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Dear Mary

ROLLESTON ACCESS IMPROVEMENTS NOTICE OF REQUIREMENT – REVIEW OF AIR QUALITY ASSESSMENT (PACKAGE 1)

1.0 Introduction

1.1 Background

Pattle Delamore Partners Limited (PDP) has been engaged by the Selwyn District Council (SDC) to undertake a peer review of the air quality assessment (package 1) that relates to New Zealand Transport Agency/Waka Kotahi (iNZTA) *Notice of Requirement for Alteration of a Designation s181(1) Resource Management Act 1991* (NOR), issued October 2024.

The NOR document provides an overview of NZTA's proposal to undertake improvement works at the intersections of Dunns Crossing Road and Main South Road (SH1), and Runners Road and Walkers Road (i.e., 'Package 1'). Our understanding of the location and extent of the area of interest ('the site' or 'investigation area'), is based on the NZTA NOR document provided by SDC in email dated 4 November 2024; specifically, the *Land Designation Plan Package 1* in the NOR document.

Specific to SDC's request, one report has been identified for review:

- **Beca Limited (Beca) (2024)** – State Highway 1 – Rolleston Access Improvements. Air Quality Assessment – Package 1. Prepared for NZTA.

For additional context and completeness, we have also consulted the Assessment of Environmental Effects (AEE) report issued by Beca (30 October 2024) and the Consent Order issued on 31 October 2024.

1.2 Objectives of Review

SDC's key objectives for the air quality reviews are to:

- Review and provide comment on the Beca Air Quality assessment (See Section 1.3 below);
- Help Council determine the air quality effects of the NOR; and
- Help Council determine which notification pathway the NOR will be processed under.

1.3 Purpose of this Letter

To enable PDP to achieve SDC's objectives, the scope of the review is defined to include consideration of:

a. Description of the type and location of the proposed activity;

b. Description of the receiving environment (land uses, meteorology, topography, background air quality and sensitive receptors);

c. Relevant sources and types of contaminants discharges have been identified;

d. Amounts of contaminants discharged have been correctly quantified;

e. Relevant potential impacts of contaminants discharged have been identified;

f. AEE's assessment methodology is fit for purpose and reflects good practice and is appropriate for the nature and scale of contaminant effects;

g. That the input data used to inform the assessment is robust and acceptable;

h. Any proposed emission management/reduction/monitoring strategy;

i. Whether the conclusions regarding the level of effects are reasonably supported by the assessment; and,

j. Identification of any potentially affected parties to the proposal.

The purpose of this letter is to provide SDC with feedback from PDP's peer review of the Beca Air Quality Assessment that relates to NZTA NOR Package 1.

PDP has undertaken more than five air quality assessments for NZTA roadway projects of a similar type and scale as the Rolleston Access Improvements (Package 1) over the last five years. PDP also has extensive experience in monitoring and analysis of near-road ambient air quality data. While the findings presented in Section 3 identify some key missing information and discusses the implications of these gaps, using our knowledge and experience of similar projects PDP are able to help fulfil SDC's review objectives.

2.0 Review Process

2.1 Reports and Requests for Further Information

PDP undertook the initial review of the Beca Air Quality Assessment[1] in early November 2024. That review identified some information gaps[2] which PDP considered needed to be filled before PDP could complete the review. This s92 request for further information (RFI) was provided to Beca on 12 November 2024. A response to these questions[3] was received on 09 December 2024 which was reviewed by PDP. PDP considered that some of the answers provided by Beca did not helpfully answer the questions posed. PDP rephased the questions which we considered needed additional detail and submitted those to SDC[4] on 18 December 2024. Beca provided a response to the second round of s92 RFI questions[5] on 5 February 2025 which PDP has reviewed.

[1] Beca Limited (Beca) (2024) – State Highway 1 – Rolleston Access Improvements. Air Quality Assessment – Package 1. Prepared for NZTA.
[2] Email 12/11/24. State Highway 1 - Rolleston Access Improvements: PDP Initial technical review. Jeff Bluett (PDP) to Jon Trewin (SDC) and Mary McConnel (HG).
[3] NZTA - Package 1 - s92 Register.xlsx. 16 December 2024.
[4] Email 18/12/24. State Highway 1 - Rolleston Access Improvements: PDP Initial technical review. Jeff Bluett (PDP) to Jon Trewin (SDC) and Mary McConnel (HG).
[5] NZTA - Package 1 - s92 Register- RESPONSE V2.xlsx. 20 February 2025.

2.2 Information Gaps

Following receipt of the second phase response to the s92 RFI questions, PDP considers that three modelling issues remain unresolved, which have been flagged to SDC[6]. PDP considers the key information gaps are:

- The assessment does not appear to have considered the resources and recommendations currently available from Waka Kotahi to assist with and guide air quality roading project assessment. Specifically:
  - Draft Guideline for assessing air quality impacts from road transport projects[7];
  - AQ Screening Tool V38; and,
  - NOx to NO2 roadside conversion model[9].
- Dust generating construction activities - when, where, how much and for how long?;
- Reliance on a 50 m buffer distance as providing adequate separation between dust source and sensitive receptors;
- Detail on scope and content of the Dust Management Plan (DMP);
- A discussion on if and how meteorological and/or dust monitoring might be used to ensure dust mitigation is appropriate and effective;
- Detail on vehicle numbers and fleet composition;
- Information on the assumptions made to model vehicle emission rates;
- Defining the extent, location and of the model receptor grid;
- Commentary on how the dispersion model used fits within the Aus/NZ guideline recommendations; and
- Example model input/output files so PDP can check the setup of the model.

This review considers the information PDP has been supplied by Beca, identifies the missing information and discusses the implications of these gaps in our findings.

2.3 Structure of the reivew

The review defines nine key issues, each which need to be carefully considered in an air quality assessment for a roadway construction and roadway operation project. The nine review issues (and their location within this report) are:

- Description of the Proposed Activity (Section 3.1 and Appendix A);
- Description of the Receiving Environment (Section 3.2 and Appendix B);
- Description of the Discharge of Contaminants (Section 3.3 and Appendix C);
- Proposed Mitigation (Section 3.4 and Appendix D);

[6] Email 10/02/25. State Highway 1 - Rolleston Access Improvements: - Section 92(1). Jeff Bluett (PDP) to Jon Trewin (SDC) and Mary McConnel (HG).
[7] Guideline for assessing air quality impacts from road transport projects. Version 3. 14 June 2024.
[8] Air Quality Screening Model. Version 3.0, Tonkin and Taylor. 19 June 2024.
[9] NZ Specific NOx to NO2 Tool and User Guide. WSP. 8 November 2024.

- Assessment Method - Construction dust (Section 3.5 and Appendix E);
- Assessment Results – Construction Dust (Section 3.6 and Appendix F);
- Assessment Method – Operational Emissions (Section 3.7 and Appendix E);
- Assessment Results – Operational Emissions (Section 3.8 and Appendix F); and,
- Potentially Affected Parties (Section 3.9 and Appendix G).

The summary outcomes from PDP's review of each of these issues are presented in Section 3 (as noted in the bullet point list above). The detailed outcomes from PDP's review of each of these issues are presented in the appendices attached to this report (as noted in the bullet point list above).

3.0 Review Findings

3.1 Description of the Proposed Activity

Key Review Findings:

- The description of the current and proposed roadway links is adequate;
- There is a lack of detail of earthworks required to construct the project; and,
- There is a lack of detail on traffic numbers and speed.

Review Conclusion

- The Description of the proposed activity is adequate, but the missing information makes reviewing the applicant's assessment findings uncertain.

3.2 Description of the Receiving Environment

Key Review Findings:

- The description of the receiving environment is fit for purpose; and,
- There is a brief discussion on the definition and importance of separation distances to sensitive receptors

Review Conclusion:

- The AQ-AEE's description of the receiving environment is generally informative and meets accepted good practice.

3.3 Description of the Discharge of Contaminants

Key Review Findings:

- Beca did not provide quantitative or spatial detail on construction dust generating activities. -
- The description of discharge of tailpipe contaminants from operational activities is fit for purpose;
- The AEE does not consider the effect of non-tailpipe emissions; and,
- The AEE handles the atmospheric conversion of NOx to NO2 in a simplified manner.

Review Conclusion:

- The AQ-AEE's description of the discharge of construction discharges is lacking detail and is not consistent with accepted best practice; and,

- The AQ-AEE's description of the discharge of operational contaminants is generally informative and with the exception of not considering the impacts of non-tailpipe emissions, meets accepted good practice.

3.4 Proposed Mitigation

Key Review Findings:

- Dust control measures brief but sufficient to provide an overview of good practice;
- Benefits and use of meteorology and dust monitoring are not discussed in the AEE;
- The development of a dust mitigation plan is noted in the AEE, but a draft DMP Is not provided; and,
- Mitigation of operational effects not considered.

Review Conclusion

- The lack of consideration of meteorology and dust and lack of detail on the DMP is not helpful for the purpose of this review.
- This gap could be captured in the DMP review process which PDP recommends is required by the consent conditions.

3.5 Assessment Method - Construction dust

Key Review Findings:

- Assessment methods generally aligns with accepted best practice;
- Detail provided on activity is lacking E.g. Location and size of dust sources in relation to the sensitive receptors. – makes conclusions very hard to review;
- 50 m separation distance is used as an indicator of effects but is a very small and potentially ineffective buffer; and,
- The information provided within the AEE does not support the assessment's reliance on a 50 m buffer.

Review Conclusion:

The lack of activity detail and reliance on a 50 m buffer create an uncertainty in the AEE's construction dust assessment method.

3.6 Assessment Results – Construction Dust

Key Review Findings:

- Results assume effective dust mitigation;
- The AEE suggests low to medium dust risk when working <50 m from residential properties; and,
- The AEE suggests Negligible risk when working >50 m from residential properties.

Review Conclusions:

- PDP considers the applicant's conclusion is likely correct;
- However, there is uncertainty in these findings due to Beca's reliance on the effectiveness of a 50 m buffer, a lack of quantification and spatial orientation of dust sources and receptors;

- PDP would have assessed the dust risk impact as medium to high within 50 m, and moderate to low out to 100 m and low beyond that; and,
- This situation puts a large emphasis and importance on a comprehensive DMP being written and effectively implemented.

3.7 Assessment Method – Operational Emissions

Key Review Findings:

- Beca has not considered the criteria recommended by NZTA to determine what level of assessment is appropriate from the NZTA 3 Tier assessment hierarchy;
- Beca simply provide a Tier 3 (detailed) assessment;
- The AEE employs the RLINE-EXT dispersion modelling to inform the assessment; and,
- No validation or sanity check of the model results has been undertaken.

Review Conclusions:

- Information provided suggests that dispersion modelling method generally follows accepted good practice;
- Modelling detail is lacking which means PDP is unable to check:
  - Vehicle numbers and fleet composition;
  - Vehicle speed;
  - Emission model configuration and assumptions; and,
  - Dispersion model setup and configuration; and,
- The lack of detail on model details and validation creates uncertainty in the AEE's operational emissions assessment method.

3.8 Assessment Results – Operational Emissions

Key Review Findings:

- Negligible effect from vehicle emissions: < 4% of NES or AAQGL;
- Cumulative effects are not negligible: 44- 80% of NES or AAQGL;
- Small increase in GLCs from without-project to with-project scenario;
- Decrease over time – not substantiated in the AEE; and,
- No adverse effect on health effects.

Review Conclusions:

- There are significant gaps in the information provided to explain and support the modelling results. This situation is not consistent with good practice.
- Notwithstanding the information gaps noted above and the uncertainties created by these, in PDP's experience with similar sites, the conclusions on the operational effects are probably correct.

3.9 Potentially Affected Parties

Key Review Findings

- The AEE does not discuss any potentially affected parties.

Review Conclusions:

- The AEE conclusions infer that there are no potentially affected parties.
- On balance PDP's review concurs with this finding. However, there are a number of additional pieces of information requested from the applicant that, if provided, would allow PDP to be more certain of the conclusion.

4.0 Review Summary

SDC's key objectives for the air quality reviews are to:

- Review and provide comment on the Beca Air Quality assessment;
- Help Council determine the effects of the NOR; and,
- Help Council determine which notification pathway the NOR will be processed under.

Section 3 and the appendices of this report provide PDP's review and comment on the Beca Air Quality assessment.

On balance, using the information provided by Beca alongside PDP's experience and expertise, PDP review leads us to the opinion that the air quality AEE's findings and conclusions are likely correct. However we note that there are a number of additional pieces of information requested from the applicant that, if provided, would allow PDP to be more certain of the conclusion.

Given the findings of the assessment and review, if SDC is confident that the consent conditions can require a comprehensive and effective dust mitigation and monitoring plan, PDP consider it appropriate to process the consent application via the non-notified pathway.

5.0 Closing

Thank you for the opportunity for PDP to provide this review to SDC. PDP trusts the review presented in this letter meets the requirements of SDC. If you have any questions or comments about the review, please do not hesitate to contact Jeff Bluett.

6.0 Limitations

This peer review letter has been prepared by Pattle Delamore Partners Limited (PDP) on the basis of contaminated land investigation reports and relevant information provided by Selwyn District Council, specifically in relation to NZTA NOR Package 1 alignments (intersections of Dunns Crossing Road and Main South Road (SH1), and Runners Road and Walkers Road). PDP has not independently verified the provided information and has relied upon it being accurate and sufficient for use by PDP in preparing this letter. PDP accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the provided information.

This letter has been prepared by PDP on the specific instructions of Selwyn District Council for the limited purposes stated in the letter. PDP accepts no liability if the letter is used for a different purpose or if it is used or relied on by any other person. Any such use or reliance will be solely at their own risk.

Yours faithfully

PATTLE DELAMORE PARTNERS LIMITED

Prepared by

Jeff Bluett

Technical Director – Air Quality

Reviewed and approved by

Andrew Curtis

Technical Director – Air Quality

Appendix A: Description of the Proposed Activity

Key Sources of Information from AQ AEE

- Section 2.1 Overview of Project
- Figure 2-1. Overview of the Package 1 alignment (Source: NZTA)

Review Findings

- The description of the current and proposed roadway links is adequate.
- There is a lack of detail which does not allow PDP to understand the method, scale and location of earthworks required to construct the project.
- There is a lack of detail which does not allow me to understand the change in traffic numbers, vehicle speed and fleet composition between the with and without projects scenarios.
- Without the additional detail on construction and vehicle activity (note above) I am unable to sanity check the results nor confidently state that I concur with the AQ-AEE's conclusions.

Appendix B: Description of the Receiving Environment

Key Sources of Information from AQ AEE

- Section 5.1 of AQ AEE – Surrounding Land use
- Figure 5-1. Zoning of Package 1 surrounding area (Source: Environment Canterbury Maps).
- Section 5.2 Topography
- Section 5.3 Meteorology
- Section 5.5 Background Air Quality
- Question 50 of RFI - Section 5.5 Background Air Quality

Review Findings

- Unusually sensitive receptors not identified in section 3 but are covered briefly in:
  - Section 7.3.3 Separation Distance to Sensitive Receptors.
  - Figure 8-1 shows the location of the dwelling which are likely to be most impacted by Package 1.
- Question 50 of RFI - Section 5.5 Background Air Quality
  - Useful explanation of the degree of impact from train emissions
- Other than this the AQ-AEE's description of the receiving environment is informative and meets accepted good practice.

Appendix C: Discharge of Contaminants and Adverse Effects

Key Sources of Information from AQ AEE

- Section 3.1 Construction effects
  - Nature and sources of dust
  - Machinery exhaust emissions.
  - Question 40 of RFI - Section 3.1 Construction Discharges to Air
  - Question 52 of RFI - Section 7.1 7.1 Potential Dust effects.
- Section 3.2 Operational effects.
  - Nature of vehicle tailpipe emissions
  - Pollutant emission rates
  - Traffic scenarios
  - Definitions of receptor areas
- Section 6.0 Assessment Criteria
  - Section 6.1 Operational effects
  - Section 6.2 Dust Nuisance effects
  - Question 51 RFI. 6 Dust Nuisance Effects

Review Findings

- Section 3.1 – Construction effects –description provided aligns with accepted best practice at a high level.
- Question 40 of RFI - Section 3.1 Construction Discharges to Air
  - Beca did not provide quantitative detail on dust generating activities. - Not consistent with accepted best practice.
- Question 52 of RFI - Section 7.1 Potential Dust effects.
  - Useful reference provided to support claim that PM_{10} emissions form earthworks will be small.
- Section 3.2 - Operational effects. Not consistent with accepted best practice. Specifically:
  - No consideration of non-tailpipe emissions
- Question 45 of RFI - Section 3.2.1 Primary and Secondary NO2 – Not consistent with best practice
  - Ambient ratio method used – as per CASANZ guidelines
  - Assumed ratio is 0.2 NO2/NOx
  - Beca asked reviewer to supply NZTA roadside NOx-NO2 model. Applicant's consultant hasn't asked NZTA who they are contracted to do the work.
  - Suggest considering NOx to NO2 conversion isn't important for the purposes of this assessment
  - Applicant states proxy method could be used to answer question but doesn't actually use it to do so.

- Question 51 RFI. 6 Dust Nuisance Effects
  - Assessment criteria quote MfE dust impact concentrations.
  - Dust impact concentrations are NOT used in the assessment or monitoring plan – not consistent with accepted best practice.
- Section 6.0 Assessment Criteria generally aligns with accepted good practice.

Appendix D: Proposed Mitigation

Key Sources of Information from AQ AEE

- Section 3.1.5 – construction effects

Review Findings

- Section 3.1.5 – construction effects
  - Dust control measures brief but sufficient to demonstrate good practice.
- Question 41 of RFI - - Section 3.1.5 Dust mitigation
  - Applicant states unlimited water available for dust suppression via town supply.
  - This requirement should be included in the dust management and monitoring plan.
- Question 42 of RFI - benefits of meteorology monitoring - not consistent with accepted best practice
  - Applicant notes that meteorology monitoring will be up to contractor and detailed in the DMP.
- Question 43 of RFI - benefits of dust monitoring- Not consistent with accepted best practice
  - Applicant notes that dust monitoring will be up to contractor and detailed in the DMP. Dust monitoring will be done visually if at all.
- Mitigation of Operation effects not considered - Not consistent with accepted good practice.

Appendix E: Assessment Methods

Key Sources of Information from AQ AEE

- Section 7.1, 7.2 and 7.3 Construction Dust
- Question 53 and 54 of RFI – Section 7.2 FIDOL factors
- Question 55 of RFI – Section 7.3.3 Separation distances to sensitive receptors
- Section 8.1 and 8.2 Operational Emissions
- Questions 56 and 57 of RFI- Section 8.2 Assessment method (Operational Discharges).

Review Findings

- Section 7.1, 7.2 and 7.3 Construction Dust
  - Health and nuisance effects assessed.
  - FIDOL assessment method used.
  - CASANZ GPG dust risk assessment method referenced.
  - Assessment methods aligns with accepted best practice
  - Detail provided on activity is lacking e.g. Location and size of dust sources in relation to the sensitive receptors. – makes conclusions very hard to review.
  - 50 m separation distance used as an indicator of effects is a very small buffer. Accepted buffer is at least 100 m. Raises questions on robustness of conclusions.
- Questions 53 and 54 of RFI – Section 7.2 FIDOL factors
  - The assessment does not provide a clear link between FIDOL and IQAM dust assessment methods (including DEP). This is not consistent with accepted good practice.
- Question 55 of RFI – Section 7.3.3 Separation distances to sensitive receptors
  - Beca say they are just following CASANZ assessment method and that should be fine.
  - The CASANZ assessment method uses a 50 m buffer distance for the following reasons:
    - To identify potentially sensitive receptors that may be affected by dust emissions;
      - As a distance band to quantify the number of human receptors close to an emission source (the other bands are <20 m, <50 m, <100 m and < 350 m)
  - PDP is not convinced by the appropriateness of a 50 m buffer distance in the way it has been used in this assessment:
    - For example this is not consistent with the advice given in the MfE Dust GPG and other literature on effective buffer distances ;
    - No quantification of the number of receptors within the defined distance bands has been provided in the assessment; and,
    - IAQM uses 50 m buffer:
      - To determine the sensitivity of a receptor area;
      - To determine if a detailed assessment is needed; and,
      - Not as an effective mitigation measure.

- Section 3.1.6 Vehicle emissions during construction
  - Question 44 of RFI - Section 3.1.6 vehicle emissions during construction
  - Good reference to and use of NZTA screening model
- Section 8.1 and 8.2 Operational
  - Focus on NO2, PM10 and PM2.5. Consistent with accepted good practice.
  - Dispersion modelling – AERMOD. Unvalidated model in NZ. No validation offered.
  - Detailed assessment method. Unclear if this is consistent with accepted good practice. Normally a screening model is used to determine if a detailed assessment is needed.
  - Comparing predicted GLCs vs health assessment guidelines.- Consistent with accepted good practice.
  - Scenarios run: - Consistent with accepted good practice.
    - 2028 with project
    - 2028 without project
    - 2038 with project
- Questions 56 and 57 of RFI- Section 8.2 Assessment method (Operational Discharges - screening verses a detailed assessment).
  - Beca have not considered the recommended 3 Tier assessment required by NZTA
  - Beca have without explanation jumped to a Tier 3 (detailed) assessment.
  - Beca suggest NZTA screening model is not suitable for intersections and dismiss its applicability to this assessment.
  - PDP don't consider Beca followed good practice to arrive at providing a detailed assessment, but the consequence of this is simply in the cost of the assessment. A detailed assessment is much more expensive than a screening assessment.
- Question 46 of RFI - 3.2.2 Vehicle emission rates
  - VEPM model requested but not supplied
  - Lack of supporting information on vehicle emission rates.
- Question 47 of RFI - 3.2.3 Package 1 AADT- vehicle numbers
- Question 48 of RFI – explain differences in AADT for do minimum and with project scenarios
- Question 49 of RFI – explain differences in AADT for do minimum and with project scenarios
  - No information provided on vehicle numbers or fleet profile on Package 1 Roadway links
  - This response from Beca is not consistent with accepted good practice.
- Question 58 of RFI – choice of 2019 as a typical meteorological year
  - Helpful comparison and explanation provided accept 2019 as appropriate
- Questions 59, 63, 64 65 and 66 of RFI - Sections 8.3.1 to 8.3.3 Prediction of pollutant concentrations.

  - A generic discussion on the origins and use of AERMOD within which RLine-EXT sits is provided and argues that the model is fit for purpose.
  - No model validation for RLine-EXT has been undertaken or a literature reference provided.
    - No detail on AADT nor hourly Vehicle numbers for each roadway link has been provided
    - No uncertainty assessment of model results has been provided.
    - Information provided to explain and support the model selected and the way which it was configured is not consistent with accepted good practice.

- Questions 61 of RFI - Effects of development on the emissions from wider road network
  - No discussion is provided on the effects of development on the emissions from wider road network – This is not consistent with accepted good practice
- Questions 62 of RFI – Choice to use RLINE-EXT
- Question 63 of RFI - validation process that RLINE-EXT
  - The choice of using RLine-EXT as the model used in the assessment is that it is a regulatory model and has been validated by the USEPA.
  - No discussion has been provided on how RLine-EXT fits within the recommended model use guidelines used in Australia and New Zealand – not consistent with accepted good practice
- Question 64 of RFI -Model receptor grid and spacing
  - No detail has been provided on the location, extent or spacing of the Model receptor grid – not consistent with accepted good practice
- Question 65 of RFI - VPM
  - No example VEPM model input or output files provided to enable a check of model setup or configuration – not consistent with accepted good practice
- Question 66 of RFI - RLINE-EXT input and output files
  - No example RLINE-EXT model input or output files provided to enable a check of model setup or configuration – not consistent with accepted good practice

Appendix F: Assessment Results

Key Sources of Information from AQ AEE

- Section 7.4 and 7.5 – Construction
  - Residential properties at the North end of Dunns Crossing Road most at risk of dust impacts
  - Receptors 60-70 m from construction activities.
  - Other sensitive receptors at much further distances.
  - Prevailing winds away from residential areas.
  - Conclude:
    - Low to medium risk when working <50 m from residential properties
    - Negligible risk when working >50 m from residential properties
  - Risk of adverse dust effects reduced by dust mitigation.
- Section 8.3 and 8.4 – Operational
- Questions 59, 63, 64 65 and 66 of RFI - Sections 8.3.1 to 8.3.3 Prediction of pollutant concentrations

Review Findings

- Section 7.4 and 7.5 – Construction
  - Receptors 60-70 m from construction activities. Detail provided on activity is lacking E.g. Location and size of dust sources in relation to the sensitive receptors. Makes conclusions very hard to review.
  - 50 m separation distance used as an indicator of effects is a very small buffer. Accepted buffer is at least 100 m. Raises questions on robustness of conclusions.
  - Health effects assessment provided – does not align with accepted good practice.
- Questions 59, 63, 64 65 and 66 of RFI - Sections 8.3.1 to 8.3.3 Prediction of pollutant concentrations
  - No sanity-check of model results undertaken against vehicle numbers or distance from source.
- Section 8.3– Operational
  - Good representation of location and number of sensitive dwellings (Figure 8-1 Package 1 location of sensitive receptors) - Consistent with accepted good practice.
  - Location of modelled receptors undefined. Not consistent with accepted good practice.
  - PM10 and PM2.5: 24 hour –
    - Results not linked to a spatial reference. This is not consistent with accepted good practice.
    - However spatial reference information can be inferred from the isopleth plots which are appended to the main body of the report.
    - 2028 – without project Modelled GLC: (PM10 1.7 – 2.1) (PM2.5 0.8 – 0.9)

  - 2028 – with project Modelled GLC: (PM10 2.3 – 2.3) (PM2.5 1.0 – 1.1)
  - Background (PM10 – 37) (PM2.5 – 18)
  - Summary predicted PM10 and PM2.5 24-hour GLCs under NES – small increase associated with with-project scenario.
  - Notwithstanding the uncertainties noted above, in PDP's experience the PM10 and PM2.5 24-hour conclusions are probably correct.
- PM10 and PM2.5 Annual –
  - 2028 – without project Modelled GLC = (PM10 0.4 to 0.6) (PM2.5 0.2 – 0.3)
  - 2028 – with project Modelled GLC = (PM10 0.4 to 0.7) (PM2.5 0.2 – 0.3)
  - Background (PM10 - 14) (PM2.5- 4.9)
  - Summary predicted PM10 and PM2.5 annual GLCs under NESAQ – no or small increase associated with with-project scenario.
  - No increase for receptor area 2 doesn't make sense given there is an increase in 24-hour average cons. – Sanity check needed.
  - Notwithstanding the uncertainties noted above, in PDP's experience the PM10 and PM2.54 annual conclusions are probably correct.
- NO2 1 hour –
  - 2028 – without project Modelled GLC = 22-26.4
  - 2028 – with project Modelled GLC = 87.4-92.2
  - Background 65
  - Summary predicted NO2 1-hour GLCs under NES – small increase associated with with-project scenario.
  - Notwithstanding the uncertainties noted above, in PDP's experience the NO2 24-hour conclusion is probably correct.
- NO2 24 hour–
  - 2028 – without project Modelled GLC = 5.4 to 6.4
  - 2028 – with project Modelled GLC = 44.6 to 45
  - Background 39
  - Summary predicted NO2 24-hour GLCs under NESAQ – no or small increase associated with with-project scenario.
  - No increase for receptor area 2 doesn't make sense given there is an increase in 24-hour average cons. – Sanity check needed.
  - Notwithstanding the uncertainties noted above, in PDP's experience the NO2 24-hour conclusion is probably correct.
- Section 8.4 Summary of operational effects
  - Negligible effect from vehicle emissions < 4% of NES or AAQGL

- Cumulative effects is not Negligible 44- 80% of NES or AAQGL
- Small increase in GLCs from without-project to with-project scenario
- Decrease over time – not substantiated in the AEE.
- No adverse effect on health effects.
- Notwithstanding the uncertainties noted above, in PDP's experience the conclusions on the operational effects are probably correct.

Appendix G: Potentially Affected Parties

Key Sources of Information from AQ AEE

- The AEE does not discuss any potentially affected parties

Review Findings

- The AEE conclusions infer that there are no potentially affected parties
- On balance the PDP review concurs with this finding
- However, there are a number of additional pieces of information requested from the applicant that if provided would allow PDP to be more certain of the conclusion.

Appendix H: AEE Conclusions

Key Points from AQ AEE:

- Section 10 Conclusions- Construction
  - Dust no impact
  - Dust Mitigated by standard control measures
  - Dust management and monitoring plan recommended
- Section 10 Conclusions- Operation
  - See Section 7.2 above

Review Findings

- Section 10 Construction
  - Dust no impact but depends on 50 m buffer distance.
  - Dust Mitigated by standard control measures not particularly detailed
  - Dust management and monitoring plan recommended but not supplied
  - Essential that the DMMP is reviewed carefully and that this includes at least wind monitoring and visual dust monitoring programme.
  - Construction conclusion probably be OK PDP consider there are a lot of loose ends
- Section 10 Operation
  - Negligible effect from vehicle emissions < 4% of NES or AAQGL
  - Cumulative effects are not Negligible 44- 80% of NES or AAQGL
  - Small increase in GLCs from without-project to with-project scenario
  - Decrease over time – not substantiated in the AEE.
  - No adverse effect on health effects.
  - Notwithstanding the uncertainties noted above, in PDP's experience the conclusions on the operational effects are probably correct.