

Appendix Two: DMR response to proposed recommendations

ATTACHMENT 3



**Pacific Motorway
Queensland Ombudsman: Proposed Report: 28 September 2006
Response to Section 17 – Proposed Recommendations**

Proposed Recommendation	Supporting Facts	DMR Position	Response
<p>Proposed recommendation 1</p> <p>To satisfy the IMP commitment about baseline noise levels, DMR offer individual architectural treatments for all premises existing in 1996 that, based on the 1996 noise scenario as modelled in 2003, will be exposed to a long-term increase in their respective baseline noise levels having regard to the predicted levels for the 2011 planning horizon.</p>	<ul style="list-style-type: none"> • 'Architectural treatments' refer to thickened glass, double glazing, sealing around doors and windows. Hence include 'mechanical ventilation/air-conditioning' which will be adequate in most cases. • Replace 'all' with 'only' those to clarify the intent beyond doubt. • The rationale for 'No sustained increase' (terminology used in the IMP) to be interpreted by Main Roads as less than 3 dB(A) is based on the definition in the Table 2 of the Interim Guidelines and Technical Notes for Road Traffic Noise Amelioration (July 1992), "Significance of Environmental Noise Exposure Changes", as 'Insignificant Change'. That is, by definition, an increase in noise levels by less than 3 dB(A) is accepted by road authorities as insignificant. • To keep faith with the use of the term 'No sustained increase' in the IMP, MR commits to appropriate remedial action to dwellings where noise levels are below the fixed noise criteria (68 dB(A)) but which, as verified via modelling, may experience a greater than or equal to 3 dB(A) increase by 2011. • The zone of accuracy of the CoRTN model is 300m from the road. CoRTN states 'extrapolation outside this range can lead to progressive and significant error but calculations can be extended outside the quoted range for the purpose of assessing changes in noise levels'. 	<p>Agree but modify</p>	<p>Redrafted recommendation 1</p> <p>1.1 To satisfy the IMP commitment about baseline noise levels, DMR offer mechanical ventilation/air-conditioning and individual architectural treatments (if necessary) for only those premises existing in 1996 that, based on the 1996 noise scenario as modelled in 2003, and within the 300m zone of accuracy of the CoRTN model, will be exposed to a forecast increase, by 2011, of at least 3 dB(A) above baseline noise levels existing in 1996.</p> <p>1.2 DMR undertake modelling to determine which premises that existed in 1996, beyond the 300m accuracy zone of CoRTN, will experience a forecast increase, by 2011, of at least 3 dB(A) above baseline noise levels existing in 1996 and subsequently offer mechanical ventilation and air-conditioning and individual architectural treatments (if necessary).</p>
<p>Proposed recommendation 2</p> <p>Priority for individual architectural</p>	<ul style="list-style-type: none"> • To be consistent with proposed recommendation 1, this requires redrafting. 	<p>Agree but modify</p>	<p>Redrafted recommendation 2</p> <p>Priority for individual installations of</p>

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treatments be determined having regard to the severity of noise increases.			mechanical ventilation and air-conditioning and architectural treatments (if necessary) be determined having regard to the severity of noise increases.
Proposed recommendation 3 If funds for the individual architectural treatments are not immediately available, DMR develop a program to complete all treatments by 2011.	<ul style="list-style-type: none"> • A process is in place to develop the program of treatments. 	Agree	
Proposed recommendation 4 Recommendations 1, 2 and 3 apply in relation to both new and upgraded sections of the motorway.	<ul style="list-style-type: none"> • The Pacific Motorway Project constructed during the 1997-2000 period included alignments of new road and upgraded sections of the Pacific Highway. This aspect needs to be clarified in the recommendation. 	Agree but modify	Redrafted recommendation 4 Recommendations 1, 2 and 3 apply in relation to both new and upgraded sections of the Pacific Motorway project (Logan River to Pappas Way).
Proposed recommendation 5 DMR ensure that noise monitoring following completion of the noise barrier program for the motorway is conducted as soon as practicable and any remedial action, necessary to achieve the IMP commitments in respect of both the maximum thresholds and any increases in baseline noise levels, is taken in a timely manner (Remedial action includes alterations to noise barriers and architectural treatments for any additional premises identified as experiencing a sustained increase in their respective baseline noise levels by 2011).	<ul style="list-style-type: none"> • Need to distinguish between the four stages of construction of noise barriers on the Pacific Motorway Project (see Attachment 4): <ul style="list-style-type: none"> ○ 13,900 m (45,140 sq m) of noise barriers installed during the construction of the project ○ 4,200 m (17,270 sq m) of noise barriers constructed after the project including: <ul style="list-style-type: none"> - those withdrawn from the major contracts and built after further consultation with the local community - those built as an outcome of additional monitoring following complaints ○ 4,980 m (21,370 sq m) of noise barriers commenced in 2003 as a result of the 2003 Reassessment Project ○ About 300 houses to have remedial action by alterations to noise barriers, mechanical ventilation/air-conditioning and individual architectural treatments (if necessary) for any additional premises that existed in 1996 and are identified as experiencing a sustained increase 	Agree but modify	Redrafted recommendation 5 DMR ensure that noise monitoring following completion of the noise barrier program (commenced in 2003) for the motorway is conducted as soon as practicable and any remedial action, necessary to achieve the IMP commitments in respect of both the maximum thresholds and any increases in baseline noise levels, is taken in a timely manner (Remedial action includes alterations to noise barriers, mechanical ventilation/air-conditioning and individual architectural treatments (if necessary) for any additional premises that existed in 1996 and are identified as experiencing a sustained increase in their respective baseline noise levels by 2011).

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	<p>in their respective baseline noise levels by 2011.</p> <ul style="list-style-type: none"> • Need to clarify the type of remedial action and the extent of additional premises. 		
<p>Proposed recommendation 6</p> <p>DMR develop and adhere to a clear and consistent message prior to any future public consultative process for proposed roadworks to avoid any misunderstanding by participants, and ensure that all commitments and undertakings are achievable.</p>	<ul style="list-style-type: none"> • DMR processes always intend such an outcome. This is consistent with its documented community consultation processes and procedures, past and present. Specific information on the consultation process in this case has been provided and further information can be provided to demonstrate this as may be required. • DMR can demonstrate that there was a consistent message on noise throughout the consultation process on this project. 	<p>Agree but modify</p>	<p>Redrafted recommendation 6</p> <p>DMR continue to provide a clear and consistent message prior to any future public consultative process for proposed roadworks to avoid any misunderstanding by participants, and ensure that all commitments and undertakings are achievable.</p>
<p>Proposed recommendation 7</p> <p>DMR ensure that, wherever practicable, all public commitments and undertakings about proposed roadworks, including associated noise attenuation works, are met.</p>	<ul style="list-style-type: none"> • DMR processes always intend such an outcome. This is consistent with its documented community consultation processes and procedures, past and present. Specific information on the consultation process in this case has been provided and further information can be provided to demonstrate this as may be required. • DMR can demonstrate that there was a consistent message on noise throughout the consultation process on this project. • As demonstrated on this project, DMR have: <ul style="list-style-type: none"> ○ Met continuously with community representatives including RAIN members ○ Undertook post-construction monitoring to meet the requirements of the IMP. 	<p>Agree but modify</p>	<p>Redrafted recommendation 7</p> <p>DMR continue to ensure that, wherever practicable, all public commitments and undertakings about proposed roadworks, including associated noise attenuation works, are met.</p>
<p>Proposed recommendation 8</p> <p>DMR ensure that, wherever practicable, noise attenuation works associated with proposed roadworks are completed at the same time as the construction of the roadworks.</p>	<ul style="list-style-type: none"> • Because of the variability in resultant noise levels, the process for the treatment of road traffic noise needs a two stage process: <ul style="list-style-type: none"> ○ Stage 1: Take measurements, model and analyse current and predict future noise environments and so determine where noise treatments are required as part of the design process and construct as part of the project. ○ Stage 2: After completion of the construction, 	<p>Agree but modify</p>	<p>Redrafted recommendation 8</p> <p>DMR ensure that:</p> <ul style="list-style-type: none"> • where required and wherever practicable, Stage 1 noise attenuation works associated with proposed roadworks are completed at the same time as the construction of the roadworks

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	<p>monitor the actual noise levels and undertake any further noise treatments (if necessary) which are required if the DMR criteria will not been achieved due to the physical variables.</p>		<ul style="list-style-type: none"> Stage 2 noise attenuation works (if necessary) are completed as soon as practicable after the construction of the roadworks.
<p>Proposed recommendation 9</p> <p>If any variation is made to Schedule 1 in the EP Noise Policy in relation to the planning levels for beneficial assets (public roads), DMR review the design levels in its Noise Code for State-controlled roads.</p>	<ul style="list-style-type: none"> DMR reviews all its codes periodically and takes into account other relevant policies and codes. 	<p>Agree but modify</p>	<p>Redrafted recommendation 9</p> <p>If any variation is made to Schedule 1 in the EP Noise Policy in relation to the planning levels for beneficial assets (public roads), DMR continue to review the design levels in its Noise Code for State-controlled roads.</p>
<p>Proposed recommendation 10</p> <p>DMR make reference in its Noise Code to all planning levels in the EP Noise Policy as they relate to State-controlled roads and articulate its reasons for the non-inclusion of night-time and maximum road traffic noise levels (if that situation is to continue).</p>	<ul style="list-style-type: none"> This will be included in the Revised Noise Code 	<p>Agree</p>	
<p>Proposed recommendation 11</p> <p>DMR commission further research by the end of 2007 with a view to developing an appropriate design level for night-time noise having regard to the corresponding planning level in the EP Noise Policy and, in due course, include the adopted design level for night-time noise in its Noise Code.</p>	<ul style="list-style-type: none"> DMR research is prioritised in accordance with various factors. MR cannot commit to a fixed time frame, as this recommendation implies, to conduct complex research into night-time noise criteria. However, it is something that DMR plans to develop and it may eventually form part of the DMR Noise Code, for example, research of $L_{10}(18h)$ with $L_{eq}(1h)$ from measurements has already been undertaken. 	<p>Agree but modify</p>	<p>Redrafted recommendation 11</p> <p>DMR undertake further research into night-time noise levels that addresses EPA guidelines, feasibility, desirability, implementation and management practicality, as part of the ongoing development of the DMR Noise Code.</p>
<p>Proposed recommendation 12</p> <p>DMR actively promote, through</p>	<ul style="list-style-type: none"> DMR, while continuously interacting and collaborating with its interstate counterparts on the full range of technical issues affecting state road 	<p>Agree but modify</p>	<p>Redrafted recommendation 12</p> <p>DMR continue to promote, through</p>

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<p>Austrroads, a national traffic noise standard for different road classifications that is both achievable and gives due recognition to the impact of road traffic noise on the community, with a view to the standard being adopted by all Australian road authorities.</p>	<p>authorities, cannot by itself commit to delivering such an outcome.</p> <ul style="list-style-type: none"> • Noise issues have been considered in the past by Austrroads. It is a vexing issue for all state road authorities. Past initiatives have not been able to reach a national agreement. • Proposed recommendations 11 and 14 also address DMR's ongoing improvement process. 		<p>Austrroads, a national road traffic noise standard for different road classifications that is achievable, technically feasible, reasonable and gives due recognition to the impact of road traffic noise on the community.</p>
<p>Proposed recommendation 13</p> <p>If, by the end of 2008, a uniform national road traffic noise standard is not achieved, DMR review its design levels by the end of 2009 to achieve road traffic noise thresholds that are generally consistent with the majority of state and territory road authorities in Australia.</p>	<ul style="list-style-type: none"> • DMR, while continuously interacting and collaborating with its interstate counterparts on the full range of technical issues affecting state road authorities, cannot by itself commit to delivering such an outcome. • Noise issues have been considered in the past by Austrroads. It is a vexing issue for all state road authorities. Past initiatives have not been able to reach a national agreement. • Proposed recommendations 11 and 14 also address DMR's ongoing improvement process. • The time frame shown is unrealistic given the complexity and variability of this research. 	<p>Agree but modify</p>	<p>Redrafted recommendation 13</p> <p>If a uniform national road traffic noise standard is not achieved, DMR review its design levels to achieve road traffic noise thresholds that can be justified compared with the majority of state and territory road authorities in Australia.</p>
<p>Proposed recommendation 14</p> <p>DMR review its Noise Code every two years and update it in line with emerging scientific, engineering, technical and administrative developments regarding road traffic noise issues.</p>	<ul style="list-style-type: none"> • DMR is committed to continually improving its standards, guidelines and practices. • DMR continually scans national and global practice, and undertakes its own research and development to supplement gathered knowledge. • DMR considers the timeframe contained in this recommendation is unnecessarily restrictive. 	<p>Agree but modify</p>	<p>Redrafted recommendation 14</p> <p>DMR continue to review and update the DMR Noise Code as circumstances and legislation change and in line with emerging scientific, engineering, technical and administrative developments regarding road traffic noise issues.</p>
<p>Proposed recommendation 15</p> <p>The section on complaint management in the revised Noise Code be amended to provide remedial measures for</p>	<ul style="list-style-type: none"> • Payment for noise testing costs could become very resource wasteful, particularly when noise modelling requiring fewer but strategically-placed measurements, is the accepted industry practice. • The measurement, analysis and interpretation of noise data and the calibration of noise models 	<p>Agree but modify</p>	<p>Redrafted recommendation 15</p> <p>DMR includes a comprehensive complaint management section, including remedial measures and treatments, in the DMR Noise Code.</p>

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<p>complainants, whose complaints are substantiated, including reimbursement of noise testing costs.</p>	<p>requires high level expertise. It is not as simple as taking single noise measurements.</p> <ul style="list-style-type: none"> DMR is committed to consistency in the way it addresses complaints and has included a comprehensive complaints management section in its Revised Noise Code 		
<p>Proposed recommendation 16</p> <p>DMR ensure that its codes of practice regarding road design, construction and maintenance:</p> <ul style="list-style-type: none"> clearly reflect the requirements of the TI Act in terms of linkages with national and international standards and best practice; describe the national and international standards and best practice that are relevant to the issue being addressed in the particular code of practice; and state whether the standards and practices set out in each code are consistent with the relevant national and international standards and best practice and, if not, the reasons for any variation. 	<ul style="list-style-type: none"> DMR does consider national and international standards and best practice when a code of practice is developed and reviewed. DMR is confident in the robustness of the decision-making process to determine the codes of practice appropriate at that time. Documenting the process followed, and stating the consistency, does not necessarily improve the outcome of the code. Comparisons of the DMR code with other codes within the body of the DMR code could be confusing to users and is not practised elsewhere. 	<p>Agree but modify</p>	<p>Redrafted recommendation 16</p> <p>DMR continue to ensure that its codes of practice regarding road design, construction and maintenance:</p> <ul style="list-style-type: none"> clearly reflect the requirements of the TI Act in terms of linkages with national and international standards and best practice; consider the national and international standards and best practice that are relevant to the issue being addressed in the particular code of practice.
<p>Proposed recommendation 17</p> <p>DMR ensure that full and accurate records are created of all significant decisions (and of the reasons for the decisions) about roadworks or other issues affecting</p>	<ul style="list-style-type: none"> A hard copy recording system was used for the Pacific Motorway project. Enormous quantities of records exist, however retrieval of specific records has proved problematic. DMR now utilises an electronic document management system (DMS) that creates electronic records, manages these records and provides for 	<p>Agree but modify</p>	<p>Redrafted recommendation 17</p> <p>DMR continue to ensure that full and accurate records are created of all significant decisions (and of the factors leading to the decisions) about roadworks and that such records are</p>

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<p>members of the community and that such records are kept and maintained in accordance with the <i>Public Records Act 2002</i>.</p>	<p>easier retrieval at a later stage.</p> <ul style="list-style-type: none"> • This records system complies with the requirements of the <i>Public Records Act 2002</i>. • To include 'other issues affecting members of the community' would add an enormous quantity to the DMS with little gain for all parties. 		<p>kept and maintained in accordance with the <i>Public Records Act 2002</i>.</p>
<p>Proposed recommendation 18</p> <p>DMR review its records management system by 30 June 2007 to ensure that records are maintained and stored in a manner that facilitates their ready location and retrieval.</p>	<ul style="list-style-type: none"> • A hard copy recording system was used for the Pacific Motorway project. Enormous quantities of records exist, however retrieval of specific records has proved problematic. • DMR now utilises an electronic document management system (DMS) that creates electronic records, manages these records and provides for easier retrieval at a later stage. • This records system complies with the requirements of the <i>Public Records Act 2002</i>. 	<p>Agree but modify</p>	<p>Redrafted recommendation 18</p> <p>DMR undertake regular records audits on projects to ensure that records are maintained and stored in a manner that facilitates their ready location and retrieval and in accordance with DMR records policies.</p>
<p>Proposed recommendation 19</p> <p>DMR ensure that it implements all 12 recommendations in the 2002 IRT Report by 31 December 2006 and acts in accordance with the policies and procedures resulting from those recommendations.</p>	<ul style="list-style-type: none"> • Recommendations 1-6 and 8 of the IRT report were implemented as part of the Pacific Motorway Reassessment project. • Recommendations 7, 8, 9, 11 and 12 have been included in the revised DMR Noise Code. • Recommendation 10 has been the subject of research since 2001 by Stephen Samuels. Correction factors applying to different surfacing types have been included in the revised DMR Noise Code. • The Ombudsman's Report should reflect the completion of all recommendations from the IRT Report by DMR. The relevant opinions and recommendations may need to be modified. 	<p>Agree but modify</p>	<p>Proposed recommendation 19</p> <p>It be noted that DMR has implemented or responded to all 12 recommendations in the 2002 IRT Report. DMR continue to act in accordance with the policies and procedures resulting from those recommendations.</p>
<p>Proposed recommendation 20</p> <p>DMR continue to research ways in which the noise effects of the PCC pavement on the motorway can be reduced for residents along the motorway; and act on the findings</p>	<ul style="list-style-type: none"> • DMR believes recommendations 1, 2, 3, 4, 5, 11, 14 and 19 adequately address the commitments made in the IMP for the Pacific Motorway project and ongoing improvements to the DMR Noise Code. 	<p>Agree but modify</p>	<p>Redrafted recommendation 20</p> <p>DMR continue to monitor ways in which the noise effects of the PCC pavement on the motorway can be reduced for residents along the motorway; and act on the findings of that research having</p>

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of that research having regard to all relevant factors at the material time.			regard to all relevant factors at the material time.
<p>Proposed recommendation 21</p> <p>Any proposal to conduct a resurfacing trial on the PCC pavement on the motorway should be based on a proper assessment of relevant criteria, including whether the highway is adjacent to a 'noise-critical area'.</p>	<ul style="list-style-type: none"> • DMR does not propose to conduct any resurfacing trials on the Pacific Motorway. • There are considerable technical and safety risks associated with trials of this nature. Trials on the Pacific Motorway are not an option for DMR. • The performance of asphalt material across the joints of a Plain Concrete Pavement leads to frequent repairs, disruption to traffic and is not an acceptable option for DMR. • This recommendation is not technically feasible or acceptable to good management of the motorway. 	Not supported	Delete proposed recommendation 21.
<p>Proposed recommendation 22</p> <p>DMR continue to investigate and, as appropriate, implement measures to improve motorist visibility of lane markings in wet conditions on the PCC section of the motorway.</p>	<ul style="list-style-type: none"> • DMR will continue to monitor methods to improve the visibility of lane markings in wet conditions. • Trials with different lane markings have shown that 150mm wide white lane lines in combination with raised pavement markers have improved the visibility of the lane markings in wet conditions. 	Agree	

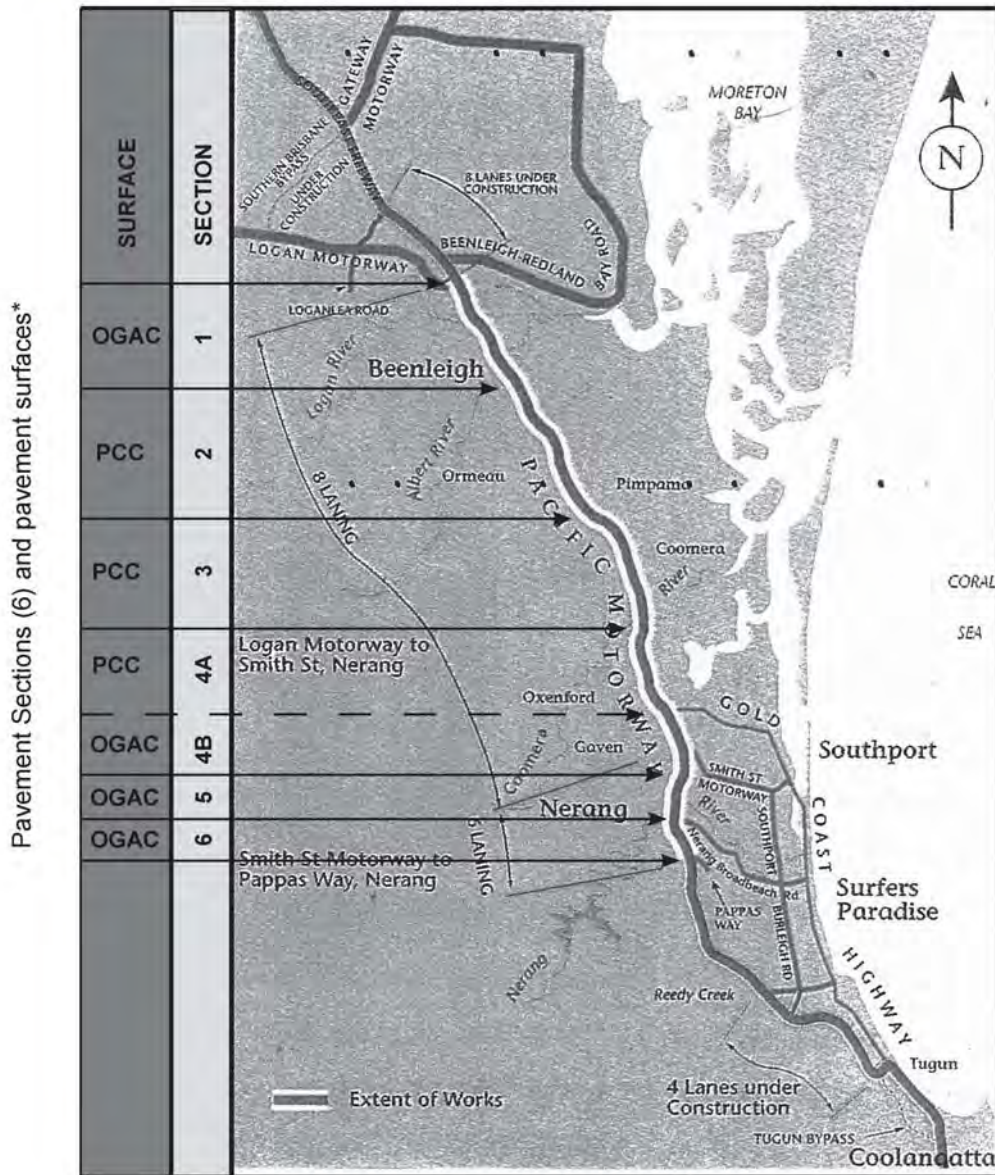
Appendix Three: Table 10.1 Technical Paper No. 13

Table 10.1: Recommended Barrier Design and Location

Location of Barrier Along the Length of the Alignment						
ID	Location	L (m)	H (m)	PR	Type	Noise Reduction dB(A)
A1	Logan Motorway off-ramp	260	3.0 - 4.0	Yes	B	2.0 - 3.0
A2	Clarks Road -Logan River	680	3.5 - 5.0	Yes	B	2.0 - 8.0
B1	River Hills Road to Brigade Drive	280	2.5 - 4.0	Yes	B	4.0 - 9.0
B2	Peacock Avenue-Blackbird Street	130	2.0 - 2.5	Yes	B	3.0 - 6.0
B3	Pine Avenue	350	2.5 - 5.0	Yes	B	2.0 - 9.0
B4	Logan Street-Fryar Road	790	3.0 - 4.5	Yes	B/MC	3.0 - 12.0
B5	City Road-Juniper Street	480	2.5 - 4.0	Yes	B/MC	4.0 - 15.0
B6	Saverin Road-Clover Court	160	2.5 - 3.5	Yes	B	2.0 - 4.0
B7	Beenleigh State High School	245	2.5	Yes	B/M	3.0 - 7.0
D1	Pimpama State School	505	5.0	Yes	B/M	5.0 - 8.5
E1	Coomera - Northbound	150	2.0 - 4.5	Yes	B/M	2.0 - 5.0
E2	Coomera- Southbound	150	2.0 - 5.0	Yes	B/M	3.0 - 6.0
F1	Riverview	140	3.0 - 4.0	No	B	1.0 - 2.0
F2	Cottonwood Place	190	3.5 - 4.0	No	B/M	1.0 - 2.0
F3	Narracourt Place	140	2.0	No	B	1.0 - 3.0
F4	Sussex Court - Carnarvon Court	350	3.0 - 4.5	No	B	1.0 - 7.0
F5	Gardenvale Caravan Park	270	3.5 - 5.0	No	B	2.0 - 5.0
F6	River Oak Drive	90	3.0 - 3.5	No	B	1.0 - 3.0
G1	Studio Village	260	2.0	No	B/M	1.0
G2	Glade Drive - Connemara Road	1050	3.0 - 5.0	Yes	B/M	1.0 - 5.0
G3	Lilac Way	160	3.5 - 4.5	Yes	B	3.0
H1	Kingsway Drive	220	3.5-4.5	No	B	1-5
H2	Coolibah Road - Matilda Street	360	2.0-3.0	No	B	1.0-3.0
I1	Parkridge Drive	200	2-3	Yes	B	1.0-5.0
I2	Nerang Street	370	2.0-4.0	Yes	B	1.0-4.0
J1	Cayuga Street-Kerrabee Street	142	2.0-3.0	No	B	1.0-3.0

- L: Length of Barrier
- H: Height of Barrier
- PR: Pavement Reduction of open graded asphalt is required in addition to barrier.
- B: Noise Barrier Only
- B/M: Barrier on top of mound
- B/C: Barrier on top of cut
- B/MC: Barrier on top of mound and/or cut

Appendix Four: Location of the various pavement types used on the motorway



* See Chapter 5.5 of this report

LEGEND	
OGAC	Open-Graded Asphaltic Concrete
PCC	Portland cement concrete



QUEENSLAND
ombudsman