



## MEMO

TO Shannon Watson, Jo Frances

COPIED TO

FROM Megan Oliver

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### **Eastern Bays Shared Path notified consent – Content of evidence summary regarding the application to conduct works associated with the construction of a 4.4km shared path along Marine Drive in Hutt City’s Eastern Bays**

#### **1. Qualifications and experience**

I have a PhD in Marine Biology from the University of Tasmania. I was employed for 14 years at the National Institute of Water and Atmosphere (NIWA), based in Wellington, as a marine ecologist. My work included a wide range of nearshore and offshore boat-based work, predominantly focussed on ecological assessments and monitoring of rocky reef environments. In 2011, I joined Greater Wellington Regional Council in the role of Senior Environmental Scientist (Coast) overseeing the coastal monitoring programme for the Wellington region. I am now the Team Leader of the Marine and Freshwater team in the Environmental Science department. I am a member of the NZ Marine Sciences Society and the NZ Coastal Society.

#### **2. Scope of evidence**

I am submitting on the effects of the proposed developments on the intertidal and subtidal ecology, and seagrass meadows, of the nearshore coastal environment.

With respect to the intertidal and subtidal rocky reef ecology, I agree with the authors’ characterisation of the habitats, infauna, macroalgae and sediment contamination, and with the conclusion that the community composition is what would be expected for this section of coastline and is similar to that found elsewhere in Wellington Harbour.

I strongly support the recommended additional mitigation measures for “high” and “medium” encroachment zones. As acknowledged in the AEE, enhancing what would otherwise be smooth

concrete walls with textured concrete panels to provide habitat complexity will be essential for mitigating the impacts of this project. I also strongly support the addition of rock pools drilled or cast into the steps of the curved walls and into the hard revetment rock. And I would encourage the applicants to provide additional habitat above the present-day intertidal zone (“low encroachment zones”) for future ecological resilience to sea level rise. This is consistent with the objectives of the PNRP to safeguard aquatic ecosystem health, including biological and habitat outcomes.

With regard to sandy beach ecology, I strongly support **all** mitigation measures proposed and the requirement for follow up monitoring of beach infauna a year later. This will provide highly valuable information for ongoing renourishment at this site, and future projects at other sites.

My main concerns relate to inadequate mitigation of the impacts of the development on remnant seagrass meadows.

### **3. Existing environment**

The Eastbourne coastline is broadly typical of the range of rocky reef and beach habitats found throughout Wellington Harbour. The invertebrate and macroalgal community composition is what would be expected for this section of coastline and is similar to that found at nearby sheltered rocky shore and beach habitats.

Of particular note along this coastline are the remnant seagrass meadows. The three occurrences of seagrass in Lowry Bay represent the last of this habitat type in Wellington Harbour. And in fact, outside of Porirua Harbour, I am not aware of any other seagrass meadows left in the region. As such, these highly valuable, biogenic habitats are under threat of local extinction from smothering and erosion resulting from this project. Furthermore, seagrass flowers were documented in these meadows at the time of the ecological assessment, and this may represent the southern-most record for this species (need confirmation from Fleur), and a potential seed bank, increasing the value and importance of this habitat.

Seagrass has a threat status of “At Risk-Declining” and is listed as a habitat with significant indigenous biodiversity values in the coastal marine area in Schedule F5 of the Proposed Natural Resources Plan (PNRP) for the Wellington Region. As such, the PNRP directs these habitats to be protected and restored, for ecological connections to be maintained between fragmented habitats, to provide adequate buffers and to avoid cumulative adverse effects and incremental loss.

### **4. Effects related to my area of expertise**

Overall, my greatest concern with the seawall and beach nourishment work proposed for this project relates to the survival of the seagrass meadows in Lowry Bay. I am concerned that physical destruction from direct encroachment, and reduced clarity and smothering from the addition and redistribution of beach nourishment material, will adversely affect the meadows.

## **5. Recommended mitigation or offset**

The *Memorandum 2 – Responses to Further Information Request* received on 26 August 2019, outlines the management hierarchy to address residual effects on seagrass habitat. I am satisfied that the final detailed design of the cycleway and beach nourishment will be undertaken to ensure there is absolutely no encroachment on seagrass habitat.

I am also broadly satisfied that the Coastal Physical Processes report concludes that turbidity resulting from beach nourishment activities is highly unlikely to exceed ambient conditions.

I support the mitigation measures outlined in Dr Fleur Matheson's report to delineate and monitor the seagrass beds. However, I am less comfortable with offsetting as an option, and the idea that small scale transplantation might be feasible, should the project experience net seagrass loss. I have worked with Dr Matheson on seagrass transplantation trials in Porirua Harbour and they were unsuccessful. So the strong preference is for this project to avoid, at all costs, any impact on the seagrass meadows.

## **6. Responses to issues in submissions**

Two submissions express concern about the impact of heavy machinery on coastal formations and associated flora and fauna (#80), and the ongoing disturbance and discharge of contaminants during the period of work (#190). The preparation of a Construction Environmental Monitoring Plan (CEMP) would provide collective reassurance that such impact will be managed and avoided.

An additional submission point from DOC (#161) reiterates my concerns about impacts on the seagrass meadows. My response is simply as above; the mitigation and management hierarchy would appear to be sufficient to minimise effects. However, given the incredibly high value of these remnant meadows and the fact they are locally very rare, every possible effort should be made to have no impact on these habitats, as there is little, if any, strong evidence for successful offsetting of seagrass.

## **7. Conclusions**

The proposed package of mitigation options is adequate to address the impacts of the development and ongoing use of the Shared Path on intertidal and subtidal ecology. Offsetting for net loss of seagrass is not a viable option for which we have any evidence of success, and the project should therefore, work incredibly hard to minimise all effects on these highly valuable biogenic habitats.

### **Dr Megan Oliver**

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