Question on Notice

No. 112

Asked on 23 February 2023

MR S ANDREW ASKED MINISTER FOR TRANSPORT AND MAIN ROADS (HON M BAILEY)—

QUESTION:

With reference to expert studies showing that recycled waste materials are not suitable for use on roads in areas subject to extreme weather conditions—

Will the Minister provide details (a) of any recycled waste products used to repair potholes on rural and regional roads in North Queensland and (b) of all studies/assessments the department has obtained showing that these recycled waste materials are sufficiently resilient, hardy, and long-lasting for use in North Queensland, a region known for extreme weather conditions?

ANSWER:

I thank the Member for Mirani for the question.

For pothole repairs across North Queensland, the Department of Transport and Main Roads (TMR) uses propriety products which are generally made up of cold asphalt materials. There are no recycled waste products in these cold asphalt materials at present, however, a range of materials may be used to repair potholes depending on their location and urgency.

TMR does facilitate the use of recycled materials in TMR pavement works as an alternative to conventional materials, through TMR standard specifications. TMR uses the following principles when assessing the suitability of recycled materials:

- the end result provides as good, if not better, performance/resilience than conventional materials (in the same applications)
- they do not harm the environment, the community or workers
- they do not cause operational issues in the longer term (such as contaminated land)
- they are ‘re-recyclable’ at the end of life.

Examples of the use of recycled materials, include:

- reclaimed asphalt pavement in asphalt
- fly ash in stabilised granular material (gravel).

TMR is not aware of expert studies opposed to recycled material usage in roads in areas, subject to extreme weather conditions. Foamed bitumen stabilisation (in situ and plant mixed) technology has now been used in over 1000 kilometres of road pavement in Queensland. TMR standard specifications allow the use of recycled materials to be incorporated in the design and production of foamed bitumen (both in situ and plant mixed). Reviews of pavement performance to date have established that foamed bitumen treatment provides not only strong and flexible pavements, but pavements resilient to flooding and significant wet periods.

Foamed bitumen stabilised base overlying stabilised subbase and subgrade with carefully designed combinations of lime, cement and fly ash (waste product) has not only provided the required structural strength to cater for the design traffic loading, but has stood up to some of the worst conditions that Ex-Cyclone Debbie had to offer. For example:

- Bruce Highway (Sandy Gully) near Bowen showed no evidence of damage, despite very heavy rainfall
- pavement construction in Warrill View (south of Ipswich) was able to continue without delay, despite the unsealed foamed bitumen pavement being inundated
- Yeppen floodway at Rockhampton emerged from complete inundation with no pavement damage, and was able to be opened to traffic immediately after flood waters receded.

Due to foamed bitumen stabilised pavements proven performance—particularly its ability to provide resilience to flooding—North Queensland and the Central region are now actively using this technology in many of their projects:

- past examples include:
    - Palmerston Highway
    - Captain Cook Highway
    - many sections of the Bruce Highway
- recent examples include:
    - Cairns Bruce Highway Upgrade (Stage 2)
    - Haughton River Floodway upgrade
    - Smithfield bypass
    - Bruce Highway, Edmonton – Gordonvale
    - Walkerston Bypass.