Commentary on the KBR Report

The Report that is the subject of this commentary is described below. It is simply referred to as the KBR Report in this commentary.

> Frankston Coastguard
> Breakwater Assessment
> Prepared for:
> **FRANKSTON CITY COUNCIL**
> 30 Davey Street Frankston Victoria 3199
> Prepared by:
> **Kellogg Brown & Root Pty Ltd**
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> **07 November 2018**
> MEJ852-TD-MN-GEN-0001 Rev 0

Context

This was one of four documents released by the City of Frankston as part of the initial public consultation phase of the project during December 2018 and January 2019. The quotes in *italics* are from the Report. The other documents were concept plans and a statuary planning memo.

Summary of the KBR Report

At the risk of over simplification, a fair paraphrase of the report in every-day language would be as follows:

- Using the best techniques and information available the beach is unlikely to wash away.
- The double arm breakwater with dredging every few years was determined to be the preferred option using a number of subjective assumptions and judgments. Some of these assumptions were that;
    - all weather use by recreational boaters is needed, and
    - the Coast Guard needs to use a conventional propeller driven craft rather than one than could float in shallower water using jet propulsion – such as that presently used by the Water Police.
- The construction cost of this preferred option would be $17 million (±40%).
- Water from Sweetwater Creek and local drains are unlikely to change very much.

The report is not an evaluation of the merits of the project

The strengths and the weaknesses of the report are summarised in the first words on page iii.

'The sole purpose of this report and the associated services performed by Kellogg Brown & Root Pty Ltd (KBR) is to ascertain the impact of a Breakwater on the hydrodynamics in the Oliver's Hill region…..' page iii

It answers a relatively small number of the questions about the local effects of the project but does not address the main questions that a proper analysis should involve itself with. Because the project involves a large amount of expenditure with considerable risks then an evaluation is important to justify the project in terms of benefits and costs. In particular a separate report (that does not appear to exist) should answer the sort of questions that a normal 'business case' would require. The documentation available to the public shows no justification for the project. The Report entitled 'KBR Draft Preliminary Planning and Environment Assessment' 8th November 2018 is simply semi-legal statuary planning document rather than any justification for the expenditure of a large amount of public funding. At 5%, a capital cost of $17M is equivalent to an annual rate of $850,000 or $2,329 for every day of the year. By way of comparison, Council would require more documentation for the justification for the extension of a residential dwelling than is evident in this project. The visual impact alone would appear to be an order of magnitude greater than the most prominent building re-development on land.

All this would not matter except that by releasing the bundle of KBR reports, Council implies that they provide arguments that justify the project.

The Unanswered Questions

1. What are the benefits of the facility in specific terms? The implied objective is to enable the better search and rescue of people on the Bay (page 1 of KBR Report) but there is no indication as to what 'better' means. Are some people not rescued now? How many more would be rescued if the facility were to be built? The question is not the total number of rescues but the *marginal* change to justify $17M and the associated risks.
2. What is the nature of call-outs on the Bay? How much are time savings critical? Given the fact that for the past 20 or 30 years the Coast Guard has been towing it's rescue craft from Frankston all the way to the Patterson River before it is even launched how critical are time savings really?
3. How does the service provided by the Coast Guard complement other emergency services such as Water Police and the ambulance service?
4. Why has no other launching site even been considered? Surely this should have been done for a facility that will cost so much. If the project is part of a coordinated rescue strategy for the whole of Port Phillip Bay (coastline over 200km) why has a site only 9km from Patterson River been selected? Wouldn't sites further south, or perhaps around Portarlington give much quicker response times for the southern part of the Bay? Are there locations that would better serve the southern part of the Bay off Rosebud and Rye? The 'KBR Draft Preliminary Planning and Environment Assessment' 8th November 2018 states that, 'It is considered that the project is of 'regional significance', (Table 3) because of the geography of the rescue area.
5. What have been the locations of craft that have been rescued? With GPS enabled rescue

craft this historical data must exist somewhere. Was this data used to determine the best place to have a new launching facility?

6. How much of a problem is the need for the rapid retrieval of recreational boats in the event of unexpected storms? Historically recreational craft were slow, unreliable, weather forecasts problematic and mobile phones non-existent. How many modern recreational boaters could not enter Kananook Creek or take shelter in Davey's Bay in an emergency? Especially given that the overwhelming percentage of boats launched at the Oliver's Hill boat ramp seem to be jet skis. At a cost of around $2,329 for every day of the year it is difficult to see the project justified on these grounds.
7. If the facility is to be on this part of the Bay why did a site requiring close to $17M needed to protect it from heavy seas selected when there are nearby sites already protected from heavy seas without the expenditure of any money at all? eg Mothers Beach at Mornington and Kananook Creek in Frankston, both of which have excellent launching facilities.
8. If the facility must be in Frankston (and in all the documentation there is no case put for this), then why can't Kananook Creek be made to work? The only two problems I am aware of for Kananook Creek have been:
    - The shallow water at low tides – however the Oliver's Hill site would require dredging too. The Water Police craft only requires a draft of 1.0m below Lowest Astronomical Tide. This is 0.5m shallower than the craft operated by the Coast Guard. (page 20 of KBR Report). What is the normal minimum depth for present access via Kananook Creek?
    - The clearance under the Landmark Bridge. How much would it cost to build a rescue craft low enough to pass under the Landmark Bridge? One could reasonably expect considerably less than $17M. The Haskell sketch (EYE VIEW) of the storage facility shows a roller door clearance of around 3.5m when the rescue craft is on the back of a trailer. Even without modification, the craft would come close to passing under the Landmark Bridge – particularly as much of that 3.5m would be below sea level. Surely both these problems could be overcome for less than $17 M without the risks associated with the Oliver's Hill site. Dredging is already a regular feature of the operation of Kananook Creek and will continue to be.

What if the Beach washes away?

A weakness of the KBR report is that it does not give an assessment of the chances that its predictions about the hydrodynamics could be wrong. This question may well not have been asked of KBR but is critical given the chequered history of similar assessments in the past eg the loss of the Portsea Beach following channel deepening. Once built, it is unlikely that the breakwater would be removed if there were to be unforeseen negative effects such as the loss of the beach. Therefore it is important that some measures are taken to guard against such an outcome. This could include (a) more analysis, or (b) a peer review of the KBR Report, or (c) some sensitivity analysis as to the robustness of its conclusions, or perhaps (d) the creation of a trust fund that would be used to resupply the beach sand in perpetuity if the beach were to wash away.

Visual Analysis

The KBR Report gives little attention to the visual effects of the project. It touches on the visual differences in the various local breakwater options in the multi-criteria analysis. The visual impact is included only as one of five contributors (which *combined* have a total weight of just 21%) to the 'Community acceptance of proposed option' criterion. This criterion is itself just one of six criteria.

Perhaps visual analysis was not in the KBR brief. In any case there is a large body of professional skill and knowledge that could have been used to differentiate the various options and compare their visual impact with the 'no build' option. Given photographs of the view from Oliver's Hill are so common it seems an omission that no artist's impressions from Oliver's Hill were created nor for viewpoints along the Highway. The Highway is used by tens of thousands of motorists every day. The 'proposed view from the street' required of the most simple of new building developments seems not to have been required for this proposed development in a most conspicuous location.

A simple Google Search showed that 9 of the first 14 images on the search word 'Frankston' were of within a kilometre of the project suggesting that this area is close to the heart of the City's visual identity.

The Multi-criteria Analysis of the Local Options

The best local option was determined looking at various criteria. In the best of circumstances multi-criteria analysis is fraught due the inherent complexity of the real compromises (trade-offs).

In this case the way in which it was reported, particularly the weighting given to each criterion was not really clear. The meaning of *'Figure A.2: Example Options Evaluation Matrix'* is particularly unclear. There seems to be an over-reliance on subjective scores for each option.

The use of numerical estimates of construction costs would have resulted in a more meaningful analysis of trade-offs between options rather than using a 'score' for cost in the assessment column. For example it would answer questions such as, 'for an additional construction cost of $ X for this option we would gain these specific benefits…'

The widely used convention (almost universal) of using the base case of 'no build' as the yardstick for estimating the performance of each of the four 'build options' would have been preferable to the scoring process that was actually used. That is Option 1 (no-build) should have scored zero on every criteria and the build options should been ranked positive or negative compared with the 'no-build' option. It is unclear what the basis of each score was if it was not a comparison with the no-build base case.

Whether or not a different preferred local option would have been identified if a different process were to be used is a moot point. There is no way of knowing without actually undertaking the analysis.

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