



Tumbulgum Community Association Inc.
PO Box 19 Tumbulgum NSW 2490
tumbulgumcommunityassociation@hotmail.com

Mr Geoff Provest MP
PO Box 6695
TWEED HEADS SOUTH NSW 2486

24 July 2017

Dear Geoff

As a result of the unprecedented effect of the recent March/April 2107 flood event, the residents of Tumbulgum are seeking a review of the impact of the M1 Motorway on the flood in the Tweed Valley compared to modelling undertaken prior to its construction.

Figures obtained from Manly Hydraulics Laboratory (MHL) indicate peak levels in the 2017 flood to be:

Location	Peak Height	Time and Date
Murwillumbah	5.838 m AHD	0330 hrs 31/3/17
Tumbulgum	3.96 m AHD	1015 hrs 31/3/17
Chinderah	2.216 m AHD	1245 hrs 31/3/17

Source: Preliminary MHL Data provided 1/5/17 *Refer attachment 1*

The historic record heights at each location obtained from the Tweed Shire are:

Location	Height
Murwilumbah	6.58 m AHD
Tumbulgum	3.94 m AHD
Chinderah	3.09 m AHD

Source: Tweed Shire Development Control Plan Section A3 Development of Flood Liable Land Version 1.4 Appendix A *Refer attachment 2* or full document at <http://www.tweed.nsw.gov.au/Controls/Planning/Documents/PlanningDocs/DCP%20A3.pdf>

Difference between 2017 height and previous record:

Location	Height Difference
Murwilumbah	0.752 m below
Tumbulgum	0.02 m ABOVE
Chinderah	0.874 m below

The community is concerned that the M1 Motorway is acting a barrier (partial dam wall) preventing adequate drainage of heavy rainfall into the ocean, and whether alterations are needed to fix any problems that may exist.

Heavy rain fell for approximately 27 hours in the recent event. Residents are concerned about the potential outcome had it rained for a longer period.

A photograph that appeared in the Tweed Link Issue 1001, dated 11 April 2017, clearly shows the difference in water colour on both sides of the M1. *Refer Attachment 3*. Chinderah after the flood showed little or no sign of any silt, yet Tumbulgum had a cover of 150mm or more of silt throughout the village.

The community is seeking your assistance to obtain a review of the impact of the M1 Motorway during a major flood by the relevant agency and that consequent steps are taken to remedy the situation.

Jennifer Kidd
President
Tumbulgum Community Association Inc
0431 989 477

Attachments x 3

ATTACHMENT 1 Preliminary MHL Data 1/5/17

Date	Time	Murwillumbah Br	Tumbulgum	Barneys Point
30/03/2017	0:00:00	0.752	0.708	0.434
30/03/2017	0:15:00	0.722	0.676	0.4
30/03/2017	0:30:00	0.678	0.642	0.376
30/03/2017	0:45:00	0.62	0.604	0.345
30/03/2017	1:00:00	0.569	0.575	0.297
30/03/2017	1:15:00	0.541	0.536	0.259
30/03/2017	1:30:00	0.509	0.491	0.223
30/03/2017	1:45:00	0.464	0.45	0.178
30/03/2017	2:00:00	0.428	0.414	0.135
30/03/2017	2:15:00	0.4	0.379	0.091
30/03/2017	2:30:00	0.376	0.343	0.042
30/03/2017	2:45:00	0.35	0.312	0.001
30/03/2017	3:00:00	0.322	0.294	-0.028
30/03/2017	3:15:00	0.334	0.281	-0.057
30/03/2017	3:30:00	0.351	0.271	-0.088
30/03/2017	3:45:00	0.368	0.265	-0.109
30/03/2017	4:00:00	0.399	0.272	-0.127
30/03/2017	4:15:00	0.441	0.277	-0.146
30/03/2017	4:30:00	0.498	0.296	-0.153
30/03/2017	4:45:00	0.572	0.322	-0.152
30/03/2017	5:00:00	0.651	0.354	-0.146
30/03/2017	5:15:00	0.74	0.397	-0.138
30/03/2017	5:30:00	0.827	0.446	-0.117
30/03/2017	5:45:00	0.94	0.496	-0.085
30/03/2017	6:00:00	1.039	0.543	-0.049
30/03/2017	6:15:00	1.141	0.6	-0.002
30/03/2017	6:30:00	1.241	0.657	0.058
30/03/2017	6:45:00	1.336	0.715	0.121
30/03/2017	7:00:00	1.441	0.774	0.189
30/03/2017	7:15:00	1.543	0.847	0.266
30/03/2017	7:30:00	1.646	0.916	0.337
30/03/2017	7:45:00	1.761	0.989	0.418
30/03/2017	8:00:00	1.873	1.063	0.509
30/03/2017	8:15:00	1.991	1.145	0.596
30/03/2017	8:30:00	2.132	1.236	0.671
30/03/2017	8:45:00	2.292	1.331	0.738
30/03/2017	9:00:00	2.438	1.418	0.791
30/03/2017	9:15:00	2.595	1.5	0.838
30/03/2017	9:30:00	2.751	1.575	0.887
30/03/2017	9:45:00	2.882	1.658	0.94
30/03/2017	10:00:00	3.01	1.713	0.974
30/03/2017	10:15:00	3.133	1.777	1.002
30/03/2017	10:30:00	3.245	1.815	1.018
30/03/2017	10:45:00	3.355	1.863	1.031

30/03/2017	11:00:00	3.438	1.921	1.048
30/03/2017	11:15:00	3.519	1.965	1.07
30/03/2017	11:30:00	3.61	2.015	1.093
30/03/2017	11:45:00	3.701	2.047	1.102
30/03/2017	12:00:00	3.786	2.081	1.12
30/03/2017	12:15:00	3.88	2.136	1.117
30/03/2017	12:30:00	3.975	2.163	1.121
30/03/2017	12:45:00	4.069	2.211	1.122
30/03/2017	13:00:00	4.16	2.246	1.124
30/03/2017	13:15:00	4.248	2.277	1.127
30/03/2017	13:30:00	4.32	2.311	1.12
30/03/2017	13:45:00	4.402	2.354	1.124
30/03/2017	14:00:00	4.464	2.382	1.123
30/03/2017	14:15:00	4.532	2.405	1.123
30/03/2017	14:30:00	4.598	2.448	1.127
30/03/2017	14:45:00	4.658	2.472	1.123
30/03/2017	15:00:00	4.715	2.485	1.133
30/03/2017	15:15:00	4.765	2.503	1.13
30/03/2017	15:30:00	4.809	2.534	1.134
30/03/2017	15:45:00	4.843	2.556	1.133
30/03/2017	16:00:00	4.875	2.582	1.141
30/03/2017	16:15:00	4.892	2.596	1.141
30/03/2017	16:30:00	4.916	2.609	1.153
30/03/2017	16:45:00	4.937	2.629	1.155
30/03/2017	17:00:00	4.945	2.65	1.167
30/03/2017	17:15:00	4.961	2.663	1.172
30/03/2017	17:30:00	4.962	2.667	1.182
30/03/2017	17:45:00	4.984	2.684	1.19
30/03/2017	18:00:00	5.011	2.691	1.2
30/03/2017	18:15:00	5.006	2.706	1.209
30/03/2017	18:30:00	5.003	2.719	1.221
30/03/2017	18:45:00	5.013	2.731	1.238
30/03/2017	19:00:00	5.019	2.734	1.255
30/03/2017	19:15:00	5.029	2.749	1.272
30/03/2017	19:30:00	5.031	2.76	1.293
30/03/2017	19:45:00	5.028	2.763	1.31
30/03/2017	20:00:00	5.042	2.774	1.328
30/03/2017	20:15:00	5.048	2.788	1.351
30/03/2017	20:30:00	5.057	2.8	1.382
30/03/2017	20:45:00	5.073	2.82	1.415
30/03/2017	21:00:00	5.093	2.831	1.449
30/03/2017	21:15:00	5.14	2.86	1.473
30/03/2017	21:30:00	5.162	2.881	1.491
30/03/2017	21:45:00	5.181	2.892	1.512
30/03/2017	22:00:00	5.197	2.922	1.543
30/03/2017	22:15:00	5.215	2.955	1.57
30/03/2017	22:30:00	5.254	2.993	1.577
30/03/2017	22:45:00	5.282	3.006	1.585

30/03/2017	23:00:00	5.292	3.025	1.59
30/03/2017	23:15:00	5.309	3.048	1.592
30/03/2017	23:30:00	5.35	3.054	1.606
30/03/2017	23:45:00	5.399	3.084	1.606
31/03/2017	0:00:00	5.45	3.091	1.612
31/03/2017	0:15:00	5.457	3.129	1.614
31/03/2017	0:30:00	5.521	3.152	1.614
31/03/2017	0:45:00	5.538	3.169	1.6
31/03/2017	1:00:00	5.557	3.208	1.591
31/03/2017	1:15:00	5.62	3.235	1.58
31/03/2017	1:30:00	5.625	3.256	1.57
31/03/2017	1:45:00	5.678	3.274	1.565
31/03/2017	2:00:00	5.715	3.305	1.557
31/03/2017	2:15:00	5.689	3.34	1.557
31/03/2017	2:30:00	5.674	3.359	1.563
31/03/2017	2:45:00	5.687	3.384	1.576
31/03/2017	3:00:00	5.746	3.425	1.563
31/03/2017	3:15:00	5.794	3.439	1.555
31/03/2017	3:30:00	5.838	3.472	1.565
31/03/2017	3:45:00	5.808	3.491	1.572
31/03/2017	4:00:00	5.789	3.512	1.58
31/03/2017	4:15:00	5.77	3.536	1.594
31/03/2017	4:30:00	5.76	3.571	1.605
31/03/2017	4:45:00	5.749	3.585	1.612
31/03/2017	5:00:00	5.731	3.628	1.625
31/03/2017	5:15:00	5.715	3.659	1.643
31/03/2017	5:30:00	5.695	3.673	1.665
31/03/2017	5:45:00	5.673	3.703	1.676
31/03/2017	6:00:00	5.639	3.729	1.705
31/03/2017	6:15:00	5.604	3.755	1.719
31/03/2017	6:30:00	5.554	3.778	1.736
31/03/2017	6:45:00	5.514	3.825	1.762
31/03/2017	7:00:00	5.465	3.831	1.775
31/03/2017	7:15:00	5.42	3.848	1.803
31/03/2017	7:30:00	5.373	3.873	1.827
31/03/2017	7:45:00	5.331	3.885	1.859
31/03/2017	8:00:00	5.288	3.907	1.881
31/03/2017	8:15:00	5.239	3.9	1.912
31/03/2017	8:30:00	5.203	3.932	1.933
31/03/2017	8:45:00	5.16	3.938	1.957
31/03/2017	9:00:00	5.124	3.946	1.989
31/03/2017	9:15:00	5.079	3.951	2.019
31/03/2017	9:30:00	5.036	3.948	2.045
31/03/2017	9:45:00	4.997	3.951	2.073
31/03/2017	10:00:00	4.948	3.956	2.083
31/03/2017	10:15:00	4.909	3.96	2.11
31/03/2017	10:30:00	4.863	3.947	2.126
31/03/2017	10:45:00	4.813	3.95	2.144

31/03/2017	11:00:00	4.765	3.946	2.162
31/03/2017	11:15:00	4.729	3.942	2.162
31/03/2017	11:30:00	4.684	3.93	2.184
31/03/2017	11:45:00	4.638	3.926	2.19
31/03/2017	12:00:00	4.599	3.913	2.197
31/03/2017	12:15:00	4.557	3.909	2.208
31/03/2017	12:30:00	4.523	3.901	2.203
31/03/2017	12:45:00	4.487	3.884	2.216
31/03/2017	13:00:00	4.451	3.881	2.197
31/03/2017	13:15:00	4.415	3.873	2.207
31/03/2017	13:30:00	4.379	3.857	2.194
31/03/2017	13:45:00	4.347	3.846	2.21
31/03/2017	14:00:00	4.316	3.825	2.197
31/03/2017	14:15:00	4.283	3.822	2.192
31/03/2017	14:30:00	4.253	3.809	2.183
31/03/2017	14:45:00	4.224	3.79	2.181
31/03/2017	15:00:00	4.193	3.776	2.155
31/03/2017	15:15:00	4.168	3.762	2.138
31/03/2017	15:30:00	4.139	3.751	2.14
31/03/2017	15:45:00	4.108	3.731	2.119
31/03/2017	16:00:00	4.083	3.719	2.102
31/03/2017	16:15:00	4.056	3.7	2.081
31/03/2017	16:30:00	4.032	3.688	2.07
31/03/2017	16:45:00	4.011	3.669	2.062
31/03/2017	17:00:00	3.982	3.647	2.041
31/03/2017	17:15:00	3.956	3.637	2.037
31/03/2017	17:30:00	3.93	3.616	2.019
31/03/2017	17:45:00	3.908	3.604	2.005
31/03/2017	18:00:00	3.88	3.589	2.011

Appendices/References/Bibliography

APPENDIX A - Historic Flood Levels

These are historic flood levels saved from the Flood Level Tables of superseded versions of the original Development Control Plan No 5 relating to development of Flood Liable Land.

Section 3 - Locality	Highest Recorded Flood Level
T. Heads T. Heads West T. Heads South	2.15m AHD
Banora Point Oxley Cove	3.09m AHD
Bimbadeen Ave & Barneys Pt. Bridge to Waugh St	3.09m AHD

Section 4 - Locality	Highest Recorded Flood Level
Chinderah	3.09m AHD
Fingal Rd to Barneys Pt Bridge (Wommin Lake)	2.94m AHD

Section 5 - Locality	Highest Recorded Flood Level
Fingal (Village) & Southward to No 52 (Lot 19) Fingal Road	2.45m AHD

Section 7 - Locality	Highest Recorded Flood Level
Kingscliff	3.09m AHD
Kingscliff West (Section B4)	-

Section 8 Locality	Highest Recorded Flood Level
Tumbulgum	3.94m AHD
Condong	4.05m AHD
Norths Lane (Condong)	-
Mur-bah - Buchanan St to Stand. Sawmill	5.15m AHD
Mur-bah	6.58m AHD
Mur-bah East & Mooball Street	5.40-5.05m AHD
Dorothy/William	4.65m AHD
Mur-bah South	6.53-5.84m AHD
Bray Park	7.40m AHD
Mur-bah South - Sth of Rose Ln	6.30m AHD

Section 8 Locality.	Highest Recorded Flood Level
Mur-bah South - Railway Street/ Buchanan Est	5.25m AHD
Bray Pk/Byangum/River Oak Drive	-
Murwillumbah Bellevue Heights/North Arm Road Department of Housing/ Riveroak Drive	- -
Cobaki	-
Byangum Bridge	-
Dallis Park Bakers Road/ Dallis Court/ Amarillo Drive	- -
Glenock Farm Uki end Murwillumbah end	- -
Murwillumbah Golden Links Haley Place Hall Drive Lundberg Drive Mountain View Retirement Home Reserve Creek Road to Cane Road, Condong Nunderi – (Norths Lane) Murwillumbah Showground/ Dorothy/ William Standard Sawmill to Condong	- - - - - - - - 4.65m AHD

ATTACHMENT 3



Tweed Link Issue 1001 11 APRIL 2017, page 2



The Hon. Melinda Pavey MP
Minister for Roads, Maritime and Freight

RECEIVED
15 APR 2018

Our Ref: 00478390

Mr Geoff Provest MP
Member for Tweed
PO Box 6695
TWEED HEADS SOUTH NSW 2486

BY:

Geoff
Dear Mr Provest,

Thank you for your correspondence on behalf of Ms Jennifer Kidd, President of the Tumbulgum Community Association Inc, about flood levels on the Pacific Highway in the Tweed Shire area.

I note Ms Kidd's concerns and appreciate the reasons which prompted you to write.

I note Ms Kidd's comments about a review of the Pacific Highway between Yelgun and Chinderah. Roads and Maritime Services acknowledges the community's concerns about this matter and has carried out a preliminary review of the new highway's design in light of the March/April 2017 flood.

Roads and Maritime designed and constructed this section of the highway under specific conditions of approval, in accordance with the NSW Department of Planning and Environment's (DPE) requirements. Roads and Maritime carried out numerous investigations throughout the project to ensure it met approval.

This stretch of the highway was designed and built to achieve a 100-year Average Recurrence Interval (ARI) immunity for road users, with the exception of the Tweed River floodplain crossing, which was designed for a 20-year ARI. During floods greater than a 20-year ARI in the Tweed River catchment, the flood waters will flow over the highway onto the floodplain.

In addition, it is a DPE requirement that the water not be raised immediately upstream by greater than 50mm, should a flood occur. For a 20-year ARI flood, impacts on upstream villages, and the towns of Tumbulgum and Murwillumbah (both on the Tweed River floodplain), would be less than 5mm.

Preliminary advice from the NSW Office of Environment and Heritage (OEH) indicates the flood level at Murwillumbah was its highest recorded. Further, the extremely high rainfall in the Rous River catchment, which joins the Tweed River at Tumbulgum, is consistent with the Tumbulgum flood-level data and the overall nature of the 2017 flood.

There are two rainfall gauges at Murwillumbah Bridge and North Murwillumbah. Data was collected and analysed in a report published by the Manly Hydraulics Laboratory, which found the bridge's gauge peaked at 5.84m Australian Height Datum, its highest recorded level.

The North Murwillumbah gauge peaked at around 6.13m. Tweed Shire Council records indicate the highest level prior to the 2017 floods stood at 6.04m during a 1954 flood. The 6.58m level for Murwillumbah, as noted by the Tumbulgum Community Association, is sourced from the Tweed Council Development Control Plan and should not be read as the Murwillumbah gauge. As such, this data is not comparable with that provided by OEH investigations.

Roads and Maritime acknowledges minimising flooding impacts is crucial when designing any road, including this section of the Pacific Highway. I understand the OEH is progressing a preliminary investigation, and further flood modelling, which will be released in a public report when these have been completed.

Roads and Maritime will continue to work closely with Council, the community and the NSW State Emergency Service to ensure accurate monitoring and evaluation during major storm events.

If Ms Kidd has any further questions, Mr Bob Higgins, Director Pacific Highway at Roads and Maritime, would be pleased to take her call on (02) 6640 1378.

Yours sincerely,



The Hon. Melinda Pavey MP
Minister for Roads, Maritime and Freight

13 APR 2018