

Local Road Dilapidation Report Marrickville Council

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Signature:						

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Document Control

The Project Director is responsible for ensuring that this Report is reviewed and approved. The Construction Manager (Project Wide) is responsible for updating this Report to reflect changes to the Project, legal and other requirements, as required.

Amendments

Any revisions or amendments must be approved by the Project Director before being distributed or implemented.

Revision Details

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Local Road Dilapidation Report – Marrickville



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Local Road Dilapidation Report – Marrickville



1. Introduction

The CPB Contractors, Dragados and Samsung Joint Venture (CDS-JV) has been selected to deliver the New M5 from St Peters to Beverly Hills.

Condition B59 of the Minister's Condition of Approval (MCoA) requires CDS-JV to determine the access route(s) for heavy and oversized vehicles associated with the construction of the New M5 and site establishment works and prepare a Local Road Dilapidation Report for those local roads within the control of the relevant councils that would be utilised.

In addition, Clause 4.3 of Exhibit A of the SWTC requires CDS-JV to undertake ground and infrastructure condition surveys of all existing infrastructure (including local roads) within 50 meters of the Project Site and Temporary Areas and within a surface corridor which, when viewed in plan, has boundaries set a minimum of 50 meters beyond all excavations.

This is the dilapidation report of the local roads within the control of Marrickville Council.

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2. Dilapidation survey of Local Roads within the control of Marrickville Council

Local Roads within the control of Marrickville Council that require dilapidation survey falls in to two groups;

1. Group 1- Local roads that will be utilised for heavy and oversized vehicles associated with the construction of the New M5 (**Condition B59 of MCoA**)
2. Group 2- Local roads within 50m of the construction works but are not utilised for construction traffic (**Clause 4.3 of Exhibit A of the SWTC**)

2.1 Group 1- Local Roads that will be utilised for heavy and oversized vehicles

Table 1 below shows the increase in traffic volumes on the local roads that will be utilised for heavy and oversized vehicles associated with the construction of the WestConnex New M5.

Street	From	To	Length (m)	Direction	** Traffic volumes and performance 2016 with construction traffic			
					Heavy Vehicles			
					AM Peak Hour		PM Peak Hour	
					Total	% increase	Total	% increase
* Canal Rd	Princes Highway	Burrows Rd	550	East bound	91	39%	66	71%
				West bound	85	43%	107	35%

* Roads in Local Areas to be maintained by the Project Company

** New M5 EIS Vol 202B App G Traffic and Transport Part 02

Table 1

As per the Condition B59 of Minister's Condition of Approval the Local Road Dilapidation Report must assess the current condition of the road and describe mechanism to restore any damage that may result due to its use by traffic and transport related to the construction of the WestConnex New M5.

Local Road Dilapidation survey was undertaken by Australian Road Research Board (ARRB) and dilapidation survey results and the assessment of the current condition of the local roads is described in the report Pre-construction Road Condition Report WestConnex New M5 Main Works Project by ARRB (Attachment 1).

Mechanisms to restore any damage that may result due to its use by traffic and transport related to the construction of the project

Canal Road will be maintained by the Project Company during the Project Company's Work as required by 'Appendix C.6 Local Road Maintenance during Project Company's Work'. Any damage that may result due to construction traffic will be restored during the local road maintenance by the Project Company.

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2.2 Group 2 - Local roads within 50m of the construction works but are not utilised for construction traffic

Table 2 below shows the local roads within 50m of the construction works but that will not be utilised for project construction traffic. Assessment of the current condition of the local roads is described in the report Pre-construction Road Condition Report WestConnex New M5 Main Works Project by ARRB (Attachment 1).

A post-construction dilapidation report will be prepared within 4 weeks of the completion of construction. The post-construction dilapidation report will be compared with the pre-construction dilapidation report and any changes in the road condition will be recorded. Any damage that may have resulted due to construction of the Project Company's Work will be assessed and repairs undertaken based on the geotechnical instrumentation and monitoring data, primarily vertical and horizontal ground movement data, in conjunction with the dilapidations reports.

Street	From	To	Length (m)	Suburb
Holbeach Av	South St	To End	350	Tempe
South St	from Holbeach Av to Fanning St + 200m length to Tempe Golf Driving range entrance (see below for the 200m long section)		450	Tempe
(No name) access RD to Tempe Golf Driving Range	200m length to Tempe Golf Driving range entrance from South Street		200	Tempe
Station St	South St	Old St	100	Tempe
Hart St	South St	120m length	120	Tempe
Wentworth St	South St	160m length	160	Tempe
Fanning St	South St	180m length	180	Tempe
Barden St	Princes Highway	Wood ST	230	Tempe
Smith St	Princes Highway	Wood ST	190	Tempe
Lymmerston St	Princes Highway	100m length	100	Tempe
Samuel St	Princes Highway	100m length	100	Tempe
Milne Lane	Lymmerston St	Samuel St	80	Tempe
Terry St	Princes Highway	130m length	130	Tempe
Bellevue St	Princes Highway	30m length	30	Tempe
Belmore St	Princes Highway	140m length	140	Tempe
Belmore Lane	Park Rd	140m length	140	Sydenham

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Stewart Lane	Park Rd	Railway Rd	80	Sydenham
Railway Lane	Railway Rd	Henry St	200	Sydenham
Railway Rd	Princes Highway	150m length	150	Sydenham
Park Lane	Stewart Lane	100m length	100	Sydenham
Hilton Av	From Railway Lane	to end	50	Sydenham
Reilly Lane	Princes Highway	Henry Street	190	Sydenham
George St	Princes Highway	150m length	150	Sydenham
Yelverton St	Princes Highway	140m length	140	Sydenham
Frederick St	Princes Highway	120m length	120	Sydenham
Sutherland St	Princes Highway	110m length	110	St Peters
Grove St	Princes Highway	130m length	130	St Peters
Alfred St	Princes Highway	140m length	140	St Peters
Mary St	Princes Highway	150m length	150	St Peters
Roberts St	Edith St	140m length	140	St Peters
Edith St	Princes Highway	100m length	100	St Peters
Bakers Lane	Grove St	Mary St	130	St Peters
Roberts Lane	from Mary St to Edith St		120	St Peters
Talbot St	Princes Highway	50m length	50	St Peters
Bellevue St (opposite George St)	Princes Highway	70m length	70	St Peters
Bishop St	Princes Highway	Princes Highway	270	St Peters
Victoria St (south of Princes Highway)	from Princes Highway	to end	50	St Peters
Barwon Park Rd	Campbell St	Princes Highway	450	St Peters
Crown St	Campbell St	Barwon Park Rd	230	St Peters
Unwins Bridge Rd	100m from end of road works	100m length	100	St Peters
Mary St	End of road works	Princes Highway	350	St Peters

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Brown St	End of road works	Silver Rd	180	St Peters
Florence St	End of road works	Silver Rd	260	St Peters
Hutchinson St	100m from end of road works	100m length	100	St Peters
St Peters St	120m from end of road works	120m length	120	St Peters
Church St	145m from end of road works	145m length	145	St Peters

Table 2

Local Road Dilapidation Report – Marrickville



Attachment 1 – Pre-construction Road Condition Report for WestConnex New M5 Main Works Project

Local Road Dilapidation Report – Marrickville Council



Pre-Construction Road Condition
Report for WestConnex New M5 Main
Works Project – Marrickville Council

for CDS JV

SUMMARY

ARRB was commissioned by CDS JV (CPB Contractors Pty Limited, Dragados Australia Pty Ltd, and Samsung C&T Corporation Joint Venture) to survey and assess the current condition of the nominated roads associated with the construction of the WestConnex New M5 Main Works project.

A surface condition survey of the road network was conducted by ARRB in April 2016 to collect condition distresses including rutting, roughness, texture and cracking information.

The scope of the main report includes:

- collection and processing of pavement condition data into various data categories including roughness (IRI m/km), rut depth (mm), texture depth (mm) and cracking (% area).
- preparation of a report evaluating the overall condition of each road by direction and lane for each of the road authorities involved in the study area.

The study area involves several road authorities and the road conditions are reported in the below road groups for each organisation where applicable.

- Group 1 – Local roads that will be utilised for heavy and oversized vehicles
- Group 2 - Local roads within 50m of the construction works but are not utilised for construction traffic
- Group 3 - Non-haulage maintenance roads
- RMS- Arterial roads within 50m buffer zone

Condition assessments presented are based on current industry practices for the purpose of dilapidation rather than a customised local condition assessment. It should be noted that the condition statement could vary depending on the definition. See Section 1.3 for details.

The results of the condition assessment are presented separately for each road agency.

This report is an extraction from the main report of the sections relevant for Marrickville Council.

Marrickville Council

Condition assessments (based on current industry standards) are presented based on the average condition of road sections owned by Marrickville Council.

Group 1 roads:

	IRI group	Rut group	Texture group	Cracking group
CANAL RD_C_1	Good	Good	Fair	Very good
CANAL RD_C_2	Good	Good	Fair	Very good
CANAL RD_C_3	Good	Fair	Fair	Good
CANAL RD_P_1	Good	Good	Fair	Very good
CANAL RD_P_2	Good	Fair	Fair	Very good

Group 2 roads:

	IRI group	Rut group	Texture group	Cracking group
ALFRED ST_P_1	Very poor	Fair	Fair	Very good
BAKERS LANE_P_1	Very poor	Fair	Fair	Good

	IRI group	Rut group	Texture group	Cracking group
BARDEN ST_P_1	Good	Fair	Poor	Very good
BARWON PARK RD_C_1	Fair	Fair	Poor	Very good
BARWON PARK RD_P_1	Fair	Good	Fair	Very good
BELLEVUE ST (OPPOSITE GEORGE ST)_C_1	Very good	Fair	Poor	Good
BELLEVUE ST_C_1	Fair	Fair	Poor	Very good
BELLEVUE ST_P_1	Very good	Good	Fair	Very good
BELMORE LANE_P_1	Good	Poor	Fair	Very good
BELMORE ST_P_1	Fair	Good	Fair	Very good
BISHOP ST_P_1	Very poor	Fair	Fair	Good
BROWN ST_P_1	Fair	Good	Poor	Very good
CHURCH ST_P_1	Fair	Good	Poor	Good
CROWN ST_P_1	Very poor	Fair	Poor	Very good
EDITH ST_P_1	Fair	Fair	Fair	Very good
FANNING ST_P_1	Good	Very good	Poor	Fair
FLORENCE ST_P_1	Poor	Good	Fair	Very good
FREDERICK ST_P_1	Good	Fair	Fair	Very good
GEORGE ST_C_1	Good	Good	Fair	Very good
GEORGE ST_P_1	Good	Good	Fair	Very good
GROVE ST_P_1	Very poor	Fair	Fair	Very good
HART ST_P_1	Poor	Good	Fair	Fair
HILTON AV_P_1	Very good	Fair	Fair	Very good
HOLBEACH AV_C_1	Fair	Fair	Poor	Good
HOLBEACH AV_P_1	Fair	Good	Fair	Fair
LYMERSTON ST_C_1	Very poor	Good	Poor	Very good
LYMERSTON ST_P_1	Good	Fair	Fair	Very good
MARY ST_P_1	Poor	Fair	Poor	Very good
MILNE LANE_P_1	Very good	Poor	Fair	Very good
PARK LANE_P_1	Very poor	Fair	Fair	Very good
RAILWAY LANE_P_1	Fair	Fair	Fair	Very good
RAILWAY RD_C_1	Good	Fair	Poor	Fair
RAILWAY RD_C_2	Good	Fair	Poor	Very good
RAILWAY RD_P_1	Good	Fair	Poor	Very good
RAILWAY RD_P_2	Fair	Fair	Poor	Very good
REILLY LANE_P_1	Very poor	Good	Poor	Very good
ROBERTS LANE/STREET_P_1	Poor	Good	Poor	Good
ROBERTS ST_P_1	Very poor	Good	Poor	Good
SAMUEL ST_P_1	Fair	Good	Fair	Very good
SMITH ST_P_1	Fair	Fair	Fair	Very good

	IRI group	Rut group	Texture group	Cracking group
SOUTH ST_P_1	Very poor	Good	Poor	Good
ST PETERS ST_P_1	Poor	Good	Poor	Very good
STEWART LANE_P_1	Very poor	Good	Fair	Very good
SUTHERLAND ST_C_1	Fair	Good	Poor	Very good
SUTHERLAND ST_P_1	Good	Fair	Fair	Very good
TALBOT ST_C_1	Poor	Good	Poor	Very good
TALBOT ST_P_1	Very poor	Fair	Poor	Good
TERRY ST_C_1	Good	Fair	Poor	Very good
TERRY ST_P_1	Good	Very good	Poor	Very good
UNWINS BRIDGE RD_C_1	Very poor	Fair	Fair	Very good
UNWINS BRIDGE RD_C_2	Very poor	Fair	Fair	Very good
UNWINS BRIDGE RD_P_1	Poor	Fair	Poor	Very good
UNWINS BRIDGE RD_P_2	Poor	Fair	Fair	Very good
VICTORIA ST (SOUTH OF PRINCES HIGHWAY)_P_1	Very poor	Fair	Fair	Good
WENTWORTH ST_P_1	Poor	Fair	Poor	Poor
YELVERTON ST_C_1	Very poor	Good	Fair	Good
YELVERTON ST_P_1	Very poor	Fair	Fair	Very good

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1 INTRODUCTION

1.1 General

ARRB was commissioned by CDS JV (CPB Contractors Pty Limited, Dragados Australia Pty Ltd, and Samsung C&T Corporation Joint Venture) to survey and assess the current condition of the nominated roads associated with the construction of the WestConnex New M5 Main Works project.

Pavement surface condition survey of the road network was undertaken by ARRB in April 2016 to collect surface condition distresses including rutting, roughness, cracking and texture depth. The survey scope included a series of roads managed by several organisations and the pre and post construction condition report is presented for these roads.

The study area involves several road authorities. The road condition is reported in separate road groups for each organisation where applicable.

- Group 1 – Local roads that will be utilised for heavy and oversized vehicles
- Group 2 - Local roads within 50m of the construction works but are not utilised for construction traffic
- Group 3 - Non-haulage maintenance roads
- RMS- Arterial roads within 50m buffer zone

The report summarises the current surface condition of the affected road sections by lane.

The following sections address road conditions for Marrickville Council.

1.2 Condition Survey

ARRB used Hawkeye 2000 survey vehicle to capture surface condition data of the road pavement network including:

- rut depth (inner, outer and lane)
- roughness (IRI, NAASRA)
- surface texture including sand patch texture depth (SPTD) and sensor measured texture depth (SMTD) for outer and between wheel paths.
- Surface condition including cracking data and other surface defects.



Source: ARRB Group Ltd Figure

Figure 1.1: Network survey vehicle (NSV)

1.3 Assumptions for levels of services

To help communicate between engineers and management teams, condition data is further grouped into “Very Good”, “Good”, “Fair”, “Poor”, and “Very poor” based on current industry practices, see Table 1.1.

Table 1.1: Current industry Level of services

Class name	Very Good	Good	Fair	Poor	Very poor
Rut depth (mm) range	0–2.5	2.5–5	5–10	10–15	>15
Roughness (IRI) range	0–1.5	1.5–3.0	3.0–4.2	4.2–5.33	>5.33
Texture range (mm)	>1.2	1.2–0.8	0.8–0.4	0.4–0.2	0.2–0
Cracking (%) range	0–5	5–10	10–15	15–20	>20

1.4 Scope

The scope of the report is as follows:

- collection and processing of pavement condition data including roughness (IRI m/km), rut depth (mm), cracking (%) and texture depth (mm)
- preparation of a report evaluating the current condition of the road and describe outstanding defects in terms of rutting, roughness, texture depth and cracking

2 MARRICKVILLE COUNCIL

Table 2.1 shows the average condition of IRI, rutting, texture depth and cracking for the nominated roads of reporting for the MC (Marrickville Council) in terms of Group 1 and Group 2 road.

Table 2.2 presents the worst condition on each of the selected roads. Below is the definition of Group 1 and Group 2:

- Group 1 – Local Roads that will be utilised for heavy and oversized vehicles
- Group 2 - Local roads within 50m of the construction works but are not utilised for construction traffic

Table 2.1: Average road network condition- MC- Group 1 road

	IRI (m/km)	Rut (mm)	Texture depth (mm)	Cracking (%)
CANAL RD_C_1	1.56	4.29	0.45	1.80
CANAL RD_C_2	2.00	4.71	0.46	1.80
CANAL RD_C_3	2.21	5.34	0.50	6.48
CANAL RD_P_1	2.14	3.32	0.46	1.53
CANAL RD_P_2	2.61	5.88	0.48	0.00

Average road network condition for Group 2 road is presented in Appendix due to its size. (Table 0.1)

Table 2.2: Worst condition on the network- MC- Group 1 road

	IRI (m/km)	Rut (mm)	Texture depth (mm)	Cracking (%)
CANAL RD_C_1	2.07	6.62	0.37	3.00
CANAL RD_C_2	2.42	6.64	0.38	4.30
CANAL RD_C_3	3.59	7.24	0.38	10.60
CANAL RD_P_1	3.22	4.05	0.40	3.33
CANAL RD_P_2	4.49	6.99	0.40	0.00
CANAL RD_C_1	2.07	6.62	0.37	3.00

The worst condition of Group 2 road is presented in Table 0.2.

According to the definition shown above (Section 1.3), the following condition statement is presented for each of the surveyed road. It should be noted that the condition statement could vary depending on the definition. The following condition categories are for the purpose of the pre and post construction comparison rather than a customised local condition assessment.

Table 2.3: Categories of condition- MC- Group 1 road

	IRI group	Rut group	Texture group	Cracking group
CANAL RD_C_1	Good	Good	Fair	Very good
CANAL RD_C_2	Good	Good	Fair	Very good
CANAL RD_C_3	Good	Fair	Fair	Good
CANAL RD_P_1	Good	Good	Fair	Very good

CANAL RD_P_2	Good	Fair	Fair	Very good
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The condition categories report for Group 2 road is included in Table 0.3.

Each of the individual physical parameter (rut depth, roughness, texture depth and cracking) is described separately in the following sections.

2.1 Rut Depth

A rut is a pavement defect in the form of a longitudinal depression of the surface, usually in a wheel path (Austroads 2006b).

Rutting is considered as one of the most critical parameters on bituminous pavements in urban environments, as it reflects the deformation of the pavement. Rutting also has implications for road safety due to the potential for water ponding and subsequent loss of skid resistance.

The deformation (rutting), of the asphalt may be functional or structural distress, depending on the pavement’s base. Signalised intersections with asphalt pavements are particularly prone to rutting under heavy traffic.

For the current project, rutting data is collected using a 13-point laser system, which measures a 2-metre transverse profile across the lane. A full transverse profile is measured every 20 mm of longitudinal travel and the processing software allows both lane and wheel path rutting to be measured using the string line and straight edge model.

Figure 2.1 and Figure 2.2 present the average rutting of each road lane for Group 1 and Group 2 respectively. Some sections in Group 2 show rut depth of up to 12mm, such as BELMORE LANE_P_1 and MILNE LANE_P_1 and are considered ‘poor’.

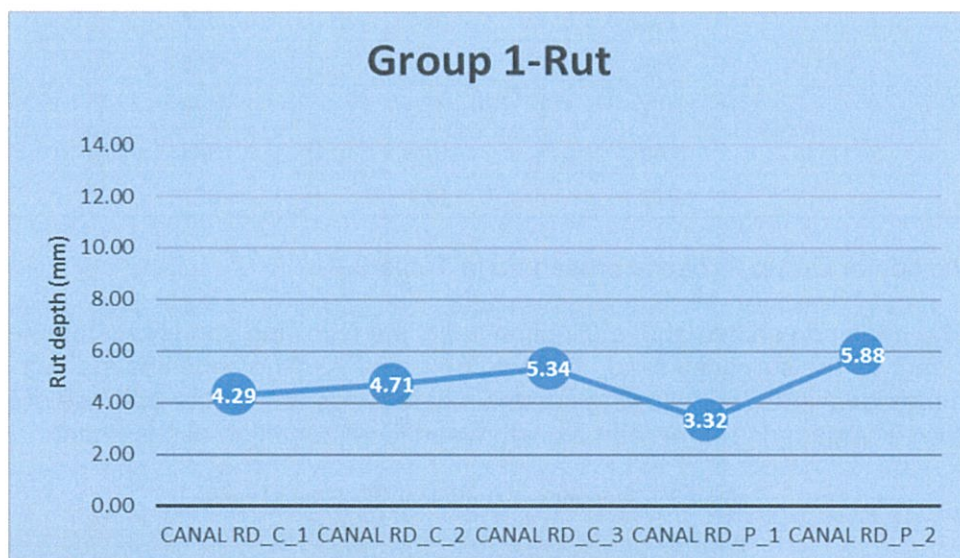


Figure 2.1: Rutting condition- MC- Group 1 road

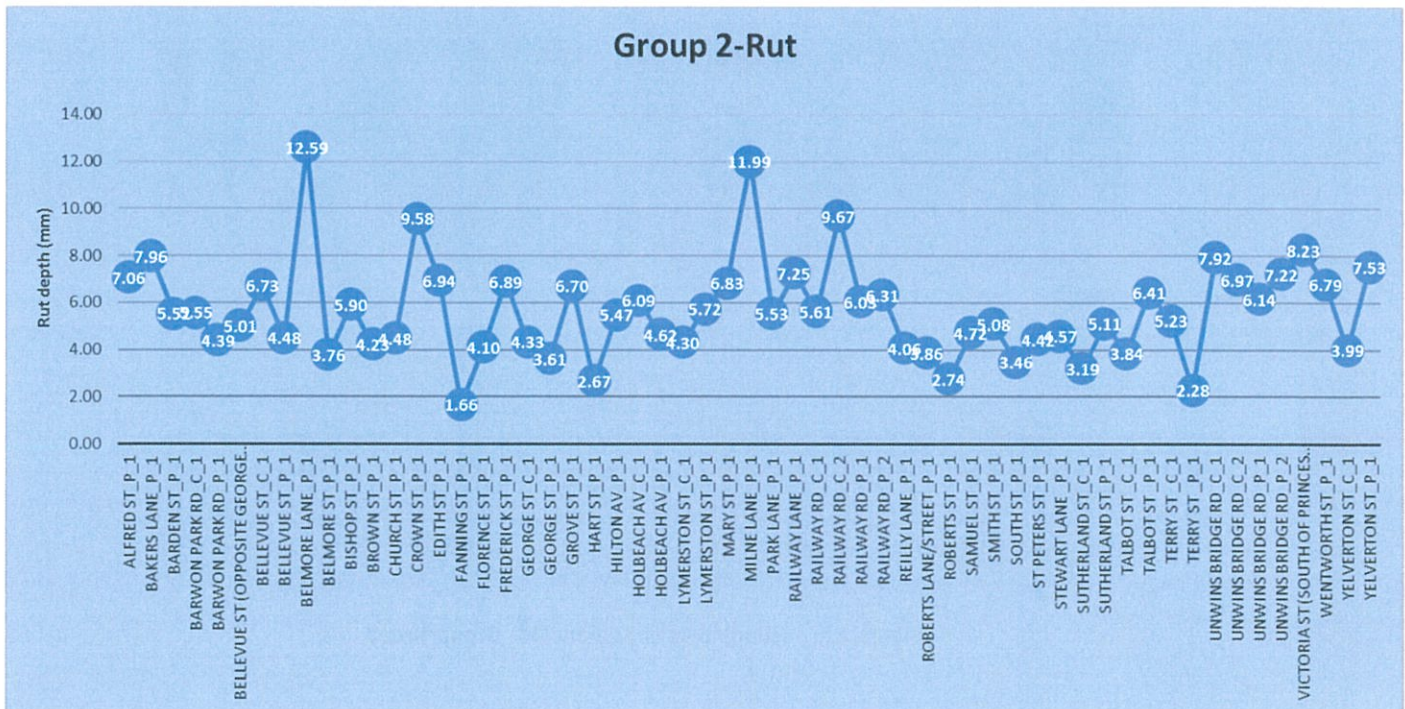


Figure 2.2: Rutting condition- MC- Group 2 road

2.2 Roughness

Roughness is considered as an important indicator of driver comfort and its change is accepted as an indicator of condition deterioration. Roughness data is presented as the International Roughness Index (IRI), the average of the left and right wheel path values for the surveyed lanes. Austroads has endorsed the International Roughness Index (IRI) as the reporting unit for road roughness in Australasia (Austroads 2006a).

Figure 2.3 and Figure 2.4 shows the average roughness condition of each surveyed lane for Group 1 and Group 2. Most Group 1 roads present roughness value of around 2 IRI and are considered 'fair', except KINGSGROVE ROAD_P_2. Group 2 contains some section with roughness up to 8 IRI, such as ALFRED ST_P_1, BAKERS LANE_P_1, BISHOP ST_P_1, and STEWART LANE_P_1; VICTORIA ST (SOUTH OF PRINCES HIGHWAY)_P_1 even go up to 10 IRI.

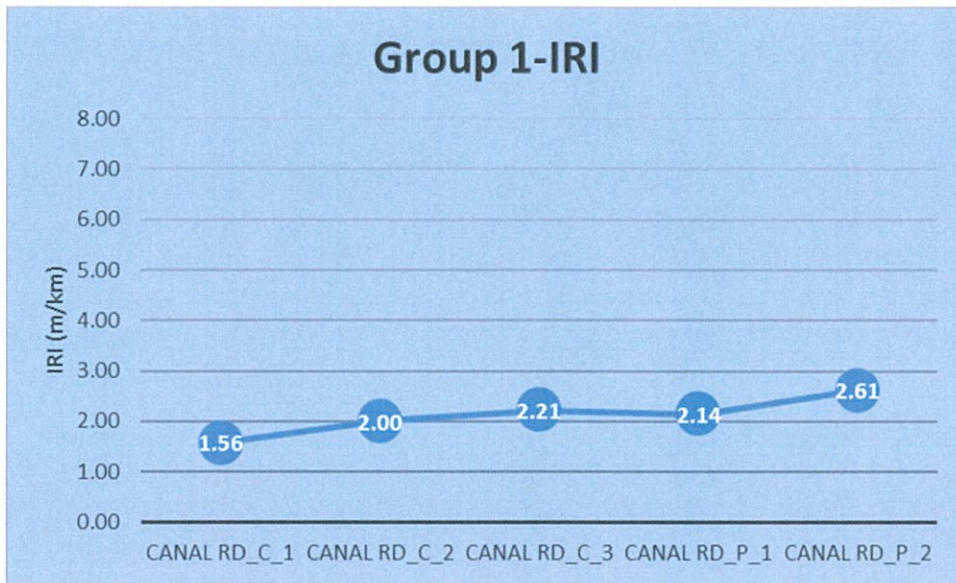


Figure 2.3: Roughness condition- MC- Group 1 road

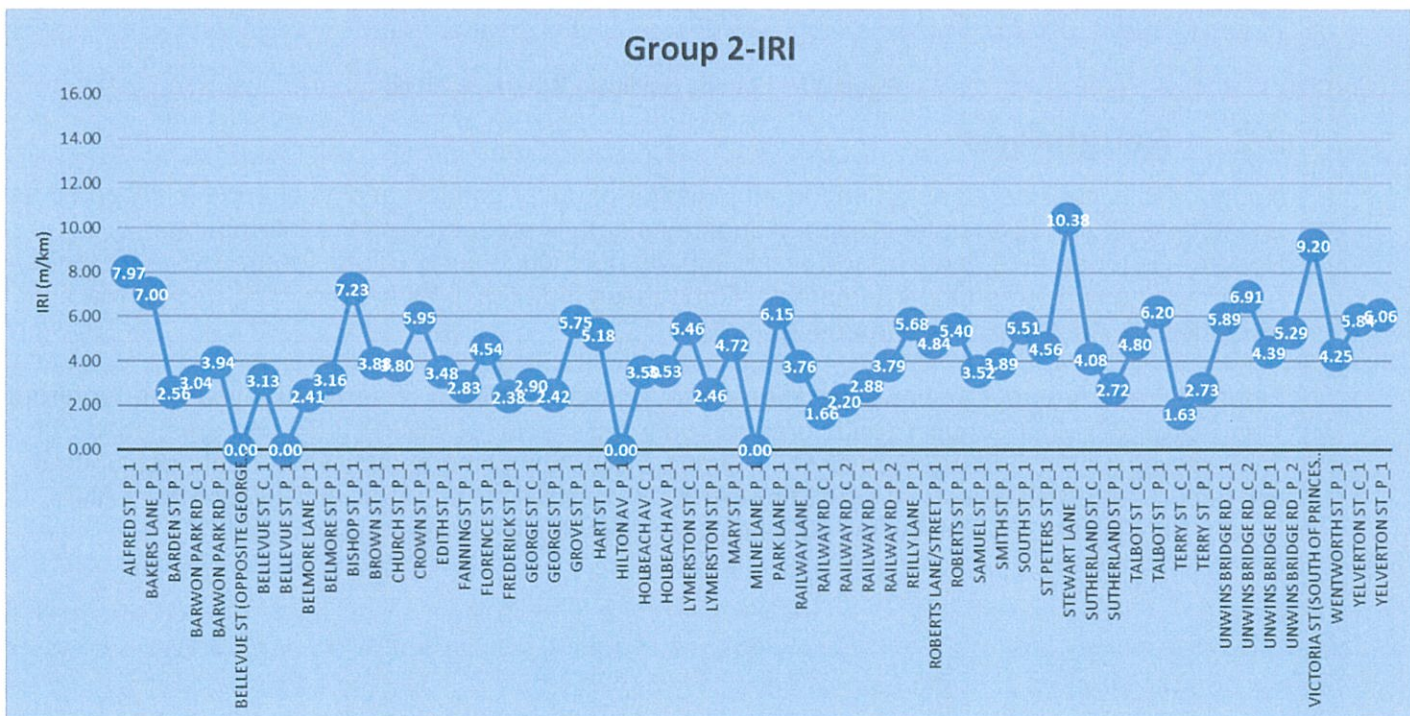


Figure 2.4: Roughness condition- MC- Group 2 road

2.3 Texture Depth

Texture depth refers to the amplitude of deviations from the surface plane of the road and is influenced by the size, shape and spacing of the aggregate of the surfacing material.

Texture is an important contributor to safety, as adequate texture depth is required to maintain skid resistance, particularly under wet conditions. On bituminous surfaces, it may indicate the loss of texture or appearance of bitumen on the surface. Both the outer (where trafficking is greatest) and

inner wheel paths (where trafficking is minimal) were measured. It should be noted that a comparison of both could indicate texture loss, which should be monitored against future measurements to determine the rate and extent of deterioration. In the analysis, texture was taken from the survey data as the minimum of SMTD (mm) of the left wheel path and right wheel path.

As indicated in Figure 2.5 and Figure 2.6, most roads in Group 1 are considered 'poor' in texture depth condition. Group 2 roads are found to be in 'fair' or 'poor' condition for texture depth.

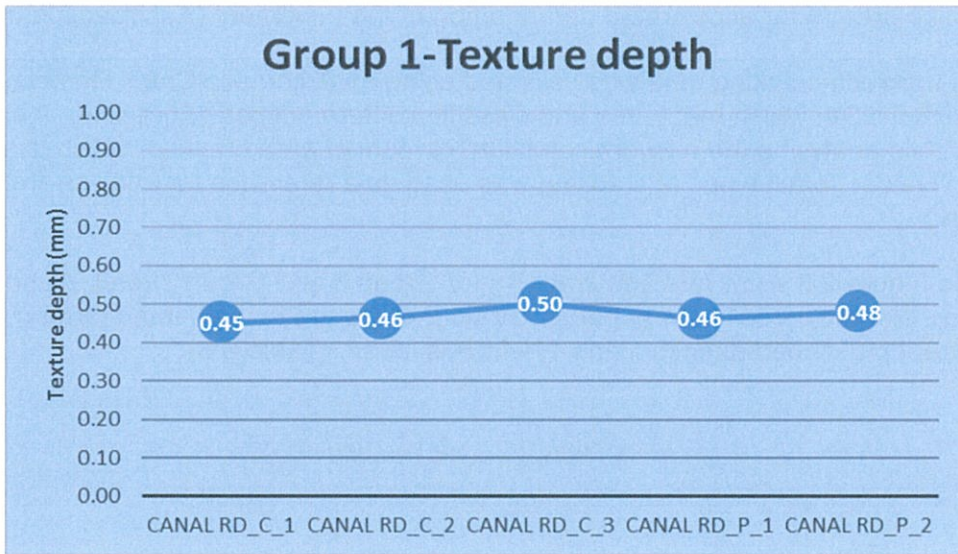


Figure 2.5: Texture depth- MC- Group 1 road

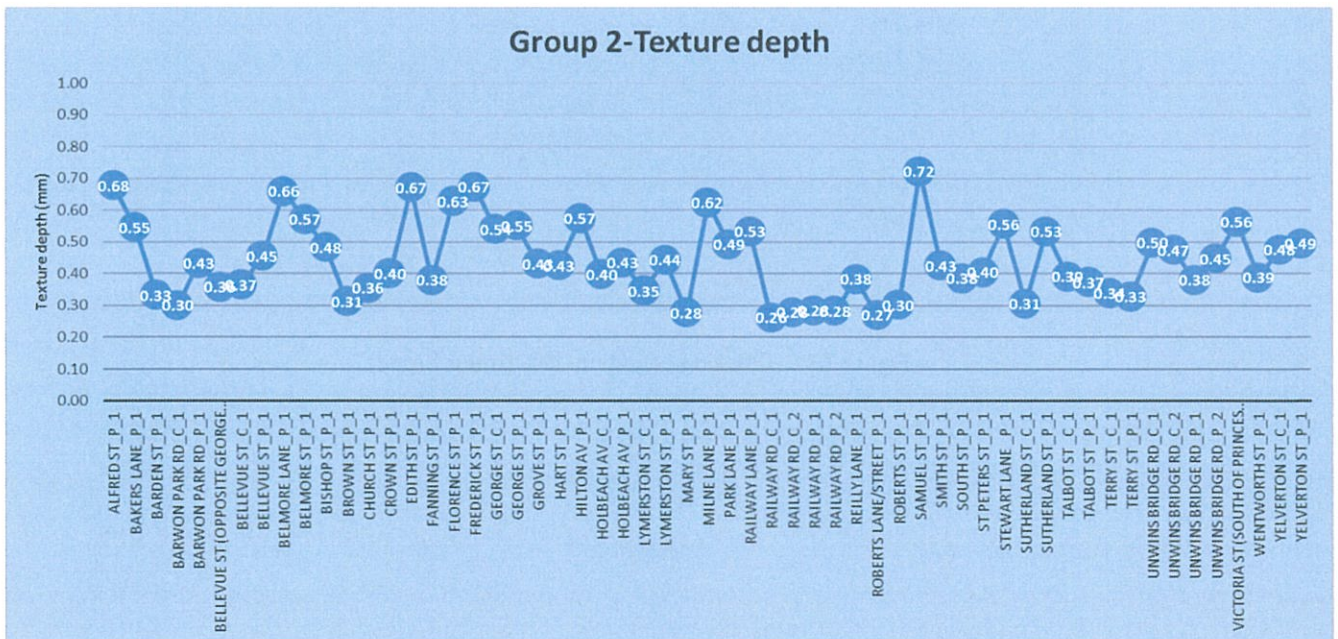


Figure 2.6: Texture depth- MC- Group 2 road

2.4 Cracking

A crack is an unplanned break or discontinuity in the integrity of the pavement surface, usually a narrow opening or partial fracture, often indicating vertical splitting of the pavement, not necessarily extending through the entire thickness of a course or pavement (Austroads 2006C).

Cracks may be linear (transverse or longitudinal), interconnected (crocodile or block), or irregular, single and isolated or in groups, with varying spacing between them. Once cracking is initiated, the potential is much greater for accelerated deterioration of the pavement (Austroads 2006C).

For the current project, cracking data was collected using an Automatic Crack Detection system fitted to the ARRB NSV, which measures and classifies different types of cracking, their extent, severity etc. While analysing the network condition, percent of area cracked, which is an aggregation of values for all types of cracking was used as a reference for analysis from the surveyed data.

Figure 2.7 and Figure 2.8 show average cracking for Group 1 and Group 2 road. All sections in Group 1 are considered 'good' or 'very good'. Group 2 roads are in the same cracking state except Wentworth Street prescribed direction lane 1, which is 'poor'. (Table 0.3)

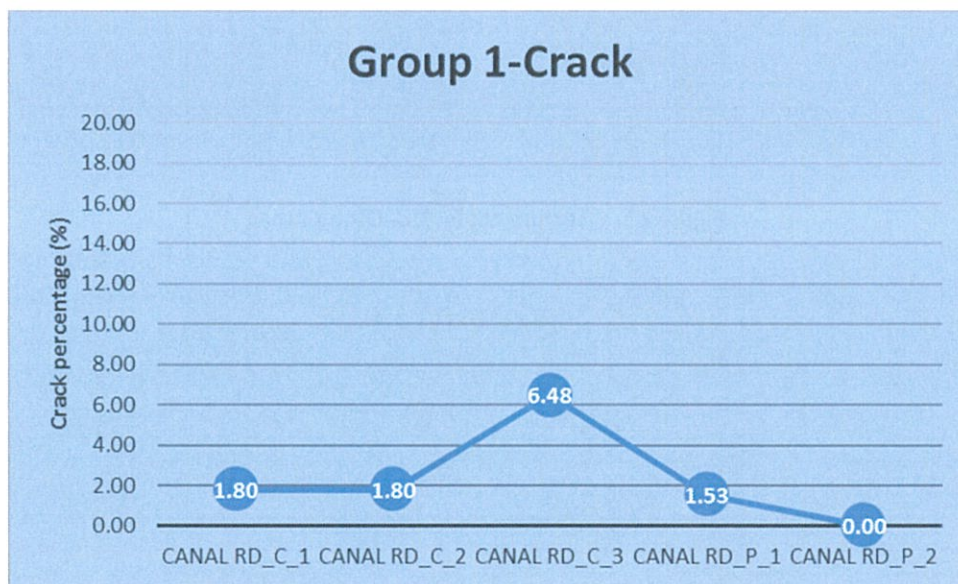


Figure 2.7: Cracking condition- MC- Group 1 road

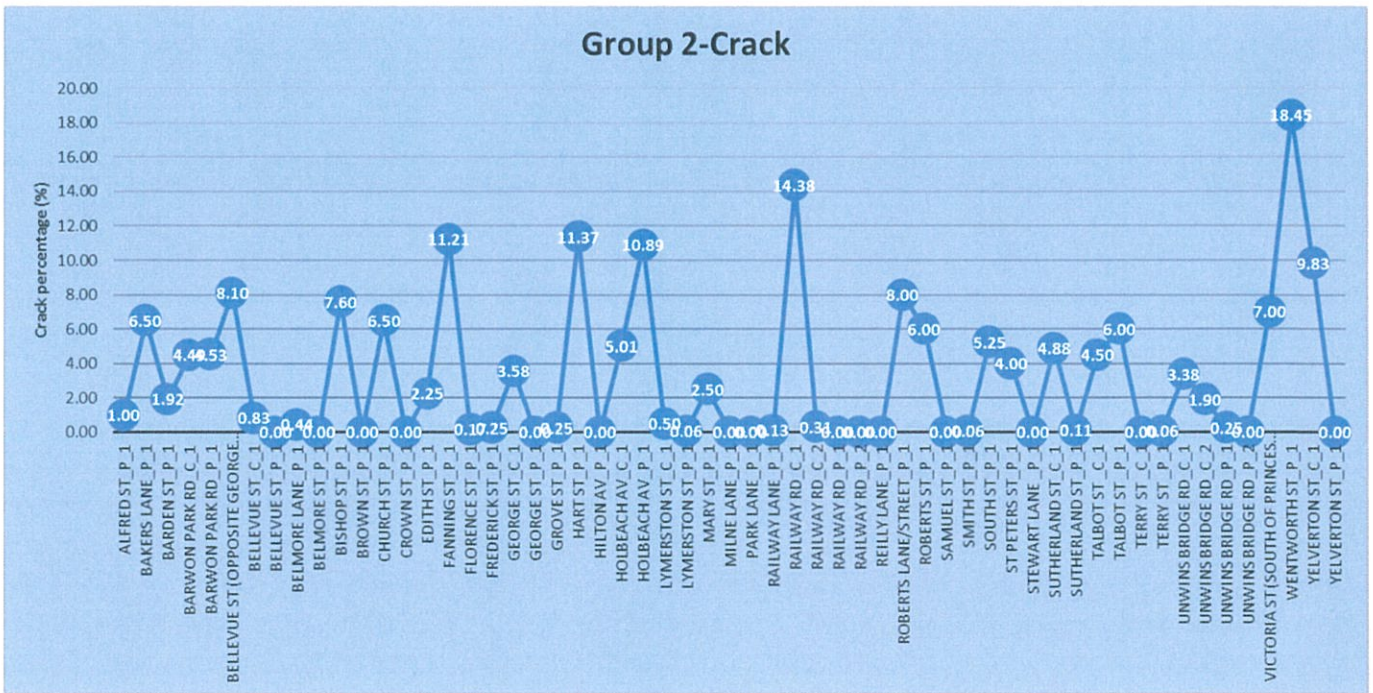


Figure 2.8: Cracking condition- MC- Group 2 road

3 CONCLUSIONS

ARRB was commissioned by CDS JV (CPB Contractors Pty Limited, Dragados Australia Pty Ltd, and Samsung C&T Corporation Joint Venture) to survey and assess the current condition of the nominated roads associated with the construction of the WestConnex New M5 Main Works project.

Surface condition survey of the road network was conducted by ARRB in April 2016 to collect surface condition distresses including rutting, roughness, texture, cracking information.

The scope of the report includes:

- collection and processing of pavement condition data into various data categories including roughness (IRI m/km), rut depth (mm), texture depth (mm) and cracking (% area).
- preparation of a report evaluating the overall condition of each road by direction and lane for each of the road authorities involved in the study area.

The study area involves several road authorities and the conditions were reported in road groups for each organisation, where applicable, as per the below.

- Group 1 - Local Roads that will be utilised for heavy and oversized vehicles
- Group 2 - Local roads within 50m of the construction works but are not utilised for construction traffic
- Group 3 - Non-haulage maintenance roads
- RMS- Arterial roads within 50m buffer zone

Condition assessments were presented based on current industry practices for the purpose of dilapidation, rather than a customised local condition assessment. Please be mindful that the condition statement could vary depending on the definition. See Section 1.3.

The findings from the condition assessments are presented for Marrickville Council.

Marrickville Council

Condition assessment based on current industry standards, presented utilising the average condition of road sections owned by Marrickville Council.

Group 1 road:

	IRI group	Rut group	Texture group	Cracking group
CANAL RD_C_1	Good	Good	Fair	Very good
CANAL RD_C_2	Good	Good	Fair	Very good
CANAL RD_C_3	Good	Fair	Fair	Good
CANAL RD_P_1	Good	Good	Fair	Very good
CANAL RD_P_2	Good	Fair	Fair	Very good

Group 2 contains a large number of road sections and is presented in Table 0.3.

4 SURVEY RESULTS

Surface condition survey processed data results are supplied to CDS JV separately in electronic format. The file names and contents are as follows (Table 4.1):

Table 4.1: Files with survey results

File Name	Content
PSS16084 - NSV_MS_WestConnex Laser Data	Roughness, rut depth and Texture depth data
PSS16084 - NSV_MS_WestConnex Visual Assessment	Cracking and other surface defects data

REFERENCES

Austroads 2006a, *Guide to Asset Management Part 5B: Roughness*, AGAM05B/07, Austroads, Sydney, NSW.

Austroads 2006b, *Guide to Asset Management Part 5C: Rutting*, AGAM05C/07, Austroads, Sydney, NSW

Austroads 2006C, *Guide to Asset Management Part 5C: Cracking*, AGAM05E/07, Austroads, Sydney, NSW.

APPENDIX A MARRICKVILLE COUNCIL CONDITION DETAILS

Table 0.1: Average network condition- MC Group 2 road

	IRI (m/km)	Rut (mm)	Texture depth (mm)	Cracking (%)
ALFRED ST_P_1	7.97	7.06	0.68	1.00
BAKERS LANE_P_1	7.00	7.96	0.55	6.50
BARDEN ST_P_1	2.56	5.52	0.33	1.92
BARWON PARK RD_C_1	3.04	5.55	0.30	4.49
BARWON PARK RD_P_1	3.94	4.39	0.43	4.53
BELLEVUE ST (OPPOSITE GEORGE ST)_C_1	0.00	5.01	0.36	8.10
BELLEVUE ST_C_1	3.13	6.73	0.37	0.83
BELLEVUE ST_P_1	0.00	4.48	0.45	0.00
BELMORE LANE_P_1	2.41	12.59	0.66	0.44
BELMORE ST_P_1	3.16	3.76	0.57	0.00
BISHOP ST_P_1	7.23	5.90	0.48	7.60
BROWN ST_P_1	3.88	4.23	0.31	0.00
CHURCH ST_P_1	3.80	4.48	0.36	6.50
CROWN ST_P_1	5.95	9.58	0.40	0.00
EDITH ST_P_1	3.48	6.94	0.67	2.25
FANNING ST_P_1	2.83	1.66	0.38	11.21
FLORENCE ST_P_1	4.54	4.10	0.63	0.17
FREDERICK ST_P_1	2.38	6.89	0.67	0.25
GEORGE ST_C_1	2.90	4.33	0.54	3.58
GEORGE ST_P_1	2.42	3.61	0.55	0.00
GROVE ST_P_1	5.75	6.70	0.43	0.25
HART ST_P_1	5.18	2.67	0.43	11.37
HILTON AV_P_1	0.00	5.47	0.57	0.00
HOLBEACH AV_C_1	3.50	6.09	0.40	5.01
HOLBEACH AV_P_1	3.53	4.62	0.43	10.89
HUTCHINSON ST_C_1	4.51	3.12	0.60	0.94
HUTCHINSON ST_P_1	3.59	5.74	0.59	3.08
LYMERSTON ST_C_1	5.46	4.30	0.35	0.50
LYMERSTON ST_P_1	2.46	5.72	0.44	0.06
MARY ST_P_1	4.72	6.83	0.28	2.50
MILNE LANE_P_1	0.00	11.99	0.62	0.00
PARK LANE_P_1	6.15	5.53	0.49	0.00
RAILWAY LANE_P_1	3.76	7.25	0.53	0.13
RAILWAY RD_C_1	1.66	5.61	0.26	14.38

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	IRI (m/km)	Rut (mm)	Texture depth (mm)	Cracking (%)
RAILWAY RD_C_2	2.20	9.67	0.28	0.31
RAILWAY RD_P_1	2.88	6.03	0.28	0.00
RAILWAY RD_P_2	3.79	6.31	0.28	0.00
REILLY LANE_P_1	5.68	4.06	0.38	0.00
ROBERTS LANE/STREET_P_1	4.84	3.86	0.27	8.00
ROBERTS ST_P_1	5.40	2.74	0.30	6.00
SAMUEL ST_P_1	3.52	4.72	0.72	0.00
SMITH ST_P_1	3.89	5.08	0.43	0.06
SOUTH ST_P_1	5.51	3.46	0.38	5.25
ST PETERS ST_P_1	4.56	4.42	0.40	4.00
STATION ST_C_1	3.08	2.58	0.36	1.50
STATION ST_P_1	5.00	2.99	0.39	3.24
STEWART LANE_P_1	10.38	4.57	0.56	0.00
SUTHERLAND ST_C_1	4.08	3.19	0.31	4.88
SUTHERLAND ST_P_1	2.72	5.11	0.53	0.11
TALBOT ST_C_1	4.80	3.84	0.39	4.50
TALBOT ST_P_1	6.20	6.41	0.37	6.00
TERRY ST_C_1	1.63	5.23	0.34	0.00
TERRY ST_P_1	2.73	2.28	0.33	0.06
UNWINS BRIDGE RD_C_1	5.89	7.92	0.50	3.38
UNWINS BRIDGE RD_C_2	6.91	6.97	0.47	1.90
UNWINS BRIDGE RD_P_1	4.39	6.14	0.38	0.25
UNWINS BRIDGE RD_P_2	5.29	7.22	0.45	0.00
VICTORIA ST (SOUTH OF PRINCES HIGHWAY)_P_1	9.20	8.23	0.56	7.00
WENTWORTH ST_P_1	4.25	6.79	0.39	18.45
YELVERTON ST_C_1	5.84	3.99	0.48	9.83
YELVERTON ST_P_1	6.06	7.53	0.49	0.00

Table 0.2: Worst network condition- MC- Group 2 road

	IRI (m/km)	Rut (mm)	Texture depth (mm)	Cracking (%)
ALFRED ST_P_1	9.62	10.81	0.63	2.00
BAKERS LANE_P_1	7.54	8.87	0.50	8.50
BARDEN ST_P_1	4.44	9.78	0.31	5.50
BARWON PARK RD_C_1	4.42	6.95	0.28	7.25
BARWON PARK RD_P_1	4.61	5.45	0.39	7.00
BELLEVUE ST (OPPOSITE GEORGE ST)_C_1	0.00	5.01	0.36	8.10
BELLEVUE ST_C_1	3.13	6.73	0.37	0.83
BELLEVUE ST_P_1	0.00	4.48	0.45	0.00
BELMORE LANE_P_1	4.83	17.99	0.56	0.50
BELMORE ST_P_1	3.41	3.84	0.56	0.00
BISHOP ST_P_1	7.99	7.77	0.37	9.00
BROWN ST_P_1	4.09	4.51	0.31	0.00
CHURCH ST_P_1	7.60	5.11	0.32	10.00
CROWN ST_P_1	6.33	11.90	0.39	0.00
EDITH ST_P_1	4.69	8.04	0.67	4.50
FANNING ST_P_1	3.36	2.02	0.36	18.63
FLORENCE ST_P_1	4.95	5.04	0.59	0.50
FREDERICK ST_P_1	4.76	8.38	0.63	0.50
GEORGE ST_C_1	3.14	5.24	0.53	4.65
GEORGE ST_P_1	2.53	4.00	0.52	0.00
GROVE ST_P_1	6.37	7.56	0.41	0.50
HART ST_P_1	5.22	3.66	0.42	13.10
HILTON AV_P_1	0.00	5.47	0.57	0.00
HOLBEACH AV_C_1	4.71	8.98	0.27	19.05
HOLBEACH AV_P_1	5.33	6.23	0.32	17.43
HUTCHINSON ST_C_1	5.71	3.83	0.59	1.88
HUTCHINSON ST_P_1	3.92	8.53	0.53	6.15
LYMERSTON ST_C_1	5.98	5.47	0.27	1.00
LYMERSTON ST_P_1	4.91	6.99	0.44	0.13
MARY ST_P_1	5.71	7.19	0.28	5.00
MILNE LANE_P_1	0.00	11.99	0.62	0.00
PARK LANE_P_1	6.15	5.53	0.49	0.00
RAILWAY LANE_P_1	7.52	8.90	0.43	0.25
RAILWAY RD_C_1	1.89	5.87	0.25	18.60
RAILWAY RD_C_2	2.23	9.84	0.27	0.38
RAILWAY RD_P_1	3.84	6.58	0.25	0.00
RAILWAY RD_P_2	4.97	7.47	0.25	0.00

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	IRI (m/km)	Rut (mm)	Texture depth (mm)	Cracking (%)
REILLY LANE_P_1	6.05	4.55	0.37	0.00
ROBERTS LANE/STREET_P_1	5.03	5.03	0.26	8.50
ROBERTS ST_P_1	5.92	2.80	0.30	9.00
SAMUEL ST_P_1	4.14	5.14	0.63	0.00
SMITH ST_P_1	4.09	5.54	0.43	0.13
SOUTH ST_P_1	8.18	6.03	0.29	13.25
ST PETERS ST_P_1	4.76	4.99	0.35	7.50
STATION ST_C_1	3.64	3.25	0.34	5.00
STATION ST_P_1	9.21	3.75	0.29	8.50
STEWART LANE_P_1	10.38	4.57	0.56	0.00
SUTHERLAND ST_C_1	4.35	3.71	0.29	5.75
SUTHERLAND ST_P_1	5.43	5.44	0.38	0.23
TALBOT ST_C_1	4.80	3.84	0.39	4.50
TALBOT ST_P_1	6.20	6.41	0.37	6.00
TERRY ST_C_1	3.26	6.99	0.34	0.00
TERRY ST_P_1	3.17	2.50	0.32	0.13
UNWINS BRIDGE RD_C_1	6.16	9.38	0.39	5.13
UNWINS BRIDGE RD_C_2	8.04	7.33	0.46	3.30
UNWINS BRIDGE RD_P_1	5.26	6.78	0.36	0.50
UNWINS BRIDGE RD_P_2	5.49	7.41	0.41	0.00
VICTORIA ST (SOUTH OF PRINCES HIGHWAY)_P_1	9.20	8.23	0.56	7.00
WENTWORTH ST_P_1	4.69	8.82	0.38	33.90
YELVERTON ST_C_1	5.92	4.79	0.43	17.17
YELVERTON ST_P_1	6.33	8.28	0.47	0.00

Table 0.3: Categories of condition- MC- Group 2 road

	IRI group	Rut group	Texture group	Cracking group
ALFRED ST_P_1	Very poor	Fair	Fair	Very good
BAKERS LANE_P_1	Very poor	Fair	Fair	Good
BARDEN ST_P_1	Good	Fair	Poor	Very good
BARWON PARK RD_C_1	Fair	Fair	Poor	Very good
BARWON PARK RD_P_1	Fair	Good	Fair	Very good
BELLEVUE ST (OPPOSITE GEORGE ST)_C_1	Very good	Fair	Poor	Good
BELLEVUE ST_C_1	Fair	Fair	Poor	Very good
BELLEVUE ST_P_1	Very good	Good	Fair	Very good
BELMORE LANE_P_1	Good	Poor	Fair	Very good
BELMORE ST_P_1	Fair	Good	Fair	Very good
BISHOP ST_P_1	Very poor	Fair	Fair	Good
BROWN ST_P_1	Fair	Good	Poor	Very good
CHURCH ST_P_1	Fair	Good	Poor	Good
CROWN ST_P_1	Very poor	Fair	Poor	Very good
EDITH ST_P_1	Fair	Fair	Fair	Very good
FANNING ST_P_1	Good	Very good	Poor	Fair
FLORENCE ST_P_1	Poor	Good	Fair	Very good
FREDERICK ST_P_1	Good	Fair	Fair	Very good
GEORGE ST_C_1	Good	Good	Fair	Very good
GEORGE ST_P_1	Good	Good	Fair	Very good
GROVE ST_P_1	Very poor	Fair	Fair	Very good
HART ST_P_1	Poor	Good	Fair	Fair
HILTON AV_P_1	Very good	Fair	Fair	Very good
HOLBEACH AV_C_1	Fair	Fair	Poor	Good
HOLBEACH AV_P_1	Fair	Good	Fair	Fair
LYMERSTON ST_C_1	Very poor	Good	Poor	Very good
LYMERSTON ST_P_1	Good	Fair	Fair	Very good
MARY ST_P_1	Poor	Fair	Poor	Very good
MILNE LANE_P_1	Very good	Poor	Fair	Very good
PARK LANE_P_1	Very poor	Fair	Fair	Very good
RAILWAY LANE_P_1	Fair	Fair	Fair	Very good
RAILWAY RD_C_1	Good	Fair	Poor	Fair
RAILWAY RD_C_2	Good	Fair	Poor	Very good
RAILWAY RD_P_1	Good	Fair	Poor	Very good

	IRI group	Rut group	Texture group	Cracking group
RAILWAY RD_P_2	Fair	Fair	Poor	Very good
REILLY LANE_P_1	Very poor	Good	Poor	Very good
ROBERTS LANE/STREET_P_1	Poor	Good	Poor	Good
ROBERTS ST_P_1	Very poor	Good	Poor	Good
SAMUEL ST_P_1	Fair	Good	Fair	Very good
SMITH ST_P_1	Fair	Fair	Fair	Very good
SOUTH ST_P_1	Very poor	Good	Poor	Good
ST PETERS ST_P_1	Poor	Good	Poor	Very good
STEWART LANE_P_1	Very poor	Good	Fair	Very good
SUTHERLAND ST_C_1	Fair	Good	Poor	Very good
SUTHERLAND ST_P_1	Good	Fair	Fair	Very good
TALBOT ST_C_1	Poor	Good	Poor	Very good
TALBOT ST_P_1	Very poor	Fair	Poor	Good
TERRY ST_C_1	Good	Fair	Poor	Very good
TERRY ST_P_1	Good	Very good	Poor	Very good
UNWINS BRIDGE RD_C_1	Very poor	Fair	Fair	Very good
UNWINS BRIDGE RD_C_2	Very poor	Fair	Fair	Very good
UNWINS BRIDGE RD_P_1	Poor	Fair	Poor	Very good
UNWINS BRIDGE RD_P_2	Poor	Fair	Fair	Very good
VICTORIA ST (SOUTH OF PRINCES HIGHWAY)_P_1	Very poor	Fair	Fair	Good
WENTWORTH ST_P_1	Poor	Fair	Poor	Poor
YELVERTON ST_C_1	Very poor	Good	Fair	Good
YELVERTON ST_P_1	Very poor	Fair	Fair	Very good

Local Road Dilapidation Report – Marrickville



Attachment 2 - Clause 3.2 Pavement Repairs of SWTC Appendix C.6 Local Road Maintenance during Project Company's Work

Local Road Dilapidation Report – Marrickville



Local Road Dilapidation Report – Marrickville



3.2 Pavement Repairs

Element	Requirement
1.Safe conditions	Repair to ensure road remains open to traffic providing safe conditions under the prevailing weather conditions, traffic volume, and speed zone.
2.Integrity of materials	All repairs, unless otherwise specified, shall comprise materials that are compatible with, or of better quality than the existing pavement. Asphalt may be used to alleviate stepping at joint.
3.Unsound material	For permanent repairs, the Project Company must remove enough of the underlying unsound material to ensure sound repair is achieved.
4.Compaction	Compaction shall achieve a uniformly dense, free from segregation and well bonded repair sufficient to ensure that it is not displaced, shoved, deformed, or picked up by traffic.
5.Ride quality	The deviation both within the repair and between the existing pavement and the repair when measured with a 1.5 m straight edge shall not be greater than 10 mm with a maximum surface level difference of 5 mm at the perimeter of the repair
6.Surface Finish	The surface shall provide a uniform water resistance layer to protect the pavement layers from surface infiltration of moisture. The skid resistance of the surface shall not be lower than that apparent immediately in front of and beyond the work area. Where surfacing aggregate is used it shall remain proud of the binder so that: <ul style="list-style-type: none"> ▪ binder is not picked up by the tyres of traffic, and ▪ the surface repair shall have no exposed bituminous material.
7.Lateral drainage	Ensure completed repair does not adversely affect lateral drainage across shoulder.

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Code of Maintenance Standards for Service Centre Access Roads

Element	Requirement
8.Excess material	Excavated material and debris shall not be left on the roadside or placed so as to impede surface drainage. Excess material shall be swept from the traffic lanes and bicycle lanes and disposed of legally and responsibly at the Project Company's expense.
9.Avoid damage to existing surface	Repair material and binding agents used shall not cause damage to the integrity of the existing bituminous surfacing.

