

VML:ed
Vicki Lukritz
3810 6221

12 July 2018

Sir/Madam

Notice is hereby given that a Meeting of the **INFRASTRUCTURE AND EMERGENCY MANAGEMENT COMMITTEE** is to be held in the Council Chambers on the 2nd Floor of the Council Administration Building, 45 Roderick Street, Ipswich commencing at **8.30 am** on **Monday, 16 July 2018**.

<u>MEMBERS OF THE INFRASTRUCTURE AND EMERGENCY MANAGEMENT COMMITTEE</u>	
Councillor Bromage (Chairperson) Councillor Silver (Deputy Chairperson)	Councillor Wendt (Acting Mayor) Councillor Morrison Councillor Ireland

Yours faithfully

CHIEF EXECUTIVE OFFICER

INFRASTRUCTURE AND EMERGENCY MANAGEMENT COMMITTEE

AGENDA

8.30am on **Monday**, 16 July 2018

Council Chambers

Item No.	Item Title	Officer
1	2019-2020 Black Spot Program Project Submission	PE (IP)
2	Infrastructure Delivery Progress as at 28 June 2018	CFM
3	Local Drainage Sub-Program – List of Projects	E (H)
4	Road Safety and Operation Sub-Program – Road Safety Improvements Priority List of Projects	TO (T)

** Item includes confidential papers

INFRASTRUCTURE AND EMERGENCY MANAGEMENT COMMITTEE NO. 2018(07)

16 JULY 2018

AGENDA

1. **2019-2020 BLACK SPOT PROGRAM PROJECT SUBMISSION**

With reference to a report by the Principal Engineer (Infrastructure Planning) dated 3 July 2018 concerning Council's 2019–2020 Infrastructure Investment Program, Black Spot Program Project submission.

RECOMMENDATION

That the projects detailed in Table 1 of the report by the Principal Engineer (Infrastructure Planning) dated 3 July 2018, be approved and submitted to the Department of Transport and Main Roads for funding consideration under the 2019–2020 Federal Government’s Black Spot Program.

2. **INFRASTRUCTURE DELIVERY PROGRESS AS AT 28 JUNE 2018**

With reference to a report by the Commercial Finance Manager dated 28 June 2018 concerning the delivery of the 2017-2018 Infrastructure Services Capital Works Portfolio.

RECOMMENDATION

That the report be received and the contents noted.

3. **LOCAL DRAINAGE SUB-PROGRAM – LIST OF PROJECTS**

With reference to a report by the Engineer (Hydraulics) dated 2 July 2018 concerning the “Local Drainage” capital works portfolio sub-program.

RECOMMENDATION

That the prioritised list of projects, as detailed in Attachment C to the report by the Engineer (Hydraulics) dated 2 July 2018, be considered when developing the “Local Drainage” sub-program as part of the 2019-2020 capital works portfolio.

4. **ROAD SAFETY AND OPERATION SUB-PROGRAM – ROAD SAFETY IMPROVEMENTS PRIORITY LIST OF PROJECTS**

With reference to a report by the Technical Officer (Traffic) dated 5 July 2018 concerning the road safety improvements project listing that forms part of the “Road Safety and Operations” capital works portfolio sub-program.

RECOMMENDATION

That the prioritised list of projects, as detailed in Attachment B to the report by the Technical Officer (Traffic) dated 5 July 2018, be considered when developing the Road Safety Improvement project listing which forms part of the “Road Safety and Operations” sub-program as part of the 2019-2020 capital works portfolio.

** Item includes confidential papers

and any other items as considered necessary.

Infrastructure and Emergency Management Committee	
Mtg Date: 16.07.18	OAR: YES
Authorisation: Charlie Dill	

MT:MT

3 July 2018

MEMORANDUM

TO: INFRASTRUCTURE PLANNING MANAGER
FROM: PRINCIPAL ENGINEER (INFRASTRUCTURE PLANNING)
RE: 2019-2020 BLACK SPOT PROGRAM PROJECT SUBMISSION

INTRODUCTION:

This is a report by the Principal Engineer (Infrastructure Planning) dated 3 July 2018 concerning Council's 2019–2020 Infrastructure Investment Program, Black Spot Program Project submission.

BACKGROUND:

The Queensland Department of Transport and Main Roads (DTMR) recently requested local governments to make submissions for funding under the Federal Government's 2019–2020 Infrastructure Investment Program, Black Spot Program. It is understood that DTMR collates all submissions, checks them to ensure funding eligibility and submits a consolidated list to the Federal Government National Blackspot Committee for consideration.

During evaluating potential 2019-2020 Blackspot program projects, DTMR officers advised that all projects submitted for funding consideration under this program for 2018-2019 were unsuccessful. Attachment A provides correspondence from DTMR in this regard and to the feedback as to why the projects were unsuccessful. Although these projects were unsuccessful in 2018-2019, Council were encouraged to nominate these in future submissions if they are eligible.

This report outlines the projects to be included in the Ipswich City Council 2019–2020 submission to DTMR.

2019-2020 FUNDING ELIGIBILITY:

The Black Spot Program aims to fund cost effective, safety oriented projects. For a project to be eligible for consideration, it needs to meet the following criteria:

- (a) For discrete sites (e.g. an intersection, mid-block or short road section) the minimum eligibility criterion is at least three casualty (injury) crashes over the past five year period;
- (b) For road lengths (minimum length of 3km) the minimum eligibility criterion is an average of 0.2 casualty (injury) crashes per kilometre per annum over the length in question, measured over five years;
- (c) Works are to have a benefit/cost ratio (BCR) of greater than 2.0;
- (d) Projects can receive up to a maximum of \$2.0 million and Local Governments may contribute additional funds. Although the BCR calculations must be based on the total project cost including any additional funds provided by Council;
- (e) Works are not to include:
 - a. Significant use of treatments in a proposal that should be funded under routine or program maintenance (e.g.: minor carriageway repairs; replacing existing line marking and other existing delineators; replacing existing barrier);
 - b. The purchase of road building plant or equipment;
 - c. Red light or Speed Camera installation;
 - d. Police enforcement bays or other work that could potentially be revenue generating; or
 - e. Planning Studies, Route Link Investigations and Road Safety Audits.

Note: nominations consisting predominantly of high cost treatments such as extensive pavement widening, shoulder widening, sealing over continuous lengths and installation of overtaking lanes, are unlikely to be considered a priority unless:

- (f) the treatment is arguably the most cost-effective treatment available to treat the crash concern(s) identified; and/or
- (g) the treatment is required to enable other treatments considered more cost-effective, such as guardrail installation to be implemented.

It should be noted that, due to funding constraints, all projects that meet the criteria do not necessarily receive funding.

2019-2020 SUBMISSION:

Council officers have carried out a review of road crash data obtained from the Queensland Government's WebCrash database for the entire City and completed an analysis of potential treatments for specific locations. This included all locations that met the minimum eligibility criteria of at least three casualty (injury) crashes over the past five year period.

Following the above analysis, projects that met the 2019-2020 funding eligibility criteria are outlined in Table 1.

**TABLE 1
PROPOSED 2019-2020 BLACK SPOT PROGRAM SUBMISSION**


PROJECT LOCATION	DIVISION	TREATMENT	BENEFIT – COST RATIO	ORDER OF COST
School Road and Fernbrooke Boulevard, Redbank Plains	9	Install new traffic signals	5.7	\$612,000
Cobalt Street and Johnson Road, Carole Park	1	Install new traffic signals	3.2	\$800,000
Old Logan Road and Addison Road, Camira	1	Upgrade traffic signals	2.0	\$545,000

The timeframe for notification by the Federal Government of successful projects is expected for the 2019-2020 program to be June 2019.

CONCLUSION:

The Department of Transport and Main Roads have recently called for submissions under the Federal Government's Black Spot Program for 2019-2020. There are four eligible sites proposed for submission under this program.

ATTACHMENTS:

Name of Attachment	Attachment
Response from Department of Transport and Main Roads regarding the unsuccessful nominated projects for 2018-2019	 Attachment A

RECOMMENDATION:

That the projects detailed in Table 1 of the report by the Principal Engineer (Infrastructure Planning) dated 3 July 2018, be approved and submitted to the Department of Transport and Main Roads for funding consideration under the 2019–2020 Federal Government’s Black Spot Program.

Mary Torres
PRINCIPAL ENGINEER (INFRASTRUCTURE PLANNING)

I concur with the recommendation contained in this report.

Tony Dileo
INFRASTRUCTURE PLANNING MANAGER

I concur with the recommendation contained in this report.

Charlie Dill
CHIEF OPERATING OFFICER (INFRASTRUCTURE SERVICES)



Our ref
Your ref
Enquiries Liz Hall

Department of
Transport and Main Roads

16 May 2018

Mr Jim Lindsay
Chief Executive Officer
Ipswich City Council
PO Box 191
Ipswich QLD 4305

Attn: Mr Matthew Mulroney

Dear Jim

Reference is made to your submission for funding of projects under the 2018/2019 Black Spot Program.

I wish to advise you that the nominated projects on the list below were not successful in this round.

Location	Amount	Feedback
Queen Street / Albert Street intersection, Goodna	\$416,000	Not Recommended Eligible but below BCR Ranking Priority Cut-off for Black Spot
Redbank Plains Road / Stuart Street intersection, Goodna	\$495,000	Not Recommended Eligible but below BCR Ranking Priority Cut-off for Black Spot
Brisbane Terrace / Layard Street intersection, Goodna	\$849,000	Not Recommended Eligible but below BCR Ranking Priority Cut-off for Black Spot
Johnson Street / Colbalt Street intersection, Carole Park	\$800,000	Not Supported BCR is overstated due to day time crashes being used for night time treatment.

If you have any queries, please contact Liz Hall on 3066 5832.

Yours sincerely

Kim Forsyth
Manager (Technical Services)

Program Delivery And Operations
Metropolitan Region
Floor 12 Brisbane City - 313 Adelaide Street
313 Adelaide Street Brisbane City
PO Box 70 Spring Hill Qld 4000

Telephone +61 7 (07) 3066 5832
Facsimile +61 7 3220 6071
Website www.tmr.qld.gov.au
Email Elizabeth.A.Hall@tmr.qld.gov.au
ABN 39 407 690 291

Infrastructure and Emergency Management Committee	
Mtg Date: 16.07.18	OAR: YES
Authorisation: Charlie Dill	

28 June 2018

MEMORANDUM

TO: CHIEF OPERATING OFFICER (INFRASTRUCTURE SERVICES)

FROM: COMMERCIAL FINANCE MANAGER

RE: INFRASTRUCTURE DELIVERY PROGRESS AS AT 28 JUNE 2018

INTRODUCTION:

This is a report by the Commercial Finance Manager dated 28 June 2018 concerning the delivery of the 2017-2018 Infrastructure Services Capital Works Portfolio.

BACKGROUND:

The Infrastructure Services (IS) Department is responsible for the planning and delivery of the city's transport and municipal capital infrastructure. The Infrastructure Services Monthly Activity Report (Attachment A) is for the month of June as of 28 June 2018.

CONCLUSION:

The Infrastructure Services Monthly Activity Report provides a status on the delivery of the Capital Works Portfolio, progress update on key capital projects and community affairs.

ATTACHMENT:

Name of Attachment	Attachment
Infrastructure Services Monthly Activity Report - June 2018	Attachment A

RECOMMENDATION:

That the report be received and the contents noted.

Cathy Murray
COMMERCIAL FINANCE MANAGER

I concur with the recommendation/s contained in this report.

Charlie Dill
CHIEF OPERATING OFFICER (INFRASTRUCTURE SERVICES)



Infrastructure Services

Monthly Activity Report
June 2018
Presented by Charlie Dill



This page intentionally left blank



Table of Contents

Introduction	3
Capital Portfolio	4
Progress Summary	4
Cost Summary	4
Planning	5
Community	6
Opening/Media Events	6
Media Releases/Articles Published	6
Schedule	7
Key Capital Project Updates.....	7

Glossary of Terms

Term / Acronym	Description
CO	Financial carry-over from previous financial year
EOFY	End of Financial Year
FFC	Forecast Final Cost
FY	Financial Year
FYTD	Financial Year to Date
IS	Infrastructure Services Department

Introduction

Council's Department of Infrastructure Services (IS) is the lead service provider in the Ipswich community for the planning and delivery of the city's transport and municipal capital infrastructure. This includes Strategic Transport and Investment Planning, Program Development, Traffic Engineering and Road Safety Advice, Program Management, Design and Survey, Procurement, Project Management and Construction.

The IS Department's activities are delivered through its 4 Branches:

- Infrastructure Planning, comprising of:
 - Transport Planning
 - Infrastructure Planning
 - Management of Customer Service Requests related to transport, traffic and local drainage
 - Manage and operate the traffic signal network and intelligent transport systems
- Program Management and Technical Services, comprising of:
 - Program Management and Coordination Section (Pre-Tender Management)
 - Technical Services Section (Design, Survey, Geotech)
- Construction, comprising of:
 - Transport Delivery
 - Municipal Works Delivery (Open Space, Drainage, Facilities, Divisional works)
- Business Support, comprising of:
 - Contracts and Procurement
 - Finance and Controls
 - Performance and Reporting
 - Estimation
 - Scheduling

This monthly activity report, dated 28 June 2018, provides a status of Infrastructure Services key activities for the 2017-2018 Infrastructure Services Capital Works Portfolio.

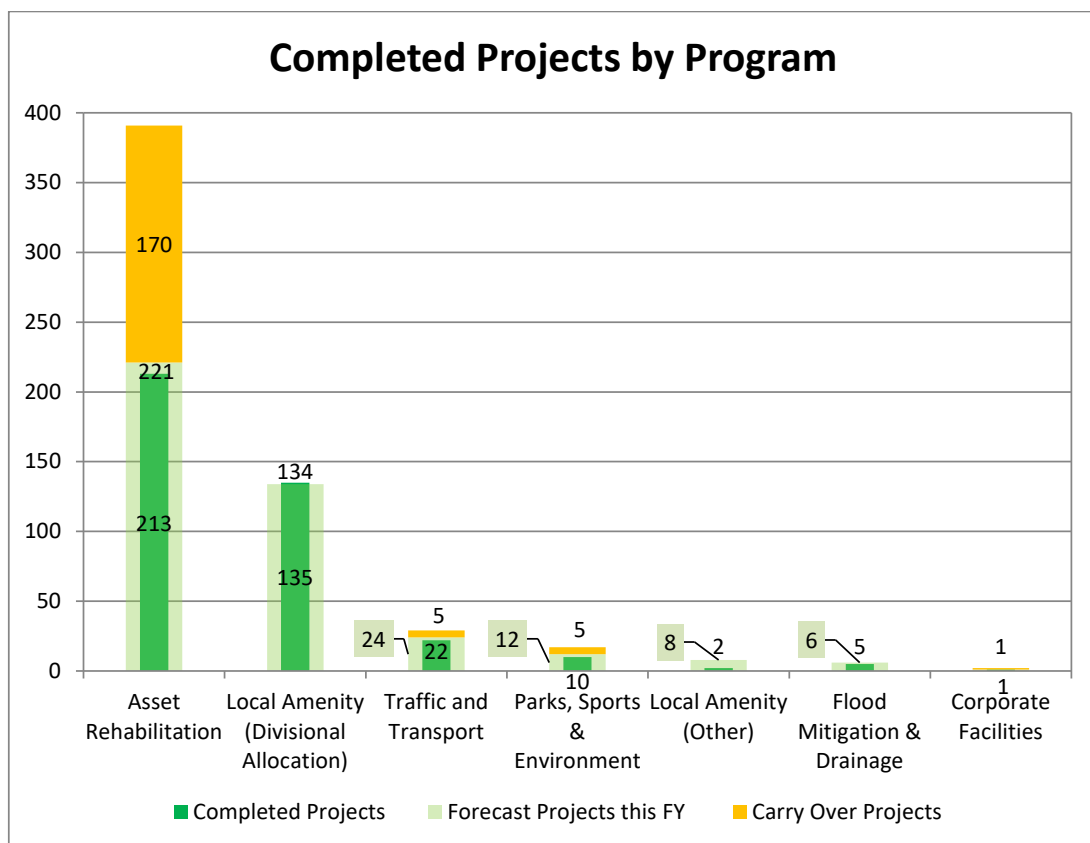
“Trusted Advisor to Council for Infrastructure Planning, Design and Delivery”

Capital Portfolio

Progress Summary

IS has completed 388 projects to date in the 2017-2018 financial year, out of approximately 587 construction projects. This includes 285 reseal and rehab road projects of which, there remain 156 reseal projects to be completed.

As at the end of June, there are approximately 31 construction and rehabilitation projects to carry over into 2018-2019 FY and approximately 156 reseal projects. The increase in reseal carry over projects, is a result of excessively cold weather occurring in May and June, as such, these projects have been rescheduled to September 2018.



Cost Summary

The Council Approved Budget (BAv3) for IS Deliverable component of the 2017-2018 Capital Works Portfolio, was \$82.99 million, with approximately \$66.28 million expended at end of financial year.

In June, Council adopted the 2018-2019 Budget, of which the IS Deliverable component for Capital Works Portfolio is approximately \$64 million, excluding 2017-2018 carryover. The 2017-2018 carryover will be presented to Council for adoption in the first Budget Amendment for 2018-2019.

Planning

The recommended actions outlined in iGO, continue to be progressed; including strategy and policy development, investment and corridor planning, grant applications, project scoping, feasibility and provision of transport and traffic advice.

Norman Street Bridge Preliminary Business Case – (iGO Action R9). The Preliminary Business Case to “Address Congestion, Cross River Connectivity and Network Resilience in the Ipswich City Centre” is being compiled along with Traffic Modelling. The high priority options have undergone assessment and two options have been identified to undergo further technical analysis as part of the Preliminary Business Case.

10 Year Transport Infrastructure Investment Plan (10 Year TIIP) – (iGO Action D8). The 10 Year TIIP provides intelligence for logical and effective program management, and the delivery of major transport projects including effective planning, design, procurement, pre-construction and construction processes. The plan is being rationalized with the 2018-2019 capital portfolio.

Springfield Parkway Planning Study – (iGO Action R2). A road corridor planning study for the upgrade of Springfield Parkway between Old Logan Road and the Centenary Highway to 4 lanes. The concept plan will be finalised in July 2018.

Goodna Roundabout Planning Study – (iGO Action R2). The project analyses potential short to long term upgrade options which improve the intersection’s traffic operations during peak hours (queuing and delays) and improves pedestrian safety and mobility when crossing approach roads of the intersection. Consultation with the Divisional Councillor will occur early in 2018-2019.


iGO Public Transport Advocacy and Action Plan – (iGO Action PT7). This project will identify short, medium and long term improvements to the future public transport system and advocacy strategies. Current planning document shall be compiled and reviewed during July-August 2018.

iGO Parking Pricing Strategy – (iGO Action P6). The project will identify short, medium and long term pricing actions; technologies, zones, pricing models, etc. to effectively manage short and long stay parking arrangement in the Ipswich City Centre.

iGO Active Transport Action Plan Implementation – In progress (iGO ATAP Action 1.1, 1.2 and 2.2). Concept planning of the 2018-2019 projects is in progress.

TMR Cycle Network Local Government Grants – (iGO ATAP Action 1.3). Successful grant projects were announced in the Queensland Transport and Roads Investment Program 2018-2019 on 12 June 2018. All 4 Council grant applications were successful, these being; Brisbane Valley Rail Trail Connector (external contribution of \$1.05 million), Brassall Bikeway Stage 5 (external contribution of \$700k), Eastern Ipswich Bikeway Link (external contribution of \$275k) and Ipswich Motorway Bikeway Cycle Data Counters (external contribution of \$25k).

iGO Active Transport Way Finding Strategy – (iGO Action AT5 and iGO ATAP Action 6.1). The project involves the development of an active transport signage strategy and signage design guide. Development of the strategy and design manual is in progress, with feedback on the second draft provided by project officers.



DTMR Ipswich CBD Public Transport Study – The project is a joint study between the Department of Transport and Main Roads and Council which will determine current and future public transport demands, and infrastructure requirements within the Ipswich Central Business District. The final report has been drafted and feedback to be provided by Council’s project officer.

iGO Intelligent Transport Systems Action Plan – (iGO Action R5). The project involves the development of a strategic plan for road based technologies. A project workshop was held on 14 June 2018 and feedback on the first draft of the report has been provided.

Deebing Creek Bikeway Corridor Plan – (iGO Action AT9 and iGO ATAP Action 1.4). A bikeway corridor planning study is underway for Deebing Creek (between Carr St (Ipswich) and the Cunningham Highway (Yamanto/ Flinders View)), this will further build upon the work completed in the WPR and IS Deebing Creek Corridor Plan. A route alignment workshop to confirm the preferred bikeway alignment was held with IS and WPR representatives on 22 June 2018.

2017-2018 Strategic Intersection Counts – (iGO Action TDM4). Council monitored traffic volumes at key intersections within the Ipswich LGA to inform transport planning, traffic operations and development control activities. The count program spans across 61 intersections in Ipswich. ICC is awaiting the final report from the Consultants.

2017-2018 Strategic Pedestrian and Cycle Counts – (iGO Action TDM4). Council have developed a strategic pedestrian and cycle count program to record pedestrian and cycle volumes in key locations across Ipswich, to assist with monitoring the implementation success of projects generated by the iGO Active Transport Action Plan. The program took place on 14 June 2018 and ICC is waiting on the final report from the Consultants.

Community

- Land acquisition negotiations are ongoing for the following projects:
 - Old Toowoomba Road.
- Ongoing consultation efforts to support the following projects:
 - Sandra Nolan Drainage Channel
 - Brisbane Street Interim Upgrade
 - Old Toowoomba Road
 - Springfield Library
 - Rosewood Library
 - Resurfacing works across the City
 - Hunter Street
 - Consultation planning for: Redbank Plains Road Stage 3, Cole Street and Brisbane Road.

Opening/Media Events

There were no opening events held in June 2018.

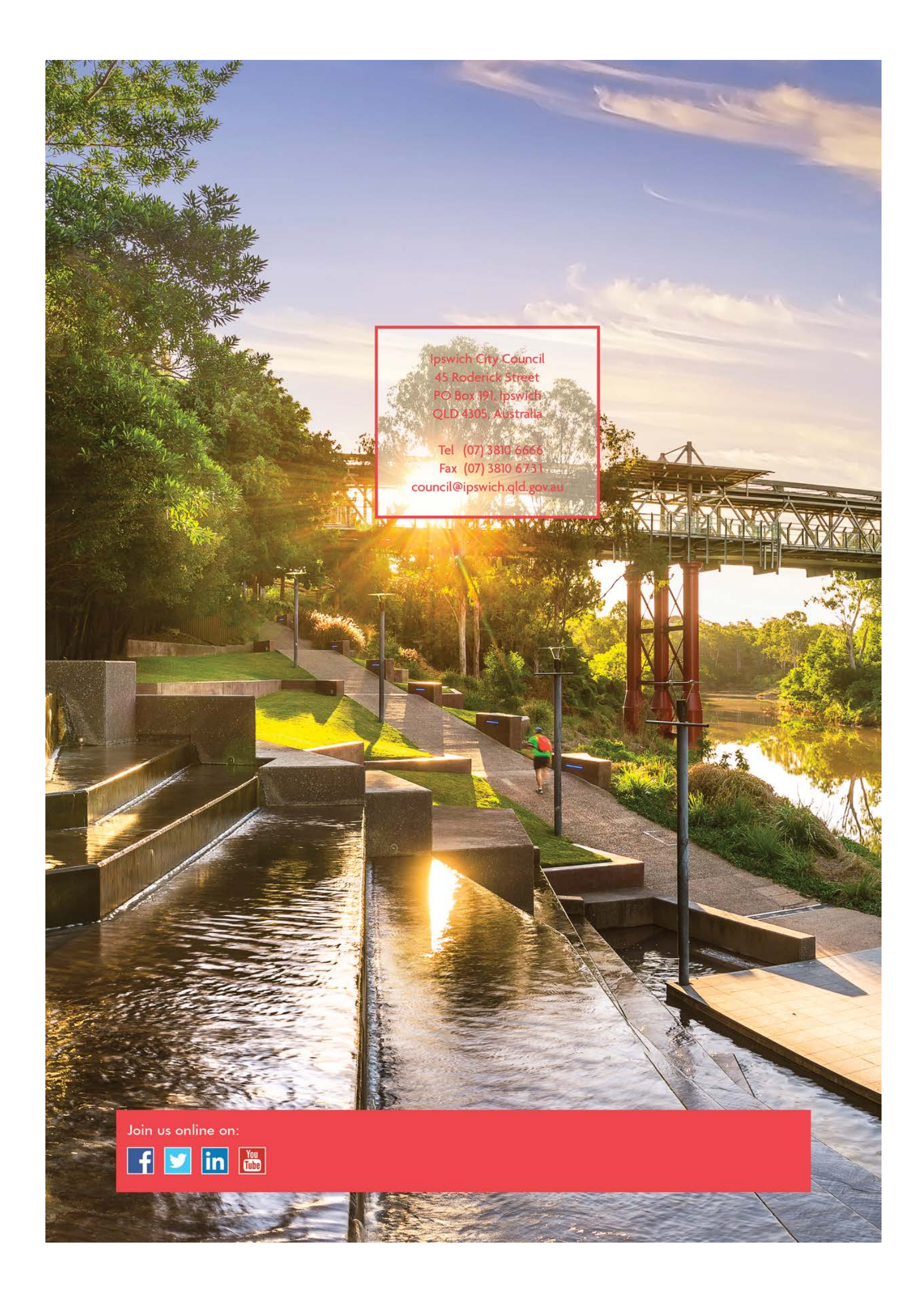
Media Releases/Articles Published

No media releases or articles to report.

Schedule

Key Capital Project Updates

- **Springfield Central Library** – Fit-out works are continuing on site, both internally and externally to the building. The forecast completion date is 24 July 2018. Early access to Level 1 will be provided to Council to undertake the library setup, with mobilisation prior to full completion of the Contractor works.
- **Rosewood Library** – Detailed Design is continuing, the Development Application (DA) response is still pending and the design package is being prepared for Tender. Procurement for the building works will commence when the DA response is received.
- **Road Resurfacing Program** – Construction works are complete in Divisions 10 (Package 1), 9 and 8. Division 7 has one street to complete, this will occur in September 2018. Due to cold weather, the Contractor cannot meet the Technical Specification on the remaining resurfacing works, delaying completion until the end of September 2018, when the temperature is expected to be warmer. Patching works will continue, with works complete for Divisions 5 and 6, and in progress for Divisions 1 to 4.
- **Kerb and Channel (K&C) Program** – The 2017-2018 Program is complete. Detailed design for the 2018-2019 K&C projects are in progress. Detailed designs of five projects for execution in 2018-2019 have been handed over to execution, with a further two detailed designs expected to be handed over by end of July 2018. The majority of projects for delivery in 2018-2019 are to be handed over to construction by end of August 2018.
- **Redbank Plains Stage 3** – Community consultation has commenced. Fact sheet letterbox drops, community display and consultation will follow. The detailed design is progressing with the focus on minimising the impacts on utilities and property.
- **Old Toowoomba Road, Leichhardt** – Property resumptions are to be finalised. Relocation of major services are progressing. Demolition is complete. The procurement for the civil construction works has commenced.
- **Brisbane Street, West Ipswich** – Property resumptions are to be finalised. Relocation of major utilities is progressing. A request for tender (for civil works) has been released and closed on Tuesday 3rd of July 2018.
- **Blackstone/South Station Roads – Intersection upgrade** – Service relocations are nearing completion for all accessible areas (property acquisition for remaining service relocations nearing completion). A request for tender (for civil works) has been released and closes 3 of July 2018.
- **Marsden Parade realignment** – The design is progressing. Site contamination and TMR reports are expected by 6th of July 2018. Final land acquisition completed on 29 June 2018.



Ipswich City Council
45 Roderick Street
PO Box 191, Ipswich
QLD 4305, Australia

Tel (07) 3810 6666
Fax (07) 3810 6731
council@ipswich.qld.gov.au

Join us online on:



Infrastructure and Emergency Management Committee	
Mtg Date: 16.07.18	OAR: YES
Authorisation: Charlie Dill	

SF:MT
H:\5-Infrastructure Planning\Infrastructure Planning Team\Committee Reports\Methodology Report\Methodology Report 19-20\Local Drainage Improvements 19-20.docx

2 July 2018

MEMORANDUM

TO: INFRASTRUCTURE PLANNING MANAGER
FROM: ENGINEER (HYDRAULICS)
RE: "LOCAL DRAINAGE" SUB-PROGRAM – LIST OF PROJECTS

INTRODUCTION:

This is a report by the Engineer (Hydraulics) dated 2 July 2018 concerning the "local drainage" capital works portfolio sub-program.

BACKGROUND:

As part of the 2019-2020 capital portfolio build process, it is proposed to submit a report outlining the project listing for each sub-program. This report relates to the "local drainage" sub-program. Table 1 below outlines the status for sub-programs that the Infrastructure Services Department is responsible for and that will have prioritised lists reported to Council.

PREVIOUS BUDGET:

In the 2018-2019 financial year, Council has allocated \$765,000 towards the local drainage sub-program. This budgeted amount for local drainage has remained relatively consistent in recent years.

Table 1 – Proposed Sub-Program Project Lists

Program	Sub-program	Project Lists	Status
Transport and Traffic	Strategic Transport	Strategic Roads and Potential Bicycle Links	Submit to September 2018 I&EM Committee
		iGo ATAP implementation	Submit to September 2018 I&EM Committee
	Road Safety and Operations	Road Safety Improvements	Submit to July 2018 I&EM Committee
		Gravel Turnarounds	Submit to August 2018 I&EM Committee
	Sustainable Travel	Public Transport Improvements	Submitted to September 2018 I&EM Committee
		Pedestrian Safety Improvements	Submitted to August 2018 I&EM Committee
Cycle Safety and Mobility Improvements		Submit to September 2018 I&EM Committee	
Flood Mitigation and Drainage	Local Drainage	Local Drainage Improvements	Submitted to July 2018 I&EM Committee
Local Amenity	Sealing Gravel Roads	Sealing Gravel Roads	Submit to August 2018 I&EM Committee

PREVIOUS CONSIDERATIONS:




At its Ordinary meeting on 15 September 2015, Council endorsed a methodology for assessing local drainage issues [refer to Item 5 tabled at the City Infrastructure Committee Meeting 2015(09)], as per Attachment A.

The previously developed prioritisation methodology endorsed by Council has an associated calculation matrix which is used to prioritise future projects. The matrix can be viewed in Attachment B with a worked example. The full list of local drainage projects for future years are shown in Attachment C, along with the associated criteria scoring and priority ranking.

CONCLUSION:

“Local drainage” is a sub-program of Council’s capital works portfolio. Council previously endorsed a risk assessment based methodology which has been used to develop a list of priority projects. The priority list of projects for this sub-program is shown in Attachment C of this report.

ATTACHMENTS:

Name of Attachment	Attachment
Report from City Infrastructure Committee No 2015(09) regarding local drainage prioritisation methodology	 Attachment A
Local drainage prioritisation metrics / matrix	 Attachment B
Prioritised local drainage project listing	 Attachment C

RECOMMENDATION:

That the prioritised list of projects, as detailed in Attachment C to the report by the Engineer (Hydraulics) dated 2 July 2018, be considered when developing the “local drainage” sub-program as part of the 2019-2020 capital works portfolio.

Scott Fenn
ENGINEER (HYDRAULICS)

I concur with the recommendation contained in this report.

Tony Dileo
INFRASTRUCTURE PLANNING MANAGER

I concur with the recommendation contained in this report.

Charlie Dill
CHIEF OPERATING OFFICER (INFRASTRUCTURE SERVICES)

City Infrastructure Committee	
Mtg Date: 07.09.15	OAR: YES
Authorisation: Charlie Dill	

SF:MT
H:\5-Infrastructure Planning\Infrastructure Planning Team\Committee Reports\Local Drainage Prioritisation Methodology.docx

ITEM 5

26 August 2015

MEMORANDUM

TO: INFRASTRUCTURE PLANNING MANAGER

FROM: ENGINEER (HYDRAULICS)

RE: "LOCAL DRAINAGE IMPROVEMENTS" SUB-PROGRAM – PRIORITISATION
METHODOLOGY AND LIST OF PROJECTS

INTRODUCTION:

This is a report by the Engineer (Hydraulics) dated 26 August 2015 regarding the "local drainage" capital works portfolio sub-program.

BACKGROUND:

As part of the 2016/2017 capital portfolio build process, it is proposed to submit a report outlining the prioritisation methodology and subsequent project listing for each sub-program. This report relates to the "local drainage" sub-program. Table 1 below outlines the sub-program's that will have prioritised lists reported to Council with a status update.

Table 1 – Proposed Sub-Program Project Lists

Program	Sub-program	Project Lists	Status
Transport	Growth Management	Strategic Roads	Submitted to September 2015 CI Committee
	Safety and Amenity	SafeST	Submitted to September 2015 CI Committee
		Road Safety Improvements	Submitted to July 2015 CI Committee
		Sealing Gravel Roads	
		Gravel Turnarounds	Submitted to August 2015 CI Committee
		Public Transport Improvements	Submitted to September 2015 CI Committee
	Sustainable Travel	Pedestrian Safety Improvements	Submitted to August 2015 CI Committee
		Cycle Safety and Mobility Improvements	Submitted to July 2015 CI Committee
	Drainage	Drainage	Local Drainage Improvements

PREVIOUS CONSIDERATIONS:

At its ordinary meeting on 17 July 2012, Council endorsed the risk assessment based methodology for assessing local drainage issues [refer to Item 2 tabled at the City Infrastructure Committee Meeting 2012(03) as per Attachment A].

The previously developed and endorsed prioritisation methodology has been used to develop local drainage project lists for each subsequent financial year since being endorsed. As part of the development of the 2016/2017 capital portfolio build, a re-evaluation of the previously endorsed risk assessment methodology has been undertaken. The Infrastructure Services Department has undertaken a collaborative review of the methodology with several officers from the Works, Parks & Recreation Department. The review has outlined improvements that can be made including some additional considerations as outlined in this report.

PROPOSED PRIORITISATION METHODOLOGY FOR LOCAL DRAINAGE PROJECTS:

The previously endorsed risk assessment methodology can be improved by further considering three main ‘categories’ when investigating a local drainage issue. The three categories are outlined below:

- i) drainage issues,
- ii) environmental issues;
- iii) other contributing factors (such as road hierarchy and public infrastructure).

Each category is further broken up into ‘characteristics’ and their associated impacts. The characteristics and impacts are both rated to allow calculation of the overall priority score.

Below in Table 2 are the characteristics and their associated impacts further explained.

Table 2 – Explanation of Local Drainage Categories and the associated Impact Ratings

Category 1: Drainage Issues	
Characteristic (Rating)	Explanation of Impacts (Rating)
Council infrastructure contributing (4)	<p><u>Directly responsible (5):</u> Where Council drainage infrastructure (pipe, table drain, kerb and channel, swale etc.) is directly responsible for the issue. Example: if Council has installed a pipe which is causing flooding to a property previously not affected.</p> <p><u>Contributing (2):</u> Where Council drainage infrastructure (pipe, table drain, kerb and channel, swale etc.) is contributing to the issue. In this case, the issue would still exist without Council’s infrastructure, however is being exacerbated by it. Example: erosion in a drainage channel. Council may have pipes flowing into the channel, however even without the pipes erosion can still occur from overland flows.</p>
Existing drainage – including kerb and channel (2)	<p><u>Under-capacity (3):</u> Where Council’s drainage capacity is less than what is specified in the QLD urban drainage manual (QUDM).</p> <p><u>Inefficient (2):</u> Where Council’s drainage has sufficient capacity, however is not working efficiently, an impact rating of two is applied. Example: inlet grate too small to allow full stormwater flows to enter into pipe.</p>
Stormwater enters property – not caused by flooded Creeks/Rivers	<p><u>Habitable dwelling (5):</u> Where stormwater enters a habitable dwelling (house/business etc.) during a local storm event.</p> <p><u>Non-habitable structure (3):</u> Where stormwater enters a non-habitable structure (garage/carport</p>

(5)	<p>etc.) during a local storm event.</p> <p><u>Land only (1):</u> Where stormwater unlawfully enters a neighbouring property during a local storm event i.e. where an easement, pipe, drainage channel, overland flow path etc. does not exist on the property to prevent flow to the neighbouring property.</p>
Safety (3)	<p><u>Pedestrian and vehicular (5):</u> Where the drainage issue affects both pedestrian and vehicle movements.</p> <p><u>Vehicular (3):</u> Where the drainage issue affects vehicles travelling on the carriageway only.</p> <p><u>Pedestrian (2):</u> Where the drainage issue affects pedestrians only.</p>
Category 2: Environmental Issues	
Characteristic (Rating)	Explanation of Impacts (Rating)
Erosion / scour / sediment (2)	<p><u>Severe (5):</u> Where erosion/scour/sediment has the potential to cause ‘catastrophic’ harm to the environment or adjacent infrastructure if not resolved.</p> <p><u>Major (3):</u> Where erosion/scour/sediment has the potential to cause ‘severe’ harm to the environment or adjacent infrastructure if not resolved.</p> <p><u>Moderate (2):</u> Where erosion/scour/sediment has the potential to cause ‘major’ harm to the environment or adjacent infrastructure if not resolved.</p> <p><u>Minor (1):</u> Where erosion/scour/sediment has the potential to cause ‘moderate’ harm to the environment or adjacent infrastructure if not resolved.</p>
General (2)	<p><u>Deep ponding water (5):</u> Where water ponds in excess of 300mm in areas where this is not the intent i.e. not in detention basins etc.</p> <p><u>Shallow ponding water (3):</u> Where water ponds less than 300mm in areas where this is not the intent.</p> <p><u>Overgrown (2):</u> Where an area becomes overgrown due to the fact it cannot be maintained. This may be due to maintenance access restrictions for example.</p> <p><u>Unsightly (1):</u></p>

	Where an area is aesthetically displeasing for residents.
Maintenance history (3)	Where Council's City Maintenance Branch have encountered a drainage issue and have only been able to provide a temporary solution. <u>Frequent (3):</u> Example: gravel road with no cross-drainage pipe at the sag will require frequent scour repairs on top of their programmed maintenance runs. <u>Occasional/reactive (1):</u> Where maintenance has been undertaken on a reactive basis i.e. as an outcome of a customer service request.
Category 3: Other	
Characteristic (Rating)	Explanation of Impacts (Rating)
Road classification – if issue is with the road only (2)	Where a drainage issue exists on a Council controlled road, the associated road hierarchy shall determine its impact rating. <u>Arterial Road (5)</u> <u>Sub-arterial Road (4)</u> <u>Major Collector Road (3)</u> <u>Minor collector Road (2)</u> <u>Local Road (1)</u>
Nearby public infrastructure likely to be affected by issue (2)	Where a drainage issue exists within close proximity to public infrastructure, and is likely to be encountered by a large volume of people. <u>School (5)</u> <u>Shopping centre (5)</u> <u>Hospital (5)</u> <u>Public Transport (3)</u> <u>Park (3)</u>

Refer to Attachment B for further clarity on how the characteristic scores and overall priority score are calculated.

Below is a summary of how the matrix in Attachment B is used to determine the prioritisation of local drainage projects:

1. Multiply the characteristic rating (CR) by the corresponding impact rating (IR) to give a characteristic score (CS). If the characteristic is not relevant to the project, no score

shall be given. Only one impact rating per characteristic is allowed. Where multiple impacts apply to a project, the impact with the highest rating shall be used.

2. Calculate the overall priority score by accumulating the total of the characteristic scores.

The sites that have the same priority rating will then further be prioritised based on which project has the highest score from the drainage issues category. The current list of local drainage projects for the future years are shown in Attachment B, along with the associated contributing categories and priority ranking.




CONCLUSION:

“Local drainage” is a sub-program of Council’s capital works portfolio. Council previously endorsed a risk assessment based methodology which has been reviewed and improved. A list of priority projects have been developed based on the methodology of using the following three categories:

1. Drainage Issues;
2. Environmental Issues;
3. Other Contributing Factors.

A revised local drainage project list has been developed using the proposed prioritisation methodology. The priority listing of projects for this sub-program is shown in Attachment B of this report.

ATTACHMENTS:

Name of Attachment	Attachment
Report from City Infrastructure Committee No 2012(03) regarding local drainage prioritisation methodology	 Attachment A
Prioritised local drainage improvement prioritisation metrics / matrix	 Attachment B
Prioritised local drainage improvement project listing	 Attachment C

RECOMMENDATIONS:

Amended at CI Ctee No. 2015(09) of 7 September 2015

- A. That the proposed prioritisation methodology as detailed in the report by the Engineer (Hydraulics) dated 26 August 2015, be adopted and used when developing the “local drainage” sub-program as part of the 2016-2017 Capital Works Portfolio report be received and the contents noted.

- B. That the prioritised ~~proposed prioritisation methodology and subsequent priority~~ list of projects as detailed in Attachment C B to the report by the Engineer (Hydraulics) dated 26 August 2015, be received adopted and used when developing the “local drainage” sub-program as part of the 2016/2017 capital works portfolio, ~~noting that the number of projects adopted will depend on~~ subject to funding availability.

Scott Fenn
ENGINEER (HYDRAULICS)

I concur with the recommendation contained in this report.

Tony Dileo
INFRASTRUCTURE PLANNING MANAGER

I concur with the recommendation contained in this report.

Charlie Dill
CHIEF OPERATING OFFICER (INFRASTRUCTURE SERVICES)

City Infrastructure Committee	
Mtg Date: 09.07.12	OAR: YES
Authorisation: Craig Maudsley	

AMG:AMG

(h:\departmental\committee reports\1206 AMG local drainage capital works program methodology)

ITEM 32

19 June 2012

MEMORANDUM

TO: ACTING INFRASTRUCTURE PLANNING & PARTNERSHIPS MANAGER

FROM: TECHNICAL OFFICER

RE: LOCAL DRAINAGE CAPITAL WORKS PROGRAM 2012–2013

INTRODUCTION:

This is a report by the Technical Officer dated 19 June 2012 concerning the 2012–2013 Local Drainage Program and methodology used to develop the program.

BACKGROUND:

Council's response to local drainage related issues has to date been generally a reactive process whereby capital works programs have been driven by requests from members of the community and internal stakeholders. On average Council receives 800 drainage related customer service requests per annum (based on 2011–2012 figures) which are investigated by Council officers with the intent of resolving the issue. Of these requests, approximately 20% are, or indirectly result in requests for new drainage improvements. Understandably, the combined cost of these requests far out ways Council's annual financial capacity to fund all works with consideration to other competing strategic priorities.

To better assist Council with budgeting, program development and timely delivery of works, a "risk assessment" based approach has been developed by the Works, Parks and Recreation Department to inform the development of future local drainage capital works programs.

PROPOSED PROCESS FOR DETERMINING PRIORITIZATION OF LOCAL DRAINAGE CAPITAL WORKS:

Outlined below is a summary of the process for determining the prioritization of local drainage capital works for inclusion in the Local Drainage capital works program:

1. Use Councils adopted Risk Calculator (refer **Table 2**) to determine risk ratings for each of the assessment “characteristics”
2. Determine Risk Scores for each local drainage assessment “characteristic” by multiplying the characteristic weighting by the risk rating (refer Attachment A)
3. Determine local drainage capital works Priority Score by calculating the total of the drainage characteristic Risk Scores (refer Attachment A)

LOCAL DRAINAGE ASSESSMENT CHARACTERISTICS:

Following the investigation of a local drainage issue, the assessment characteristics shown in **Table 1** are examined when considering the priority of the local drainage capital works.

TABLE 1 – LIST OF LOCAL DRAINAGE ASSESSMENT CHARACTERISTICS

No.	ASSESSMENT CHARACTERISTIC DESCRIPTION	CHARACTERISTIC WEIGHTING
1	Is the existing issue caused by Council infrastructure	3
2	Number of houses affected by the existing issue	3
3	Number of private properties affected by existing issue	1
4	Potential extent of scouring caused by existing issue	1
5	Potential for personal injuries caused by existing issue	5
6	Potential road safety concerns caused by existing issue	1
7	Potential effect on public health caused by existing issue	3
8	Does existing drainage network have adequate capacity	2
9	Does existing kerb and channel infrastructure exist	2
10	Is a drainage easement required to help resolve existing issue	2
11	Maintenance requirements due to existing issue	2
12	Number of previous complaints raised regarding existing issue	1
13	Potential adverse environmental impacts caused by existing issue	4

CHARACTERISTIC WEIGHTING:

For each Local Drainage Assessment ‘Characteristic’ (as shown in **Table 1**), there is a corresponding weighting. The purpose of this weighting parameter is to place more importance on certain assessment “characteristics”, rather than treating all “characteristics” as being equal. By doing this, assessment characteristics can be assigned appropriate weightings to align and reflect Council’s strategic vision.

As Council’s strategic objectives change over time, the weightings assigned to each assessment characteristic can be adjusted accordingly.

RISK ASSESSMENT OF LOCAL DRAINAGE CHARACTERISTICS:

A risk assessment framework is used for each of the local drainage assessment characteristics to determine the corresponding risk rating. The basis of the risk assessment framework is shown in **Table 2**, and is in accordance with the risk assessment methodology currently adopted by Council.

TABLE 2 - RISK CALCULATOR

LIKELIHOOD	CONSEQUENCES				
	Minimal	Low	Moderate	High	Catastrophic
Almost Certain	MEDIUM	HIGH	HIGH	VERY HIGH	VERY HIGH
Likely	MEDIUM	MEDIUM	HIGH	HIGH	VERY HIGH
Possible	LOW	MEDIUM	HIGH	HIGH	HIGH
Unlikely	LOW	LOW	MEDIUM	MEDIUM	HIGH
Rare	LOW	LOW	MEDIUM	MEDIUM	HIGH

The identified risk from **Table 2** is then converted into a risk rating as follows

- LOW risk corresponds to a risk rating of 1
- MEDIUM risk corresponds to a risk rating of 2
- HIGH risk corresponds to a risk rating of 3
- VERY HIGH risk corresponds to a risk rating of 4

In situations where the Assessment Characteristic is not applicable to the local drainage issue, the risk rating is 0.

DETERMINATION OF RISK AND PRIORITY SCORES:

Risk scores are calculated for each local drainage assessment “characteristic” by multiplying the characteristic weighting by the risk rating.

Following on from this, the local drainage capital works priority score of a drainage issue is calculated by adding together all the risk scores for the drainage issue. The higher the priority score, the higher the priority the local drainage issue has of being funded by the local drainage capital works program.

Please refer to Attachment A for a visual representation of how the Risk Scores and Priority Score are calculated and Attachment C for list of Prioritised Local Drainage Improvement service requests.

PROPOSED 2012–2013 LOCAL DRAINAGE CAPITAL WORKS PROGRAM:

Taking into consideration the risk assessment and priority score for the local drainage issues, Attachment B provides a list of proposed local drainage works for 2012–2013.

Taking into consideration the risk assessment and priority score for the local drainage issues, Attachment B provides a list of proposed local drainage works for 2012–2013 with

consideration to Council’s 2012–2013 Drainage Network – Local Drainage Improvements program which has a budget allocation of \$750,000.00.




BENEFITS TO COMMUNITY AND CUSTOMERS:

By utilising a systematic approach to evaluating local drainage needs for the entire city network, Council is able to effectively prioritise and program proposed local drainage capital works based on available funds. It also allows Councillors to assess how local drainage issues within their division compare to the rest of Ipswich. As a result, Councillors are able to make more informed decisions regarding the use of Divisional allocations to fund local drainage projects that are unlikely to be funded by the local drainage capital works program in the immediate future.

CONCLUSION:

In adopting a “risk – assessment” based approach to assessing Local Drainage issues, Council will be well placed for years to come, to responsibly inform the prioritization and development of local drainage capital works programs.

ATTACHMENT/S:

Name of Attachment	
ATTACHMENT A – Risk assessment and priority score determination of local drainage issues	 Attachment A
ATTACHMENT B – List of proposed Local Drainage Capital Works Program for 2012/13	 Attachment B
ATTACHMENT C – Prioritised Local Drainage Improvement service requests.	 Attachment C

RECOMMENDATION:

- A. That the risk assessment based methodology for assessing Local Drainage issues, as detailed in the report by the Technical Officer dated 19 June 2012, be endorsed.
- B. That the proposed Local Drainage Capital Works Program for 2012–2013, as detailed in Attachment B to the report by the Technical Officer dated 19 June 2012, be adopted.

Andrew McGrath
TECHNICAL OFFICER

I concur with the recommendation/s contained in this report.

Bryce Hines
INFRASTRUCTURE PLANNING AND PARTNERSHIPS MANAGER

I concur with the recommendation/s contained in this report.

Craig Maudsley
CHIEF OPERATING OFFICER (WORKS, PARKS AND RECREATION)

APPENDIX A – RISK ASSESSMENT AND PRIORITY SCORE DETERMINATION OF LOCAL DRAINAGE ISSUES

LOCAL DRAINAGE ASSESSMENT CHARACTERISTIC	CHARACTERISTIC WEIGHTING (CW)	RISK DESCRIPTION	RISK RATING (RR)	RISK SCORE (RS) (= CW x RR)	PRIORITY SCORE (=Σ RS)
Is existing issue caused by Council infrastructure	X	Very High	4		
		High	3		
		Medium	2		
		Low	1		
		No Risk	0	X	
No. of Houses affected by existing issue	X	Greater than 5 houses affected	4		
		4 - 5 houses affected	3		
		2 - 3 houses affected	2		
		One house affected	1		
		None	0	X	
No. of Properties affected by existing issue	X	Greater than 5 properties affected	4		
		4 - 5 properties affected	3		
		2 - 3 properties affected	2		
		One house affected	1		
		None	0	X	
Potential extent of scouring caused by existing issue	X	Very High	4		
		High	3		
		Medium	2		
		Low	1		
		No Risk	0	X	
Potential for Personal injuries caused by existing issue	X	Very High	4		
		High	3		
		Medium	2		
		Low	1		
		No Risk	0	X	
Potential road safety concerns caused by existing issue	X	Very High	4		
		High	3		
		Medium	2		
		Low	1		
		No Risk	0	X	
Potential effect on Public Health caused by existing issue	X	Very High	4		
		High	3		
		Medium	2		
		Low	1		
		No Risk	0	X	
Does existing drainage network have adequate capacity	X	Very High	4		
		High	3		
		Medium	2		
		Low	1		
		No Risk	0	X	
Does existing kerb and channel infrastructure exist	X	No kerbing at all	4		
		Only AC kerb	2		
		Existing K&C or N/A	0	X	
Is a drainage easement required to help resolve existing issue	X	Yes	4		
		No	0	X	
Maintenance requirements due to existing issue	X	Very High	4		
		High	3		
		Medium	2		
		Low	1		
		No Maintenance	0	X	
No. of previous complaints raised regarding existing issue	X	Issue raised > 5 times previously	4		
		Issue raised 4 - 5 times previously	3		
		Issue raised 2 - 3 times previously	2		
		Issue raised previously	1		
		Not raised previously	0	X	
Adverse environmental impact from existing arrangement	X	Very High	4		
		High	3		
		Medium	2		
		Low	1		
		No Risk	0	X	
					X

APPENDIX B – PROPOSED LOCAL DRAINAGE CAPITAL WORKS PROGRAM FOR 2012/13

DIVISION	SR No.	LOCATION	ISSUE	DESCRIPTION OF REMEDIAL WORKS	INDICATIVE COST	PRIORITY SCORE
6	294433	15-16 Sydney St, Brassall	Insufficient road drainage	Easement creation Install drainage pipework and associated infrastructure	\$165,000	38
8	291441	13-15 Crosshill St, Leichardt	Water ponding on road	Root removal and pipe replacement within Leichardt Swim Centre	\$9,000	38
4	294675	55 Creek St, Bundamba	Water runoff through properties	Improve local drainage	\$390,000	37
1	n/a	Langley Park Hall, Camira	Ineffective drainage and erosion issues around Hall	Improve drainage around Hall	\$20,000	37

PRIORITISED LOCAL DRAINAGE SERVICE REQUESTS

Division	SR Number	Delta file	Location	Issue	Remedial Works	Short term solution description	Long term solution description	Short term solution Cost	Long term solution Cost	PRIORITY SCORE
	5	310854	2 Barry Street, East Ipswich	Water runoff through property	Construct Kerb along western side of driveway; AC bund (speed bump) northern end of ramp; and make good to damage under residents house caused by nuisance overland flow.				\$6,000	44
	6	294433	15-16 Sydney St, Brassall	Insufficient road drainage	Easement creation Install drainage pipework and associated infrastructure				\$165,000	38
	8	291441	13-15 Crosshill St, Leichardt	Water ponding on road	Root removal and pipe replacement				\$9,000	38
	4	294675	55 Creek St, Bundamba	Water runoff through properties	Improve local drainage	165000			\$390,000	37
	1		Langley Park, Camira	Ineffective drainage near hall	Undertake earthworks, landscaping and install subsurface drainage.				\$20,000	37
	1	225647	30910 6-10 Hallet Ave, Camira	Scouring of property	Easement creation Extension of existing pipe infrastructure				\$240,000	37
	5	308751	Perseverance Street, Chuwar	Erosion and damage to exiting pipe crossing	Replace damaged pipe crossing.	Some maintenance works have been undertaken as part of urgent remedial works.			\$6,000	37
	6	276874	33951 Collins St, Brassall	Water runoff entering property	Easement creation Install drainage pipework and associated infrastructure				\$140,000	37
	2	302995	168 Brisbane Terrace	Road shoulder drainage inefficient	Construct 1.2m wide concrete invert, turf and reshape.				\$85,000	31
	5	294558	65 Moores Pocket Rd, Moores Pocket	Water ponding at intersection of Moore	Extend and upgrade existing drainage infrastructure				\$80,000	31
	2	285395	33879 Britains Rd, Bellbird Park	Erosion within Council land	External report required to advise on erosion prevention				\$600,000	30
	6	248397	31004 22-24 Langlands St, Chuwar	Damaged stormwater infrastructure	Reline stormwater pipe				\$70,000	30
	9	264965	30997 28 Melrose Dr, Flinders View	Collapsing easement	Replace and extend stormwater pipe				\$30,100	30
	5	304534	57-61 Jacaranda St, East Ipswich	Water ponding within property	combination of filling and grading a table drain (IF LEVELS AVAIL.	Minor Maintenance	Drainage improvement study		\$31,000	29
	10		Long Gully Rd, Grandchester	Scouring on downstream side of dra	New drainage road crossing and remedial works on southern side of road			next one up	\$78,000	28
	10	265229	33003 10-25 Wairuna Ct, Pine Mountain	Erosion in watercourse	Bank protection measures				\$290,000	27
	5	298449	50-52 Lyndon Way, Karalee	Overland flow and erosion of southern	Spray seal shoulder and construct AC kerb				\$21,000	26
	6	293514	52 Carlock Promenade, Karalee	Discharge from road drainage potential	Easement creation Pipe road drainage to River				\$260,000	26
	6	307839	61 Workhops Street	Stormwater Ponding	Construct Swale Drain stabilise discharge locations				\$45,000	26
	2	282686	30925 14 Brick St, Redbank Plains	Water runoff through property	Upgrade existing drainage infrastructure				\$95,000	25
	4	297759	6 John St, Bundamba	Lack of drainage on James St	Extend table drain within James St road reserve, along the length of 6 John St				\$25,000	25
	9	277326	33638 Siedofsky St, Redbank Plains	Park drainage	Concrete v-drain				\$210,000	25
	10	259836	34105 Rosewood Drainage Channel	Stagnant water in Drainage Channel	Maintenance of Drainage Channel	Drain maintenance southern side of Ipswich-Rosewood Rd to end of Council drainage channel within 1082 - 1139 Ipswich-Rosewood Rd	Drain maintenance southern side of Mill St to end of Council drainage channel within 1082 - 1139 Ipswich-Rosewood Rd	\$105,000	\$230,000	25
	10	262145	33679 12 Senna Close, Pine Mountain	Safety around SW chamber	Retrofit SW chamber with improved safety barriers				\$20,000	25
	9	277235	33638 Siedofsky St, Redbank Plains	Footpath drainage	Footpath drainage				\$35,000	24
	10	274982	33873 38 Waters Rd, Calvert	Road drainage enters property	Install piped drainage road culvert and associated earthworks				\$300,000	24
	2	279932	33861 9 Layard St, Goodna	Water runoff through property	Upgrade existing drainage infrastructure				\$130,000	23
	10	273100	33882 86 Berlins Rd, Marburg	Water runoff has been redirected	Road drainage crossing and associated works				\$150,000	23
	8	279958	34110 28 Fitzroy St, Churchill	Water runoff entering property	Easement creation Install new drainage pipework and associated infrastructure to convey runoff from Fitzroy st to Council land				\$155,000	22
	10	303544	Doonans Road Grandchester	Water ponding over floodway during	3 options sent to MB to discuss with CR.10	Maintenance already undertaken	Silt removal on private property		\$130,000	22
	5	301462	Junction Road, Karalee (Between Albatross Ave. and Rae Ave.)	Continual overland flow on footpath causing slip hazards	Move pedestrian crossing location; install pedestrian refuge; construct new sections of footpath raising the surface level; and install sub-soil drains on high side of footpaths	High pressure water clean, to remove slime and mould.			\$93,000	22
	5	286060	33942 17 Blackwood Ave, North Ipswich	Water runoff through property	Extend and upgrade existing drainage infrastructure				\$200,000	21
	7	300907	22 Madden St, Eastern Heights	Water ponding on access road to Jim Donald Park	Install concrete road surface drain				\$15,000	20
	10		104 Champions Way, Willowbank	Scouring on along fenceline of coun	Reprofile earth drain and associated works				\$100,000	19
	2	259191	32838 16 Enid St, Goodna	Water runoff through property	Install road table drain and associated driveway crossing				\$20,000	18
	2	294114	7 Harry St, Bellbird Park	Lack of road drainage	Upgrade kerb and drainage				\$45,000	18
	5	293648	468-470 Junction Rd, Karalee	Erosion to Drainage Easement	Re-profile Drainage Easement, top soil then re-turf.				\$40,000	18
	6	287794	33691 13 North St, North Ipswich	Insufficient road drainage	Improve drainage				\$35,000	18
	7	285238	33862 99 Darling St, West Ipswich	Water runoff entering property	Install new kerb inlet pit				\$15,000	18
	6	295466		Walkway drainage	Easement creation Install drainage pipework and associated infrastructure				\$100,000	17
	8	291314	34065 62 Grampian Dr, Deebing Heights	Ponding of water	Reprofile & turf nature strip Reinstall table drain				\$10,000	17
	2	286174	3 Alma St, Gallees	Water runoff from Newman St	Future kerb and channel				\$170,000	16
	8	299193	35 Ash Street, Yamanto	Ponding of water	Reconstruct Kerb and Investigate AC slump around SMH with QUU	Reconstruct barrier kerb	Pending QUU's investigation, remove 10m2 surface area of AC then reprofile, compact and construct new surface layer, all to ensure a positive fall is achieved to downstream catchpit.	10000	\$25,000	16
	5	305500	415-417 Junction Rd, Karalee	STORMWATER ROOF/DOMESTIC/LAND	Drainage study / investigation	Block Gully Pit and Field inlet (however not supported by City Infrastructure Planning)	Implement Design Proposal by PC		\$280,000	14
	6	301348	12 Gregory Street	Wulkuraka	Construct AC kerb and should 50 m long.				\$20,000	13
	5	294088	Elanora Way, Karalee	Water ponding on side of road	Install road base and widen road shoulder				\$25,000	12
	5	285932	33716 17 Riverside Ave, Barallan Point	Water runoff through property	Install table drain and associated infrastructure				\$25,000	11
	4	250283	70 David St, North Ipswich	Cracked concrete and brickwork near C	Relining of roofwater drainage pipe				\$30,000	9
	6	288380	34017 24 Jupiter St, Wulkuraka	Water runoff entering property	Install grassed bund to allow sheet flow				\$15,000	9
	1	305664	2 Evergreen Court, Springfield	Seepage across footpath	Install a 20m sub-soil drain parallel to footpath on upstream side and connect into gully-pit				\$5,000	8
	5	307231	6-12 Arunta Street, Karalee	Seepage from property	Install a sub-soil drain off Front property boundary.	Resident to prune vegetation to allow sun to shine on verge			\$10,000	7
	6	276196	33706 5 Glossop St, Brassall	Water runoff entering property	Install new kerb inlet pit				\$8,000	7
	7	298330	Prose Lane, Eastern Heights	Insufficient road drainage	Install kerb and channel				\$150,000	7
	9	278778	34063 99 Keildges Rd, Redbank Plains	Water runoff through property	Install grassed bund in unformed road reserve				\$25,000	3

ATTACHMENT B – LOCAL DRAINAGE IMPROVEMENTS ASSESSMENT CRITERIA MATRIX

CATEGORIES	CHARACTERISTIC RATING (CR)	CHARACTERISTICS	IMPACT RATING (IR)	IMPACTS	CHARACTERISTIC SCORE (CS) (=CRxIR)	PRIORITY SCORE (=ΣCS)	
Drainage Issues	4	Council infrastructure contributing	5	Directly Responsible	X		
			2	Contributing			
	2	Existing drainage (including k&c)	3	Undercapacity	X		
			2	Inefficient (e.g. too flat)			
	5	Stormwater enters property (not caused by flooded Creeks/Rivers)	5	Habitable dwelling	X		
			3	Non-habitable structure			
			1	Land only			
	3	Safety	5	Pedestrian and vehicular	X		
			3	Vehicular			
			2	Pedestrian			
	Environmental Issues	2	Erosion / scour / sediment	5	Severe		X
				3	Major		
2				Moderate			
1				Minor			
2		General	5	Deep ponding water	X		
			3	Shallow ponding water			
			2	Overgrown			
			1	Unightly			
3		Maintenance history	3	Frequent	X		
			1	Occasional / reactive			
Other	2	Road classification (if issue is with the road only)	5	Arterial	X		
			4	Sub-arterial			
			3	Major collector			
			2	Minor collector			
			1	Local			
	2	Nearby public infrastructure likely to be affected by issue	5	School	X		
			5	Shopping centre			
			5	Hospital			
			3	Transport			
			3	Park			
				X			

Notes:

1. Multiply the characteristic rating (CR) by the corresponding impact rating (IR) to give a characteristic score (CS). If the characteristic is not relevant to the project, no score shall be given. Only one impact rating per characteristic is allowed. Where multiple impacts apply to a project, the impact with the highest rating shall be used.

2. Calculate the overall priority score by accumulating the total of the characteristic scores.

Worked Example for James Street, Bundamba (Priority 1)

CATEGORIES	CHARACTERISTIC RATING (CR)	CHARACTERISTICS	IMPACT RATING (IR)	IMPACTS	CHARACTERISTIC SCORE (CS) (=CRxIR)	PRIORITY SCORE (=sum CS)	
Drainage Issues	4	Council infrastructure contributing	5	Directly Responsible			
			2	Contributing			
	2	Existing drainage (including k&c)	3	Undercapacity			
			2	Inefficient (e.g. too flat)	4		
	5	Stormwater enters property (not caused by flooded Creeks/Rivers)	5	Habitable dwelling	25		
			3	Non-habitable structure			
			1	Land only			
	3	Safety	5	Pedestrian and vehicular			
			3	Vehicular			
			2	Pedestrian	6		
	Total Drainage Issues						35
	Environmental Issues	2	Erosion / scour / sediment	5	Severe		
3				Major			
2				Moderate			
1				Minor			
2		General	5	Deep ponding water			
			3	Shallow ponding water	6		
			2	Overgrown			
			1	Unightly			
3		Maintenance history	3	Frequent	9		
			1	Occasional / reactive			
Total Environmental Issues						15	
Other	2	Road classification (if issue is with the road only)	5	Arterial			
			4	Sub-arterial			
			3	Major collector			
			2	Minor collector			
			1	Local	2		
	2	Nearby public infrastructure likely to be affected by issue	5	School			
			5	Shopping centre			
			5	Hospital			
			3	Transport			
			3	Park			
Total Other						2	
SUBTOTAL						52	

Division	Location	Issue	Priority Score	Priority Rating
4	James St, Bundamba	Overland flow over James St and through several properties.	52	1
4	Barclay St Park, Bundamba	Overland flow through several properties. Unmitigated flows from upstream development.	46	2
2	Bellevue Rd, Goodna	Ponding water at intersect	44	3
6	4A Smith Street, North Ipswich	Trapped sag causing deep ponding water in properties.	42	4
6	13 North St, North Ipswich	Insufficient road drainage causing water to overtop concrete k&c.	39	5
7	Tallon Street, Sadliers Crossing	Inlet pits blocking causing flooding railway walkway.	37	6
2	65-67 Boscawan Cres, Bellbird Park	Severe erosion through property.	37	6
10	102 Champions Way, Willowbank	Severe erosion along fenceline.	36	7
8	6 Glode Avenue, Churchill	Inlet pit undercapacity and blocks causing water runoff through property.	34	8
4	70 David St, North Booval	Cracked concrete and brickwork near Council drain.	34	8
2	16 Enid St, Goodna	Drainage channel in private property not maintainable. Water ponding on Enid St and flooding road.	34	8
2	7 Harry St, Bellbird Park	Water ponding on footpath and road. Minor silting issues.	33	9
2	15 Nimerette St, Bellbird Park	Sag inlets undercapacity. K&c overtops and flows into property.	32	10
7	118 Gladstone Rd, Coalfalls	Fence falling into drainage channel.	32	10
2	67 Redbank Plains Rd, Goodna	Insufficient road drainage causing water to overtop concrete k&c.	31	11
5	468-470 Junction Rd, Karalee	Erosion within drainage channel.	31	11
8	35 Ash Street, Yamanto	Possible pavement movement. Sag point not drained causing ponding water on road.	31	11
10	Berlins Rd, Tallegalla	Water has been redirected and causing erosion to gravel road.	29	12
10	6 Keogh Street, Marburg	Table drain directed towards properties.	28	13
6	Sutton Park, Brassall	Ponding water throughout Sutton Park.	28	13
10	Wanstall Rd, Thagoona	Deep ponding water and channel erosion.	27	14
5	17 Blackwood Ave, North Ipswich	Insufficient road drainage causing water flow through property.	27	14
10	Tristania Street Yamanto concrete invert	Channel unmaintainable. Ponding water throughout.	27	14
2	20 Waterford Road, Gailles	Insufficient road drainage causing water to overtop bitumen k&c	25	15
1	6-10 Hallet Ave, Camira	Severe erosion through property.	25	15
6	12 Wyndham Street, North Ipswich	Insufficient road drainage.	24	16
4	41 Alfred St, Riverview	Dangerous inlet pit adjacent road edge.	24	16
10	Rosewood Drainage Channel, Rosewood	Channel requires full reprofiling.	23	17
10	80 Cummings Road, Calvert	Gravel road scour. Requires concrete floodway for minor flows.	22	18
5	2 Fitzroy Place, Karalee	Water runoff through property.	21	19
4	2B Thompson St, Bundamba	Channel unmaintainable.	20	20
7	Thornton St Drainage Channel, Raceview	Channel unmaintainable. Ponding water throughout.	20	20
6	33 Waterworks Rd, North Ipswich	Insufficient road drainage causing water to overtop concrete k&c.	19	21
10	Doonans Road Grandchester	Water ponding on ffloway.	17	22
10	38 Waters Rd, Calvert	Lack of table drain shape allowing water through properties.	17	22
7	99 Darling St West, West Ipswich	Lack of table drain shape allowing water through properties.	17	22
10	309 Ironbark Rd, Ironbark	Gravel road scour. Requires pipe for minor flows.	16	23
10	80 McCarthys Road, Thagoona	Ponding water in table drain.	16	23
5	415-417 Junction Rd, Karalee	Water causing boggy area in property backyard.	14	24
2	14 Brick St, Redbank	Water runoff through property.	13	25
5	6-12 Arunta Street, Karalee	Seepage.	10	26
10	12 Senna Close, Pine Mountain	Safety concerns for children with large pipe opening in property.	6	27

Note: For those projects that have the same priority rating the project with the highest drainage issue category score is considered a higher priority

ATTACHMENT B – LOCAL DRAINAGE IMPROVEMENTS ASSESSMENT CRITERIA MATRIX

CATEGORIES	CHARACTERISTIC RATING (CR)	CHARACTERISTICS	IMPACT RATING (IR)	IMPACTS	CHARACTERISTIC SCORE (CS) (=CRxIR)	PRIORITY SCORE (=ΣCS)	
Drainage Issues	4	Council infrastructure contributing	5	Directly Responsible	X		
			2	Contributing			
	2	Existing drainage (including k&c)	3	Undercapacity	X		
			2	Inefficient (e.g. too flat)			
	5 Further multiply if multiple properties affected.	Stormwater enters property (not caused by flooded Creeks/Rivers)	5	Habitable dwelling	X		
			3	Non-habitable structure			
			1	Land only			
	3	Safety	5	Pedestrian and vehicular	X		
			3	Vehicular			
			2	Pedestrian			
	Environmental Issues	2	Erosion / scour / sediment	5	Severe		X
				3	Major		
2				Moderate			
1				Minor			
2		General	5	Deep ponding water	X		
			3	Shallow ponding water			
			2	Overgrown			
			1	Unightly			
3		Maintenance history	3	Frequent	X		
			1	Occasional / reactive			
Other		2	Road classification (if issue is with the road only)	5	Arterial	X	
				4	Sub-arterial		
	3			Major collector			
	2			Minor collector			
	1			Local			
	2	Nearby public infrastructure likely to be affected by issue	5	School	X		
5			Shopping centre				
5			Hospital				
3			Transport				
3			Park				
					X		

Notes:

1. Multiply the characteristic rating (CR) by the corresponding impact rating (IR) to give a characteristic score (CS). If the characteristic is not relevant to the project, no score shall be given. Only one impact rating per characteristic is allowed. Where multiple impacts apply to a project, the impact with the highest rating shall be used.

2. Calculate the overall priority score by accumulating the total of the characteristic scores.

Worked Example for Bellevue Road, Goodna (Priority 1)

CATEGORIES	CHARACTERISTIC RATING (CR)	CHARACTERISTICS	IMPACT RATING (IR)	IMPACTS	CHARACTERISTIC SCORE (CS) (=CRxIR)	PRIORITY SCORE (=ΣCS)		
Drainage Issues	4	Council infrastructure contributing	5	Directly Responsible	8			
			2	Contributing				
	2	Existing drainage (including k&c)	3	Undercapacity				
			2	Inefficient (e.g. too flat)				
	5 Further multiply if multiple properties affected.	Stormwater enters property (not caused by flooded Creeks/Rivers)	5	Habitable dwelling				
			3	Non-habitable structure				
			1	Land only				
	3	Safety	5	Pedestrian and vehicular	9			
			3	Vehicular				
			2	Pedestrian				
							9	
	Total Drainage Issues						17	
Environmental Issues	2	Erosion / scour / sediment	5	Severe	2			
			3	Major				
			2	Moderate				
			1	Minor				
	2	General	5	Deep ponding water	6			
			3	Shallow ponding water				
			2	Overgrown				
			1	Unightly				
	3	Maintenance history	3	Frequent	3			
			1	Occasional / reactive				
						3		
	Total Environmental Issues						11	
Other	2	Road classification (if issue is with the road only)	5	Arterial	6			
			4	Sub-arterial				
			3	Major collector				
			2	Minor collector				
			1	Local				
	2	Nearby public infrastructure likely to be affected by issue	5	School	10			
			5	Shopping centre				
			5	Hospital				
			3	Transport				
			3	Park				
						10		
	Total Other						16	
						44		

Attachment C - Prioritised Local Drainage Projects

Division	Location	Issue	Priority Score	Priority Rating	Overall Priority
2	Marlborough St, Bellbird Park	Undersized pipe attributed to flooding of units.	48	1	1
6	77 Keswick Rd, Karrabin	Insufficient road drainage at sag causing water to flow through property.	42	2	2
5	36 Queensborough Pde, Karalee	Insufficient road drainage at sag causing water to flow through property.	36	3	3
10	102 Champions Way, Willowbank	Severe erosion along fenceline.	36	3	4
5	1A Joyce St, East Ipswich	Water surcharging from manhole. Extent of pipe network downstream unknown.	35	4	5
7	Bethany Lutheran School Drain	Water ponding and silt depositing on concrete invert.	35	4	6
2	20 Waterford Road, Gailes	Insufficient road drainage causing water to overtop bitumen k&c.	34	5	7
8	6 Glode Avenue, Churchill	Inlet pit under capacity and blocks, causing water runoff through properties.	34	5	8
2	16 Enid St, Goodna	Drainage channel in private property not maintainable. Water ponding on Enid St and flooding road.	34	5	9
2	15-17 Verran St, Bellbird Park	Lack of road drainage.	33	6	10
6	12 Smith St, North Ipswich	Insufficient road drainage at sag causing water to flow through property.	33	6	11
2	7 Harry St, Bellbird Park	Water ponding on footpath and road. Minor silting issues.	33	6	12
7	118 Gladstone Rd, Coalfalls	Fence falling into drainage channel.	32	7	13
2	67 Redbank Plains Rd, Goodna	Insufficient road drainage causing water to overtop concrete k&c.	31	8	14
5	164 Moores Pocket Rd, Moores Pocket	No drainage on road. Water overtops AC kerb and runs under houses.	31	8	15
8	Kerners Rd, Yamanto	Water sheeting across road near first bend.	31	8	16
8	35 Ash Street, Yamanto	Possible pavement movement. Sag point not drained causing ponding water on road.	31	8	17
5	468-470 Junction Rd, Karalee	Erosion within drainage channel.	31	8	18
2	8 Dove Cl & 5 Corella Pl, Goodna	Insufficient road drainage causing water flooding pool and dangerous flows in rock-lined channel.	29	9	19
8	Cnr Coyne St/Chubb St, One Mile	Intersection ponds water since road rehab project in 2012.	29	9	20
10	Berlins Rd, Tallegalla	Water has been redirected and causing erosion to gravel road.	29	9	21
6	144 Fernvale Rd, Brassall	Water collects at a trapped sag upstream of retaining wall and ponds on road.	28	10	22
4	James St, Bundamba	Flows hit raised sewer and splits causing water to flood the cul de sac.	28	10	23
7	29 Lloyd George St, Eastern Heights	Trapped sag at intersection with Devon St. Water overtopping kerb flowing onto front lawn at 29 Lloyd George St.	28	10	24
6	Sutton Park, Brassall	Ponding water throughout Sutton Park.	28	10	25
5	130b Chermiside Rd, East Ipswich	Bike-safe grate blocks and water overtops kerb going into property and down footpath.	27	11	26
5	17 Blackwood Ave, North Ipswich	Insufficient road drainage causing water flow through property.	27	11	27
3	Maxwell St/Old Ipswich Rd, Riverview	Water ponding at intersection causing aquaplaning.	27	11	28
10	Tristania Street Yamanto	Channel unmaintainable. Ponding water throughout.	27	11	29
7	66 Gladstone Rd, Sadiers Crossing	Insufficient drainage on road. Water builds up on western side of the road and overtops AC kerb into several properties.	26	12	30
1	39 Meier Rd, Camira	Water overtopping footpath since kerb and channel installation.	25	13	31
1	6-10 Hallet Ave, Camira	Severe erosion through property.	25	13	32
6	12 Wyndham Street, North Ipswich	Insufficient road drainage.	24	14	33
3	41 Alfred St, Riverview	Dangerous inlet pit adjacent road edge.	24	14	34
10	Rosewood Drainage Channel, Rosewood	Channel requires full reprofiling.	23	15	35
10	Keanes Rd, Rosewood	Gravel resheet has raised height of road causing water to backup into 1042 Ipswich Rosewood Rd.	22	16	36
4	5 Wearne St, Booval	Open channel in front of property. Owners have been complaining for 40 years apparently.	22	16	37
10	80 Cummings Road, Calvert	Gravel road scour. Requires concrete floodway for minor flows.	22	16	38
10	92 Schumanns Rd, Mt Marrow	Water crossing road adjacent driveway to 92 Schumanns Rd. No culvert under road at sag location.	22	16	39
5	2 Fitzroy Place, Karalee	Water runoff through property.	21	17	40
7	Thornton St Drainage Channel, Raceview	Channel unmaintainable. Ponding water throughout.	20	18	41
4	2B Thompson St, Bundamba	Channel unmaintainable.	20	18	42
8	Watsons Rd, South Ripley	Water pooling on south-east side of intersection with McGuires Hut Rd.	20	18	43
6	33 Waterworks Rd, North Ipswich	Insufficient road drainage causing water to overtop concrete k&c.	19	19	44
10	23 Hiddenvale Rd, Calvert	Water backing up into property due to undersized culverts (4 x 900 x 300 RCBC's)	19	19	45
10	38 Waters Rd, Calvert	Lack of table drain shape allowing water through properties.	17	20	46
7	99 Darling St West, West Ipswich	Lack of table drain shape allowing water through properties.	17	20	47
10	309 Ironbark Rd, Ironbark	Gravel road scour. Requires pipe for minor flows.	16	21	48
10	80 McCarthys Road, Thagoona	Ponding water in table drain.	16	21	49
5	415-417 Junction Rd, Karalee	Water causing boggy area in property backyard.	14	22	50
2	14 Brick St, Redbank	Water runoff through property.	13	23	51
5	6-12 Arunta Street, Karalee	Seepage.	10	24	52
10	12 Senna Close, Pine Mountain	Safety concerns for children with large pipe opening in property.	6	25	53

Note: For those projects that have the same priority rating the project with the highest 'Drainage Issues' category sub-total score is considered a higher priority

Infrastructure and Emergency Management Committee	
Mtg Date: 16.07.18	OAR: YES
Authorisation: Charlie Dill	

DW:MT

H:\5-Infrastructure Planning\Infrastructure Planning Team\Committee Reports\Methodology Report\Methodology Report 19-20\Road Safety Improvements 2019-2020.Doc

5 July 2018

MEMORANDUM

TO: INFRASTRUCTURE PLANNING MANAGER

FROM: TECHNICAL OFFICER (TRAFFIC)

RE: "ROAD SAFETY AND OPERATIONS" SUB-PROGRAM – ROAD SAFETY IMPROVEMENTS PRIORITY LIST OF PROJECTS

INTRODUCTION:

This is a report by the Technical Officer (Traffic) dated 5 July 2018 concerning the road safety improvements project listing that forms part of the "Road Safety and Operations" capital works portfolio sub-program.

BACKGROUND:

As part of the 2019-2020 capital portfolio build process, it is proposed to submit a report outlining the project listing for each sub-program. This report relates to the road safety improvements which forms part of the "Road Safety and Operations" sub-program. Table 1 below outlines the sub-programs that the Infrastructure Services Department is responsible for and that will have prioritised lists reported to Council.

PREVIOUS BUDGET:

In the 2018-2019 financial year, Council allocated \$250,000 towards road safety improvements within the "Road Safety and Operations" sub-program. This budgeted amount for road safety improvements has remained relatively consistent in recent years.

Table 1 – Proposed Sub-Program Project Lists

Program	Sub-program	Project Lists	Status
Transport and Traffic	Strategic Transport	Strategic Roads and Potential Bicycle Links	Submit to September 2018 I&EM Committee
		iGo ATAP implementation	Submit to September 2018 I&EM Committee
	Road Safety and Operations	Road Safety Improvements	Submit to July 2018 I&EM Committee
		Gravel Turnarounds	Submit to August 2018 I&EM Committee
	Sustainable Travel	Public Transport Improvements	Submitted to September 2018 I&EM Committee
		Pedestrian Safety Improvements	Submitted to August 2018 I&EM Committee
Cycle Safety and Mobility Improvements		Submit to September 2018 I&EM Committee	
Flood Mitigation and Drainage	Local Drainage	Local Drainage Improvements	Submitted to July 2018 I&EM Committee
Local Amenity	Sealing Gravel Roads	Sealing Gravel Roads	Submit to August 2018 I&EM Committee

PREVIOUS CONSIDERATIONS:

At its Ordinary meeting on 28 July 2015, Council endorsed a methodology for assessing road safety improvements [refer to Item 7 tabled at the City Infrastructure Committee Meeting 2015(07)], as per Attachment A.


The previously developed methodology endorsed by Council has been used to prioritise future projects. The full list of road safety improvement projects for future years can be viewed in Attachment B, with the associated priority ranking.

Council currently does not have any subprogram that accommodates installation of guardrail or other safety improvement works such as minor road / culvert widening, shoulder sealing etc. Given this subprogram is for road safety improvements, projects that are identified as potential safety concerns will be considered when developing the list of prioritised projects. However, these projects would be considered a much lower priority given the road safety audit recommendations have been outstanding for some time and have been documented for improvement through a formal road safety audit report.

CONCLUSION:

Road safety improvements form part of the “Road Safety and Operations” sub-program within Council’s capital works portfolio. Council previously endorsed a methodology for assessing road safety improvements which has been used to develop a list of priority projects. The priority list of projects for the road safety improvements which forms part of the “Road Safety and Operations” sub-program is shown in Attachment B of this report.

ATTACHMENTS:

Name of Attachment	Attachment
Report from City Infrastructure Committee No 2015(07) regarding the road safety improvements sub-program	 Attachment A
Road Safety Improvements – Prioritised project list	 Attachment B

RECOMMENDATION:

That the prioritised list of projects, as detailed in Attachment B to the report by the Technical Officer (Traffic) dated 5 July 2018, be considered when developing the Road Safety Improvement project listing which forms part of the “Road Safety and Operations” sub-program as part of the 2019-2020 capital works portfolio.

Dylan Wingfield
TECHNICAL OFFICER (TRAFFIC)

I concur with the recommendation contained in this report.

Tony Dileo
INFRASTRUCTURE PLANNING MANAGER

I concur with the recommendation contained in this report.

Charlie Dill
CHIEF OPERATING OFFICER (INFRASTRUCTURE SERVICES)

City Infrastructure Committee	
Mtg Date: 20.07.2015	OAR: YES
Authorisation: Charlie Dill	

ITEM 4

MT:MT

H:\5-Infrastructure Planning\Infrastructure Planning Team\Committee Reports\Road Safety Improvements.Doc

9 July 2015

MEMORANDUM

TO: INFRASTRUCTURE PLANNING MANAGER

FROM: PRINCIPAL ENGINEER (INFRASTRUCTURE PLANNING)

RE: "ROAD SAFETY IMPROVEMENTS" SUB-PROGRAM - PRIORITY LIST OF PROJECTS

INTRODUCTION:

This is a report by the Principal Engineer (Infrastructure Planning) dated 9 July 2015 concerning the "Road Safety Improvements" capital works portfolio sub-program.

BACKGROUND:

As part of the 2016–2017 capital portfolio build process, it is proposed to submit a report outlining the prioritisation methodology and subsequent project listing for each sub-program. This report relates to the "Road Safety Improvements" sub-program. Table 1 below outlines the sub-programs that will have prioritised lists reported to Council with a status update; which will remain the responsibility of the Infrastructure Services Department to create priorities for.

Table 1 – Proposed Sub-Program Project Lists

Program	Sub-program	Project Lists	Status
Transport	Growth Management	Strategic Roads	
		SafeST	
	Safety and Amenity	Road Safety Improvements	Submitted to July 2015 CI Committee
		Sealing Gravel Roads	
		Gravel Turnarounds	
	Sustainable Travel	Public Transport Improvements	
		Pedestrian Safety Improvements	
		Cycle Safety and Mobility Improvements	Submitted to July 2015 CI Committee

Drainage	Drainage	Local Drainage Improvements	
----------	----------	-----------------------------	--

PREVIOUS CONSIDERATIONS:

At its Ordinary meeting on 23 July 2013, Council endorsed a priority list of outstanding road safety audit recommendations to be undertaken should funds become available [refer to Item 2 tabled at the City Infrastructure Committee Meeting 2013(05) as per Attachment A].

The previously developed and endorsed priority list was based on the methodology of undertaking the oldest outstanding audit recommendations first working towards implementing the newer road safety audit recommendations as the lower priority.

PRIORITY LIST OF PROJECTS

As outlined in the report shown in Attachment A, Council over a number of years, has commissioned a number of Road Safety Audits. However, due to previous budget constraints not all of the recommendations of these audits have been delivered. Council officers have reviewed all of the recommendations for the Road Safety Audits to determine which recommendations have been completed and those that are still outstanding. A summary of the findings can be found in Attachment B.

It should also be noted that some recommendations have a high cost and may need to be undertaken over several financial years or submitted for funding consideration under a grant program (e.g. Federal Blackspot Program).

A priority list of outstanding recommendations has been determined based on the review and the list of projects and priorities are outlined in Table 2 below. The priority list has been developed to address the oldest outstanding recommendations first. As the opportunity becomes available, outstanding recommendations will also be submitted for grant funding consideration as part of the Federal Government Blackspot programme to assist with delivering the recommendations as soon as possible.

**TABLE 2
PROPOSED ROAD SAFETY IMPROVEMENTS PRIORITY LISTING**

Road Safety Audit	Outstanding Recommendation	Priority Order
Tallegalla Road	Provide guardrail at the two culverts at Black Snake Creek	1
	Provide guardrail at the tree 150m past Ivy Hansens Road	2
Redbank Plains Road (Keidges Road to Stuart Street)	Provide supplementary lighting at pedestrian refuge near Verran Street	3
	Provide route lighting between Brennan Street and Stuart Street to similar standard as balance of road	4
	Inspect streetlighting slip base supports in	5

	median between pedestrian signals to Eagle Street and upgrade if necessary	
	Relocate streetlight No 107226 to approximately 5m from alignment of edgeline to remove from clear zone	6
	Replace and extend guardrail in median on approach to pedestrian signals south of Frangipani Street	7
	Upgrade various kerb ramps to meet DDA compliance	8
	Consider provision of road widening (shoulders) ore alternative means to allow cyclists to bypass squeeze points at the Kruger Parade roundabout	9
	Install bicycle safe grates	10
	Consider provision of shoulder widening at bus stops	11
Redbank Plains Road / Queen Street	Check streetlights provide a uniform level of illumination along the route	12
	Relocate power pole 10716 slighting south of Azure Street further back from kerb	13
	Consider provision of pedestrian path on eastern side of road from Caldwell Street to Brennan Street	14
	Upgrade various kerb ramps to meet DDA compliance	15
	Install bicycle safe grates	16
Old Ipswich Road	Consider banning right turn out of Joseph Street to Jacob Street	17
Brisbane Terrace	The majority of recommendations are yet to be undertaken.	18
Pine Mountain Road	Installation of guardrail at several locations	19
	Road widening and sealing shoulders at various locations on Pine Mountain Road	20
Alice Street	All recommendations listed in the road safety audit except the signalisation of Alice Street / Church Street intersection. Works include but not limited to signs and lines, guardrail upgrades, removal of roadside hazards etc.	21
Bergins Hill Road / Barclay Street / Naomai Street / Charlotte Street	All recommendations listed in the road safety audit are to be addressed.	22
Lobb Street	All recommendations listed in the road safety audit are to be addressed.	23

CONCLUSION:

“Road Safety Improvements” is a sub-program of Council’s capital works portfolio. The projects undertaken under this sub-program are predominately outstanding recommendations from Road Safety Audits. A proposed list of priority projects have been developed based on the methodology of implementing the oldest recommendations as the highest priority. The priority listing for this sub-program is shown in Table 2 of this report.

ATTACHMENTS:

Name of Attachment	Attachment
Report from City Infrastructure Committee No 2013 (05) regarding Road Safety Audits and Road Crash Prevention	 Attachment A
Review of Road Safety Audits undertaken with associated recommendations	 Attachment B

RECOMMENDATION:

That the prioritisation methodology and subsequent priority list of projects as detailed in Table 2 to the report by the Principal Engineer (Infrastructure Planning) dated 9 July 2015 be adopted and used when developing the “Road Safety Improvements” sub-program as part of the 2016–2017 capital works portfolio, noting that the number of projects adopted will depend on funding availability.

Mary Torres
PRINCIPAL ENGINEER (INFRASTRUCTURE PLANNING)

I concur with the recommendation contained in this report.

Tony Dileo
INFRASTRUCTURE PLANNING MANAGER

I concur with the recommendation contained in this report.

Charlie Dill
CHIEF OPERATING OFFICER (INFRASTRUCTURE SERVICES)

City Infrastructure Committee	
Mtg Date: 13.05.13	OAR: YES
Authorisation: Craig Maudsley	

MT:MT

H:\Departmental\Committee Reports\1304MT road safety audits 2013-2014CR.doc

ITEM 2

22 April 2013

MEMORANDUM

TO: INFRASTRUCTURE PLANNING AND PARTNERSHIPS MANAGER

FROM: PRINCIPAL ENGINEER (CITY INFRASTRUCTURE PLANNING)

RE: ROAD SAFETY AUDITS AND ROAD CRASH PREVENTION FUNDING

INTRODUCTION:

This is a report by the Principal Engineer (City Infrastructure Planning) dated 22 April 2013 concerning Road Safety Audits and Road Crash Prevention funds.

BACKGROUND:

At its ordinary meeting on 15 November 2011, Council endorsed a five year program for the undertaking of Road Safety Audits and also how the findings of the audits will form the basis of Council's Road Crash Prevention capital budget program, [refer Item 2 tabled at City Works Committee Meeting 2011(11)], as shown in Attachment A.

As part of this report, Council identified the audit for Bergins Hill Road / Barclay Street / Naomai Street / Charlotte Street in Bundamba / Blackstone to inform the works to be undertaken under the Road Crash Prevention program for 2013-2014. A budget allocation for this program of \$1,500,000 has been allowed for in 2013-2014. The recommendations proposed to be undertaken in 2013-2014 as an outcome of this audit can be viewed in Attachment B.

Based on the audit findings it has been identified that there will be available funds from the Road Crash Prevention budget in 2013-2014 above and beyond the funds required to complete the works identified in this audit.

ADDITIONAL WORKS:

Council, over a number of years, has undertaken a number of Road Safety Audits. However due to previous budget constraints not all of the recommendations of these previous audits have been delivered.

Once a road safety audit has been undertaken on an existing road, it is considered Council's obligation to ensure the recommendations are addressed, even if they are done so in future programs. Therefore it is considered necessary to utilise the available funds from the 2013–2014 Road Crash Prevention capital budget allocation to carry out on a priority basis any remaining recommendations from previous audits of those sites listed below in Table 1. It should also be noted that some recommendations may be at a high cost and may need to be undertaken over two financial years or submitted for funding under a grant program (e.g. Federal Blackspot Program).

Council officers have reviewed all of the recommendations for the sites in Table 1 to determine which recommendations have been completed and those that are still outstanding.

A priority list of outstanding recommendations has been determined and can be viewed in Attachment C. The priority list has been developed to address the oldest outstanding recommendations first, leading to the latest outstanding audits. Several sites have been submitted for grant funding as part of the Federal Government Blackspot programme, and these are noted in Attachment C.

It is therefore proposed to undertake these outstanding recommendations as a rolling program from any available funds available from the Road Crash Prevention budget funds on an annual basis until all of the recommendations have been completed.



**TABLE 1
ROAD SAFETY REVIEWS CARRIED OUT ON EXISTING ROAD LENGTHS**

Road Length	Section	When Undertaken
Blackstone Road / Mary Street	South Station Road to Cunningham Highway	May 2000
Burnett Street / Hunter Street	Darling Street East to Pine Mountain Road	June 2000
Namatjira Drive / Kruger Parade	Collingwood Drive to Redbank Plains Road	November 2000
Redbank Plains Road, Redbank Plains	Cunningham Highway to Keidges Road	June 2002
Old Logan Road, Camira	Alice Street to Meier Road	July 2002
Tallegalla Road	Rosewood Marburg Road to Minden Post Office Road	January 2003
Redbank Plains Road	Keidges Road to Stuart Street	May 2003
Redbank Plains Road / Queen Street	Stuart Street to Woogaroo Street	June 2003
Old Ipswich Road	Aberdare Street to Duncan Street	June 2005
Brisbane Terrace	Monash Road to Woogaroo Creek	February 2009
Wulkuraka Connection Road	Warrego Highway to Karrabin-Rosewood Road	March 2011

CONCLUSION:

Council have previously endorsed projects to be undertaken as part of the Road Safety Audit and Crash Prevention funding program over a five year period. Recommendations from a recent audit has identified that there will be available funds available from the Road Crash Prevention budget allocation in 2013-2014. It is proposed that any available funds from this allocation be used to fulfil any outstanding road safety audit recommendations previously undertaken until all recommendations have been completed. This is to be undertaken in accordance with the list of outstanding recommendations prioritised in Attachment C of this report.

ATTACHMENTS:

Name of Attachment	Attachment
Report from City Works Committee No 2011(11) on Road Safety Audits and Road Crash Prevention Funding	 Attachment A
Recommendations from the Bergins Hill Road / Barclay Street / Naomai Street / Charlotte Street audit to be undertaken in 2013-2014	 Attachment B

Proposed Priority Listing of outstanding Road Safety Audit recommendations to be undertaken



Attachment C

RECOMMENDATION:

Amended at CI Ctee No 2013(05) of 13 May 2013. aip

- A. That Council deliver all of the recommendations from the Bergins Hill Road / Barclay Street / Naomai Street / Charlotte Street road safety audit as part of the Road Safety Crash Prevention program for 2013–2014, subject to final allocation of funds in the 2013-2014 budget.
- B. That Council adopt the proposal to utilise any available funds from the Road Crash Prevention budget allocation to fund any outstanding audit recommendations not completed from audits previously undertaken for Council.
- C. That Council adopt the priority list of outstanding Road Safety Audit recommendations as detailed in Attachment C of the report by the Principal Engineer (City Infrastructure Planning) dated 22 April 2013.

Mary Torres

PRINCIPAL ENGINEER (CITY INFRASTRUCTRE PLANNING)

I concur with the recommendation contained in this report.

Bryce Hines

INFRASTRUCTURE PLANNING & PARTNERSHIPS MANAGER

I concur with the recommendation contained in this report.

Craig Maudsley

CHIEF OPERATING OFFICER (WORKS, PARKS AND RECREATION)

MT:BH

City Works Committee	
Mtg Date: 07.11.11	OAR: YES
Authorisation: Craig Maudsley	

ITEM 2

21 October 2011

MEMORANDUM

TO: INFRASTRUCTURE PLANNING AND PARTNERSHIPS MANAGER
FROM: PRINCIPAL ENGINEER (TRAFFIC OPERATIONS)
RE: ROAD SAFETY AUDITS AND ROAD CRASH PREVENTION FUNDING

INTRODUCTION:

[AMENDED AT CW COMMITTEE NO. 2011\(11\) ON 7 NOVEMBER 2011. tf](#)

This is a report by the Principal Engineer (Traffic Operations) dated 21 October 2011 ~~regarding concerning~~ the undertaking of Road Safety Audits and implementation of the audit recommendations for existing roads under Council's Road Crash Prevention budget activity.

BACKGROUND:

As part of Council's continued effort to provide safer roads for the community, traffic improvements have been identified through the conduct of formal road safety audits. These traffic improvement works are generally implemented under the Road Crash Prevention budget activity in the Capital Works Program.

City Works Committee have previously been presented with reports identifying how the Road Crash Prevention funding is intended to be spent, however there has not been an approved program of Road Safety Audits for existing roads.

ROAD SAFETY AUDITS:

A road safety audit is a formal examination of a road, in which an independent and suitably qualified auditor reports on the road's crash potential and safety performance in accordance with nationally recognised and accepted examination standards.

An audit can be conducted for an existing road (termed a road safety review), or a future road or traffic project during the design process.

A road safety audit has the greatest potential for improving safety and is most cost-effective when it is applied to a road or traffic design before the project is built. It can be conducted on any design proposal that involves changes to the way road users will interact, either with each other or with their physical environment. It is a formal process using a defined

procedure. To be effective it must be conducted by people who are independent and who have appropriate experience and training.

For existing roads, the road safety review aims to ensure that the safety features of the road are compatible with the intended purpose of the road, and to ensure that these are at an appropriate level of safety. For existing roads, locations selected are typically high traffic volume strategic roads. It is most beneficial to undertake audits of existing individual road lengths (rather than a wider road network) as these type of audits yield very detailed safety issues.

Once an audit has been undertaken, findings are listed in the report as recommendations into improving either the design or existing road length. The recommendations are prioritised from A to C and are summarised below:

- (a) Priority A – Issues which have a high priority for action from a road safety viewpoint. (These items should be ones that are of a nature that can be treated quickly). Priority A recommendations are generally required to be undertaken as soon as possible.
- (b) Priority B – Issues for which action needs to be taken from a road safety viewpoint. These recommendations are to be undertaken in the short to medium timeframe.
- (c) Priority C – Issues for which action is desirable from a road safety viewpoint. These recommendations can be prioritised under a future program

BENEFITS OF ROAD SAFETY AUDITS:

There are many benefits with undertaking Road Safety Audits. The cost of performing a Road Safety Audit and making changes to improve safety during the design process is significantly lower than the cost of remedial treatments once works are constructed. Similarly, the auditing of existing roads can result in significant savings through reduced accident costs. Apart from accidents savings, benefits include:

- Safer road network
- Reduced total life costs of road schemes
- Reduced the need to modify new schemes
- Road safety is given a greater prominence by road designers
- Eventual improvements to standards and procedures
- Better consideration of vulnerable road users

ROAD SAFETY AUDIT PROCESS:

A Road safety audit has the greatest potential for improving safety when it is applied to a design before a road or traffic project is built. It can be conducted on any proposal that is likely to alter interactions between different road users, or between road users and their physical environment.

A road safety audit may be undertaken at one or more of the following stages as a design proceeds from concept to implementation:

- the feasibility stage (including audit of the design brief)
- the preliminary design stage

- the detailed design stage
- the pre-opening stage (or post-opening if done just after the project opens).

Council should consider formalising the road safety audit process during the design of road projects. Below is a list of proposals regarding the possible implementation of the Road Safety Audit process for new designs:

- For projects greater than \$5m, audits be undertaken at each stage from preliminary design to pre-opening stage
- Detailed design audits on all significant projects
- Other stage audits as needed
- Audit of existing roads to be identified by annual road length inspections

ROAD SAFETY REVIEWS ON EXISTING ROAD LENGTHS:

Due to the cost of undertaking an audit of an existing road length, it is proposed to limit these types of audits to no more than two per annum. Audit costs vary depending on the length of road to be investigated. However, as an indication of costs, an average amount of \$40,000 is spent on individual sites. Any Priority A and B recommendations that evolve from the review is proposed to be implemented in the following financial year under the Road Crash Prevention budget activity (thereby this will provide the prioritisation of the safety related Capital Program).

Any high priority recommendations that have not been completed in one financial year will need to be carried over to the following financial year or submitted for funding under a grant program (eg Blackspot). It should be noted that some of the recommendations from Road Safety Reviews can be costly and may require additional funding over and above the standard annual budgeted amount under Road Crash Prevention. Once a Road Safety Review has been undertaken on an existing road, it is Council's obligation to ensure the high priority concerns are addressed accordingly in a timely manner.

Table 1 (below) identifies Road Safety Reviews that have been undertaken on existing road lengths over the past few years:

Table 1: Road Safety Reviews carried out on existing road lengths

Road Length	Section	When Undertaken
Blackstone Road / Mary Street	South Station Road to Cunningham Highway	May 2000
Burnett Street / Hunter Street	Darling Street East to Pine Mountain Road	June 2000
Namatjira Drive / Kruger Parade	Collingwood Drive to Redbank Plains Road	November 2000
Redbank Plains Road, Redbank Plains	Cunningham Highway to Keidges Road	June 2002
Old Logan Road, Camira	Alice Street to Meier Road	July 2002
Tallegalla Road	Rosewood Marburg Road to Minden Post Office Road	January 2003
Redbank Plains Road	Keidges Road to Stuart Street	May 2003

Redbank Plains Road / Queen Street	Stuart Street to Woogaroo Street	June 2003
Old Ipswich Road	Aberdare Street to Duncan Street	June 2005
Brisbane Terrace	Monash Road to Woogaroo Creek	February 2009
Wulkuraka Connection Road	Warrego Highway to Karrabin-Rosewood Road	March 2011

The prioritisation of existing roads to have a road safety review undertaken has been determined based on the following:

- road hierarchy (all strategic roads are considered a high priority)
- road has identified crash history
- identified safety concerns
- adjacent developments in the area (therefore increasing traffic on road)
- identified safety features which requires determination of whether the road is fit for purpose based on the current road conditions

Table 2 (below) identifies Road Safety Reviews that are proposed to be undertaken over the next five year period.

Table 2: Road Safety Reviews proposed over the next five years

Road Length	Section	When Undertaken
Pine Mountain Road, Muirlea / Pine Mountain	Warrego Highway to ICC Boundary	2011/2012 financial year
Alice Street, Goodna	Newman Street to Stuart Street	2011/2012 financial year
Bergins Hill Road / Barclay Street/ Naomai Street / Charlotte Street, Bundamba / Blackstone	Brisbane Road to William Street	2012/2013 financial year
Lobb Street, Churchill / One Mile	Warwick Road to Old Toowoomba Road	2013/2014 financial year
Kholo Road, Muirlea / Chuwar / North Ipswich	Warrego Highway to ICC Boundary	2014/2015 financial year
Rosewood Thagoona Road / Railway Street, Thagoona / Rosewood	Thagoona Haigslea Road to John Street	2015/2016 financial year

CONSULTATION PROCESS:

Following the undertaking of a Road Safety Review of an existing road, the relevant Divisional Councillor/s are consulted with the outcomes and the proposed recommendations. The high Priority recommendations (A and B) are then scoped and a Committee Report prepared to City Works Committee to advise of how the Road Crash Prevention funds will be applied to address the recommendations.

CONCLUSION:

Given the importance of Road Safety Audits, it is intended to continue undertaking these within Ipswich on existing roads. The recommendations of the road safety reviews on existing roads will then inform Council's Road Crash Prevention Capital Budget activity for the following financial year.

It is also proposed that Council become proactive by implementing a series of design audits during new road designs.

RECOMMENDATION:

AMENDED AT CW COMMITTEE NO. 2011(11) ON 7 NOVEMBER 2011. tf

- A. That the projects detailed in Table 2 of the report by the Coordinator Principal Engineer (Traffic Operations) dated 21 October 2011 form the basis of Council's Road Safety Review program for the next five years.
- B. That Council implement a proactive program of undertaking Road Safety Audits of new road designs at the appropriate stages of the design and construction of the road.
- C. That recommendations of the Road Safety Reviews on existing roads be used to inform how the annual Road Crash Prevention Capital Budget program is applied.

Mary Torres

PRINCIPAL ENGINEER (TRAFFIC OPERATIONS)

I concur with the recommendations contained in this report.

Bryce Hines

INFRASTRUCTURE PLANNING & PARTNERSHIPS MANAGER

I concur with the recommendations contained in this report.

Craig Maudsley

CHIEF OPERATING OFFICER (WORKS, PARKS AND RECREATION)

Attachment B - Road Safety Audit Recommendations to be undertaken in 2013-2014

APPENDIX 1					
ROUTE INVENTORY					
NO.	LOCATION/ CHAINAGE	GAZETAL DIRECTION	LOCATION REFERENCE	ACTION	PRIORITY
1	0.09	G	Sheet 1	Remove R4-1A '60km/hr' sign; erect new R4-1B '60km/hr' sign	A
2	0.27	G	Sheet 1	Replace 'ROAD SUBJECT TO FLOODING' G9-21-1 sign	A
3	0.30	G	Sheet 1	Erect new Children/REFUGE ISLAND W6-3B/W8-25B sign & std	A
4	0.37	AG	Sheet 1	Erect new Children/REFUGE ISLAND W6-3B/W8-25B sign & std	A
5	0.39	G	Sheet 1	Erect new 'SCHOOL' W6-4B sign & std	A
6	0.40	AG	Sheet 1	Remove R4-1A '60km/hr' sign; erect new R4-1B '60km/hr' sign	A
7	0.30, 0.39, 0.47	G	Sheet 1	Erect new Flood Indicators G9-22-1A (3 no.)	A
8	0.37, 0.42, 0.47	AG	Sheet 1	Erect new Flood Indicators G9-22-1A (3 no.)	A
9	Thompson Street; 0.52	-	Sheet 1	Replace 'ROAD SUBJECT TO FLOODING' G9-21-1 signs (2 no.)	A
10	0.45	G	Sheet 1	Replace 'SCHOOL ZONE' R4-Q01B sign	A
11	0.59	AG	Sheet 1	Replace 'SCHOOL ZONE' R4-Q01B sign	A
12	0.59	G	Sheet 1	Remove R4-1A '60km/hr' sign; erect new R4-1B '60km/hr' sign	A
13	0.62	AG	Sheet 2	Erect new 'SCHOOL' W6-4B sign & std	A
14	0.64	G	Sheet 2	Replace 'ROAD SUBJECT TO FLOODING' G9-21-1 sign	A

15	0.71	AG	Sheet 2	Trim foliage at Flood Indicator G9-22-1A	A
16	0.74	AG	Sheet 2	Replace 'No Pedestrians' R6-15A sign; remove 'USE OTHER SIDE' sign	A
17	0.79	AG	Sheet 2	Replace 'ROAD SUBJECT TO FLOODING' G9-21-1 sign	A
18	1.02	AG	Sheet 2	Remove R4-1A '60km/hr' sign & std	A
19	1.06	AG	Sheet 2	Erect new R4-1B '60km/hr' sign & std	A
20	1.19	G	Sheet 2	Erect new R4-1B '60km/hr' sign & std	A
21	1.32	AG	Sheet 3	Replace 'SAFETY HOUSE ZONE' TC9802 sign	A
22	1.47	G	Sheet 3	Erect new W2-4B(R) sign & std	A
23	1.62	G	Sheet 3	Erect new R4-1B '60km/hr' sign & std	A
24	1.68	G	Sheet 3	Erect new 'Children' W6-3B sign & std	A
25	1.74	AG	Sheet 3	Relocate 'Kangaroos' W5-29B sign & std from 1.83km to 1.74km	A
26	1.83	AG	Sheet 3	Erect new 'Children' W6-3B sign & std	A
27	1.87	AG	Sheet 3	Erect new R4-1B '60km/hr' sign & std	A
28	2.03	G	Sheet 4	Remove R4-1A '60km/hr' sign; erect new R4-1B '60km/hr' sign	A
29	2.34	AG	Sheet 4	Remove R4-1A '60km/hr' sign & std	A
30	2.33	AG	Sheet 4	Erect new R4-1B '60km/hr' sign & std at PP4648	A
31	2.45	AG	Sheet 4	Remove R4-1A '60km/hr' sign; erect new R4-1B '60km/hr' sign & std	A
32	Mary Street	-	Sheet 4	Remove W2-1B sign' erect new W2-9B(L) sign	A

APPENDIX 2

INTERSECTIONS

NO.	LOCATION/ CHAINAGE	GAZETAL DIRECTION	LOCATION REFERENCE	ACTION	PRIORITY
1	Brisbane Road	-	Sheet 1	Replace R5-35D sign	A
2	Brisbane Road	G	Sheet 1	Replace 'KEEP LEFT' R2-3A(L) sign	A
3	Brisbane Road	AG	Sheet 1	Replace 'KEEP LEFT' R2-3A(L) sign	A
4	Brisbane Road	G	Sheet 1	Install yellow No Stopping Line (NSL)	A
5	Brisbane Road	AG	Sheet 1	Install yellow No Stopping Line (NSL)	A
6	Brisbane Road	-	Sheet 1	Replace 'Pedestrians CROSS WITH CARE' G9-Q10 labels (6 no.)	A
7	Brisbane Road	-	Sheet 1	Repaint all markings	A
8	Herbert Street	AG	Sheet 2	Replace R5-35R sign with R5-35D sign	A
9	Herbert Street	AG	Sheet 2	Replace R5-35R sign with R5-35D sign	B
10	Herbert Street	AG	Sheet 2	Erect new R5-35D sign & std	B
11	Herbert Street	AG	Sheet 2	Install yellow No Stopping Line (NSL)	B
12	Herbert Street	G	Sheet 2	Replace R5-35R sign	A
13	Herbert Street	G	Sheet 2	Remove R5-35L sign & std	A
14	Herbert Street	G	Sheet 2	Erect new R5-35L sign & std	B
15	Herbert Street	-	Sheet 2	Replace R5-35R sign with R5-35D sign	A
16	Herbert Street	-	Sheet 2	Replace R5-35L sign with R5-35D sign	A
17	Herbert Street	G	Sheet 2	Install yellow No Stopping Line (NSL)	A

18	Herbert Street	G	Sheet 2	Install yellow No Stopping Line (NSL)	B
19	Herbert Street	-	Sheet 2	Replace 'NO THROUGH ROAD' G5-10 sign	A
20	Herbert Street	-	Sheet 2	Repaint intersection markings	A
21	Lindsay Street	-	Sheet 3	Erect new 'GIVE WAY' R1-2A sign & std	A
22	Lindsay Street	-	Sheet 3	Install intersection markings	A
23	Tibbits Street	AG	Sheet 4	Erect new R5-35L sign & std	A
24	Tibbits Street	AG	Sheet 4	Erect new R5-35D sign & std	A
25	Tibbits Street	AG	Sheet 4	Install yellow No Stopping Line (NSL)	A
26	Tibbits Street	G	Sheet 4	Erect new R5-35R sign & std	A
27	Tibbits Street	G	Sheet 4	Erect new R5-35D sign & std	A
28	Tibbits Street	G	Sheet 4	Install yellow No Stopping Line (NSL)	A
29	Tibbits Street	G	Sheet 4	Install yellow No Stopping Line (NSL)	A
30	Tibbits Street	G	Sheet 4	Replace 'KEEP LEFT' R2-3A(L) sign	A
31	Tibbits Street	AG	Sheet 4	Replace 'KEEP LEFT' R2-3A(L) sign	A
32	Tibbits Street	-	Sheet 4	Repaint intersection markings	A
33	Thompson Street	AG	Sheet 5	Erect new R5-35D sign & std	B
34	Thompson Street	AG	Sheet 5	Erect new R5-35R sign & std	B
35	Thompson Street	AG	Sheet 5	Install yellow No Stopping Line (NSL)	B
36	Thompson Street	G	Sheet 5	Erect new R5-35D sign & std	B

37	Thompson Street	G	Sheet 5	Erect new R5-35L sign & std	B
38	Thompson Street	G	Sheet 5	Install yellow No Stopping Line (NSL)	B
39	Thompson Street	G	Sheet 5	Install yellow No Stopping Line (NSL)	B
40	Thompson Street	-	Sheet 5	Erect new 'GIVE WAY' R1-2A sign & std	A
41	Thompson Street	-	Sheet 5	Install intersection markings	A
42	Elms Street	-	Sheet 6	Erect new 'STOP' R1-1A sign & std	A
43	Elms Street	-	Sheet 6	Install intersection markings	A
44	Elms Street	-	Sheet 6	Provide 2m bitumen seal and install new 'GIVE WAY' R1-2A sign & std	C
45	Naomai Street/ Barclay Street	-	Sheet 7	Replace 'STOP' R1-1A sign	A
46	Naomai Street/ Barclay Street	-	Sheet 7	Replace 'GIVE WAY' R1-2A sign	A
47	Naomai Street/ Barclay Street	-	Sheet 7	Remove "old" posts	A
48	Naomai Street/ Barclay Street	-	Sheet 7	Repaint intersection markings	A
49	Naomai Street/ Barclay Street	-	Sheet 7	Install new Continuity Line (CL) marking	A
50	Naomai Street/ Barclay Street	-	Sheet 7	Install RRPMS along painted islands, lane line, edge lines (20 uni-directional yellow, 2 uni-directional white, 10 uni-directional red)	B
51	Naomai Street/ Barclay Street	-	Sheet 7	Replace white RRPMS with yellow RRPMS (13 uni-directional yellow)	B
52	Cooneana Street	-	Sheet 8	Repaint intersection markings	A
53	Emma Street	-	Sheet 9	Provide 2m wide bitumen seal and install new 'STOP' R1-1A sign & std and install intersection markings	C
54	Alice Street	-	Sheet 10	Erect new 'STOP' R1-1A sign & std	A
55	Alice Street	-	Sheet 10	Install intersection markings	A
56	Short Street	-	Sheet 11	Erect new 'GIVE WAY' R1-2A sign & std	A

57	Short Street	-	Sheet 11	Install intersection markings	A
58	Charlotte Street/ William Street	-	Sheet 12	Replace 'Slippery' W5-20A sign	A
59	Charlotte Street/ William Street	-	Sheet 12	Repaint all intersection markings	A
60	Charlotte Street/ William Street	-	Sheet 12	Install RRPMS at painted islands (12 uni-directional yellow)	B
61	Charlotte Street/ William Street	-	Sheet 12	Install yellow No Stopping Line (NSL)	A
62	Mary Street	-	Sheet 13	Replace 'GIVE WAY' R1-2B sign	A
63	Mary Street	-	Sheet 13	Repaint intersection markings	A
64	Mary Street	-	Sheet 13	Replace hazard marker D4-4A sign	A

APPENDIX 3A
ROADWAY DELINEATION
SIGNS AND MARKINGS

NO.	LOCATION/ CHAINAGE	GAZETAL DIRECTION	LOCATION REFERENCE	ACTION	PRIORITY
1	0.00 - 2.49	-	Sheet 1	Repaint centreline and painted islands along route	A
2	1.05 - 1.15	-	Sheet 1	1. Remove existing white RRPMS on painted islands.	B
				2. Install yellow RRPMS on centreline: 70 no. uni-directional; 270 no. bi-directional	B
3	0.86	G	Sheet 2	Trim foliage for sign visibility	A
4	1.01	G	Sheet 2	Erect new W2-9B(R) sign & std	B
5	0.86	G	Sheet 2	Replace W1-3A(L) sign with W1-3B(L) sign	B
6	1.02	AG	Sheet 2	Erect new W1-3B(R) sign & std	B
7	1.23	AG	Sheet 2	Erect new W2-9B(L) sign & std	B
8	1.88	G	Sheet 3	Replace W1-1B(R)/W8-2A(20) signs with new W1-1B(R)/W8-2B(20) signs	B
9	2.03	AG	Sheet 3	Replace W1-1A(L)/W8-2A(20) signs with new W1-1B(L)/W8-2B(20) signs	B
10	1.96	G	Sheet 3	Remove existing hazard marker D4-1-1A(R) sign & std; erect 2 new D4-1-1A(R) sign & stds	B
11	1.96	AG	Sheet 3	Erect hazard marker D4-1-1A(L) sign & std	B

12	1.96 - 2.02	G	Sheet 3	Install new edge line around curve	A
13	2.27	G	Sheet 3	Replace W2-9A(L) mod. Sign with W2-9B(L) mod. sign	B
14	2.41	AG	Sheet 3	Replace W2-16A(R) sign with W2-16B(R) sign	B

APPENDIX 3B
ROADWAY DELINEATION
ROAD EDGE GUIDE POSTS

NO.	LOCATION/ CHAINAGE	GAZETAL DIRECTION	LOCATION REFERENCE	ACTION	PRIORITY
1	0.48	-	Sheet 1	Install 1 pair REGPs (2 no.)	B
2	0.55	-	Sheet 1	Install 1 pair REGPs (2 no.)	B
3	0.60	-	Sheet 1	Install 1 pair REGPs (2 no.)	B
4	0.79	-	Sheet 1	Install 1 pair REGPs (2 no.)	B
5	0.55 - 0.60	G	Sheet 1	Install REGPs (2 no.)	B
6	Elms Street	G	Sheet 1	Install REGP (1 no.)	B
7	0.86	-	Sheet 2	Install 1 pair REGPs (2 no.)	B
8	0.97	-	Sheet 2	Install 1 pair REGPs (2 no.)	B
9	1.01	-	Sheet 2	Install 1 pair REGPs (2 no.)	B
10	1.05	-	Sheet 2	Install 1 pair REGPs (2 no.)	B
11	1.07 - 1.17	AG	Sheet 2	Install REGPs (9 no.)	B
12	1.17	AG	Sheet 2	Install REGP (1 no.)	B
13	1.19	AG	Sheet 2	Install REGP (1 no.)	B
14	1.23	AG	Sheet 2	Install REGP (1 no.)	B
15	1.27	AG	Sheet 2	Install REGP (1 no.)	B
16	1.31	AG	Sheet 2	Install REGP (1 no.)	B
17	1.35	AG	Sheet 2	Install REGP (1 no.)	B
18	1.40	AG	Sheet 2	Install REGP (1 no.)	B

19	1.43	AG	Sheet 2	Install REGP (1 no.)	B
20	1.46	-	Sheet 2	Install 1 pair REGPs (2 no.)	B
21	1.50	-	Sheet 2	Install 1 pair REGPs (2 no.)	B
22	1.54	-	Sheet 2	Install 1 pair REGPs (2 no.)	B
23	0.88 - 0.97	AG	Sheet 2	Install REGPs (14 no.)	B
24	0.88 - 0.97	G	Sheet 2	Install REGPs (6 no.)	B
25	1.68	AG	Sheet 3	Install REGP (1 no.)	B
26	1.74	AG	Sheet 3	Install REGP (1 no.)	B
27	1.83	AG	Sheet 3	Install REGP (1 no.)	B
28	1.76	G	Sheet 3	Install REGP (1 no.)	B
29	1.88	G	Sheet 3	Install REGP (1 no.)	B
30	1.93	G	Sheet 3	Install REGP (1 no.)	B
31	1.93 - 1.98	G	Sheet 3	Install REGPs (5 no.)	B
32	2.00	G	Sheet 3	Install REGP (1 no.)	B
33	2.06	G	Sheet 3	Install REGP (1 no.)	B
34	2.20	G	Sheet 3	Install REGP (1 no.)	B
35	2.28	G	Sheet 3	Install REGP (1 no.)	B
36	2.35	G	Sheet 3	Install REGP (1 no.)	B

APPENDIX 3C
ROADWAY DELINEATION
STREETLIGHTING

NO.	LOCATION/ CHAINAGE	GAZETAL DIRECTION	LOCATION REFERENCE	ACTION	PRIORITY
1	0.34	-	Sheet 1	Install supplementary lighting at pedestrian refuge	C
2	0.48	AG	Sheet 1	Install streetlight on PP19961	B
3	0.57	G	Sheet 1	Install streetlight on PP19963	B

4	0.61	G	Sheet 1	Install streetlight on power pole	B
5	0.74	G	Sheet 1	Install streetlight on PP17873	B
6	0.87	G	Sheet 2	Install streetlight on PP4999	B
7	0.94	G	Sheet 2	Install streetlight on PP39853	B
8	1.01	G	Sheet 2	Install streetlight on PP2065	B
9	1.10	-	Sheet 2	Install new streetlights on slip-base supports (2 no.)	B
10	1.62, 1.68	AG	Sheet 3	Install streetlight on PP281426, and on PP281425 (2 no.)	B
11	1.79	AG	Sheet 3	Install streetlight on PP69666	B
12	1.82, 1.87, 1.91	AG	Sheet 3	Install streetlight on PP3036, on PP3037 and on PP51523 (3 no.)	B
13	2.06	AG	Sheet 3	Install streetlight on PP39496	B
14	2.34	AG	Sheet 3	Install streetlight on PP4648	B
15	2.38	AG	Sheet 3	Install streetlight on power pole	B

APPENDIX 4

CRASH BARRIERS AND FENCES

NO.	LOCATION/ CHAINAGE	GAZETTAL DIRECTION	LOCATION REFERENCE	ACTION	PRIORITY
1	0.71	AG	Sheet 1	Install guardrail delineators (4 no.)	B
2	0.72	G	Sheet 1	Install guardrail delineators (6 no.)	B

3	1.33	AG	Sheet 2	Install 32m guardrail (with MELTs) across culvert [depends on 'Barclay Park' works]	D
4	1.57, 1.61	G	Sheet 3	Install "buffered end and cable and 'strut and yoke' assembly" at MELT terminal ends (2 no.) [1 depart, 1 approach]	A
5	1.59	-	Sheet 3	Remove existing guardrail delineators (3 no.) and install new guardrail delineators (7 no.)	B
6	2.12	G	Sheet 3	Erect hazard marker D4-3A(R) on fence	B
7	2.12	AG	Sheet 3	Erect hazard marker D4-3A(L) on fence	B
8	2.13	G	Sheet 3	Install REGP (1 no.)	B

APPENDIX 5

ROADSIDE OBJECTS

NO.	LOCATION/ CHAINAGE	GAZETAL DIRECTION	LOCATION REFERENCE	ACTION	PRIORITY
1	Herbert Street	G	Sheet 1	Install bicycle safe grate (1 no.)	C
2	Lindsay Street	-	Sheet 1	Install bicycle safe grates (3 no.)	C
3	Pedestrian refuge at 1.34km	-	Sheet 1	Install bicycle safe grates (4 no.)	C
4	Tibbits Street	G	Sheet 1	Install bicycle safe grate (1 no.)	C
5	Thompson Street	-	Sheet 1	Install bicycle safe grates (2 no.)	C
6	0.57	G	Sheet 1	Erect hazard marker D4-3A(L) on PP19963	B
7	0.66	G	Sheet 1	Erect hazard marker D4-3A(L) on power pole	B

8	0.88 - 1.01	G	Sheet 2	Install edge line	C
9	0.88 - 1.01	AG	Sheet 2	Install edge line	C
10	0.92 - 0.98	AG	Sheet 2	Install 60m guardrail (with MELTs)	B
11	Barclay Street	-	Sheet 2	Install kerb ramp	B
12	1.12	AG	Sheet 2	Install REGPs (2 no.)	B
13	1.15	AG	Sheet 2	Install 28m guardrail (with MELTs)	B
14	Cooneana Street	-	Sheet 2	Install bicycle safe grates (2 no.)	C
15	Culvert at 1.33km	AG	Sheet 2	Install bicycle safe grates (2 no.)	C
16	Alice Street	G	Sheet 3	Erect hazard marker D4-3A(L) on PP61661	B
17	Alice Street	G	Sheet 3	Erect hazard marker D4-3A(L) on PP280018	B
18	1.975	G	Sheet 3	Remove tree on outside of curve	C
19	0.87	-	Sheet 2	Install REGPs at culvert (4 no.)	B

APPENDIX 6
TRAFFIC IMPROVEMENT WORKS

NO.	LOCATION/ CHAINAGE	GAZETTAL DIRECTION	LOCATION REFERENCE	ACTION	PRIORITY
1	0.74 - 0.88	-	Sheet 1	Widen pavement to provide 3.6m wide lanes n/b and s/b; provide AC overlay of full pavement widths, install edge lines: : n/b (i) 0.88km - 0.47km : s/b (i) 0.47km - 0.74km : s/b (ii) 0.82km - 0.88km	C
2	Elms Street - Naomai Street (0.32 - 1.10)	G	Sheet 1	Provide concrete path (missing section) (420m ² approx.)	C

3	1.28	AG	Sheet 1	Provide sealed surface for bus stop [depends on 'Barclay Park' works]	D
4	1.64 - 1.74	AG	Sheet 1	Reseal shoulder (2.0m - 2.5m wide x 100m long i.e. 220m ² approx.)	B
5	1.74	-	Sheet 1, 2	Install pedestrians refuge island (including pavement strengthening)	C
6	1.81 - 2.49	-	Sheet 1	Provide AC pavement overlay (600m long x 9.0m wide approx i.e. 5,400m ² approx.)	B
7	Mary Street	-	Sheet 1	Provide traffic/refuge island just east of William Street [for consideration with Mary Street upgrade]	C

Attachment C - Priority List of Outstanding Road Safety Audit Recommendations

Road Safety Audit Site	Outstanding Actions from Audit Recommendations	Priority
Blackstone Road / Mary Street	Provide guardrail at Bundamba Creek bridge	1
	Guard power poles, culverts and erect signs and frangible fencing	2
	Replace guardrail on corner of Hill Street with handrails	3
Burnett Street / Hunter Street	No outstanding recommendations from this audit	
Namatjira Drive / Kruger Parade	No outstanding recommendations from this audit	
Redbank Plains Road (Cunningham Highway to Keidges Road)	Outstanding recommendations will be undertaken as part of the Redbank Plains Road, and Six Mile Creek upgrade projects	
Old Logan Road (Alice Street to Meier Road)	Improve Give Way Intersection Treatment at Halletts Road	4
	Improve Give Way Intersection Treatment at Dale Road	5
	Install hazard markers on power poles	6
	Improve merge / departure tapers	7
	Improve linemarking at the Cairns Road intersection	8
	Improve bus stop linemarking	9
Tallegalla Road	Provide guardrail at the two culverts at Black Snake Creek	10
	Provide guardrail at the tree 150m past Ivy Hansens Road	11
Redbank Plains Road (Keidges Road to Stuart Street)	Provide supplementary lighting at pedestrian refuge near Verran Street	12
	Provide route lighting between Brennan Street and Stuart Street to similar standard as balance of road	13
	Inspect streetlighting slip base supports in median between pedestrian signals to Eagle Street and upgrade if necessary	14
	Relocate streetlight No 107226 to approximately 5m from alignment of edgeline to remove from clear zone	15
	Replace and extend guardrail in median on approach to pedestrian signals south of Frangipanni Street	16
	Upgrade various kerb ramps to meet DDA compliance	17
	Consider provision of road widening (shoulders) or alternative means to allow cyclists to bypass squeeze points at the Kruger Parade roundabout	18
Install bicycle safe grates	19	

Redbank Plains Road (from Stuart Street) / Queen Street	Consider provision of shoulder widening at bus stops	20
	Check streetlights provide a uniform level of illumination along the route	21
	Relocate power pole 10716 slightly south of Azure Street further back from kerb	22
	Consider provision of pedestrian path on eastern side of road from Caldwell Street to Brennan Street	23
	Upgrade various kerb ramps to meet DDA compliance	24
	Install bicycle safe grates	25
Old Ipswich Road	Install / upgrade / replace signs and repaint markings at intersections	26
	Provide delineation and markings	27
	Erect hazard markers at power poles	28
	Consider banning right turn out of Joseph Street to Jacob Street	29
Brisbane Terrace (Monash Road to Woogaroo Creek)	Outstanding recommendations (amounting to \$2,000,000) are proposed to be submitted for Blackspot funding due to the high cost of work remaining	
Wulkuraka Connection Road	Outstanding recommendations have been submitted for Blackspot funding (amounting to \$791,600)	

Attachment B - Summary of Road Safety Audits and Recommendations

Road Safety Audit Site	Audit Undertaken	Outstanding Actions from Audit Recommendations	Comments
Blackstone Road / Mary Street	May 2000	Provide guardrail at Bundamba Creek bridge	Project endorsed to be undertaken in 2015/2016
		Guard power poles, culverts and erect signs and frangible fencing	Project endorsed to be undertaken in 2015/2016
		Replace guardrail on corner of Hill Street with handrails	Project endorsed to be undertaken in 2015/2016
Burnett Street / Hunter Street	June 2000	NIL	No outstanding recommendations from this audit
Namatjira Drive / Kruger Parade	November 2000	NIL	No outstanding recommendations from this audit
Redbank Plains Road (Cunningham Highway to Keidges Road)	June 2002	Various	The majority of the outstanding recommendations will be undertaken as part of the Redbank Plains Road and Six Mile Creek upgrade projects. The remaining will be undertaken as part of the annual signs and lines budget allocation
Old Logan Road (Alice Street to Meier Road)	July 2002	Improve Give Way Intersection Treatment at Hallets Road	Will be undertaken as part of Council's Signs and Lines budget allocation in 2015/2016
		Improve Give Way Intersection Treatment at Dale Road	Will be undertaken as part of Council's Signs and Lines budget allocation in 2015/2016
		Install hazard markers on power poles	Will be undertaken as part of Council's Signs and Lines budget allocation in 2015/2016
		Improve merge / departure tapers	Will be undertaken as part of Council's Signs and Lines budget allocation in 2015/2016
		Improve linemarking at the Cairns Road intersection	Will be undertaken as part of Council's Signs and Lines budget allocation in 2015/2016
		Improve bus stop linemarking	Will be undertaken as part of Council's Signs and Lines budget allocation in 2015/2016
Tallegalla Road	January 2003	Provide guardrail at the two culverts at Black Snake Creek	
		Provide guardrail at the tree 150m past Ivy Hansens Road	
Redbank Plains Road (Keidges Road to Stuart Street)	May 2003	Provide supplementary lighting at pedestrian refuge near Verran Street	
		Provide route lighting between Brennan Street and Stuart Street to similar standard as balance of road	
		Inspect streetlighting slip base supports in median between pedestrian signals to Eagle Street and upgrade if necessary	
		Relocate streetlight No 107226 to approximately 5m from alignment of edgeline to remove from clear zone	
		Replace and extend guardrail in median on approach to pedestrian signals south of Frangipanni Street	
		Upgrade various kerb ramps to meet DDA compliance	
		Consider provision of road widening (shoulders) or alternative means to allow cyclists to bypass squeeze points at the Kruger Parade roundabout	
		Install bicycle safe grates	This may be undertaken as part of the cycle safety and mobility improvement sub-program prior to addressing in this sub-program
		Consider provision of shoulder widening at bus stops	
Redbank Plains Road (from Stuart Street) / Queen Street	June 2003	Check streetlights provide a uniform level of illumination along the route	
		Relocate power pole 10716 slightly south of Azure Street further back from kerb	
		Consider provision of pedestrian path on eastern side of road from Caldwell Street to Brennan Street	
		Upgrade various kerb ramps to meet DDA compliance	
		Install bicycle safe grates	

Road Safety Audit Site	Audit Undertaken	Outstanding Actions from Audit Recommendations	Comments
Old Ipswich Road	June 2005	Install / upgrade / replace signs and repaint markings at intersections	Will be undertaken as part of Council's Signs and Lines budget allocation in 2015/2016
		Provide delineation and markings	Will be undertaken as part of Council's Signs and Lines budget allocation in 2015/2016
		Erect hazard markers at power poles	Will be undertaken as part of Council's Signs and Lines budget allocation in 2015/2016
		Consider banning right turn out of Joseph Street to Jacob Street	
Brisbane Terrace (Monash Road to Woogaroo Creek)	February 2009	The majority of recommendations are yet to be undertaken.	Outstanding recommendations (amounting to \$2,000,000) are proposed to be submitted for Blackspot funding due to the high cost of work remaining
Wulkuraka Connection Road	March 2011	Various	Outstanding recommendations were endorsed for funding under the Federal Government's Blackspot Program, amounting to approximately \$2,000,000 and will be completed in 2015/2016
Pine Mountain Road	June 2012	Installation of guardrail at several locations	
		Road widening and sealing shoulders at various locations on Pine Mountain Road	
Alice Street	July 2012	All recommendations listed in the road safety audit except the signalisation of Alice Street / Church Street intersection. Works include but not limited to signs and lines, guardrail upgrades, removal of roadside hazards etc.	
Bergins Hill Road / Barclay Street / Naomai Street / Charlotte Street	March 2013	All recommendations listed in the road safety audit are to be addressed.	
Lobb Street	January 2014	All recommendations listed in the road safety audit are to be addressed.	

ATTACHMENT B - PROPOSED ROAD SAFETY IMPROVEMENTS PRIORITY LISTING

Road Safety Audit	Outstanding Recommendation	Priority Order
Brisbane Terrace, Goodna	The majority of recommendations are yet to be undertaken. Due to excessive cost to implement all recommendations project will be completed over multiple financial years.	1
Pine Mountain Road, Muirlea / Pine Mountain	Installation of guardrail at several locations	2
	Road widening and sealing shoulders at various locations on Pine Mountain Road	3
Alice Street, Goodna	All recommendations listed in the road safety audit except the signalisation of Alice Street / Church Street intersection where the intersection upgrade has already been completed. Works include but not limited to signs and lines, guardrail upgrades, removal of roadside hazards etc.	4
Bergins Hill Road / Barclay Street / Naomai Street / Charlotte Street, Bundamba	All recommendations listed in the road safety audit are to be addressed. Works include but not limited to signs and lines, guardrail upgrades, street lighting, removal of roadside hazards etc.	5
Lobb Street, Churchill	All recommendations listed in the road safety audit are to be addressed. Works include but not limited to signs and lines, pavement works, footpath works, guardrail upgrades, removal of roadside hazards etc.	6
Harwoods Road, Walloon	Installation of guardrail over culvert	7