

**COMMENT ON THE PROPOSED WOOLGOOLGA TO BALLINA UPGRADE PROJECT.**

FLOODPLAIN /FLOODWATER HOLDING AREA, FERRY PARK, EASTERN SIDE OF PACIFIC HIGHWAY.  
MACLEAN.

Application Number. SSI-4963.

I DO NOT SUPPORT THE PRESENT CONSTRUCTION LINE AND FORMATION OF DUMBELLS IN THE FLOODPLAIN AND FLOODWATER HOLDING AREA IN THE FLOODPLAIN DIRECTLY EAST OF FERRY PARK AND EXTENDING SOUTH TO McINTYRE'S LANE.

This is a submission concerning the potential damming by partial filling of the flood plain and flood water holding area immediately east of the existing Pacific Highway at Ferry Park, Maclean and south to McIntyre's Lane.

I have attended the presentations, the last being at the Civic Hall in Maclean and understand the highway concept and design, have been shown the design of under highway "flood slots" and where they are to be sighted and assured that any water displaced by the base of the triangle forming the highway causeway will just spread further out on the floodplain. This is where the whole understood concept falls down as when we explain to the representatives that to spread water further "uphill" across the existing plain the river height must rise significantly to do the "work" required, the correct person to address these queries seems never to be available.

Simply put, as anyone who has watched water run through a culvert has noticed there is a damming effect either side of the Inlet of the drain causing specific laws to come into operation. There is a marked level variation between the flooding side and the receiving side caused by the impedance of the container surface's and the length of said container plus a corresponding pressure differential across the length of the culvert which is of greater concern. This is an easily measured value and would be quite substantial as the water level rises and the "work" required to push a larger volume of water through a given restriction increases.

As this required "work" increases, the level of floodwater flowing in the South Arm of the Clarence must rise. Now, being restricted by higher pressure, higher water level held by the proposed roadway embankment, both velocity and volume must increase feeding into the main arm of the Clarence right at the township of Maclean.

Maclean has suffered what are being called One in Twenty Year floods three years out of the last four and each time the level comes close to overtopping the levee bank. Notices issued during the most recent flood had the high water level at over 100mm above the levee wall protecting the town, this bringing increased uncertainty on the understanding of potential flood dynamics.

I live on the hill overlooking this southern flood plain, watch the river level as it breaks into this section and can plot it's operation on the Maclean river level graph supplied by the BOM. The flood plains on

either side of the South Arm come into full over flow and holding operation at the critical point of the rising leading edge of the flood graph and serve as a major buffer to Maclean as the plain on the western side of the Clarence, opposite Maclean, is already flooded with the water contained by steeply rising ground.

**The Dumbbells** at the Ferry Park, Maclean Interchange are planned to be in what would be the deepest part of this flood holding area with the proposed highway construction following a line approximately through the center of the deeper section, due south to McIntyre's Lane. I am guessing at the depth of water held where the Dumbbells are to be constructed as water is still lying there but it must be around 4 meters, this depth slowly decreasing to the height of one year old cane at McIntyre's Lane, the most southern end.

My back yard is more than available to anyone who wishes to physically see how the propagation of flood water into and through this flood plain occurs and where the proposed new roadway is situated.

**Maclean** is also affected by tidal influence in the damming of floodwater, this being another major consideration as barometric low pressure areas and high tides must always go hand in hand.

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**PS.** Is it too late in this entire project to move this section of the Pacific Highway out to the west of Grafton. The country is solid, of lesser value productivity wise, better fill available, less noise restriction, less invasive on good cane farms, small townships, current highway traffic, cheaper bridges, longer lasting roadwork's, flatter country, better weather conditions, the list is endless. As can be seen from last weeks flood at the newly constructed roadwork's at the southern end of the Harwood bridge, severe erosion occurred along the embankments requiring emergency fill to be trucked in and re-compacted, this on a brand new section of very expensive highway and the locals can't see where the washed away material actually ended up giving rise to questions as to the underestimation of Floodwater flow, volume and velocity.