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QUALIFICATIONS	Doctor of Philosophy (Urban Design)(University of Melbourne) Master of Planning and Design (Urban Design)(University of Melbourne) Registered Architect (UK) Bachelor of Architecture (First Class Honours)(University of Bath, UK) Bachelor of Science (General Architectural Studies)(University of Bath, UK)	Doctor Philosophy (Transport Planning)(Swinburne University) Bachelor of Science (University of Melbourne)
AREA OF EXPERTISE TO MAKE THIS STATEMENT	Lecturer in sustainability and urban planning with over 30 years experience in practice and academia in the UK and Australia, and a research focus on relationships between transport and urban design. Published peer-reviewed research into the historical legacy of level crossing removals in Melbourne, viz “The Benefits of Level Crossing Removals: Learning from Melbourne’s historical experience” (Woodcock & Stone 2016), along with several other peer-reviewed papers on level crossing removals, urban design and intermodal transfer at stations in Melbourne.	Dr John Stone is a Senior Lecturer in Transport Planning in the Urban Planning Program in the Faculty of Architecture, Building and Planning. His research seeks to improve public transport performance in Australian cities through a greater understanding of the professional practice and the political and institutional context for public transport planning in similar cities in Canada and in German-speaking Europe. This work has included design research on level-crossing removals in Melbourne, published with Dr Woodcock.

1. a statement identifying any other significant contributors to the report and where necessary outlining their expertise
 - a. N/A
2. all instructions that define the scope of the report (original and supplementary and whether in writing or oral)
 - a. We have been asked to provide a statement in regard to urban design and transport by the Kingsgton Residents Association
3. the identity of the person who carried out any tests or experiments upon which the expert has relied on and the qualifications of that person.
 - a. N/A (or see EES)
4. the facts, matters and all assumptions upon which the report proceeds
 - a. These are as stated
5. reference to those documents and other materials the expert has been instructed to consider or take into account in preparing his or her report, and the literature or other material used in making the report
 - a. N/A
6. a summary of the opinion or opinions of the expert

SUMMARY: There EES report has not provided sufficient justification for a trenched rail approach to level crossing removal at either location, and the claims that environmental impacts can be managed have not been demonstrated because there is insufficient detail in the design.

7. a statement identifying any provisional opinions that are not fully researched for any reason (identifying the reason why such opinions have not been or cannot be fully researched)
 - a. The evidence in the EES is based on modelling and assertion about detailed designs yet to be provided for assessment.
8. a statement setting out:
 - any questions falling outside the expert's expertise
 - a) This report confines itself to matters within my expertise.
9. whether the report is incomplete or inaccurate in any respect.
 - a) This report is based on an incomplete design and specification provided by the EES.

THE IMPACTS OF TRENCHED RAIL

10. According to the EES, after consideration of four options for level crossing removal at Edithvale and Bonbeach, two feasible options were presented to the community for consultative purposes: lowering the railway in a trench or elevating it with a rail bridge. During the community consultation, strong views on aesthetic grounds were expressed against the idea of a rail-bridge. It was decided to carry out the work by lowering the railway into trenches. Being close to the bay, the water table is relatively high, and part of an underground water system connected to nearby RAMSAR Wetlands. Lowering the railway into trenches will require the construction of an underground 'dam' 20 metres deep at each station.
11. The EES modeling finds that at Edithvale the trench-dam will result in changes to groundwater. To the east of the trench-dam, groundwater will rise, to the west, it will fall. These changes would result in waterlogging and flooding on the east, and a loss of useful groundwater to the west. These changes in groundwater could result in damage to residential and commercial property due to subsidence, contact with groundwater or weakening of structural elements.
12. Modelling predicted that impacts include moderately increased risk of: a) wetter soils; b) more frequent waterlogging at the ground surface as well as below, for longer periods at Edithvale; b) An almost doubling of the area currently affected by waterlogging (i.e. an increase from 30Ha to 55Ha), most noticeable in public parks, playing fields and residential backyards. The modeling did not indicate these impacts were likely at Bonbeach.

AMELIORATING GROUNDWATER CHANGE IMPACTS

13. In the EES many references are made to a proposed ‘engineering solution’ comprising a perforated pipe placed at a level where it will be permanently immersed in ground water. The aim of the pipe would be to allow groundwater levels either side of the trench-dam to even out.
14. The modeling in the EES suggests that the effect of the pipe would be to minimize the changes in groundwater level to about 20% of the level change predicted.
15. There are no detailed designs for the trench or the engineering solution contained in the EES.
16. The EES states that once detailed designs are made, they would be subject to independent peer review.
17. The EES also states that once the trench-dam and perforated pipe is constructed it would be monitored to test its performance.
18. It is our view, notwithstanding any limitation related to our area of expertise, that insufficient technical detail has been provided for an accurate assessment to be made of the impacts of the trench-dam in this location.
19. Further, we submit that without an independent peer review of a detailed design, it is not possible for the EES to form a sufficiently well-informed view about the true extent of the risks proposed by this approach to level crossing removal in this particular location.
20. There are significant risks of property damage as well as significant loss of amenity for a large number of residents and commercial properties in Edithvale. While it is possible the design of the new station and its immediate surrounds could be an improvement on what is there now, the detrimental effects of the groundwater changes on a much larger residential precinct surrounding the project could be considerable. We question whether local residents have been adequately consulted about these risks and whether they feel the trade-off is acceptable.

URBAN DESIGN, TRANSPORT AND VALUE FOR MONEY

21. We question the validity of the decision to proceed with a trench-dam solution to level crossing removal at Edithvale and Bonbeach. In other level crossing removal projects, there have been sound technical, design and economic reasons for selecting the mode of grade separation. In this instance, the choice of trenches will impose enormous additional costs on the public purse that require justification.
22. Because of the high ground water levels and other aspects of the ground conditions, the piling walls for the trenches will be much deeper than normal for a trench.
23. Because the width of the rail corridor is relatively restricted, the only way to replace the current levels of station car parking will be to construct decks over the station trench. This will impose an enormous additional cost on the project. The decking required across the two stations to accommodate roughly 70 cars between them will require approximately 3,600 sqm. At a conservative estimate of \$30,000 / sqm for such a deck, this would amount to about \$108 million alone – more than the entire cost of many level crossing removal projects, representing a cost of about \$1.5 million per car space.
24. Some might argue that such small amounts of parking are hardly worth providing at such a cost, yet the LXRA policy is ‘no net loss of station parking’, and it is well-known that in Melbourne, the demand for station parking in the suburbs can never be met. A rail bridge would provide a substantially larger parcel of land, effectively for free. The decking required for the upgrades to the railway power supply is also a large impost on the project budget resulting from the choice of a trench here.
25. One of the concerns raised in the community consultation was that there would be few benefits of provided by freeing up space in the rail corridor by building rail bridges, and the observation from some that ‘car parking isn’t open space’, yet clearly, car parking is a highly valued land use in these suburbs and plenty of it can be provided far more economically with a rail bridge than with a trench, if that is what the community were to prefer.
26. The design of the trench-dams and the new stations is highly conceptual and there is insufficient detail provided in the EES documents to judge whether the LXRA urban design criteria will be met.
27. As previously noted, the trench design was selected because many in the local community expressed concern about negative visual impact of rail bridges. However, we are unable to find within the EES documentation any evidence that design imagery was used to assist community members in understanding what the visual impacts might be of either approach to grade separation. A quick review of the material available on the LXRA website reveals that the imagery outlining the original options was very generic, birds eye views.

28. It is the task of urban designers and architects to respond to concerns of community members about visual amenity and to use design skills to minimize negative visual impacts. There are three main arguments against lowering the railway at Edithvale and Bonbeach: the risks of property damage and loss of amenity due to the changes to the groundwater levels; the sub-optimal outcomes in terms of creating new land at ground level and the enormous financial premiums associated with building below the watertable, attempting to mitigate negative impacts and replace lost parking.
29. These arguments against trenching the railway here work in favour of rail bridges at Edithvale and Bonbeach: No impacts on watertables (minimizing risk to property), reclamation of land in the rail reserve for use as parking, power supply upgrades, better bus interchanges and station facilities, along with the opportunity to spend more money on higher quality architecture and urban design to ensure that community concerns about visual amenity are met. There are many precedents internationally that demonstrate how the scale of elevated railways and stations can be well-handled to create the kind of design that enhances station precincts, making them safer and more accessible places. Also, with the recent advances here in Melbourne with the elevated station designs at Rosanna, the Mernda extension and the Caulfield-Dandenong line projects, people are able to see various different outcomes as a new way of doing things.
30. We believe that this EES is not in a position to determine whether the risks posed by the proposal to trench the railway at Edithvale and Bonbeach can be adequately mitigated, because insufficient information has been provided to demonstrate beyond any reasonable doubt that the negative impacts on the environment and property can be mitigated.
31. Given this situation, we believe that the recommendation should be for more detailed designs to be developed for both of the original options. These designs should be developed to demonstrate not only how negative environmental impacts of trenched railway might be mitigated, but also, how negative preconceptions about elevated rail might be ameliorated with good design – and authentic community engagement in design.