INQUIRY AND ADVISORY COMMITTEE
APPOINTED BY THE MINISTER FOR PLANNING
PLANNING PANELS VICTORIA

IN THE MATTER OF THE EDITHVALE AND BONBEACH LEVEL CROSSING REMOVAL PROJECT ENVIRONMENT EFFECTS STATEMENT

IN THE MATTER OF DRAFT AMENDMENTS C155 AND C156 TO THE KINGSTON PLANNING SCHEME

BETWEEN:

LEVEL CROSSING REMOVAL AUTHORITY

PROPONENT

AND

KINGSTON CITY COUNCIL AND OTHERS

SUBMITTERS

SUBMISSIONS ON BEHALF OF LEVEL CROSSING REMOVAL AUTHORITY

PART C

THE ROLE OF THE IAC

1. Clause 18 of the IAC's Terms of Reference summarises the role of IAC in its capacity as an inquiry under the EE Act. It provides that the Inquiry is, relevantly, to:

   (a) *consider and report on the potential significant effects of the project investigated in the EES, taking into account the procedures and requirements of the Minister for the preparation of the ESS under section 8B(5) of the EE Act … and the controlling provisions under the EPBC Act as outlined in paragraph 12;*

   (b) *recommend necessary avoidance, mitigation or management measures for the development of the project ...*

   (c) *assess the adequacy of the proposed environment performance requirements and their suitability to achieve project-wide environmental outcomes, as described in the scoping requirements.*

2. Consistent with the above, clauses 21(a) and (b) also require the IAC to include the following matters in its written report:

   (a) findings on the significance of environmental effects (impacts) of the level crossing removals proposed in the EES, including impacts on matters of national environmental significance protected under the relevant controlling provisions of the EPBC Act;

   (b) conclusions on the feasibility of the project achieving acceptable environmental outcomes in the context of applicable legislation, related policy, relevant best practice, and the principles and objectives of ecologically sustainable development.

3. LXRA submits the last of these matters is worth emphasising: the conclusions that the IAC is required to include relate to the ability to achieve acceptable environment outcomes. Consistent with the comments of the Supreme Court in *Knox City Council v Tulcany*, an acceptable outcome may be something less than an ideal outcome (although it would include an ideal outcome).[1] In

[1] [2004] VSC 375, at [13].

particular, LXRA would submit that an outcome may be acceptable even though a residual risk of environmental impact exists.

4. At the outset LXRA echoes the submissions on behalf of the Kingston City Council that the EPRs play a vital role in determining the acceptability of the Projects.

5. Further, it is submitted that the facts and evidence are sufficiently similar for Bonbeach and Edithvale that the Projects can properly be assessed simultaneously. The substantial distinctions concern the proximity of those stations to different ecological areas and the contrasting groundwater flow regimes. Nonetheless the evidence supports the approval and assessment of both projects and a largely identical set of EPRs.

ASSESSING IMPACTS

6. In making its submissions as to findings and recommendations LXRA commends the approach taken by decision makers in past assessments. Two points are made here:

   (a) First, although the IAC is not bound by the formal rules of evidence, it is required to act in accordance with the evidence. The Committee's findings should be based on probative evidence. The submissions that rely on speculation, intuition or belief may be heartfelt but are not weighty in the context of technical expertise and peer review;

   (b) Secondly, an assessment of the significance of an impact implies an assessment of the likelihood of the impact. A line can, and should be drawn, between risks which can be regarded as plausible having regard to the evidence and risks which are essentially speculative in that they are based on assumptions that either unsupported by the available evidence or actively inconsistent with it.

7. It is submitted that, while testing the 'worst case' is informative, it is not a representation of the ultimate assessment. The worst case will only equate with the assessed significant impact if the whole of the evidence is to the effect that there is a reasonable prospect of that eventuality.

8. This is consistent with the proper application of the precautionary principle. As explained by the NSW Land and Environment Court in the leading case of *Telstra Corporation Ltd v Hornsby Shire Council*, the assessment of risk for the purposes of the precautionary principle must still be based in evidence.[2] In that case, the Court rejected concerns expressed by the community regarding the impact of electromagnetic radiation from mobile phone facilities because, while the community's views were honestly held, they had no basis in evidence.

9. As such, it is respectfully submitted that the IAC's assessment should be focussed on the *likely* effects of the Project, rather than more theoretical possibilities. This approach is consistent with the approach taken in the Scoping Requirements for the EES which required an '[a]ssessment of likely effects' in relation to each of the key issues identified in the Minister's decision to require an EES.

THE CONCEPT DESIGN

10. As stated in the Part B submission, the design before the IAC is a 'concept design'. It is contemplated that the concept design will be further refined as part of the detailed design phase. This approach is consistent with all recent significant infrastructure projects in Victoria, including the proposed Eastern Section of East West Link, the Melbourne Metro Rail Project, and the West Gate Tunnel Project. It is notable in this case that the Projects are to be developed in existing road and rail corridors and that no private land is required to form the project boundary.

11. For the purposes of preparing the EES and assessing the potential impacts of the Projects – particularly on groundwater – it was appropriate to make assumptions about the design of those Projects. As the evidence has demonstrated many of the key assumptions were conservative.

12. In particular, as set out in Technical Report A, groundwater modelling was undertaken on the basis of a conservative construction scenario. [3]

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[2] (2006) 67 NSWLR 256, [193] – [205].

[3] Technical Report A, p. 38.

Consequently, it is likely that the final design will result in reduced groundwater impacts. For example, Technical Report A identifies the potential for inclusion of soldier piles along that part of the trench which is above the water table.[4] This would reduce the impermeability of the trench and, hence, reduce its impact on groundwater flow.

13. Ultimately, the final design adopted for each project must meet:

    (a) The technical requirements for road and rail design (e.g. a maximum 2% gradient for railways); and

    (b) The requirements of the Environmental Performance Requirements ('EPRs').

14. One of the consequences of the requirement to meet the EPRs is that the unmitigated conservative trench at Edithvale modelled in the initial groundwater modelling could not be constructed, even if the contractor wished to do so. This is because it is acknowledged that the unmitigated conservative trench design will potentially result in an increase in waterlogging at ground level, contrary to the requirements of EPR GW2. This is significant because it means that whatever design is ultimately adopted will have to have a lower impact on groundwater flow than that presented in the initial modelling.

RECOMMENDED FINDINGS AND CONCLUSIONS

15. These submissions are intended to assist the IAC in meeting its obligations under clause 21(a) and (b) of the Terms of Reference to make findings on the significance of impacts associated with the Projects and to make conclusions on the feasiblity of achieving acceptable outcomes.

Summary of Recommended Findings in Relation to Potentially Significant Impacts

Evaluation Objective	Recommended Findings and Conclusions
Groundwater To minimise effects on the regional groundwater regime and quality, particularly as they might impact on the	Construction of the Projects will not have any significant impacts on groundwater. In the absence of mitigation, the Edithvale Project, once constructed, has

[4] Technical Appendix A, p. 7.

hydrology of the Edithvale-Seaford Wetlands and elsewhere on other beneficial users.	the potential to significantly impact on groundwater flows. This has the potential to exacerbate existing waterlogging at ground level in the area around the Edithvale Project. There is also the potential for other consequential impacts although these are not significant. The application of the groundwater EPRs will appropriately minimise any impact from the Edithvale Project on groundwater flows and reduce any consequential effects associated with changes to the groundwater regime. Feasible mechanisms for the minimisation of impacts on groundwater flow have been identified and will be implemented in accordance with the EPRs. The Bonbeach Project will not have any significant impacts on groundwater flows, based on the inferred direction of groundwater flow and the location of the pile walls.
Biodiversity To avoid, minimise and/or offset adverse effects on native vegetation, listed threatened species and ecological communities, listed migratory species, the Ramsar listed Edithvale-Seaford Wetlands, other protected flora and fauna and groundwater dependent ecosystems.	Development of the Edithvale Project will have no direct impact on the Edithvale Wetland or species utilising the Wetlands for habitat. Any risk of adverse impact to the Wetlands resulting from changes to the groundwater regime caused by the Edithvale Project is minimal and can be avoided through the implementation of EPRs GW1 – 5. Any risk of adverse impact to the foreshore vegetation at Edithvale resulting from changes to the groundwater regime caused by the Edithvale Project can be minimised through the implementation of EPRs GW1 – 5. Development of the Bonbeach Project will have no direct or indirect impact on the Wannarkladin Wetlands or species utilising those wetlands for habitat. There is a risk of adverse impacts to foreshore vegetation arising from the Bonbeach Project but that risk is minor, having regard to extent of natural variation in groundwater levels already experienced by vegetation on the Bonbeach foreshore. Notwithstanding this, the EPRs appropriately provide for monitoring and mitigation to address the residual risk of impacts to Edithvale Wetlands and foreshore vegetation at both Edithvale and Bonbeach.
Acid sulfate soils and contamination To prevent adverse environmental or health effects from disturbing, storing or influencing the transport /	It is likely that, during the excavation of the trenches, contaminated land, contaminated groundwater and acid sulfate soils will be encountered. The risk associated with this are well understood and adverse impacts

movement of contaminated or acid-forming material.	can be avoided through the application of EPRs CL1 – 5 and the established regulatory framework for the management of contaminated material. Changes to the groundwater regime associated with the Projects has the potential to result in the mobilisation of contamination and activation of acid sulfate soils. This risk can be minimised through the application EPRs GW1 – 5 and CL1 – 5. Any changes to groundwater quality associated with contamination are likely to be temporary, localised and reversible.

Findings on significance of impacts

16. It is respectfully submitted that the IAC should find that the neither the Edithvale nor the Bonbeach Projects will result in any significant environmental impacts provided that the proposed environmental management framework, including the proposed EPRs, is adopted. This is developed in detail below.

17. Further, it is submitted that the IAC should conclude that both the Edithvale and the Bonbeach Projects will, if constructed and operated in accordance with the EPRs, result in acceptable environmental outcomes.

RECOMMENDED FINDINGS AND CONCLUSIONS IN RESPECT OF GROUNDWATER

The EES modelling provides a sound basis for decision-making

18. It is not in dispute that assessment of the groundwater impacts associated with the Projects is a crucial element of the assessment of the environmental effects of the Projects. This is because, quite apart from the direct impacts associated with the groundwater regime (e.g. changes to waterlogging and groundwater availability), the primary mechanism for biodiversity and contamination impacts to occur is through changes in the groundwater regime.

19. Evidence on the groundwater modelling process and impact assessment was given by Mr Cauchi, assisted by Mr Gresswell, for LXRA, and Dr Woinarski, on behalf of Kingston City Council. In addition, the modelling was the subject of an independent peer review by Dr Tony Smith, Principal Modeller with the firm of CDM Smith, as part of EES, which is included as Appendix I

to Technical Report A. Dr Smith also provided a witness statement but was not called to give evidence.

20. The IAC should find that the modelling undertaken for the EES provides an appropriate and high quality basis for decision-making:

    (a) The modelling was conducted in accordance with the *Australian Groundwater Modelling Guidelines* prepared by the National Water Commission and warrants a confidence level of 2 to 3 (out of a possible 3) based on the data used, the degree of calibration, and other matters.[5]

    (b) This view is supported by the evidence of Drs Smith and Woinarski:

        (i) Both Dr Smith and Dr Woinarski evaluated the modelling against the *Australian Groundwater Modelling Guidelines* and concluded that the modelling methodology was appropriate and its results were plausible.[6]

        (ii) Significantly, both Dr Smith and Dr Woinarski agreed with the Technical Report's conclusion that the appropriate confidence level classification for the model was 2 to 3,[7] meaning that the model is 'suitable for assessing higher risk developments in higher-value aquifers'.[8]

    (c) It is also appropriate for the IAC to find that the modelling undertaken for the Projects was conservative in that it was based on:

        (i) A conservative trench geometry for both projects, which assumed a larger, deeper trench with more extensive piling than is expected to be delivered through detailed design;[9] and

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5 Technical Report A, p. 89.

6 Technical Report A, Appendix I, p. 6; Statement of Dr Andrei Woinarski, pp. 15 and 16.

7 Technical Report A, Appendix I, p. 6. Dr Woinarski's statement does not expressly address confidence levels but he agreed with the classification adopted by the Technical Report when asked in cross-examination.

8 National Water Commission, *Australian Groundwater Modelling Guidelines* (2012), p. 18.

9 Technical Report A, p. 38.

(ii) Conditions in Year 5 of the modelled period, which represents 'a period when the water table was locally elevated by higher than average recharge, with a greater volume of groundwater throughflow towards the coast compared to drier years'.[10] This is conservative because it means impacts associated with the Projects are likely to be greater than in drier years.

(d) It should also be recognised, in the context of the Edithvale Project specifically, the majority of the modelling – including the uncertainty analysis depicted in Figure 52 in Technical Report A[11] – was undertaken on the basis of an unmitigated project in circumstances where the EPRs proposed mean that the final project will be required to adopt mitigation measures. This means that unmitigated modelling is intrinsically conservative relative to the likely impacts of a mitigated project.

The construction of the Projects will not have any significant impacts on groundwater.

21. The IAC should find that the construction of the Projects is unlikely to have any significant impacts on groundwater. Construction of the pile walls for each Project will occur ahead of excavation which will significantly restrict the scope for groundwater intrusion into the trenches.[12] As a result, any drawdown associated with construction of the Projects is likely to be minimal.

Findings in relation to groundwater flow impacts of the Edithvale Project

22. The IAC should find that:

(a) Subject to the adoption of appropriate mitigation, the Edithvale Project will not have any significant impacts on groundwater flow and will provide acceptable environmental outcomes;

(b) There are feasible methods for mitigating the groundwater flow impacts, including through the adoption of a passive horizontal drain;

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[10] Environment Effects Statement, Chapter 5, p. 5.24.

[11] Technical Report A, pp. 138 – 139.

[12] Environment Effects Statement, Chapter 5, p. 5.35.

(c) The EPRs provide an appropriate framework for ensuring that the required mitigation is implemented and for managing any residual risks.

23. Modelling undertaken for the initial Edithvale project design showed that, in the absence of mitigation, the constructed project had the potential to significantly impact on groundwater flows and to cause significant levels of drawdown (up to -1.4m) and mounding (up to +0.9m) within 50m of either side of the trench.[13]

24. These changes to the groundwater regime have the potential to result in consequential impacts to the environment, including increases in waterlogging, reductions in groundwater available to bore users and subsidence caused by drawdown.

25. In order to address these risks, LXRA considered a number of potential mitigation measures which would reduce interference with groundwater flow. Of the options considered, LXRA identified the preferred option as being a 'passive horizontal drain'.[14]

26. Modelling of the passive horizontal drain option shows significant reductions in the anticipated levels of drawdown (from -1.4m to -0.3m at 50m from the trench) and mounding (from +0.9m to +0.2m at 50m from the trench).[15]

27. The reduction in mounding and drawdown effected by the application of the mitigation will have the effect of reducing the consequential impacts associated with drawdown and mounding, generally to the point of insignificance.

28. The evidence of Mr Cauchi, Mr Chan, Mr Murphy, Dr Woinarski and Mr Piper was that, subject to detailed design, the passive horizontal drain was a feasible mechanism for reducing groundwater impacts associated with the Edithvale Project. Equally, all of these witnesses acknowledged that the passive horizontal drain was not the only feasible mechanism for achieving that outcome.

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[13] Technical Report A, p. 136.

[14] Statement of Tony Cauchi, p. 6.

[15] Technical Report A, p. 141.

29. LXRA recognises the need to avoid significant impacts on groundwater flow, but does not wish to mandate any particular approach to avoiding those impacts as this may exclude better, more refined, solutions.

30. As such, LXRA proposes a suite of EPRs to address groundwater impacts associated with the Projects and Edithvale Project in particular:

    (a) EPR GW2 requires the Projects to be designed and operated so the changes in the groundwater regime do not result in any of the following:

        (i) Groundwater mounding that increases waterlogging at ground level;

        (ii) Groundwater drawdown that causes damage to buildings, structures and other assets as a result of subsidence or an adverse impact to subsurface structures;

        (iii) Degradation to groundwater quality as a result of acidification, changes to salinity or groundwater plume migration that would preclude beneficial use of groundwater;

        (iv) Changes to groundwater that would have significant impacts on groundwater dependent ecosystems.

    (b) EPR GW2 is reinforced by:

        (i) EPR GW1 which requires the Projects to be designed to meet the requirements of EPR GW2 and, in particular, requires the Edithvale Project to include redundancies and / or contingencies to enable it to consistently meet the requirements of EPR GW2.

        (ii) EPR GW4 which requires that the design of the Edithvale Project be the subject of an independent peer review in order to confirm that it is capable of meeting the requirements of EPR GW2.

    (c) In addition to the above, EPR GW3 provides a mechanism to address residual risks to important environmental values (groundwater dependent ecosystems and water quality) by requiring groundwater

monitoring, including at Edithvale Wetland and within the foreshore reserve, for a period of at least 10 years. If changes are detected in the groundwater regime that were not predicted by the model, then the monitoring regime should detect this and an appropriate response can be formulated.

31. In response to issues raised in the submissions and the course of the hearing, LXRA has also proposed the addition of EPR GW5 which would require the maintenance of any mitigation solution adopted to manage groundwater impacts. The intention is that this obligation would be ongoing and would be undertaken by or on behalf of VicTrack once handover of the Edithvale Project occurred.

32. LXRA suggests that there is merit in recognising the established role of Melbourne Water as the land manager for the Edithvale wetlands and as the custodian of the Ramsar Site Management Plan. It is important that the EPRs do not unnecessarily impose themselves on existing or proposed monitoring and management regimes undertaken by Melbourne Water. It should be recognised that Melbourne Water is and will continue to be required to monitor and manage the wetlands under the Ramsar Site Management Plan.

Findings in relation to groundwater flow impacts of the Bonbeach Project

33. It is recommended that the IAC should find that:

    (a) Due to the inferred direction of groundwater flow, the Bonbeach Project is unlikely to result in significant changes to groundwater flow;

    (b) In the absence of any significant change to groundwater flow, no design solution is required; and

    (c) The EPRs provide an appropriate framework for the management of any risk associated with the Bonbeach Project.

34. The modelling undertaken for the Project shows that, despite its similar size to the Edithvale Project, changes to groundwater flow at the Bonbeach Project are expected to be in the order of those at the Edithvale Project with mitigation, with drawdown of up to -0.7m predicted within 50m of the down

gradient side of the trench and mounding of up to +0.4m within 50m of the up gradient side of the trench.[16] This is believed to be due to two factors:

(a) The direction of groundwater flow at Bonbeach is believed to be generally parallel to the inland pile wall (i.e. toward the Patterson River); and

(b) The inland pile wall is located relatively close to a natural groundwater divide, meaning that groundwater would not flow across the trenched area anyway.

35. Significantly, the levels of drawdown and mounding at Bonbeach are not expected to result in any significant consequential impacts to the environment. As such, it is not proposed to require a design solution to address impacts on groundwater flow at the Bonbeach Project.

36. Notwithstanding this low level of impact, the Bonbeach Project is subject to many of the same design obligations as the Edithvale Project and it is considered reasonably likely that the adoption of a realistic, as opposed to conservative, trench geometry would reduce the extent of drawdown and mounding further. For example, the groundwater modelling assumed that the Bonbeach Project would have a pile wall length of 1.4km, while the final pile wall is expected to be materially less than that. As the pile wall is the barrier to groundwater flow, any reduction in the length of the pile wall would correspondingly reduce the overall impact of the Project.

RECOMMENDED FINDINGS AND CONCLUSIONS IN RESPECT OF BIODIVERSITY

37. The Terms of Reference require consideration of the impacts of the Projects on biodiversity, including in particular the Edithvale-Seaford Wetlands, the Wannarkladdin Wetlands, and vegetation on the foreshore between Aspendale and Carrum.

38. The IAC heard evidence on ecology from Mr Cameron Miller (in relation to ecological impacts generally), Dr Lance Lloyd (in relation to impacts on the

[16] Technical Report A, p. 136.

Edithvale Wetlands) and Mr Jeff Yugovic (in relation to impacts on foreshore vegetation).

Findings in relation to impacts on Edithvale Wetlands

39. Although the Terms of Reference and Scoping Requirements refer to impacts on the Edithvale-Seaford Wetlands, there is no evidence to suggest that either Project or the two Projects cumulatively would impact on the Seaford Wetlands. As such, it is recommended that the IAC should find that the Projects will not have any impact on the Seaford Wetlands.

40. In respect of the Edithvale Wetlands, it is recommended that the IAC should make the following findings:

    (a) Construction of the Edithvale Project will not have any direct impacts on the Edithvale Wetlands, due to the distance between the Project and the Wetlands;

    (b) At Edithvale, eEven in the absence of mitigation, it is highly unlikely that the Edithvale Project would have any impact on the Edithvale Wetlands through changes to the groundwater flow;

    (c) Any risk to the Edithvale Wetlands that does exist will be avoided through the implementation of the proposed mitigation solution and EPRs GW1 -5.

41. In relation to construction impacts, it is acknowledged that the development of the Edithvale Project will have a number of direct impacts which could, in theory, impact on flora and fauna (e.g. noise, lighting, etc). Given the distance between the Edithvale Project and the Edithvale Wetlands, however, there is no real prospect of those direct impacts affecting the Edithvale Wetlands or the species that utilise those Edithvale Wetlands as habitat. Dr Lloyd, on behalf of the Council, did not suggest otherwise.

42. In relation to impacts through changes to the groundwater regime, the modelling shows that the Edithvale project is highly unlikely to have any impact on the Edithvale Wetlands even in the absence of mitigation:

    (a) Initial EES modelling for the Edithvale Project without mitigation showed that, even in a wet year, in most plausible cases (50%), the

0.1m mounding contour would occur approximately 500m from the Wetlands.[17]

(b) In extreme scenarios (1%) in years in which the water table was already elevated, the 0.1m contour would occur approximately 200m from the Wetlands.[18]

(c) The impact of such a scenario on the hydrology of the wetlands was modelled as part of the EES and shown not to result in any material change to the hydrology of the wetlands.[19] In this regard, any impact falls well below the thresholds identified in the Commonwealth Department of the Environment and Energy's *Matters of National Environmental Significance - Significant Impact Guidelines* which identifies potential significant impacts as including:

(i) A substantial and measurable change in the hydrology regime of the wetland … or

(ii) A substantial and measurable change in the water quality of the wetland.[20]

(d) Moreover, as explained previously, the initial groundwater modelling was undertaken on the basis of a conservative trench geometry which would necessarily result in greater impacts than a more realistic trench geometry.

(e) The overall effect of this is that, even using a highly conservative model without mitigation, the prospect of any impact on the Edithvale Wetlands through changes to the groundwater regime is minimal (i.e. > 1%).

43. Such risks as do remain can, in any event, be entirely avoided by the adopting of mitigation measures:

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17 Technical Report A, p. 157.

18 Technical Report A, p. 149.

19 Technical Report A, p. 87.

20 Commonwealth Department of the Environment, *Matters of National Environmental Significance – Significant Impact Guidelines* (2013), p. 13.

(a) LXRA acknowledges mitigation measures will be necessary to ensure that EPR GW2 is satisfied, particularly in relation to waterlogging impacts.

(b) A further consequence of adopting those mitigation measures will be to reduce the extent of groundwater mounding to the east of the Edithvale Project with the 0.1m contour modelled as being approximately 1km away from the Edithvale Wetlands.[21]

(c) In cross-examination, Dr Woinarski agreed that, if the 0.1m contour was located 1km from the Edithvale Wetlands, then there would be no reasonable prospect of the Edithvale Project impacting on the Edithvale Wetlands through changes to the groundwater regime.

44. Consistent with this, Mr Miller and Dr Lloyd both gave evidence that, assuming the modelling was correct, there would be no impact on the Wetlands, although both acknowledged that they could not comment on the validity of the modelling.

45. In light of the evidence suggesting that there would be no impact, the EPRs take an appropriately proportionate precautionary response by requiring monitoring to be undertaken at the Edithvale Wetlands (among other places) for a period of at least 10 years. This will enable any changes to groundwater flow to be detected and an appropriate response formulated if necessary.

46. In addition, it should be noted that LXRA will be continuing to monitor its existing bore network – which includes bores in the Edithvale Wetlands – throughout the detailed design phase and will incorporate that information into updated groundwater modelling, if necessary, for detailed design purposes. This approach is consistent with comments made by Dr Woinarski in his evidence and will ensure that the modelling continues to reflect the best available information.

47. LXRA does not support the proposed additional ecological monitoring proposed by Dr Lloyd which it regards as disproportionate to the demonstrated level of risk and, in particular, the monitoring of bird populations (noting that

[21] Technical Report A, p. 157.

such populations are monitored under the Site Management Plan for the Edithvale-Seaford Wetlands).

Findings in relation to Wannarkladdin Wetlands

48. Modelling indicates that groundwater mounding from the Bonbeach Project will come no closer than 1.5km to the Wannarkladdin Wetlands.[22] In these circumstances, there is no real prospect of changes to the groundwater regime impacting on those wetlands.

Findings in relation to Aspendale – Carrum Foreshore

49. The foreshore extends along the length of both Project areas and thus has the potential to be affected by both Projects.

50. Modelling for both Projects shows that there is the potential for groundwater drawdown associated with the Projects to impact on the Foreshore.

51. Following mitigation, it is expected that the level of drawdown at Edithvale will be sufficiently reduced that the risk will be negligible. At Bonbeach, where no mitigation is proposed, the risk is considered minor due to the fact that foreshore vegetation currently experiences highly variable levels of groundwater (and, by extension, groundwater availability).

52. Following discussions with the Council, it is proposed to amend EPR FF7 so that LXRA will provide funding to Council for the enhancement of foreshore vegetation. The amount of funding provided will be conservatively equivalent to the cost offsetting the loss of the foreshore vegetation.

RECOMMENDED FINDINGS IN RESPECT OF CONTAMINATED LAND

53. The final area on which the Terms of Reference required specific assessment was in relation to contaminated land, contaminated groundwater and acid sulfate soils.

54. In relation to contaminated land, the IAC heard evidence from Mr Stuckey, who peer reviewed the contaminated land and acid sulfate soil assessment in Technical Report C, and Mr Piper, on behalf of the Council.

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[22] Technical Report A, p. 176.

55. It is recommended that the IAC make the following findings in relation to contaminated land:

    (a) A sufficient level of investigation has been undertaken to characterise the local environment for both Projects prior to the detailed design stage;

    (b) It is likely that contaminated land, contaminated groundwater and acid sulfate soils will be encountered during excavation of the Projects. The EPRs provide a suitable framework for the management of contamination issues during construction.

    (c) There is the potential for activation of small areas of acid sulfate soils at both Projects, but any impact is likely to be transient and localised.

    (d) There is also the potential for contaminant migration to occur at the Edithvale Project.

    (e) The proposed monitoring and mitigation approach contained in the EPRs is an appropriate response to the residual contamination risk.

56. LXRA has undertaken significant investigations in order to form its view of the likely extent of acid sulfate soils and contamination in the Project areas. The evidence of Mr Stuckey is that the level of investigation is appropriate having regard to the stage the Project is currently at.[23] This was not challenged by Mr Piper, although he noted the need for further work as part of detailed design. As such, the IAC should feel comfortable making findings in relation to contaminated land and acid sulfate soils.

57. LXRA accepts that it is likely that, due to ground conditions and historical and current land use, contamination and acid sulfate soils will be encountered during construction. EPRs CL1 – 4 will regulate the management of these issues during construction. To a large extent, these EPRs call up, and give effect to, the existing Victorian legislative and policy framework regarding the management of contaminated waste and acid sulfate soils. This approach was supported by Mr Stuckey, Mr Piper and the EPA.

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[23] Statement of Mark Stuckey, Section 3.

58. In relation to the operational phase, there is potential for changes to the groundwater regime to result in the activation of acid sulfate soils at both Projects:

    (a) Subject to the adoption of the mitigation measures required by EPR GW1 and GW2, the risk of activation at Edithvale is negligible as the level of change in the groundwater regime is expected to be within the existing range of natural variation;[24]

    (b) At Bonbeach, it is considered almost certain that activation of small areas of potential acid sulfate soil would occur. Given the small area involved, however, the risk is low and any impacts would localised and capable of being managed through the EPRs.[25]

59. In relation to mobilisation of existing contamination due to changes in the groundwater regime,

    (a) This is considered unlikely to occur at Bonbeach, due to the relatively small number of contamination sources identified within the area affected by drawdown or mounding;[26]

    (b) This is considered highly probable at Edithvale, as existing contamination has been identified in the area affected by drawdown and mounding, even after mitigation has been adopted.[27]

60. Although a number of the risks identified above are likely to eventuate, they are also manageable. EPRs GW3 and CL5 establish a monitoring and mitigation framework for groundwater quality, which is intended to facilitate the early detection of any movement of contamination or acidification of groundwater and to enable those changes to be appropriately addressed. As with the approach to construction risk, this approach was supported by Mr Stuckey, Mr Piper and the EPA. As a consequence, LXRA considers that, while there may be changes in groundwater quality as a result of the Projects, these will be localised, temporary and reversible.

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[24] Technical Report C, p. 141.

[25] Technical Report C, p. 145.

[26] Technical Report C, p. 155.

[27] Technical Report C, p .151.

RECOMMENDED FINDINGS AND CONCLUSIONS IN RELATION TO MATTERS OF NATIONAL ENVIRONMENT SIGNIFICANCE

61. The Projects were referred to the Department of the Environment and Energy to determine whether it was a 'controlled action' within the meaning of the EPBC Act. If an action is a 'controlled action', then the carrying out of the action is prohibited unless an approval is obtained.

62. On 8 May 2017, the Department determined that the action was a controlled action under the following provisions of the EPBC Act:

    (a) Sections 16 and 17B, relating to Ramsar wetlands;

    (b) Sections 18 and 18A, relating to listed threatened species and communities; and

    (c) Sections 20 and 20A, relating to listed migratory species.

63. The primary matter of national environmental significance relevant to the IAC's assessment is the Edithvale-Seaford Wetlands which is a Ramsar wetland, and thus a matter of national environment significance in its own right, and which provides high quality habitat for listed threatened and migratory species protected under the EPBC Act.

64. For the reasons set out above, the IAC should find that the proposed Projects will have no impact on the Edithvale-Seaford Wetlands, provided that the Edithvale Project is suitable mitigated.

65. Wannarkladdin Wetlands is not a Ramsar wetland, but has the potential to provide high quality habitat for listed threatened and migratory species.

66. For the reasons set out above, the IAC should find that the proposed Projects will have no impact on the Wannarkladdin Wetlands and, by extension, on the species which may utilise those wetlands.

67. Apart from the two wetlands, the evidence before the IAC does not identify any mechanism by which the Projects have the potential to significantly impact on any matters of national environmental significance under the EPBC Act.

68. Accordingly, it is recommended that the IAC should find that the Projects will not have a significant impact on any matters of national environmental significance, provided the Edithvale Project is suitably mitigated.

RECOMMENDED FINDINGS AND CONCLUSIONS IN RELATION TO OTHER MATTERS

69. In addition to the areas specifically identified for assessment in the Minister's reasons for requiring an EES, LXRA has undertaken impact assessments in a number of areas:

    (a) Surface Water;

    (b) Land Use and Planning;

    (c) Traffic;

    (d) Noise and Vibration;

    (e) Air Quality;

    (f) Landscape and Visual;

    (g) Business;

    (h) Social;

    (i) Aboriginal Cultural Heritage; and

    (j) Historic Heritage.

70. In general, these studies have indicated that there are unlikely to be any long term adverse impacts associated with the Projects and that short term construction impacts can be adequately managed through the application of existing and well understood regulatory frameworks. This is particularly the case in relation to construction impacts associated with air quality, noise and vibration, and traffic.

RESPONSE TO SUBMISSIONS

71. LXRA has responded in detail to submissions received before the hearing in its Table of Responses included as Annexure A to its Part A submission.

72. Beyond the Table of Responses, LXRA has also responded to submissions by proposing amendments to the EPRs.

73. Based on submissions at the hearing, LXRA further responds as follows:

    (a) The history of rail in the area could form part of the consideration under the proposed Urban Design Guidelines. It is a worthy suggestion. However, it is not the only possible suggestion and the best approach is to leave the design phase as open as possible to good ideas like this one.

    (b) Concern has been expressed by some submitters over the perceived possibility that contaminated water in the trenches might be released to sewer. All contaminated water in the trenches will be managed in accordance with EPR CL4 during construction. Following construction, the trench will be 'tanked' below the water table to prevent further inflow of groundwater. In addition EPRs SW3 and SW4 have been modified to specifically consider water quality. Water quality is also addressed by EPR SW2.

74. For the ultimate design of the roads, bicycle lanes, car parking and landscape zones, perhaps the most apt comment was made by Mr Begg who described the balance to be struck as an "arm wrestle". The EPRs leave the wrestle to the appropriate stakeholders and impose the Minister as the referee. This can be expected to give energy to this process. Nonetheless it is appropriate to reflect that, in the ordinary course, such road or rail works would not be expected to be the subject of public hearing process.

75. The surface water evidence was largely unchallenged. Moreover, the local drainage authority will be intimately involved in the resolution of the drainage solution. Stormwater quality, including its potential to impact the Edithvale Wetlands, is dealt with appropriately in SW1 and SW2 which requires that any discharge comply with the State Environment Protection Policy (Waters of Victoria) and the adoption of CSIRO publication *Urban Stormwater Best Practice Environmental Management Guidelines 1999*.

Pedestrian crossings

76. The IAC has asked LXRA to address LXRA 's position in respect of existing pedestrian level crossings.

77. The Railway Crossings Policy[28] of the Office of the National Rail Safety Regulator recognises that rail transport operators, road managers and governments have obligations to comply with safety duties to eliminate or minimise the safety risks of railway crossings (including a pedestrian or bicycle path which crosses a railway at substantially the same level) [29] so far as is reasonably practicable. Given the safety risk and severity of railway crossing accidents, the Railway Crossings Policy states that the only truly safe alternative is not to build a railway crossing at all.[30] If a crossing is required, grade separation is recognised as the most effective option for minimising risks to safety.[31]

78. Clause 18.02-4 of the State Planning Policy Framework includes a strategy to provide for grade separation at railway crossings except with the approval of the Minister for Transport.[32] This is consistent with broad planning policy objectives that seek to encourage walking and cycling by creating environments that are safe.

79. Ultimately, any new or replacement railway crossing will require a risk assessment and LXRA will need to demonstrate that risks to safety are managed so far as is reasonably practicable in accordance with the Rail Safety National Law.

80. It follows that relevant policy guidance is directed at the grade separation of railway crossings (including pedestrian and cycling crossings). Despite this general policy position, the precise nature of pedestrian infrastructure to be delivered as part of the projects is a matter for the detailed design phase. This

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[28] Version 1.1, dated 29 July 2016, available from https://www.onrsr.com.au/__data/assets/pdf_file/0016/17620/Policy-Railway-Crossings.pdf

[29] The Rail Safety National Law has been enacted as a Schedule to the *Rail Safety National Law (South Australia) Act 2012*.

[30] Refer section 9.1 at page 8.

[31] Refer section 9.2 at page 9.

[32] Refer, in particular, clause 18.02-4.

is entirely appropriate and is supported by the evidence of both Stephen Hunt and Kevin Begg.

Shared use paths

81. The inclusion of the shared user path as part of the projects has resulted from extensive consultative processes, both with the community and with key stakeholders.

82. From March 2016 to June 2018, there have been relatively regular (approximately quarterly) stakeholder meetings and workshops in respect of the potential provision of bicycle and pedestrian paths as part of the projects. These sessions have included consultation with Kingston City Council, Bicycle Network, VicRoads, PTV and Transport for Victoria.

83. VicRoads currently designates[33] the Principal Bicycle Network and a Strategic Cycling Corridor for both Bonbeach ('on road' on the Nepean Highway) and for Edithvale ('on road' on Station Street). This is understood to be based on the existing 'on road' infrastructure and the absence of off road paths.

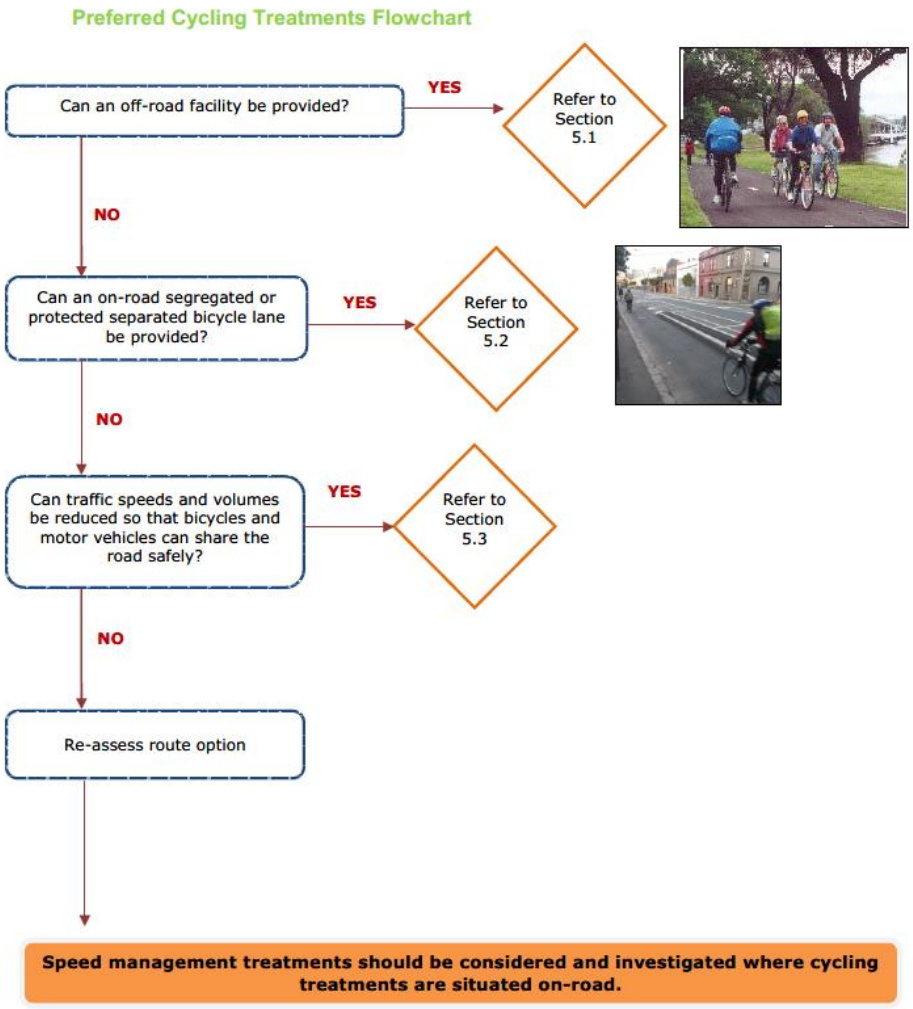
84. A Strategic Cycling Corridor is a derivative of the Principal Bicycle Network, which is a Planning Tool to guide State investment in developing a network of bicycle routes that provide access to key destinations within Victoria.

85. VicRoads' design guidance for Strategic Cycling Corridors is understood to be contained in VicRoads' Traffic Engineering Manual, Volume 3 (**Manual**).[34]

86. Section 4 of the Manual is in respect of the process for development of Strategic Cycling Corridors and provides that Figure 3 of the Manual should be used to help select the appropriate solution. Figure 3 of the Manual is set out below and prioritises the provision of an off-road facility (including a shared use path) if possible.

[33] Refer VicRoads Open Data Portal, Map Service.

[34] VicRoads' Traffic Engineering Manual, Volume 3 – Additional Network Standards & Guidelines, Design Guidance for strategically important cycling corridors, Edition 1, December 2016.



87. Section 5.1 of the Manual is in respect of off-road paths and provides guidance as to the types of off-road paths that can be provided (shared use path, segregated path or exclusive path).

88. When considering the type of bicycle facility, two guiding principles are to separate cyclists from motor vehicles and provide a high level of priority for cyclists across driveways and through intersections. Other issues, constraints and practices may also have a bearing on the decision-making process.

On-street car parking and landscaping opportunities

89. As part of the projects on-street car parking and landscaping opportunities are indicatively shown on the western side of Station Street.

90. Removal of the proposed on-street car parking and landscaping opportunities along the western side of Station Street would result in loss of 61 car parking

spaces and 16 landscaping bays at Edithvale, and loss of 45 car parking spaces and 11 landscaping bays at Bonbeach.

Proposed amendments to the Incorporated Document

91. Council raised issues regarding the drafting of the Incorporated Document, in particular in relation to:

    (a) The expiry date of Incorporated Document; and

    (b) The enforceability of the various plans required by the EPRs.

92. LXRA does not oppose the Council's request that the expiry of the planning controls in the Incorporated Document be extended. An expiry date that aligns with the proposed monitoring program(s) would be appropriate.

93. In relation to the plans, LXRA understands the Council's concern to be that the plans may be unenforceable in the absence of changes to the Incorporated Document. LXRA does not agree that this is correct. Clause 4.1.2 of the Incorporated Document requires development of the Projects to be carried out in accordance with the Environmental Management Framework, which includes the EPRs and the plans prepared under the EPRs. As such, it would be open to the Council to enforce the EPRs and the plans through the existing Incorporated Document.

Any impact on the wetlands is a significant impact

94. One recurrent theme of submissions to the IAC is that any impact on the hydrology of the Edithvale Wetlands constitutes a significant impact and, consequently, requires mitigation.

95. LXRA suggests that this approach is inconsistent with the Commonwealth's *Significant Impact Guidelines*. Those guidelines provide examples of what will constitute a significant impact in respect of the various classes of matter of national significance identified in the EPBC Act.

96. Relevantly, the *Significant Impact Guidelines* do not state that any impact on a Ramsar wetland will be a significant impact. Rather, they identify the following as significant impacts:

    - *Areas of wetland being destroyed or substantially modified;*

- *A substantial and measurable change in the hydrological regime of the wetland, for example, a substantial change to the volume, timing, duration, and frequency of ground and surface water flows to and within the wetland;*
- *The habitat or lifecycle of native species, including invertebrate fauna and fish species, dependent on the wetland being seriously affected ;*
- *A substantial and measurable change in the water quality of the wetland – for example, a substantial change in the level of salinity, pollutant, or nutrients in the wetland, or water temperature which may adversely impact on biodiversity, ecological integrity, social amenity or human health; or*
- *An invasive species that is harmful to the ecological character of the wetland being established (or an existing invasive species being spread) in the wetlands.*

97. While this list is non-exhaustive, it clearly demonstrates that something beyond a discernible impact is required. In particular, the use of the composite phrase 'substantial and measurable' indicates that measurability alone is insufficient to constitute a significant impact.

Chris Townshend QC

Rupert Watters

Instructed by Clayton Utz