

**Supplementary
Submission
No 122a**

INQUIRY INTO WINDSOR BRIDGE REPLACEMENT PROJECT

Name: Mr Brian Pearson & Ray Wedgwood

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BRIDGE OVER HAWKESBURY RIVER AT WINDSOR
PROPOSED CANAL FOR SAND/GRAVEL BARGES

Brian Pearson and Ray Wedgwood
Former Chief Bridge Engineers DMR/RTA

The RMS appears to be very keen to demolish the existing historic Windsor Bridge, despite many bridge maintenance and heritage engineering experts declaring it safe for another century, if about \$15 million is spent to repair the cosmetic surface deterioration brought about by the RMS neglect over the last 15 years.

The main areas of deterioration are:

- a) the graphitisation of the cast iron in the pier cylinders, mainly in the one metre below water level and
- b) the spalling of concrete away from corroding reinforcement, mainly under the outer beams, caused by a poor drainage detail and carbonation of the concrete.

Despite these opinions, RMS continues to persist and insist that the existing bridge requires demolition.

There is a locally held view¹ that the existing historic bridge is a barrier to the potential operation of sand/gravel barges from upstream sand/gravel leases to access the Rocla processing plant downstream of the bridge, adjacent to the river on the Wilberforce Road¹. The Rocla plant is ideally sited as it is within the zone protected by the 'Breakaway', so stockpiles would be much less likely to be washed away during flooding. Windsor Bridge is also within that zone.

Typical sand/gravel barges have a width of about 13 metres, which means that they would be too wide to pass between the piers of the existing historic bridge.

With regard to the passage of the sand/gravel barges it would be feasible to construct a canal across the fields from a location downstream of the "Breakaway" to just upstream of the Rocla plant. This canal would need to be some 35 metres wide to allow for two-way operation of the barges and require a 38 metre span bridge over it on the Freemans Reach Road. It would also require a 20 metre span bridge on the Wilberforce Road to allow one-way access to the main river. (see aerial photo A)

If additional clearance is required under the bridges, the road grading could be easily modified to provide minor local humps at each bridge relatively economically.

The proposed canal would need to be about 1.4 kilometre long, either with natural banks and floor or vertical concrete walls and floor. The estimated cost of the canal plus bridges is about \$20 million.

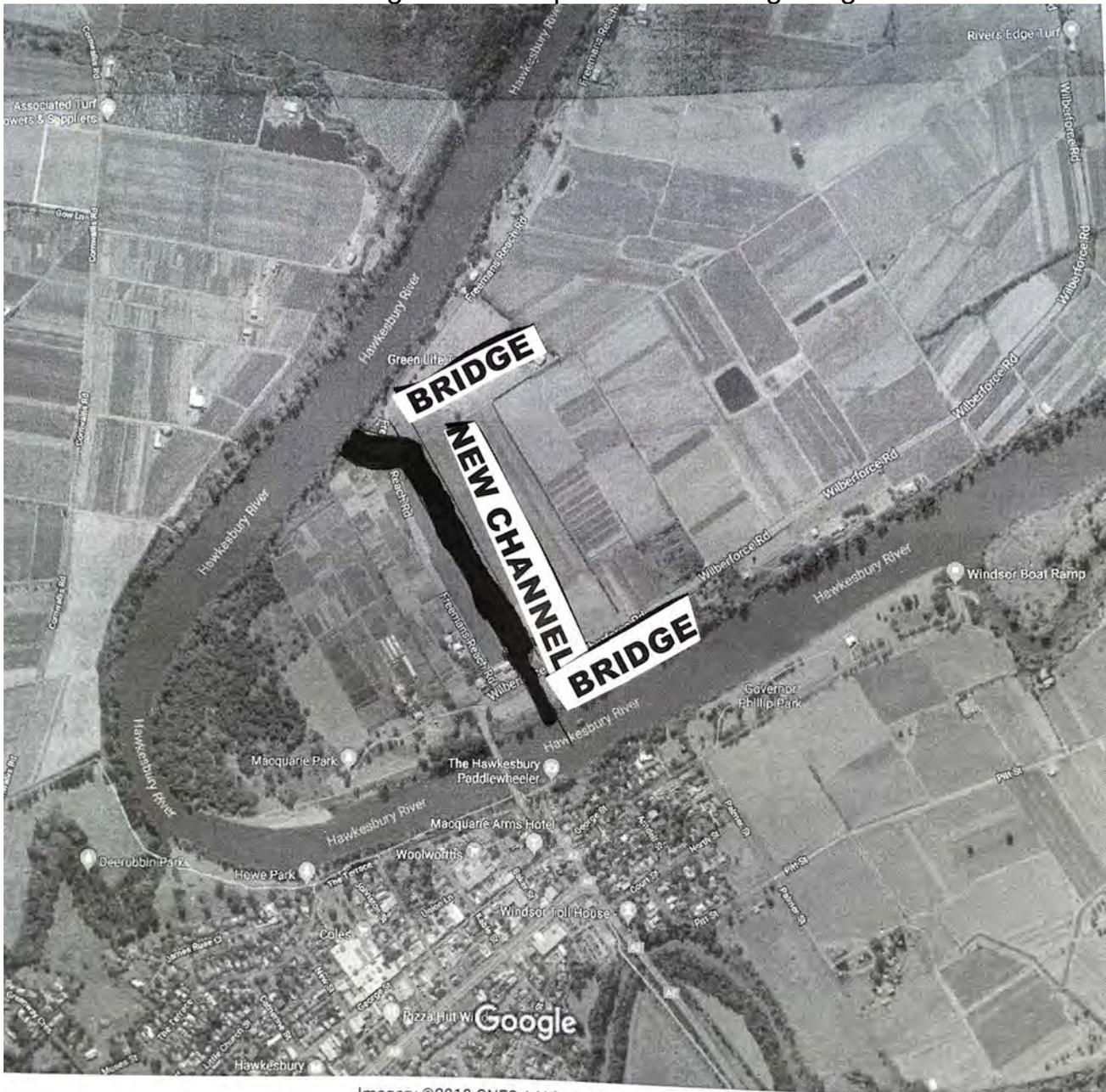
As well, there is concern about access to the beach across from Windsor town. A footway/cycleway could be provided on the upstream side of the existing bridge, using

¹ see information from Hawkesbury Council Integrity Watch website extract, attached as Appendix A

a support system similar to that used for the downstream footway. Cost approximately \$2,5 million. (See photos B and C below)

The cost of construction of the canal is relatively minor compared to the costs associated with the RMS scheme, with its contract price of \$101million, to which needs to be added the \$36 million already spent on preliminary works, including investigation, design and archeological searches, and demolition of the existing bridge (say \$5 million). In addition the 30% contingency allowance, which would be in addition to the previous amounts, is too low for the distinct possibility of a major flood.

If the access for the sand/gravel barges can be overcome by our suggestion above, the RMS can now have no argument to replace the existing bridge.



Imagery ©2018 CNES / Airbus, DigitalGlobe, Map data ©2018 Google 500 ft

AERIAL MAP A: PROPOSED CANAL FOR SAND/GRAVEL BARGES



PHOTO B: FABRICATED STEEL MEMBER BOLTED TO PIER HEADSTOCK



PHOTO C: END OF FABRICATED STEEL CANTILEVER – NOTE SUPPORT RSJ'S FOR FOOTWAY

APPENDIX A

Extracts from web site “Hawkesbury Council Integrity Watch”

Web site: hawkesburycouncilintegritywatch.org/Windsor Bridge

Windsor Bridge

Windsor Bridge final

THE WINDSOR BRIDGE STORY 28.8.16

EXTRACT 1

“Windsor Bridge and road project – what is the real agenda?”

The planned replacement of the historic Windsor Bridge and construction of a major arterial road through Windsor’s Thompson Square, Australia’s oldest public place, makes no sense from a planning perspective. It will destroy a heritage town and will not ease traffic congestion. Some in the Windsor community believe the main agenda for the bridge replacement is to allow extraction of the huge sand deposits on the Richmond Lowlands, which would support the NSW government’s infrastructure building agenda and provide a financial windfall to landowners along the Hawkesbury River.”

EXTRACT 2

“Sand mining – is this the real agenda?”

Some in the Hawkesbury community believe there is another agenda behind the bridge replacement – sand extraction on the Richmond Lowlands.

Sand is a vital resource for the NSW state government’s mega infrastructure building plans and it is in critical short supply. The sand resources along the Hawkesbury River on the Richmond Lowlands are extensive and are close to Sydney. Replacement of the existing bridge in its current location, but with wider-spaced pylons to allow barges to pass underneath, is key to cost effectively removing sand for transport by barge, according to local sand dredging experts.

Hawkesbury Council Integrity Watch interviewed a man who claims to be “*the last sand dredge skipper on the Hawkesbury River*”. He did not want to be named but said the dredges between Windsor Bridge and North Windsor were disassembled when dredging was stopped as they couldn’t be taken downstream past the Windsor Bridge:

“The dredging will start up again, the people who still own the leases will be given permission to mine for a rare mineral within the sand and the sand will be a by-product.” The man declined or was unable to name the particular mineral to be named in the application.

In the meantime Hawkesbury Council has called for tenders to dredge the river, ostensibly for “navigation” but experienced mariners simply need to follow the existing navigation leads, the GPS system and read the tide charts, all the way to Windsor Bridge. It’s akin to paying Rio-Tinto to mine coal.

The skipper, who said his last employer was Rocla, a large sand, aggregate and cement company, described the sand industry as having involved “*about twenty sand dredges altogether, on each side of the Windsor Bridge*”.

“Some dredges were assembled on site between Windsor Bridge and North Richmond on

the Lowlands, but the Greenies stopped it. There is nothing wrong with sand mining. Sooner or later it will start up again” he said. “It’s good for the river, the next flood will bring all the sand back”. And his job presumably.

An alternative to terrestrial or land-based sand is marine sand, which has very different extraction conditions. With non-tidal rivers such as the Hawkesbury, the beds are often privately owned and any royalty payments made by sand extractors go to the landowners, whereas marine sand is owned by the nation.

Both Labor and Liberal, have a history of rejecting or delaying exploration licences for marine sand. An exploration licence proposal by Sydney Marine Sand Pty Limited in 2012^[1] remains unresolved.

In its proposal Marine Sands estimates the value of marine sand off Sydney to be worth in excess of \$4 billion ex bin over 80 years. It says:

“Extraction of marine aggregate in Commonwealth waters presents a unique opportunity to develop a large, untapped resource to meet a critical local market need (now and into the future) in a way that minimises impacts to the environment.”

The company goes on to say exploration of marine sand has merit from “both resource and environmental perspectives – it is low impact, environmentally sustainable and socially equitable.”

It also points out in its proposal the environmental impact of land-based sand extraction versus marine extraction. These are shown in the chart below. While Richmond Lowlands does not rank the highest in terms of impact it is double that of marine sands and only 8 points above the highest impact locations of Maroota and Somersby.

Source: The Case for Marine Aggregate (Sand) Extraction from Commonwealth Waters off NSW – A Fresh Approach to Extractive Resource Management in NSW – Marine Sands Pty Limited 2012

Under environmental legislation (State Environmental Planning Policy Sydney Regional Environmental Plan No 9— Extractive Industry (No 2—1995) NSW Hawkesbury Council can allow sand mining along the Hawkesbury in two locations:

- The land at Windsor covered by Licence Number 74/3, Windsor. Rocla, Hawkesbury River, Windsor.
- The land at Pitt Town covered by Licence Number 82/14, Windsor. Breen Holdings P/L, Hawkesbury River, Pitt Town.

Given the NSW government’s penchant for changing legislation to suit its development plans, it is not inconceivable that sand extraction be deemed critical for state significant infrastructure and the number of permissible locations along the river expanded.

Hawkesbury sand targeted

The Hawkesbury sand resources have long been in the sights of politicians and others. In 1983 the then NSW minister for Planning and the Environment, Eric Bedford, described the Hawkesbury as “the largest source of sand, gravel and soil for the construction industry in Sydney.” However, in his report on the Hawkesbury/Nepean Valley^[2] he recommended that “given the unknown effects of extraction, caution should prevail until such time as it is shown that there are significant environmental and economic benefits to be gained from extraction.”

In 2004 Liberal MP Bruce Baird, father of current NSW premier Mike Baird, suggested in Parliament it was time to consider extraction:

“Construction in New South Wales is facing a serious problem in that between 2005 and 2010 there is going to be a supply crunch as Kurnell, Penrith Lakes and the Southern Highlands supplies of sand become exhausted. The New South Wales Labor government has sat on its hands since it was alerted to this problem in late 1995. The alternatives that

need to be examined and looked at include Newnes, **Richmond lowlands** and Stockland". (NSW Legislative Assembly, Bruce Baird, Hansard 16/06/2004)

Many others have also pointed to the sand on the Richmond lowlands as a valuable resource:

NSW Government Investment – Mineral Resources, Agriculture and Fisheries Divisions. Submission to Hawkesbury Council LEP. May, 2011:

The (O'Farrell) NSW Government Mineral Resources Division recommend:

- "Extractive areas should be protected. These are outside areas identified for residential development, i.e. Richmond lowlands."
- "The Lowlands should be acknowledged as important rural resource lands in the Natural

NSW Government Investment – Mineral Resources, Agriculture and Fisheries Divisions.

Submission to Hawkesbury Council LEP. June, 2011:

"Rocla sand extraction site on the Hawkesbury River at Windsor should be zoned W3 Working Waterways with extraction as a permitted use or draft plan shall contain an overlay to identify extraction as a permissible use within the defined area."

Zone W3 Definition: To enable the efficient movement and operation of commercial shipping, water-based transport and maritime industries.

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The Sand and Gravel Resources of the Richmond Lowlands Area. GM Oakes, 1981:

"These deposits constitute the largest, identified, on shore resource of construction materials within economic transport distance of the Sydney market, and therefore warrant special consideration by planning authorities if the long term supply of relatively inexpensive construction materials to the Sydney region is to be ensured."

Mitchell McCotter Report, 1984:

– North Richmond to Windsor:

:"Passive uses such as swimming, cruising and canoeing are proposed for this area, with the exception of the regular power boat races between Windsor Bridge and South Creek. An eight knot speed limit would generally apply in this area.

It is possible that much of the foreshore at Richmond could be affected by extractive industry in the future and this would influence the nature of recreational activity. One longer term planning proposal is the creation of an area similar to that envisaged in the Penrith Lakes Scheme."

Department of Local Government – Circular to Councils, 21-12-2001:

"Government should set the overall planning context for extractive operations, by the earliest possible announcement of its preferred option for the next prime source of sand supplies for the Sydney market.

In reaching that decision the risks, benefits and costs associated with any proposals for large-scale extraction of the Richmond Lowlands should receive particular consideration."

Extract from Hawkesbury City Council report, Hawkesbury River Dredging Investigations, Summary Report, August 2012:

"Although the navigation requirements provided in Section 6.1 are considered to be appropriate for the Hawkesbury River within the project area, Hawkesbury City Council has suggested that there would be merit in investigating the potential for provision of a minimum functional water depth of 3.0 m at mean low water spring tide (letter from Hawkesbury City Council dated 2 August 2012).

This alternative minimum functional water depth was flagged as potentially enabling navigation for larger recreational and commercial vessels in the upper reaches of the

Hawkesbury River system.”

(http://www.hawkesbury.nsw.gov.au/.../ORD_AUG2_2012_Att1toItem..., page 36)

Current status of the bridge plan

While the Windsor Bridge proposal has been approved, CAWB is determined to keep fighting through court action, lodging judicial review proceedings with the Land and Environment Court. Its case is based on the following:

- The Minister for Planning approved a new bridge and approach roads over the Hawkesbury on 20 December 2013 despite considerable advice against the project
- The Department of Infrastructure & Planning had previously appointed 3 independent heritage experts to prepare an Independent Heritage Review. That independent review advised Mr Hazzard that “the project should not go ahead because of the impact on the significance of Thompson Square Conservation Area and Windsor Bridge”
- The independent review also warned the Minister that the Heritage Assessment and Statement of Heritage Impact (SoHI) provided by the Roads and Maritime Authority to justify the project:
 - “is generally inadequate”
 - “incomplete”
 - “is insufficient to understand the significance of the Thompson Square Conservation Area”
- The Heritage Council of NSW also advised the Minister the project should not go ahead.”