Scoping Report.

REQUEST FOR SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

ATTACHMENT 15
TRAFFIC IMPACT ASSESSMENT METHODOLOGY & SCOPING REPORT

OCTOBER 2019

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TWEED SAND PLANT BE190043

Scoping and Methodology - Traffic Impact Assessment

1. Introduction

Burchills Engineering Solutions have been appointed by Hanson Construction Materials to undertake a Traffic Impact Assessment (TIA) for the existing Tweed Sand Plant (TSP) located at Altona Road within Tweed Shire Council local authority area. The site already benefits from a planning permission for the sand extraction of 500,000 tonnes per year. The existing TSP accesses the Pacific Motorway some 1.6km to the north, via Altona Road, Crescent Street and Tweed Coast Road to the east from the site.

The proposed redevelopment expansion footprint increases the sand extraction limit from approved 500,000 tonnes per year to 950,000 tonnes per year. The proposal will result in an increase in the traffic volumes (highway trucks) generated by the site. To avoid additional heavy vehicles travelling local streets as part of the redevelopment, the applicant proposes to access / egress the TSP via the Tweed Valley Way southbound off ramp at the Pacific Motorway Interchange, instead of the current approved arrangements to the east.

The TIA will be prepared in accordance with Austroads *Guide to Traffic Management Part 12*, the complementary Roads and Maritime Supplement and the RTA's '*Guide to Traffic Generating Developments*" published in October 2002. In general terms, the TIA includes an explanation of assumptions and justification of adopted parameters. Where published resources are unavailable, Burchills propose to seek agreement of the relevant Roads Authority to key assumptions. More details are given under the various headings below.

2. Previous Traffic Reports

Previous relevant traffic reports include the following:

1. Traffic Impact Study Proposed Aquaculture (Lobster Farm) Development September 2004;
2. Proposed modification to existing Aquaculture (Lobster Farm) Rytenskild February 2019.
3. TTM Chinderah Service Centre Development 1st December 2014;
4. Bitzios Report response to RMS comments 2 November 2017; and
5. Tweed Sand Plant Response to DPE and Gailes Submission Correspondence 15 February 2018.
6. Tweed Shire Council – Tweed Road Development Strategy Bitzios Consulting, November 2018

3. Traffic Volume Survey Data

Existing traffic volumes and background traffic growth is expected on the surrounding road network and along proposed haulage routes. The following sources of traffic data and new actual traffic counts to be obtained to inform the base case are proposed from the following sources;

a) Existing sources of traffic volume data:

1. NSW Government Traffic Census Data;
2. Tweed Shire Council Traffic Count Database;
3. Tweed Shire Council traffic studies and forecast traffic volumes; and
4. Previous traffic studies at the Tweed Valley Way / Pacific Motorway interchange as listed in 2 above.

b) New Traffic volume surveys are proposed at the Tweed Valley Way / Pacific Motorway Interchange and Tweed Valley Way at the following locations:

1. Tweed Valley Way southbound off ramp. 7 X 24 hr day tube counters located between the start of the Tweed Valley Way southbound off ramp and the existing Lobster Farm access 'T' intersection; and
2. The start of the merge with the northbound off ramp on the western side and Tweed Valley Way.
3. Tweed Valley Way (M.R.679) - at No 232 IGA west of the interchange.

Data collected includes; vehicle by type, volumes and travel speed.

c) Peak hour turning volumes at the following intersections:

1. The Service Station / Tweed Valley Way roundabout; and
2. The existing 'T' intersection Tweed Valley Way southbound off ramp at the Lobster Farm access / Tweed Valley Way southbound off ramp.

Fully classified turning count surveys will be undertaken for the 07.00 to 19.00 periods on a Thursday and for the 10.00 to 15.00 period on a Saturday. All surveys will avoid school and public holiday periods. Flows to be demonstrated as network diagrams.

4. Trip Generation and Distribution

The trip rates associated with the proposed increase in the sand extraction are identified through reference to the existing operations at the TSP. Also, Hanson's Lytton Sand Plant (LSP) provides a similar model to forecast the TSP operations. Hence the LSP existing trip rates and distribution combined with TSP existing site operations, will be used as a base for the trip generation.

The distribution of trips to and from the future areas of TSP generated by the proposed development including the daily and peak hourly volume will also be identified through reference to the existing TSP truck movements for 2018-2019 year combined with LSP data for the same year. These trips will be assigned to the road network via the most direct route to the west of the extraction area.

5. Assessment of Existing Road Safety Including Turn Warrants and Sight Distances

Assessment of existing road safety and consideration for any increased risk arising from trips generated by the proposed development, particularly at affected intersections including:

- Available sight distances identified and addressed by the assessment.

- Identification of existing and proposed turn treatments at affected intersections along the proposed haulage route/s, having reference to warrants provided in Austroads Guide to Traffic Management Part 6 and treatments identified in Austroads Guide to Road Design Part 4A.

6. Assessment Years and Growth Rates

On the assumption that the planning application will be submitted and registered in 2019/2020, the assessment years to be used will be 2019 to represent the existing situation, 2022 to represent opening year and 2032 to represent the future situation. A further assessment for the year 2042 is also proposed.

Traffic growth rate will be applied to the existing background traffic flows in order to accurately represent predicted base flows in the 2022, 2032 and 2042 assessment years. The growth will be calculated based on the Pacific Motorway background traffic growth factor and Tweed Valley Way background growth factor plus long term population projections and other references, thereby accurately representing regional and local conditions.

7. Truck Acceleration and Merge Assessment

Truck acceleration is based on outputs from simulation software (as supplied by the truck manufacturer) for the range of trucks operating. The results are used in conjunction with lidar survey of the road longitudinal grades to determine acceleration distances / speed relationships. Merge distance analysis is proposed along the Tweed Valley Way southbound off ramp.

8. Intersection Capacity

The operational capacity of the following intersections using SIDRA 8 software to identify the Level of Service, is proposed for the weekday AM and PM network peak hours and for the Saturday peak hour in the assessment year scenarios identified as follows:

1. Lobster Farm / Tweed Valley Way southbound off ramp intersection; and
2. Service station access / Tweed Valley Way roundabout.

The proposed development and vehicular access strategy will be described including a detailed description of the proposed site access intersection(s) arrangement and its compliance with Austroads and RMS standard design criteria.

Upgrades to the existing Lobster Farm (or suitable alternative) Access / Tweed Valley Way southbound off ramp intersection will be analysed in terms of capacity and delays for the through traffic. Details of proposed improvements to mitigate impacts on safety and efficiency of the surrounding road network are also included. Swept path analysis to demonstrate accessibility for relevant design vehicles at the access points and identified intersections along the proposed haulage route/s are also proposed.

9. Functional Layout Plans

Functional layout plans detailing dimensions, lane widths and turning radii will be provided for the extent of the new works.

10. Public Transport

Impact on public transport (public and school bus routes) and consideration for alternative transport modes such as walking and cycling.

11. Code of Conduct by Haulage Operators

Consideration for Clause 16(1) of the Mining SEPP including consideration of impacts on school zones and residential areas, a proposed Code of Conduct for haulage operators, and assessment of road safety along the proposed haulage route/s. Any Driver Code of Conduct could include, but not be limited to:

- A map of the primary haulage route/s highlighting critical locations.
- Safety initiatives for haulage through residential areas and/or school zones.
- An induction process for vehicle operators and regular toolbox meetings.
- A complaint resolution and disciplinary procedure.
- Any community consultation measures proposed for peak haulage periods

Where road safety concerns are identified at a specific location along the identified haulage route/s, Roads and Maritime suggests that the TIA be supported by a targeted Road Safety Audit undertaken by suitably qualified persons.

12. Summary and Conclusions

The above sections will be summarised in a report with appropriate conclusions and functional layout plans included. Current Austroads Guidelines, Australian Standards and Roads and Maritime Supplements are to be adopted for design and construction of any proposed works on the surrounding road network.

Dale Kleimeyer - Principal Engineer Traffic

Burchills Engineering Solutions
31 October 2019