NOOSA COASTAL HAZARD ADAPTATION PLAN:
FACTSHEET 02

ROAD RAISING

This fact sheet provides information on one of a set of adaptation options that were considered in detail as part of the Coastal Hazards Adaptation Plan (CHAP) for responding to coastal hazard risks.

What are they?

Road raising involves elevating the level of roads in areas subject to frequent tidal inundation as part of road replacement or renewal programs. It would involve raising both the road-surface and -base material above the projected inundation level.

Why have they been considered?

Frequent low-level inundation of roads can cause damage due to:

- Increased plasticity from wetting and drying of road base and surrounding soils leading to movement and buckling of road surface, requiring more frequent repair and replacement.
- Formation of salt crystals in road material, eventually leading to boils and cracking of top layer. This reduces the effective lifespan of the roads, increasing the recurrent costs of maintenance for Council and the community.

Things to consider:

- Capital costs and whether the new roads are able to accommodate any continued rises in sea level.
- The ability of new roads to withstand other climate risks (e.g. longer and more frequent longer heatwaves).
- The timing of implementation, given existing asset renewal timelines and the pace of change in sea levels.

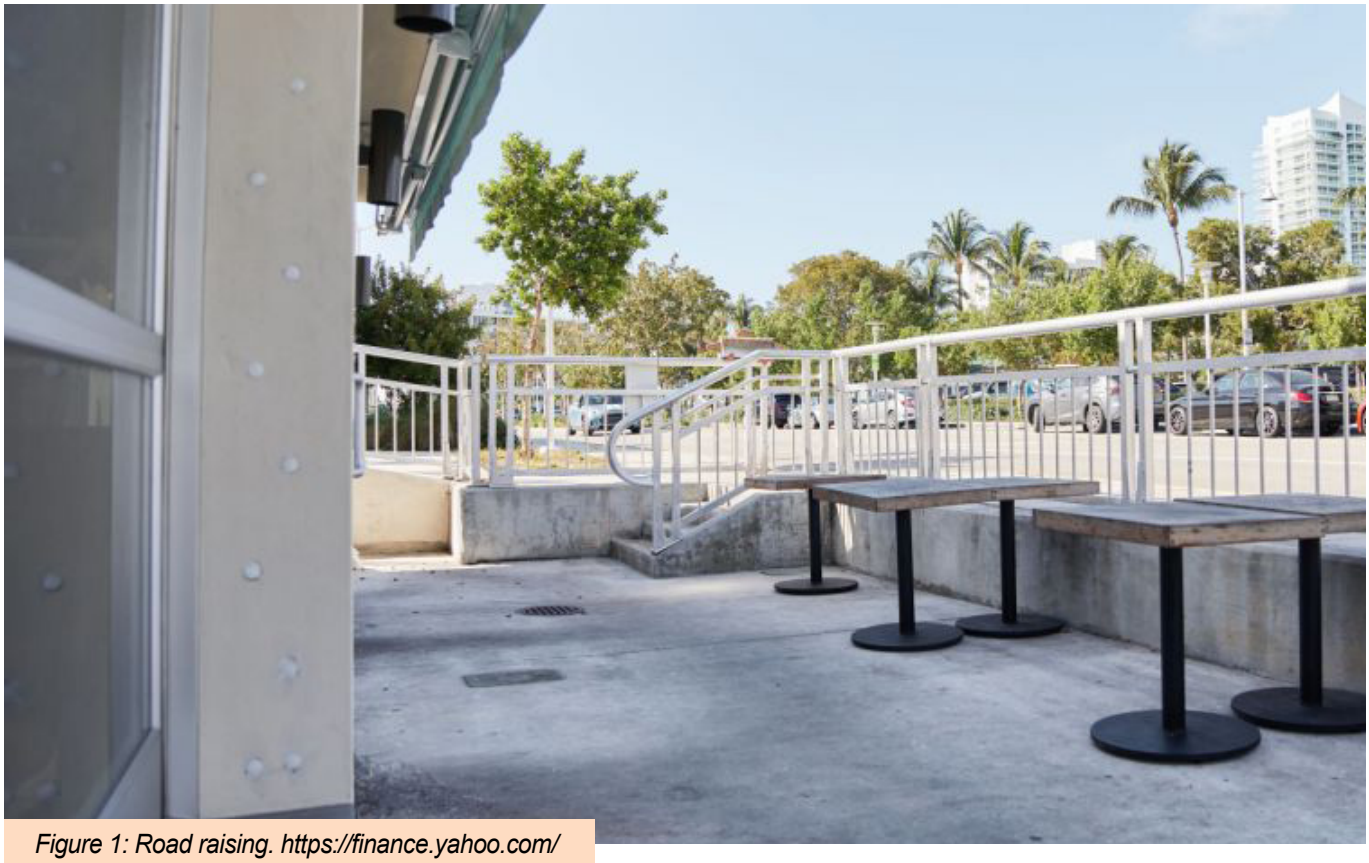

Figure 1: Road raising. https://finance.yahoo.com/

Noosa River. Source: Twenty20.com

Weyba Creek. Source: https://www.paulsmithimages.com.au/

What did our analysis conclude?

The analysis performed by specialist economics consultants considered the need to raise roads by the year 2070 in high risk areas adjacent to the Noosa River, Weyba Creek and Lake Doonella. It concluded that raising roads does not provide as extensive protection for other land uses from inundation (i.e. other than to the road network itself) compared to other measures.

Raising roads reduces the frequency of inundation (on the roads only). This will decrease the damage to roads and reduce Council road maintenance costs in the future.

There is a benefit from the avoided road maintenance and more frequent replacement costs compared to no adaptation being undertaken. However, this adaptation measure is likely to provide only limited protection to recreational values and some economic activity. The independent analysis determined road raising to result in a net present value[1] to Noosa of -$3.9M, by the year 2100 and has not been recommended as a feasible option for responding to inundation risks as part of the CHAP project.

1 – Put simply, Net Present Value is a method of calculating the total return on investment for a project or expenditure by comparing the total costs with the total benefits you expect to result from the investment and translating those returns into today's dollars, so that you can decide whether the project is worthwhile.