



Appendix 5

Traffic assessment technical advisory note

Technical Advisory Note

Project	Valley of the Winds	Project Number	SCT_00239
Client	ACEN Australia Pty Ltd		
Document Name	Review of quarry, water, waste and sewage truck volumes		
Version	2.0	Date	2 April 2024
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1.0 Background

This technical advisory note has been prepared to provide an indicative change in volume of project truck movements during construction through:

- Sourcing of crushed rock, gravel, aggregate and sand from on-site quarries in each of the wind turbine clusters or won during construction of access tracks, for example.
- Sourcing non-potable water from on-site dams in each of the wind turbine clusters.
- Transporting waste and sewage from a centralised construction workforce accommodation camp.

2.0 Analysis

The quantities for construction material were taken from the 21-261-VWWF-Infrastructure & Resource Assessment report, (icubed consulting, 28 Feb 2024), while quantities for general waste and sewerage from the workers accommodation were taken from the Valley of the Winds EIS (Ramboll, April 2022) and Amendment Report (Ramboll, Oct 2023).

2.1 Construction materials won during construction or sourced from on-site quarries

Information provided by icubed consulting (email of 8 March 2024) was that it was advisable for the first 20 per cent of the pavement materials listed in Table 4 of the 21-261-VWWF-Infrastructure & Resource Assessment report to be imported from an external quarry source, and that, due to the absence of geotechnical information, potentially 30 per cent of the remaining quantity could be won from construction, with the remaining 50 per cent sourced from on-site quarries.

Table 1 summarises the crushed rock and gravel mass quantities presented in Table 4 of the 21-261-VWWF-Infrastructure & Resource Assessment report and the amount that could be won during construction or sourced from on-site quarries.

Table 1 Summary of potential crushed rock and gravel mass that could be won during construction or sourced from on-site quarries

Description	Crushed rock (m ³)	Gravel mass (t)
Total required for access tracks, WTG hardstands, Substation benches, O&M Facilities bench, Concrete Batch Plant benches and Construction Compound benches*	326,203	685,026
Remaining 80 per cent after initial 20 per cent is imported	260,962	548,021

*Source: 21-261-VWWF-Infrastructure & Resource Assessment, icubed consulting, 28 Feb 2024

Table 2 summarises the aggregate and sand quantities presented in Table 7 and Table 8 of the 21-261-VWWF-Infrastructure & Resource Assessment report and what could be won during construction or sourced from on-site quarries.

Table 2 Summary of aggregate and sand that could be won during construction or sourced from on-site quarries

Description	Aggregate (t)	Sand (t)	Bedding sand (m ³)
Total in concrete for WTG footings*	142,803	120,258	-
Bedding sand for cable trenches	-	-	44,619
80 per cent that could be won during construction or sourced from on-site quarries	114,242	96,206	35,695

*Source: 21-261-VWWF-Infrastructure & Resource Assessment, icubed consulting, 28 Feb 2024

Based on the above assumptions, and the following truck capacity assumptions, an indicative **27,950 trucks** could be removed from the surrounding road network over the course of the construction period, made up of:

- Crushed rock: Assuming a truck and dog capacity of 30m³, a quantity of 260,962m³ would equate to 8,699 trucks
- Gravel mass: Assuming a truck and dog capacity of 42t, a quantity of 548,021t would equate to 13,049 trucks
- Aggregate: Assuming a truck and dog capacity of 42t, a quantity of 114,242t would equate to 2,721 trucks
- Sand: Assuming a truck and dog capacity of 42t, a quantity of 96,206t would equate to 2,291 trucks
- Bedding sand: Assuming a truck and dog capacity of 30m³, a quantity of 35,695m³ would equate to 1,190 trucks.

2.2 Water from on-site dams

Non-potable water could be sourced from on-site dams in each of the wind turbine clusters. **Table 3** summarises the water quantities presented in Table 4 and Table 10 of the 21-261-VWWF-Infrastructure & Resource Assessment report and what could be sourced from on-site dams.

Table 3 Summary of water volume that could be sourced from on-site dams

Description	Water (kL)
Total required for access tracks, WTG hardstands, Substation benches, O&M Facilities bench, Concrete Batch Plant benches and Construction Compound benches*	24,465
Water demand for dust suppression	421,200
Total	445,665
Remaining 80 per cent after initial 20 per cent is imported, which could be sourced from on-site dams	356,532

*Source: 21-261-VWWF-Infrastructure & Resource Assessment, icubed consulting, 28 Feb 2024

Based on the above assumptions, and a water tanker capacity assumption of 20kL, a quantity of 356,532kL would equate to an indicative **17,827 water tankers** that could be removed from the surrounding road network over the course of the construction period through the use of on-site dams.

2.3 General waste from centralised construction workforce accommodation camp

The Valley of the Winds EIS (Ramboll, April 2022) indicates a total of 2,352t of general waste over a 24-month period. Based on a truck and dog capacity of 42t, this would equate to an indicative **56 trucks** that would be required to transport waste from the centralised construction workforce accommodation camp over a 24-month period.

2.4 Sewage from centralised construction workforce accommodation camp

The Valley of the Winds Amendment Report (Ramboll, Oct 2023) indicates an estimated 88,000 litres (88kL) per day of sewage at the time of the peak workforce of 400 workers. Based on a sewage vacuum truck capacity of 12kL, this would equate to an indicative **8 trucks per day** that would be required to transport sewage from the centralised construction workforce accommodation camp during the period of the peak workforce.

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