

# Googong Township water cycle project: Stage A - Network (west)

Air quality management plan  
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# 1 Introduction

## 1.1 Context

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This Air Quality Management Plan (AQMP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for the Googong Township water cycle project Stage A – Network (west) (the Project).

Refer to Section 1 and Section 2 of the CEMP for additional detail on the scope of the Project to which this AQMP applies.

This AQMP has been prepared to address the requirements of the Minister's Conditions of Approval (CoA), the Statement of Commitments (SoC), the safeguards listed in the Googong Township water cycle project Environmental Assessment (EA), submissions report, and all applicable legislation.

## 1.2 Background

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The Googong Township water cycle project EA assessed the impacts of construction and operation of the Project on air quality.

As part of EA development, a detailed assessment was prepared to address the Director General's Requirements issued by the **former** Department of Planning and Infrastructure (DP&I), **now known as the Department of Planning and Environment (DP&E)**. The air quality assessment was addressed in Section 13.3 of the EA.

The EA concluded that there is unlikely to be significant air quality impacts associated with the construction and operation of the Project, following the implementation of the proposed mitigation measures identified in the EA.

## 1.3 Environmental management systems overview

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The overall Environmental Management System for the Project and approach to managing environmental impacts for the Project is described throughout the CEMP.

This AQMP forms part of the environmental management framework for the Project, as described in Section 1.5 of the CEMP.

# 2 Purpose and objectives

## 2.1 Purpose

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The purpose of this Plan is to describe how Googong Township Proprietary Limited (GTPL) and the contractor will manage air quality impacts during construction of the Project.

This Plan also assists in ensuring the Project meets the environmental objectives and targets as defined in Section 3.5 of the CEMP.

## 2.2 Objectives

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The key objective of the AQMP is to ensure that impacts to air quality, ie dust and odour, are minimised. To realise this objectives, the following will be undertaken:

- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 3.1 of this Plan.
- Ensure appropriate measures are implemented to address the relevant CoA and SoC, and the safeguards detailed in the EA and submissions report (refer Sections 3.2 and Section 3.3 respectively).
- Ensure appropriate controls and procedures are implemented during construction activities to avoid or minimise potential adverse impacts to air quality (refer Section 5.1).

# 3 Environmental requirements

## 3.1 Relevant legislation and guidelines

Section 3.1 of the CEMP identifies the legal and other requirements applicable to the Project. This section identifies the key legislation applicable to managing air quality.

### 3.1.1 Legislative requirements

#### *Environmental Planning and Assessment Act 1979*

As outlined in Section 3.1 of the CEMP, the Project has been assessed and approved by the NSW Department of Planning and Infrastructure (DP&I) under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

#### *Protection of the Environment Operations Act, 1997*

Construction of the Project will be undertaken in accordance with the *Protection of the Environment Operations Act, 1997* (POEO Act) and Protection of the Environment Operations (Clean Air) Regulations 2002, which covers a range of environmental offences including the generation of dust. Specifically, Part 5.4 of the POEO Act details air pollution offences and requirements for the proper and efficient operation, maintenance and handling of plant, equipment and materials.

### 3.1.2 Relevant guidelines

- *Managing Urban Stormwater: Soils and Construction 'The Blue Book'* (Landcom, 2004).
- *National Environment Protection Measure for Ambient Air Quality* (Environment Protection Heritage Council, 1998)

## 3.2 Minister's Conditions of Approval

The CoA relevant to this Plan are listed Table 3.1. A cross reference is also included to indicate where the condition is addressed in this Plan or other management documents.

**Table 3.1** Conditions of approval relevant to construction air quality

CoA No.	Condition requirements	Document reference
B1	The Proponent shall ensure that all the plant and equipment used on site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Table 5.1 (AQ16, AQ17)

CoA No.	Condition requirements	Document reference
B6	The Proponent shall ensure no offensive odours are emitted from the project site, as defined under the <i>Protection of the Environment Operations Act 1997</i> .	Table 5.1 (AQ17, AQ20, AQ22) Section 3.1.1 Note that there is limited opportunity for the emission of offensive odours during construction. This condition will be addressed as part of the Operational Environmental Management Plan, for potential odour emissions relating to the water recycle plant / sewage pumping stations.
C16	The Proponent shall: (a) implement best practice air quality management on site, including all reasonable and feasible measures to minimise off-site odour, fume and dust emissions generated by the project; (b) minimise any visible air pollution generated by the project; and (c) regularly assess the meteorological forecasting data, and relocate, modify and/or stop activities on site to ensure compliance with the relevant conditions of this approval.	Section 6.3 Section 6.4 Table 5.1 (AQ1, AQ2, AQ3, AQ4, AQ5, AQ6, AQ7, AQ8, AQ9, AQ11, AQ12, AQ13, AQ14, AQ15, AQ18, AQ19, AQ20)
C19	(g) measures to monitor and manage dust emissions, including dust generated by traffic on unsealed public roads and unsealed internal access tracks.	Section 6.3 Section 6.4 Table 5.1 (AQ12, AQ13, AQ14)

### 3.3 Statement of commitments

The SoC relevant to this Plan are listed Table 3.2. A cross reference is also included to indicate where the condition is addressed in this Plan or other management documents.

**Table 3.2** Statement of commitments relevant to construction air quality

Objective	Ref. No.	Commitment	Timing	Document reference
Minimise odour impacts of WRP and SPS at nearby receivers	AQ2	Odour control facilities at the SPSs and the WRP will be installed as detailed in the EA (refer to Sections 5.3.4 and 6.11 of Appendix B).	Construction	Table 5.1 (AQ21)

Objective	Ref. No.	Commitment	Timing	Document reference
Minimise the impact of construction activities on dust generation	AQ4	The CEMP will include typical dust suppression measures. Nuisance dust will be minimised by: <ul style="list-style-type: none"> <li>• Reducing speed limits during high dust conditions.</li> <li>• Clearing vegetation and topsoil only within the designated footprint.</li> <li>• Progressive reinstatement of disturbed areas.</li> <li>• Employment of water trucks to reduce dust in dry, windy conditions.</li> </ul>	Construction	Table 5.1 (AQ4, AQ5, AQ6, AQ11, AQ18) Section 6.3
Minimise dust generated by construction activities such as blasting	AQ5	Blasting will be conducted at appropriate times, with consideration of site conditions and sensitive receivers.	Construction	Table 5.1 (AQ20)
Manage construction activities according to weather conditions to minimise the potential for dust storms	AQ6	Working practices will be modified during periods of high winds by limiting the use of some machinery, particularly when in close proximity to dwellings, and reducing vehicle travel speeds.	Construction	Table 5.1 (AQ19) Section 6.3 Section 6.4
Avoid adverse impacts on air quality due to smoke	AQ7	The burning of material on site will be prohibited, except under the instruction of fire services.	Construction	Table 5.1 (AQ9)
Minimise emissions from vehicle use	AQ8	Vehicles will be well maintained to ensure emissions are kept to the minimum practicable.	Construction	Table 5.1 (AQ17)

# 4 Environmental aspects and impacts

The following sections summarise existing environment. Identified impacts are then reviewed. The key reference document is Section 13.3 of the EA.

## 4.1 Environmental aspects

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The Googong area is located within a rural landscape characterised by large rural landholdings, State forests and small townships. The area is predominantly surrounded by low-intensity grazing, bushland and rural residential land uses. No intensive agricultural activities are known to occur.

The ambient air quality of the local area is affected by the predominantly agricultural use of the surrounding area, and is relatively clean and fresh. There are minimal odour impacts from the agricultural uses due to the low-intensity farming.

Various external factors occasionally have impacts on air quality in the local area. These include:

- Operations of the quarry located on Old Cooma Road. Blasting, crushing and other quarrying activities, vehicle movements on unsealed surfaces and windborne particles picked up from exposed surfaces, may generate dust pollution. The environmental management plan for the quarry includes several measures to manage dust, however impacts are to some extent variable, subject to weather conditions.
- Seasonal bushfires, burn-offs and hazard reduction burning, which produce smoke and ash.

### 4.1.1 Identification of potentially sensitive receivers

The construction of the Project will interact with a number of sensitive receivers and natural environments. The lands surrounding the Project have been considered for potential sensitivity to dust and air quality impacts. The potential sensitive receivers include:

- Residences: north and west of the project on Googong Dam Road and Old Cooma Road.
- Native vegetation.
- Non-residential receivers: Park ranger station on Googong Dam Road.
- Road users: Googong Dam Road and Old Cooma Road.
- Watercourses: Googong Creek (and their tributaries).

## 4.2 Construction activities

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Key aspects of the Project that could result in adverse impacts to air quality include:

- Vegetation clearing.
- Trenching and earthworks.
- Material handling including stockpiling, loading and haulage.
- Vehicular movements over unsealed access roads.
- Wind erosion of exposed areas and temporary stockpiles.
- Tracking of dirt onto roads.
- Blasting (if required).
- Vehicle and plant exhaust emissions.

## 4.3 Air quality impacts

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Potential air quality impacts from construction activities may include:

- Deposition of dust on surfaces where it may cause damage and/or lead to a need for increased cleaning or repair.
- Aesthetic effects arising from visible airborne dust plumes and from deposits of dust on surfaces.
- Potential adverse health effects including eye, nose and throat irritation from excessive inhalation of fine particles.
- Impacts on water quality and/or vegetation from dust deposition.
- Impacts on residential and non-residential sensitive receivers, including impacts on living areas and general amenity.
- Complaints from the public relating to dust or odours.

Pipeline construction would involve only minimal surface disturbance at any one time as excavation and rehabilitation would occur progressively.

### 4.3.1 Cumulative air quality impacts

GTPL and ~~its~~ **their** contractors will be carrying out other construction work packages adjacent to the Stage 1A – Network (west) over the same time period. This includes the construction of Stage 1A – Network (east), the water recycling plant (both approved under Part 3A of the EP&A Act as part of Stage 1) and the Googong township subdivision (approved under Part 4 of the EP&A Act by Queanbeyan City Council). These works, when occurring at the same time in proximity to sensitive receivers, may increase the predicted construction air quality impacts.

Each work package will be managed through a separate CEMP. GTPL, as the proponent of each package of work, will ensure that the separate projects liaise with one another to ensure that high dust generating activities are scheduled to minimise cumulative air quality impacts at sensitive receivers as far as practical (refer to Table 5.1 – AQ23).

# 5 Environmental control measures

## 5.1 Air quality mitigation and management measures

A range of environmental requirements and control measures are identified in the various environmental documents, including the CoA, SoC and the EA. Specific measures and requirements to address impacts on air quality are outlined in Table 5.1.

**Table 5.1** Air quality mitigation measures

ID	Measure	When to implement	Reference	Responsibility
AQ1	Consultation with the community will be undertaken in accordance with Section 6.3 of the CEMP. Consultation will be undertaken regarding construction activities likely to generate dust.	Prior to construction; construction	CoA C16	Environment Manager Communications Team GTPL Assistant Project Director
AQ2	Complaints will be handled in accordance with the Complaints and Enquiries Management Procedure in the Community Information Plan.	Construction	CoA C16	Environment Manager Superintendent Construction Manager GTPL Assistant Project Director
AQ3	All Project personnel will be provided training on the requirements of this Plan, through site inductions, toolbox talks or specific training.	Prior to construction; construction	CoA C16	Environment Manager Superintendent
AQ4	Clearing of vegetation will be limited to the area required for construction, site compounds and temporary lay down areas.	Construction	CoA C16 SoC AQ4	Environment Manager Superintendent Project Engineer Construction Manager

ID	Measure	When to implement	Reference	Responsibility
AQ5	Disturbed areas will be progressively stabilised as soon as practicable. Rehabilitation will be in accordance with the Landscape Management Plan and / or Soil and Water Management Plan (CEMP Appendix A), as relevant.	Construction	CoA C16 SoC AQ4	Environment Manager <del>Construction Manager</del> <del>Superintendent</del> <del>Project Engineer</del>
AQ6	Erosion and sedimentation management measures will be installed as per the 'Blue book' (Landcom, 2004)	Construction	CoA C16 SoC AQ4	Environment Manager <del>Construction Manager</del>
AQ7	Temporary spoil stockpiles will be managed (dampened or covered) to minimise dust generation.	Construction	CoA C16	<del>Superintendent</del> Environment Manager <del>Construction Manager</del> <del>Foreman</del>
AQ8	Stockpiles will be stabilised or covered if they are to remain in place for a period of greater than two weeks.	Construction	CoA C16	<del>Superintendent</del> Environment Manager <del>Construction Manager</del> <del>Foreman</del>
AQ9	No burning or incineration of any waste (including green waste) will be permitted, except under the instruction of emergency services.	Construction	CoA C16 SoC AQ7	<del>Superintendent</del> Environment Manager <del>Construction Manager</del>
AQ10	Dust generation will be monitored visually during construction. If excessive dust is identified, additional mitigation measures will be put in place where reasonable and feasible. Refer also to AQ19.	Construction	CoA C19	Environment Manager <del>Superintendent</del> <del>Project Engineer</del> <del>Foreman</del>
AQ11	Water sprays and/or water carts will be used as required for dampening stockpiles, cleared areas and other exposed surfaces to control dust generation. Dust suppression will be targeted to protect sensitive receivers (residents, road users, fauna habitat etc).	Construction	CoA C16 SoC AQ4	Environment Manager <del>Construction Manager</del> <del>Superintendent</del> <del>Project Engineer</del>

ID	Measure	When to implement	Reference	Responsibility
AQ12	Construction speed limits will be established and enforced to ensure dust generation from vehicle movements are minimised. Speed limits would be reduced during high dust/windy conditions. Refer to Traffic Management Protocol (CEMP Appendix C).	Construction	CoA C16 CoA C19	Superintendent Project Engineer Construction Manager
AQ13	Measures to ensure limited tracking of dirt off site will be implemented at access points. The controls will include exit rumble grids at all points of egress onto public (sealed) roads, sweeping of sealed roads to remove deposited material where applicable, and/or stabilisation of site roads/tracks with aggregate where appropriate.	Construction	CoA C16 CoA C19	Superintendent Project Engineer Foreman Construction Manager
AQ14	All vehicles used for material and waste haulage will have covers and all loads will be covered on public roads.	Construction	CoA C16 CoA C19	Superintendent Project Engineer Foreman Construction Manager
AQ15	Tailgates, under-rigs and towing apparatus of trucks will be checked to ensure they are free of loose material, prior to trucks leaving the construction site. Where loose material is present, this will be swept prior to the truck leaving the site.	Construction	CoA C16 CoA C19	Superintendent Project Engineer Foreman Construction Manager
AQ16	Construction plant, vehicles and machinery will be operated in a proper and efficient manner.	Construction	CoA B1	Superintendent Project Engineer Foreman Construction Manager
AQ17	Construction plant, vehicles and machinery will be maintained to minimise exhaust emissions. Records of maintenance will be kept for all plant, vehicles and machinery used on the Project. These records will be maintained by the owners of the plant and subject to random auditing by the Environment Manager.	Construction	CoA B1 CoA B6 SoC AQ8	Environment Manager Construction Manager Superintendent Project Engineer
AQ18	As a minimum, all site accesses will be stabilised with gravel to minimise dust generation and tracking of sediments.	Prior to construction; construction	CoA C16 SoC AQ4	Superintendent Project Engineer

ID	Measure	When to implement	Reference	Responsibility
AQ19	<p>Meteorological forecast data will be reviewed daily and where prevailing weather conditions are likely to generate high dust impacts, the Environment Manager will:</p> <ul style="list-style-type: none"> <li>Review dust generating activities for the day and order work to cease (or to not to commence) if it is determined that activities are likely generate excessive dust.</li> <li>Direct that dust control such as water sprays be used for dust generating activities, if appropriate.</li> </ul> <p>Refer also to AQ10.</p>	Construction	CoA C16 SoC AQ4 SoC AQ6	Environment Manager Superintendent Construction Manager
AQ20	<p>In the event that blasting is required, it would be conducted at appropriate times, with consideration of site conditions and sensitive receivers. Specific measures to limit air quality impacts would be detailed in a Blast Management Plan (refer to Noise and Vibration Management Plan (CEMP Appendix D).</p>	Construction	CoA C16 SoC AQ5	Environment Manager Construction Manager
AQ21	<p>Odour control facilities at the sewer pump station will be installed during construction for use in operation phase.</p>	Construction	SoC AQ2	Project Manager Project Engineer Design Manager Construction Manager
AQ22	<p>No offensive odours will be emitted from the project site, as defined under the <i>Protection of the Environment Operations Act 1997</i>.</p>	Construction	CoA B6	Project Manager Project Engineer
AQ23	<p>GTPL will oversee the scheduling of high dust generating activities for this Project, construction of Stage A – Network (east), the water recycling plant and the Googong township subdivision works. Cumulative air quality impacts will be minimised as far as practical.</p>	Construction		GTPL Assistant Project Director

# 6 Compliance management

## 6.1 Roles and responsibilities

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The Project team's roles and responsibilities are outlined in Section 4.1 of the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in Section 5 of this Plan.

## 6.2 Training

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All ~~personnel employees, contractors and utility staff~~ working on site will undergo site induction training relating to air quality issues. The induction training will address elements related to air quality (dust) management including:

- Use of water sprays and carts as required during works.
- Covering of all loads on public roads.
- Actions to take in the event that dust is unduly impacting on sensitive receivers.
- Review of dust generating activities in high wind conditions.

Further details regarding staff induction and training are outlined in Section 5 of the CEMP.

## 6.3 Inspections

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Inspections of the amount and distribution of dust generated on site and of activities with the potential to generate dust will occur as required for the duration of the Project. Daily visual inspections of the construction site will be undertaken by the Environment Manager and construction personnel to identify prevailing weather conditions, excessive dust generation and any additional management measures required.

~~The Environment Manager will undertake W~~ weekly environmental inspections including of air quality (dust) management and mitigation measures ~~will be undertaken by the Environment Manager~~. This will include auditing of construction activities to ensure efficient and correct operation of plant, use of water carts, management of stockpiles etc. These inspections will be documented on the weekly checklist.

The Environmental Representative will inspect the site regularly ~~to assess air quality controls~~.

Requirements and responsibilities in relation to inspections are documented in Section 8.1 of the CEMP.

## 6.4 Auditing

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Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this Plan, CoA and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in Section 8.4 of the CEMP.

## 6.5 Reporting

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Results and outcomes of inspections, monitoring and auditing will be reported internally on a monthly basis. Six-monthly construction compliance reports will be prepared to report on compliance with the Project Approval. Reporting requirements and responsibilities are documented in Section 8.5 of the CEMP.

# 7 Review and improvement

## 7.1 Non-conformity, corrective and preventative actions

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A non-conformance is an action or omission that does not conform with the requirements of this Plan or any legal and other requirements. Any member of the Project team or the Environmental Representative can identify a non-conformance or opportunity for improvement. Section 8.3 of the CEMP identifies the process for identifying, reporting, recoding and reviewing non-conformances. This will ensure continual improvement.

## 7.2 Management plan update and amendment

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The processes described in Section 7 and Section 8 of the CEMP may result in the need to update or revise this Plan. This will occur as needed.