

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a Board of Inquiry appointed under s149J of the Resource Management Act 1991 to consider Notice of Requirements and applications for Resource Consent made by the New Zealand Transport Agency in relation to the East West Link roading proposal in Auckland.

**SUMMARY OF EVIDENCE OF CRAIG DOUGLAS BISHOP ON BEHALF OF
AUCKLAND COUNCIL
TERRESTRIAL ECOLOGY**

1. Update to Evidence

- (a) In paragraph 1.9e of my rebuttal evidence I opined that the 10 ha of land around the EWL that NZTA is proposing be managed for its biodiversity values would be “very long and narrow in shape.” Following closer examination of the proposed locations of these ‘reserve areas’ I have changed my opinion on this point.
- (b) While some of the proposed ‘reserve sites’ within wider Anns Creek are individually quite narrow; collectively they comprise a core of habitat that includes around 11.8 ha of terrestrial habitat that is suitable for restoration and weed control, of which c.2.2 ha is lava shrubland. Including mangroves, the wider Anns Creek area includes around 30 ha of terrestrial ecosystems, mangroves and saltmarsh.
- (c) In my opinion, intensive and ongoing weed and pest control across this 30 ha of core habitat, the surrounding railway and industrial land, and Anns Creek Stormwater Reserve (Bell Ave) will provide significant enhancements to indigenous biodiversity in this area. It is possible that these enhancements will be large enough to offset the loss of lava shrubland during construction and ongoing degradation of remaining lava shrubland from the shading effects of the bridge. However, in my opinion, both the biodiversity gains and losses from the Proposal are still uncertain, and therefore the final balance of environmental effects must also remain uncertain.
- (d) Throughout my rebuttal evidence I referred to both the biodiversity enhancement works proposed by the NZTA, and the additional restoration plantings that I thought were necessary, as ‘biodiversity offsets’. In relation to the accepted ‘mitigation hierarchy’ in New Zealand, some of the proposed enhancement works associated with the Project are better regarded as biodiversity or environmental compensation, rather than offsets.
- (e) To qualify as a biodiversity offset, the actions taken to secure the biodiversity gains must adhere to a set of principles that include limits to offsetting, equivalence and additionality. All three of these principles are in question with different parts of the current proposal.

2. Overview of Key Conclusions of Evidence

- (a) The proposed works and reclamation in Anns Creek East will result in significant actual and potential adverse effects on two rare ecosystems of very high ecological significance (lava shrubland and freshwater wetland), and a unique ecological sequence (the saline, brackish, freshwater, lava shrubland sequence in association with a volcanic aquifer).
- (b) There is also the potential for possible ongoing effects of the proposed viaduct at Anns Creek on these rare and unique ecosystems.
- (c) In my opinion the terrestrial biodiversity compensation proposed by the NZTA is still not sufficient to balance the negative biodiversity effects of the Project due to:
 - (i) The unique biodiversity values associated with Anns Creek East, including lava shrubland, freshwater wetlands and the ecological sequence;
 - (ii) Uncertainties concerning the impact of the viaduct on remaining shrubland, the total area that is able protected and managed, and what form this protection will take;
 - (iii) The fact that the biodiversity benefits of the proposed management will not be fully realized for several decades, whereas the negative impacts are immediate.
- (d) The effective environmental compensation ratio for the loss of fresh-water wetland ecosystems in Anns Creek is <0.25 (i.e. 0.08 ha of new planting for a 0.4 ha loss of habitat is proposed). This is very low compared with some other recent developments that have involved the removal of ecologically significant ecosystems in Auckland and New Zealand. International environmental compensation ratios can be even higher, as much as thirty times the cleared area for highly threatened,

endemic ecosystems with ecological values similar to the lava shrubland and freshwater wetland at Anns Creek.

3. Summary of Issues Resolved and Unresolved

Issues resolved –

- (a) The Proposal will result in significant adverse effects on a unique indigenous vegetation; particularly in and around Anns Creek East.
- (b) Moving the road alignment further south into Anns Creek East would result in further loss and degradation of rare and significant indigenous vegetation, above what is already proposed. This is not acceptable from an environmental or biodiversity perspective.
- (c) The ecological costs and benefits of the Proposal are finely balanced, and to achieve the benefits sought, the proposed mitigation and offset measures outlined in Table 7 in Sharon DeLuca's EIC need to be fully and successfully implemented.
- (d) Ongoing quantitative monitoring of affected ecosystems within the Project area, and compensation sites, is required to ensure that:
 - (i) Restoration objectives are met;
 - (ii) Any future degradation of remaining lava shrubland habitat from due to the effects of the bridge structure is understood and remedial/ mitigation works can be instigated.
- (e) Formal protection of the greatest extent of Anns Creek East as possible is a key component of the environmental compensation for the Proposal and will help to reduce the overall loss of indigenous biodiversity. Reducing the extent of the reserve area significantly increases the risk of mitigation failing, and significantly decreases the value of the proposed compensation.
- (f) In my opinion, reducing the effective level of statutory protection for Anns Creek East (e.g. through use of a covenant on a freehold title, rather

than formal designation of the area as a reserve) would also significantly decrease the value of the proposed compensation.

- (g) The challenge of restoring and managing the lava shrubland plant communities is significant and will require long-term commitment of time, ecological expertise and funding. In some cases a 'research-by-management' approach is likely to be necessary to achieve the desired outcome of sustainable, functioning indigenous ecosystem(s).
- (h) Recent (2010/11) analysis of more than 100 biodiversity mitigation/compensation projects throughout New Zealand showed that less than half of ecological mitigation requirements were undertaken. Factors demonstrated to achieve higher levels of compliance included the applicant having sufficient technical expertise available to undertake the project requirements, and the applicant being actively involved in determining the offset (compared with having it imposed).
- (i) Given the above, ecological management of biodiversity within the proposed 'reserve areas' is more likely to be successful if it is managed by an organisation with professional, in-house ecological expertise, a track record of successful biodiversity management, long-term commitment to the site, and a secure source of funding. That is, NZTA rather than TR Group (or a future landowner) operating at arm's length through environmental contractors and consultants.

Issues unresolved

- (j) Discussions with the NZTA's ecological experts has continued since our expert conferencing. Recently we have tried to identify sites for offsite restoration of freshwater wetland habitat in the wider Mangere Inlet. These include additional planting in the Anns Creek stormwater reserve (possible increase from 0.1 to 0.7 ha) and a wetland (c. 1.5 ha), and associated terrestrial scrub/ forest restoration (c. 2.0 ha) at Blake Park, Harania Creek, which flows into the southern part of Manger Inlet.
- (k) We have also discussed how pest control in Anns Creek could be scaled-up to include a larger area with more coherent and defensible

boundaries. This would include a total area of 55 ha that would be managed for plant and animal pests.

- (l) In my opinion, successful wetland restoration in these locations and a guarantee that robust, well-funded, long-term (30 years +), ecological management would occur across the wider Anns Creek area would be sufficient to compensate for the adverse effects of the proposal on terrestrial biodiversity.