

## 7. CONSIDERATION OF ALTERNATIVES

### Alternative Locations

- 7.1 The development of an off-shore jetty in Buller Bay near Westport had been mooted as an alternative to Lyttelton during the 1990's. While such a deep water jetty was stated as being feasible, a major problem has always been the lack of shelter and the loss of ship loading days due to poor sea-state conditions. Barging coal out from the West Coast was another option considered; but, in the end, did not become a contender to replace Lyttelton Port as the export gateway.
- 7.2 Even when coal export volumes increased and were forecast to continue to increase during the first decade of this century, the option for an alternative to export coal directly from the West Coast did not eventuate, noting that LPC and Kiwi Rail (and its predecessors) continued to improve their services.
- 7.3 The possibility of a satellite coal stockyard within Christchurch was examined in 2008 as an alternative to expanding the existing coal stockyard onto land that was proposed to be reclaimed in Te Awaparahi Bay. This was at a time when the demand for metallurgical coal for steel-making was very high.
- 7.4 Even though reclamation is expensive, the option of a satellite coal stockyard was discarded both for economic and logistical reasons. Economically, the costs to construct a new stockyard with new coal handling equipment and stormwater treatment systems at a greenfield site was very high, noting that the current investment value of the coal stockyard facilities is \$109.0 million as discussed in **Chapter 9**. Furthermore, this option would require the double handling of coal which would make it operationally expensive and logistically difficult to manage.
- 7.5 Given the existing coal stockyard can easily accommodate the projected future peak of two million tonnes per annum, no further examination of an alternative location is considered necessary.

## **Alternative Means to Mitigate Coal Dust Emissions**

- 7.6 Water<sup>1</sup> is typically used to control dust from industrial and trade premises involving the extraction, handling or storage of bulk materials.
- 7.7 An alternative to using water as the dust control method at the coal stockyard would be to enclose the coal stockyard. This option was also examined in 2008 but again was discounted for economic and logistical reasons.
- 7.8 The evaluation in 2008 found that enclosing the existing coal stockyard would have required a massive, at least 20m high building to accommodate the coal stockpiles and associated mobile plant. The building would have had to be designed so that the front-end loaders, bulldozers and other machinery were not constrained by any internal building supports. A catenary structure (involving suspension cables) or a large-span space frame enclosure was considered to be the only realistic options, but presented significant design issues in terms of anchoring such a building and dealing with wind loading and snow loading of the structure.
- 7.9 Furthermore, a large-span space frame structure was assessed as being very costly and almost impossible to erect over a stockyard that must be kept operational during construction.

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<sup>1</sup> That may include dust suppressant products mixed in with the water