>6</sup>	
								Day	Night
Topsoil removal/site preparation	Excavators/face shovel	~1 month	Receivers south of Hendon Ave (~20m)	76	Yes	N/A	temporary construction noise barriers	No	N/A
Basalt Rock Breaking	Drilling rigs Rock breakers/picks Excavators/Face shovel	~6 months	Receivers south of Hendon Ave (~40m)	78	Yes	N/A	temporary construction noise barriers breaking in cut (well shielded)	Yes	N/A
Grout Curtain	Pneumatic percussion drilling	~1 month	Receivers south of Hendon Ave (~80m)	72	Yes	N/A	temporary construction noise barriers localised screening around noisy equipment	No	N/A
Bridge pad spread footing construction or pier construction	Drill Rig Rock Breaking	~4 months	Richardson Rd and Valonia St (~80m)	62	No	Yes	no rock breaking and drilling at night times temporary construction noise barriers	No	Yes (short duration)
Precast segment delivery, craning segments into place, installation and tensioning	Grinder Hydraulic jacks Concrete vibrators	~4 months	Richardson Rd and Valonia St (~80m)	64	No	Yes	temporary construction noise barriers schedule delivery for daytime	No	Yes
Span finishing and barrier installation (if required, refer traffic noise assessment)	Jack hammer Grinder	~4 months	Richardson Rd and Valonia St (~80m)	64	No	Yes	temporary construction noise barriers no jack hammering at night-time	No	Yes
Surfacing	Asphalt spreader	~1 months	Richardson Rd and Valonia St (~80m)	62	No	Yes	temporary construction noise barriers	No	Yes (short duration)

<sup>6</sup> This does not include mitigation outside designation, e.g. installation of ventilation, offer of temporary relocation, further consultation and communication, which would be implemented in cases of exceedance.



Activity	Noisiest Equipment	Est. total duration	Closest receivers	Noise level at closest receiver w/o mitigation L <sub>Aeq(t)</sub> dB	Exceeds daytime criterion 70 dB L <sub>Aeq</sub>	Exceeds night-time criterion 45 dB L <sub>Aeq</sub>	Potential mitigation option	Potential exceedance with mitigation in designation <sup>7</sup>	
								Day	Day
Yard 9 - Alan Wood Park Driven Tunnel Operation	Material handling	5 years	Hendon Ave (~20m) and Bollard Ave (~20m)	66	No	Yes	<ul style="list-style-type: none"> <li>o solid site hoarding acting as construction noise barrier</li> <li>o layout of yard to move noisy processes as far from residences as practicable</li> </ul>	No	Yes
Yard 10 - Driven Tunnel Operation Alan Wood Park	Concrete batch plant Material handling	5 years	Methuen Rd (~50m)	71	Yes	Yes	<ul style="list-style-type: none"> <li>o solid site hoarding acting as construction noise barrier</li> <li>o layout of yard to move noisy processes as far from residences as practicable</li> <li>o full enclosure of concrete batch plant</li> </ul>	No	Yes
Hendon Reserve Crushing Area	Crusher	6 months to 1 year	Hendon Ave (~100m) Methuen Rd (~100m)	77	Yes	N/A	<ul style="list-style-type: none"> <li>o full enclosure of crushing plant</li> </ul>	No	N/A
Topsoil removal/site preparation	Excavators/face shovel	~1 month	Varies along route. Typically 30 - 60 m	73	Yes	N/A	<ul style="list-style-type: none"> <li>o temporary construction noise barriers</li> </ul>	Possibly (short duration)	N/A
Road Construction and surfacing	Asphalt paver Concrete vibrator	~12 months	Varies along route. Typically 30 - 60 m	79	Yes	N/A	<ul style="list-style-type: none"> <li>o temporary construction noise barriers</li> </ul>	Possibly (short duration)	N/A