

Memorandum

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Subject	Grey Lynn Tunnel Consideration of Restricted Discretionary Status		
From	Andrew Curtis		
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Following recent discussions with Auckland Council regarding the rules that apply to any potential air discharges associated with the proposed Grey Lynn Tunnel, AECOM has reviewed the material presented in its Report "Grey Lynn Tunnel – Air Quality Assessment" (The Report).

This Addendum Report set out the results of this reassessment, and should be read in conjunction with the above Report.

1.0 Assessment Criteria

In Section 5.1 of the Report AECOM discussed the relevant air quality rules and indicated that the most appropriate rule was Permitted Activity Rule E14.4.1 (A166) of the Auckland Unitary Plan (AUP) which states:

"Wastewater facility that is for the primary purpose of pumping or transfer or storage of raw or partially treated wastewater"

The Report then considered the General Permitted Standards (E14.6.1.1) which the potential discharges associated with the activity are able to meet.

However, there is also a specific standard associated with Rule A166 which needs to be considered. This standard is set out below.

"E14.6.1.24. Wastewater facility that is for the primary purpose of pumping or transfer or storage of raw or partially treated wastewater"

(1) Storage of wastewater must be within an enclosed tank of less than 4000m³; or between 4000m³ and 10,000m³ where it is fitted with an effective odour control system such as a bio-filter."

As the total potential storage volume of the Grey Lynn Tunnel (including the proposed shafts and chambers) is approximately 29,000m³, the activity does not comply with the permitted activity standard. This means that the status of the activity defaults to Restricted Discretionary under Rule E14.4.1 (A167) which states:

Wastewater facility that is for the primary purpose of pumping, or storage or transfer of wastewater and not meeting the permitted activity standards.

2.0 Restricted Discretionary Assessment

While a change to the Restricted Discretionary consenting status does not result in any change to the level of effects from the activity or in deed the conclusions set out in Section 10 of the Report, AECOM has set out in this section an assessment of the air discharges from the Grey Lynn Tunnel against the criteria set out in Section E14.8.2. of the AUP.

2.1 The degree to which Auckland Ambient Air Quality Targets are likely to be met where people are likely to be exposed to the specified contaminants for the relevant averaging period.

The Auckland Ambient Air Quality Targets are set out in Table 1, and are intended to ensure that the air quality discharges from activities do not result in “*significant adverse effects on human health*”.

Table 1 Auckland Ambient Air Quality Targets

Containment	Target	Averaging Time
Particles less than 10 microns (PM10)	*	
	20 µg/m ³	Annual
Particles less than 2.5 microns (PM2.5)	25 µg/m ³	24 hour
	10 µg/m ³	Annual
Nitrogen dioxide (NO ₂)	*	
	100 µg/m ³	24 hour
	40 µg/m ³	Annual
Carbon monoxide (CO)	*	
	30 mg/m ³	1 hour
Sulphur dioxide (SO ₂)	*	
	*	
	120 µg/m ³	24 hour
Ozone (O ₃)	*	
	100 µg/m ³	8 hour
Lead	0.2 µg/m ³	3 month moving average calculated monthly
Benzene	3.6 µg/m ³	Annual
Benzo[a]pyrene	0.0003 µg/m ³	Annual
1,3-Butadiene	2.4 µg/m ³	Annual
Formaldehyde	100 µg/m ³	30 minutes
Acetaldehyde	30 µg/m ³	Annual
Mercury (inorganic)	0.33 µg/m ³	Annual
Mercury (organic)	0.13 µg/m ³	Annual
Chromium VI	0.0011 µg/m ³	Annual
Chromium metal and Chromium III	0.11 µg/m ³	Annual
Arsenic (inorganic)	0.0055 µg/m ³	Annual
Arsine	0.055 µg/m ³	Annual

The primary compounds of concerns in the Auckland Region are PM₁₀, PM_{2.5} and nitrogen dioxide. These compounds will not be discharged from the Grey Lynn Tunnel when it is operational. There is potential for the compounds to be discharged by machinery associated with the construction of the Grey Lynn Tunnel. However, any emissions from this equipment will make a relatively minor contribution to ambient concentrations of these compounds in Auckland. In any event discharges to air from mobile equipment are permitted under Rule E14.4.1 (A114) of the AUP.

2.2 Whether the amount of separation between the activity discharging contaminants into air and existing or potential activities sensitive to the air discharges is sufficient to mitigate adverse effects on the environment, health and amenity.

AECOM has qualitatively assessed the effects of construction dust and odour on local residences in Section 8 of the Report and concluded that any discharges will not result in offensive or objectionable effects.

The quantitative assessment of odour discharges associated with the Grey Lynn Tunnel once it is operational are set out in Section 9 of the Report, and demonstrate that any odour that may be discharged will be at levels which are well less than the trigger values developed by the Ministry for the Environment.

Consequently, AECOM is confident that the separation that exists between the activities and sensitive activities is appropriate to mitigate any adverse effects.

2.3 The extent to which adverse effects are avoided, remedied or mitigated including appropriate emissions control technology and use of management practices.

Section 7 of the Report sets out the mitigation measures that are proposed to ensure that any potential effects associated with construction of the Grey Lynn Tunnel are minimised as far as practical.

In addition, the use of a stack to disperse any odours that may occur in extreme weather conditions is considered to represent appropriate emission control given the low frequency with which any discharges of this sort may occur.

2.4 Where applicable, the degree to which offsetting can remedy or mitigate adverse effects considering the proximity of the offset to where the effects of the discharge occur and the effective duration of the offset.

This criteria is not applicable to discharges associated with the Grey Lynn Tunnel.

2.5 Whether there are practicable location and method options that cause less adverse effects and can still achieve the applicant's objectives.

Watercare assessed a number of potential options for the Grey Lynn Tunnel shafts, (detailed in Section 4 of the Assessment of Environmental Effects). The option that forms the basis of the Application, is considered overall to be the most practicable.

As there will be no odour discharges from the site for the majority of the time, the selection of a stack to discharge odour on the rare occasions when a discharge at this location is the only option (estimated to be less than once in 10 years) is also considered the most practicable option. As demonstrated in the Report, with the mitigation proposed the discharges to air from the preferred site are at an acceptable level and therefore it is not necessary to consider further any other options.

2.6 The extent to which the odour and dust level meet the expectations for the Low air quality – dust and odour area (Quarry), Low air quality – dust and odour (Industry), Medium air quality – dust and odour area (Industry), Medium air quality – dust and odour area (Rural) and High air quality – dust and odour area.

As set out in Section 9 of the Report, any potential odours that may occur from the Grey Lynn Tunnel once it was operational will meet the Ministry for the Environment odour modelling criteria for sensitive locations, and therefore it is considered that the activity meets appropriate criteria for a “High air quality” area.

With respect to dust discharges during the construction process, as set out in Section 8 of the Report, as long as all of the mitigation measures discussed in Section 7 are used, the activity will meet the appropriate dust criteria for a “High air quality area”.

2.7 Whether the assessment methods, including monitoring and modelling are appropriate to the scale of the discharge and any potential adverse effects.

Details of the methodologies used in this assessment are set out in Section 6 of the Report. As the Report has been prepared in accordance with the Ministry for the Environment guidance documents set out below, AECOM considers that appropriate assessment methods have been used to determine the potential scale of any effects that might occur. Specifically the Report follows the guidance in:

- Good Practice Guide for Assessing and Managing Dust;
- Good Practice Guide for Assessing and Managing Odour;
- Good Practice Guide for Assessing Discharges to Air from Industry; and,
- Good Practice Guide for Atmospheric Dispersion Modelling.

2.8 Whether discharge into air are minimised as far as practicable, where appropriate through:

(a) use of clean burning fuels; or

(b) efficient use of energy; or

(c) use of best practicable option emissions control and management practices; or

(d) minimisation of fugitive emissions; or

(e) reduction, reuse or recycling of waste materials relating to waste processes.

In terms of the above criteria (a) (b) and (d) are not relevant to the air quality assessment for Grey Lynn Tunnel and are not considered further.

In terms of (c) Section 7 of the Report identifies the mitigation measures that will be used during the construction and operation of the Grey Lynn Tunnel to minimise as far as practicable emissions associated with it.

In terms of (d) the system has also been designed to minimise fugitive emissions including operating the system under negative pressure with air being drawn through the Grey Lynn Tunnel and ultimately extracted and treated at the Mangere Pump Station.

3.0 Conclusion

Based on the above assessment AECOM is confident that any air discharge effects associated with the Grey Lynn Tunnel will be less than minor.

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