BEFORE THE ENVIRONMENTAL PROTECTION AUTHORITY

IN THE MATTER of the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012

AND

IN THE MATTER of an Application for Marine Dumping Consent by Coastal Resources Limited

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SUMMARY STATEMENT OF GREG AKEHURST

ECONOMICS

Dated 4th December 2018

INTRODUCTION

1. My full name is Gregory Michael Akehurst. I have over 20 years consulting and project experience, working for commercial and public sector clients. During this time I have worked on over 400 projects. I have a Bachelor of Arts, majoring in Geography and a Bachelor of Commerce, majoring in Economics from the University of Auckland. I am a Director of Market Economics Limited, an independent research consultancy.

CODE OF CONDUCT

2. I confirm that I have read the Environment Court's Code of Conduct as set out in its Practice Note 2014 and agree to comply with it. I confirm that the issues addressed in my Statement are within my area of expertise.

SCOPE OF STATEMENT

3. I have been asked by CRL to provide the EPA DMC with additional information on demand for dredging and alternative costings for disposal options as a result of the Sapere Research review of the initial Property Economics Economic Assessment report.

SUMMARY

4. CRL has made an application to the EPA for resource consent to increase the disposal of dredged marine sediment at the NDA to 250,000m^3 from the current 50,000m^3 that currently exists. This is done to meet the future needs of Ports of Auckland, America's Cup bases and marinas in Auckland, Whangarei and Thames-Coromandel districts.
5. Based on my assessment of the likely demand for disposal of dredged material over the next ten-years arising from the above, approximately 2.8 million m3 of sediment is potentially able to be dumped at the NDA.
6. This is made up from maintenance dredging of existing marinas, to enable their continued operation, capital dredging to expand marinas to meet future projected demand for space (along with their maintenance dredging), maintenance dredging at the port of Auckland, capital works for the America's Cup bases, and a contingency allocation of around 7%.
7. My demand assessment has found that future demand for sediment disposal is likely to significantly exceed past disposal volumes. This is due to a combination of factors, including:
    a) Capital works dredging for new marina space (and consequently higher ongoing maintenance dredging volumes across these expanded areas).
    b) A change in dredging depths across a few marinas to enable their future effective operation. Note that in some case past dredging has been

insufficient.

c) Reclamation no longer being an option for reuse, and,

d) Additional capital works required to host the America's Cup.

8. I have also conducted an assessment of the different options for marine sediment disposal, including:
    a) Disposal of sediment at the NDA via a bottom dump barge, transported directly from the sediment sources.
    b) Drying of sediment at source, then transporting to landfill.
    c) Transporting the sediment to the port of Auckland, then mixing with cement, then transporting to landfill.
    d) Transporting the sediment to the port of Auckland, then mixing with cement, then re-using in other applications.
9. Costs for these options have been calculated across the different sediment source locations currently served by CRL.
    a) Cost to dispose at the NDA is estimated at $47 per m^3.
    b) The alternative options equate to between 5 and 6 times this cost;
        - drying and landfill option at $290 per m^3,
        - cement mixing and landfill option at $256 per m^3.
        - A partial costing of the cement mixing and re-use option at $92 per m^3.
10. In my opinion, the large cost differences between these options mean that sediment disposal via one of the NDA alternatives would result in the applicant facing unreasonable costs in the circumstances. Note that I have assumed that the applicant operates on behalf of the user or marina owner/operator.
11. Alternative options also generate significant travel demand. Across the ten-year period, over 130,000 truck movements generating 8 - 12 million truck km to landfills. This generates other externalities including vehicle emissions which I have estimated at $2.5 million to $3.5 million as well as congestion on the road network.
12. Some of the assessed options may not be available for sediment disposal. Land drying requires the availability of suitable land and infrastructure at appropriate locations – immediately adjacent to marinas. It also requires resource consent to be obtained, which may not be granted.
13. The re-use of sediment option is also of limited availability due to no further land reclamation able to occur in Auckland. Re-use relies on currently unidentified potential options that may or may not become available in the future. These also require acceptance through the resource consent process.
14. Consequently, this leaves the availability of the cement mixing and landfill option. This option concentrates all the significant sediment transport volumes at the port of Auckland (on both land and water). I note that, following discussion with Kieran Murray, it may be possible to re-use sediment as clean fill. However there are significant costs of either drying and or adding cement to enable this option.
15. As considered within this assessment, if sediment disposal were to occur in an

alternative option, then the resulting price rises could either redistribute underlying demand to other locations (noting that estimated demand reflects the needs for continued effective operation of marinas and the port of Auckland), or it may be reduced.

16. Sediment dredging would still need to occur at the port of Auckland as a fundamental core piece of regional and national infrastructure. Disposal via an alternative option, at 5 to 6 times the cost, would mean that these operators would face an unreasonable cost in the circumstances.
17. Alternative disposal methods would be likely to result in a constraint to activities at marinas. The recreational boating sector, as the key driver of demand, would face high relative increases in costs, reducing the ability to utilise marina's and result in an increase in unmet demand (latent).
18. Constraints in this sector would well exceed the loss of consumer benefit from participation in boating activities. It would result in flow-on effects (costs) to a wide range of sectors and employees that serve the marine sector. I do recognize that the DMC is not able to consider economic effects.
19. Lastly, the assessment has considered potential cost rises at the NDA itself and how this may affect demand for disposal. The cost differences between the NDA and other options are very large, meaning the disposal costs of this option would need to increase by around 450% to 500% to become comparable to other options.
20. Moreover, nearly all of the cost components of the NDA option are common to other options, meaning that any overall cost increase would need to be generated predominantly from the CRL administration costs – approximately 14% of the total. As such, even a large relative increase in the cost of this component would have only a minor effect on the demand for this option. Cost increases of this component itself would be limited by competition within the marketplace from other potential operations.
21. There is however the potential for transport cost reductions to occur within this option with scale economies through the use of larger barges in the future. Barge transport scale economies are likely to have a larger relative impact on the NDA disposal option than the cement mixing and landfill option as barge transport accounts for a much larger share of the cost components of the NDA option.

CAUCUSING

22. Caucusing between Kieran Murray of Sapere Research, Susan Fairgray and I took place on Friday last week and resulted in significant additional modelling over the weekend and Monday. Through this process we have tested changes to assumptions and carried out sensitivity testing.
23. As a result of that work an unfinished statement of position was submitted at 4pm yesterday, unfortunately Mr Murray did not have the time to respond to our remodeling – although I understand he will present following me.

24. As a result of caucusing a few changes have been made. We have reduced the average size for a marina berth by removing the Viaduct Harbour from our calculations, we have reduced the amount of latent or unmet demand that currently exists from 10% to 5% (as discussed above), acknowledged disposal to land as an alternative (not fully costed) but recognized that at least for a portion of dredged spoil this is a lower cost than disposal to land fill.
25. In addition, our further investigations found that we had overstated capacity yielded by future marinas and we had undercounted existing marina berths. These effects partially offset each other such that the overall effect is that future demand and the potential future supply still broadly match.

CONCLUSIONS

26. As a result of our analysis and following caucusing with Kieran Murray, I am of the opinion that the NDA represents the most appropriate location for disposing of the dredging spoil from Auckland's (and surrounding areas) ports and marina's.
27. The demand analysis we have carried out is broadly in line with known dredging consents, implying the demand estimates relied upon by CRL are appropriate, and support the quantities sought – especially in the medium to longer term (
28. The results of our analysis clearly show that the price difference between the NDA option and the alternatives is significant, and are likely to impose unreasonable costs on the applicant should the NDA consent application be declined.

DATE: 4th DECEMBER 2018

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Greg Akehurst