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 KALAYARASI (KALA) SIVAGURU ON BEHALF OF AUCKLAND COUNCIL
MARINE ECOLOGY

1. Corrections to my Evidence

(a) Page 7, paragraph 7.11, line 5 should be invertebrate **data**

(b) Page 15, paragraph 7.35, last sentence "Such a proposal does not off-set any of the adverse effects on the existing benthic community **nor** the bird population".

2. Overview of Key Conclusions of Evidence

(a) The proposed reclamation will cause a number of adverse effects on the marine ecology of the inlet. The reclamation will occupy space, currently coastal marine area and utilised by benthic fauna and flora, fish and wading birds. An increase in sedimentation in the intertidal areas, as predicted by the hydrodynamic modelling by NIWA (5 mm/year), will smother the intertidal habitats.

(b) The increase in sedimentation and elevation of the seabed will encourage mangrove colonisation. The project area has the highest mangrove colonisation rates within the Auckland region. Mangrove encroachment will further reduce the feeding area for birds and may cause displacement of wading birds.

(c) In addition to the permanent intertidal habitat loss of ~25ha for the proposed reclamation, subtidal dredging compounds the adverse effects on marine ecology of the Inlet. Alternative reclamation fill should, in my view, be sought to minimise adverse effects on the Inlet and reduce the cumulative effects of this large scale project.

(d) The proposed mitigation and offset options involving research, are not likely to offset the loss of intertidal mudflats with soft sediment benthic invertebrate communities which support significant number of threatened coastal birds. Whilst there may be some benefits from the proposed research investigations on some species, it would be a long term project with no certainty about the positive outcome. The mitigation option for the establishment of saltmarsh habitat (~1ha) is

supported, as this option has been undertaken previously in Auckland and the proposal is achievable.

3. Summary of Matters Resolved and Unresolved

Matters Resolved

As recorded in the Joint Witness Statement – Ecology (23 May 2017) a large number of matters raised in my evidence were agreed, including the following:

(a) The permanent and temporary footprint will result in permanent and temporary marine habitat loss and mortality of marine benthic organisms over approximately 24ha and 10ha respectively.

(b) Minimising the project footprint in the Mangere Inlet would reduce the significant adverse effects.

(c) Where there are areas of increased sedimentation due to the project, there may be changes to the benthic community composition.

(d) Increased deposition around the headlands may accelerate mangrove colonisation in those areas over time. This would reduce the mudflat habitat, which is the foraging area for shorebirds, and change the benthic species composition.

(e) Avoiding dredging would be a better ecological outcome.
If dredging is part of the project, there should be a condition requiring a subtidal benthic survey, at least three months before commencement of dredging to identify the areas where there are low biodiversity values (with a particular focus on Asian date mussel beds) and lowest contaminant concentrations.

(f) The integrated ecosystem approach to effects, mitigation and offset is agreed by all experts.

Matters Unresolved

(a) As noted above I do not consider that research projects would mitigate or offset the marine ecological effects of the EWL project.

(b) I remain opposed to the subtidal dredging proposed to win material for the construction of mudcrete.,.

(c) The proposed area for subtidal dredging targets Asian date mussel beds, which is the area with lower biodiversity values. It is known from the literature that Asian date mussel beds are transitory and do not last for more than 2 years. The benthic ecological field survey for the project was undertaken in April 2016. While there is a condition proposed requiring another benthic survey to identify the spatial extent of these beds, there is a possibility that these beds might not be in the area proposed for dredging closer to the time for commencing the dredging.

(d) In recent years, a number of resource consents for mangrove removal within and around the Mangere Inlet have been granted by the Auckland Council. The proposed reclamation may cause further colonisation of mangroves, which may have implications for the future management of mangroves in the Inlet.