Waste Reduction and Recycling Plan Annual Status Report

August 2016

Queensland Government

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Date	Name	Position	Action required *(Review/endorse/approve)*	Due
16/08/16	L Hoffman	Assistant/Director (Environment)	Approve	16/08/16

Risk level

☐ GACC major ☐ GACC minor ☐ High risk (but not GACC) ☒ Medium risk

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1. Executive Summary

The Department of Transport and Main Roads is a state agency that generates a wide variety of waste streams, due to the diversity and scale of it operations, which range from administration facilities to construction sites and transport infrastructure maintenance and operation activities. The wastes generated from these operations have been identified in our *Department of Transport and Main RoadsWaste Reduction and Recycling Plan 2016 -2021* and baseline collection of waste data has commenced.

The table below presents a summary of current Transport and Main Roads actions against the *Transport and Main Roads Waste Reduction and Recycling Plan 2016 -2021* requirements for the financial year 2015-16. The Department of Transport and Main Roads is tracking positively against the planned implementation schedule specified in the Transport and Main Roads Waste Reduction and Recycling Plan.

Table 1 Requirements Achieved

Requirements	Status	Comments
Publication of department's plan on website	✓	The Department of Transport and Main Roads Waste Reduction and Recycling Plan 2016-2021 ("Waste Plan 2016-2021")has been endorsed by Transport and Main Road's Director General and is published on Transport and Main Road's website at the following link http://www.tmr.qld.gov.au/Community-and-environment/Environmental-management/Land/Waste-management
Review the plan at three year intervals	✓	The Waste Plan 2016-2021 states the plan will be in effect for 3 years, with a review period in the subsequent 4th year.
Commencing from mid-2016, report within two months after the end of the financial year to EHP concerning the status of the plan	✓	This report forms the reporting against the plan required to be supplied to the Department of Environment and Heritage Protection (EHP). Currently Transport and Main Roads is collecting data to establish a baseline waste generated as per Phase 1. This is a critical step as the measurement of an accurate baseline will provide a reference for the success of future waste initiatives.
From 2016, EHP reports annually on the number of departments that have a plan in place	✓	Transport and Main Roads has a Waste Reduction and Recycling Plan in place.

2. Introduction

Transport and Main Roads generates, recycles and disposes of a variety of waste. The Transport and Main Roads Waste Reduction and Recycling Plan 2016-2021 outlines three phases of implementation. Transport and Main Roads has completed actions as specified in Phase 1 except "data reporting commences" and is currently collecting data to establish a baseline for state-wide amounts of waste generated as per Phase 1 specifications.

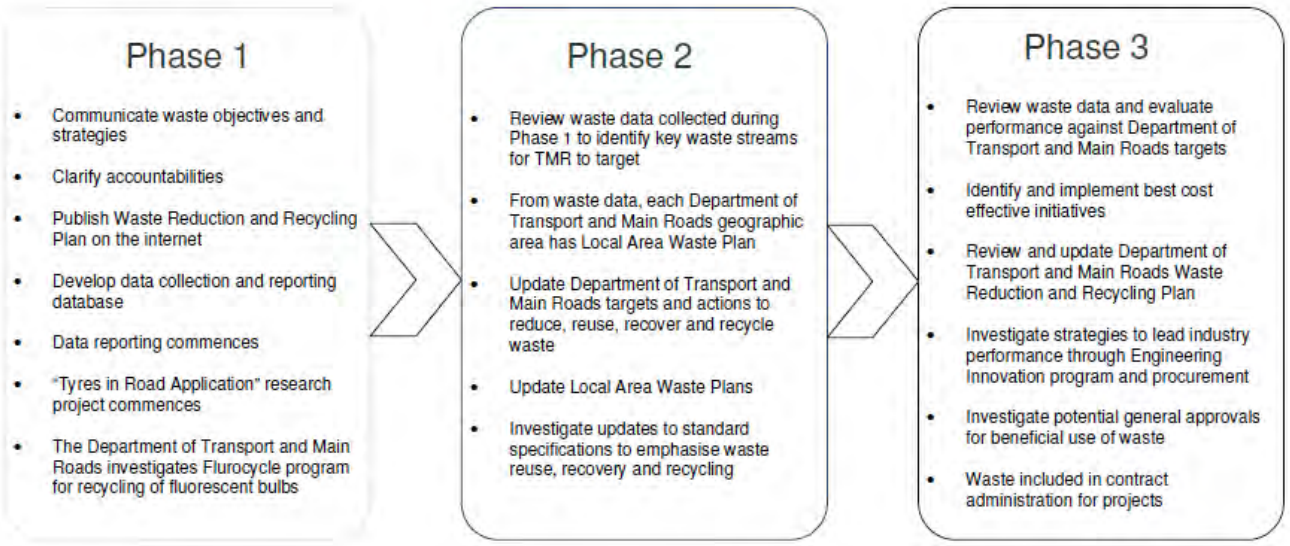


Figure 1 Transport and Main Roads Waste and Recycling Plan Phases

Phase 1 of the Transport and Main Roads Waste Reduction and Recycling Plan 2016-2021 comprises of data collection and reporting. This is a significant challenge for Transport and Main Roads, due to the complexity of the organisation and the base case which includes the following factors:

- Over 8900 staff across Queensland;
- 91 Transport and Main Roads owned and managed premises;
- 52 premises leased through Department of Housing and Public Works (DHPW);
- 2 buildings leased through other commercial contracts;
- Numerous transport infrastructure projects and sites, some with existing service contracts;
- Developing and implementing waste management reporting mechanisms for staff and contractors;
- Instilling the waste reduction and recycling culture in staff and contractors and training everyone in the current requirements.

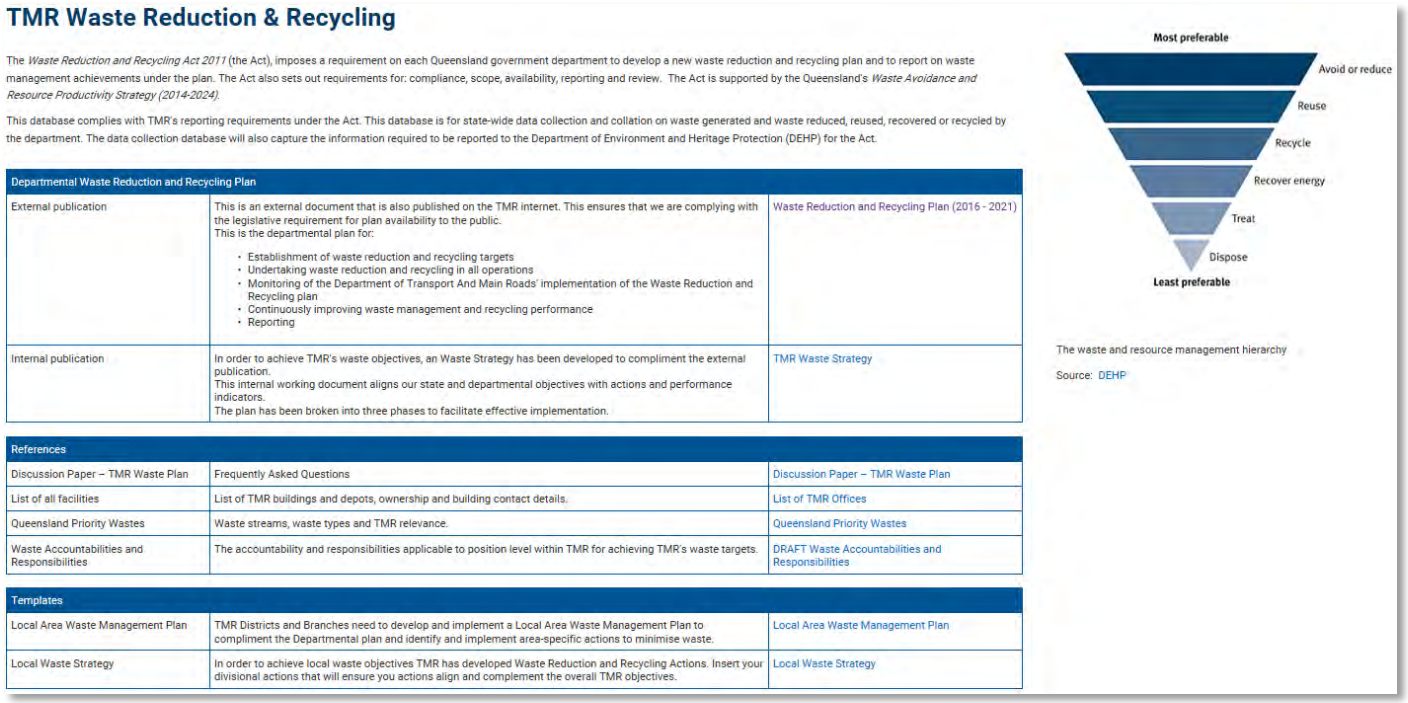
3. Waste minimisation activities and projects

Transport and Main Roads has many current projects underway to directly and indirectly minimise waste and increase recycling and therefore contribute to the overall state waste reduction targets. The following are some examples of waste reduction and recycling initiatives that are in operation across Transport and Main Roads. Reporting on these activities is now being embedded in processes to capture required data through the Transport and Main Roads Waste Intranet portal.

Program Delivery and Operations Branch - Program Management and Delivery (PMD), Environment Cultural Heritage and Corridor Management Team

The PMD Environment Cultural Heritage and Corridor Management team have prepared the Transport and Main Roads Waste Reduction and Recycling Plan 2016-2021, and are leading implementation of the plan across Transport and Main Roads. A Waste Reduction and Recycling Intranet Site has also been prepared to:

- Provide a mechanism for reporting officers to use to assist them in meeting the Waste Reduction and Recycling goals of the Department;
- Assist in waste data management and provide a portal for reporting for Transport and Main Roads officers across the state;
- Maintain a list of Local Area Representatives to ensure all Transport and Main Roads sites and buildings are represented;
- Provide resources for waste reduction and recycling opportunities for future phases of the implementation of the Transport and Main Roads Waste Reduction and Recycling plan;
- Provide a central location for future targeted waste reduction of recycling programs.



TMR Waste Reduction & Recycling

The *Waste Reduction and Recycling Act 2011* (the Act), imposes a requirement on each Queensland government department to develop a new waste reduction and recycling plan and to report on waste management achievements under the plan. The Act also sets out requirements for: compliance, scope, availability, reporting and review. The Act is supported by the Queensland's *Waste Avoidance and Resource Productivity Strategy (2014-2024)*.

This database complies with TMR's reporting requirements under the Act. This database is for state-wide data collection and collation on waste generated and waste reduced, reused, recovered or recycled by the department. The data collection database will also capture the information required to be reported to the Department of Environment and Heritage Protection (DEHP) for the Act.

Departmental Waste Reduction and Recycling Plan		
External publication	This is an external document that is also published on the TMR internet. This ensures that we are complying with the legislative requirement for plan availability to the public. This is the departmental plan for: • Establishment of waste reduction and recycling targets • Undertaking waste reduction and recycling in all operations • Monitoring of the Department of Transport And Main Roads' implementation of the Waste Reduction and Recycling plan • Continuously improving waste management and recycling performance • Reporting	Waste Reduction and Recycling Plan (2016 - 2021)
Internal publication	In order to achieve TMR's waste objectives, an Waste Strategy has been developed to compliment the external publication. This internal working document aligns our state and departmental objectives with actions and performance indicators. The plan has been broken into three phases to facilitate effective implementation.	TMR Waste Strategy

References		
Discussion Paper – TMR Waste Plan	Frequently Asked Questions	Discussion Paper – TMR Waste Plan
List of all facilities	List of TMR buildings and depots, ownership and building contact details.	List of TMR Offices
Queensland Priority Wastes	Waste streams, waste types and TMR relevance.	Queensland Priority Wastes
Waste Accountabilities and Responsibilities	The accountability and responsibilities applicable to position level within TMR for achieving TMR's waste targets.	DRAFT Waste Accountabilities and Responsibilities

Templates		
Local Area Waste Management Plan	TMR Districts and Branches need to develop and implement a Local Area Waste Management Plan to compliment the Departmental plan and identify and implement area-specific actions to minimise waste.	Local Area Waste Management Plan
Local Waste Strategy	In order to achieve local waste objectives TMR has developed Waste Reduction and Recycling Actions. Insert your divisional actions that will ensure you actions align and complement the overall TMR objectives.	Local Waste Strategy

The waste and resource management hierarchy

Source: DEHP

Figure 2 Transport and Main Roads Waste Reporting Intranet Portal

In addition, Transport and Main Roads will be including waste minimisation and recycling awareness in its induction package and exploring waste data and minimisation clauses for contract specifications with procurement in 2016/2017.

Customer Services, Safety and Regulation (CSSR) Division – Transport and Main Roads Number Plate Recycling Program

Transport and Main Roads's obsolete vehicle number plates are collected from all Transport and Main Roads Customer Service Centres, Queensland Police and Queensland Government Agency Program sites and returned to a central contractor's facility for processing. The number plates are then shredded and separated into aluminium and other metals. The shredded plates are then exported as mixed metals, which are smelted and re-used for manufacturing.

Within the 2015/2016 financial year, 116 tonnes of number plates were recycled. Recycling aluminium number plates creates 95% less air pollution, uses 97% less water and 8895 litres of saved petrol when one tonne of aluminium is recycled compared to using new aluminium. This recycling saves the equivalent electricity consumption to an average Australian household for 10 years.

This project contributes to the state landfill diversion target in the *Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024)*.

Figure 3 Shredded number plates at contractor recycling facility

RoadTek Branch – Resource Efficiency Strategy

As a leading commercial business within Transport and Main Roads, RoadTek is a major provider of transport infrastructure solutions throughout Queensland. RoadTek Branch has been contributing to waste and recycling within Transport and Main Roads since the 2010/2011 financial year, establishing a Resource Efficiency Strategy.

Within the 2015/2016 financial year the RoadTek branch achieved;

- Incorporation resource efficiency strategy and action plan targets in business plans
- Solar PV systems were delivered for Midgee Depot and Cairns Depots, adding renewable electricity generation by 1.5% up to 3.6% total across RoadTek

In addition in the 2016/2017 financial year, RoadTek is focusing on meeting

- A fuel use reduction target of 5%
- An electricity use reduction target of 5%
- Regulated waste disposal to landfill reduction target of 10%
- A potable water consumption reduction target of 5%

Information Technology Branch – E-waste Recycling

Information Technology Branch (ITB) within Transport and Main Roads provides electronic and Information Communication Technology (ICT) services to over 7,000 users throughout Transport and Main Roads in addition to 24/7 in-car PC services to the Queensland Police Service and online customer services for licensing and registration.

The ITB collects unused and faulty mobile phone devices and sends these to 'Mobile Muster'. Mobile Muster is the Australian mobile phone industry's official product stewardship program.

In addition, Transport and Main Roads ensures all hardware such as desktops, laptops, tablets, servers and printers are recycled when disposed of through our third party providers.

This project contributes to the state landfill diversion target in the *Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024)*.

Program Delivery and Operations Branch - Sustainability and Waste Management Contract Initiatives Transport and Main Roads Metropolitan Region, Transurban Queensland and Lead Lease- Gateway Upgrade North Project

The Gateway Upgrade North project (Nudgee to Bracken Ridge) is being delivered by Transurban Queensland, in conjunction with the Australian Government and Queensland Government and is committed to managing the design and construction of the project in a manner that fully considers environmental outcomes and supports an ecologically sustainable development. Sustainable outcomes include reducing waste and to achieve these outcomes, the project is aiming to meet the Infrastructure Sustainability Council of Australia (ISCA) rating of 'excellent' – *the first major road project in Queensland to seek an ISCA rating*.

To gain the excellent rating, the project has to prove its achievements in how it has been managed, how it uses construction materials, how it controls pollution and minimizes waste, increases recycling initiatives, protects ecology, delivers community benefits and incorporates innovation.

Transurban Queensland and Transport and Main Roads will work with the contractor to investigate the use of innovative methodologies and sustainable practices, including increasing recycling and waste minimization, throughout the project's design and construction. Key targets are:

- 15% reduction of the temporary and permanent project footprint
- 15% reduction of carbon footprint
- 90% of inert and nonhazardous construction waste to be beneficially used or recycled
- 20% reduction of total water demand
- Utilising locally sourced non-potable sources of water
- Recycling or reclaiming 80% of wastewater
- Utilising 100% of reinforcing bar and mesh produced through energy reduction processes

This project contributes to the state construction and demolition waste target in the *Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024)*.

Engineering and Technology Branch – Reclaimed Asphalt Pavement (RAP)

TMR Asphalt Technical Specification (MRTS30) was updated in July 2015 to allow an increased amount of reclaimed asphalt pavement (RAP) material (which is typically milled off asphalt surfaced roads) to be incorporated into new asphalt pavements. The specification previously only allowed up to 15% RAP to be included in dense graded asphalt layers that were used in non-surfacing (structural) applications. MRTS30 now allows up to:

- 20% RAP in dense graded asphalt surfacing layers, and
- 40% RAP in dense graded asphalt layers that are used in non-surfacing (structural) applications.

The Transport and Main Roads Technical Specification MRTS35 Recycled Materials for Pavements is available for use on projects where feasible, to encourage use of recycled materials to be used in pavements for road construction, rehabilitation or maintenance.

This project contributes to the state commercial and industrial waste target in the *Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024)*.

Engineering and Technology Branch - Use of crumbed rubber materials in asphalt research project

The Department of Environment and Heritage Protection (EHP) and Transport and Main Roads, in partnership with Australian Road Research Board (ARRB) embarked on a multi-year research program planned to facilitate a significant increase in the use of crumb rubber modified (CRM) in asphalt and seals in Queensland.

Application of used tyre rubber in seals and asphalt provides a high-value application of this recycled material. The use of CRM binder in both asphalt and sprayed seals can lead to much improved field performance. Currently, only a limited range of the CRM binder technologies available internationally are used in Queensland.

This project contributes to the state commercial and industrial waste target in the *Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024)*.

Program Delivery and Operations Branch - Reseal program in Downs South West Region

Between November 2015 and February 2016, the Transport and Main Roads Downs South West Region, used approximately 2 million litres of crumbed rubber across an approximate total of 191km. Crumbed rubber is pavement that is comprised of regular asphalt concrete with rubber from recycled tyres. The advantages of this are higher durability, ability to reduce road traffic noise and cost savings in comparison to traditional asphalt in addition to utilising the used tyre waste stream. Transport and Main Roads saved a total of $235 000 by utilising this crumbed rubber asphalt in their 2015/16 program while finding a beneficial reuse for the communities waste tyre stream.

This project contributes to the state commercial and industrial waste target in the *Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024)*.

Engineering and Technology Branch – use of energy efficient LED lighting

Lighting emitting diode (LED) lighting for major roads is emerging as a viable alternative to high efficiency sodium luminaires. A LED luminaire has only become available for major roads in the past 2 years. An advantage of LED lighting is high energy efficiency. E&T has conducted research, trials and consulted other road authorities, both interstate and internationally.

Transport and Main Roads policy is to use LED luminaires for all new lighting projects. To date 337 LED luminaires have been installed and 1386 have been designed into current projects. It is proposed to retrofit LED's on the Riverside Expressway. During 2015/16 three LED luminaires types were approved and published on Transport and Main Roads web site.

This project contributes to the state commercial and industrial waste target in the *Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024)*.

4. Current waste and recycling data

Over the past year, the preliminary recycling data for Transport and Main Roads leased facilities through the Department of Housing and Public works indicates that 31% of waste going to recycle facilities.

12 Month rolling TMR Waste Data							
Leased Facility ID	Comingle Container	Green Waste	Paper and Cardboard	General Waste	Weight (tn)	Weight Diverted	Recycing Ratio
3735516	0.286	0	8.69	31.606	40.582	8.98	22%
3720849	0.55	0	0.312	1.874	2.736	0.86	32%
3720873	0.55	0	0.312	1.664	2.526	0.86	34%
3720887	0.656	0	4.374	26.785	31.815	5.03	16%
5285839	0	12.62	0	1.748	14.368	12.62	88%
5749433	0.187	0	8.635	20.606	29.428	8.82	30%
5876435	5.247	0	0	16.332	21.579	5.25	24%
5876443	5.247	0	0	21.067	26.314	5.25	20%
3735373	0.528	0	0.995	4.752	6.275	1.52	24%
313 Adelaide St	0.102	0	0.219	1.08	1.4	0.32	23%
44 Nelson Street	4.03	0	0	13.026	17.06	4.03	24%
445 Flinders Street	8.11	0	0.368	13.139	21.62	8.48	39%
3735310	0	0	0.912	0	0.91	0.91	100%
3735418	0	0	0.696	0	0.7	0.7	100%
							31%

5. Litter waste data

For the 2015/2016 financial year, Transport and Main Roads collected approximately 2,580,000m³ of litter at a cost of approximately $4,530,000. Note illegal dumping is included in litter collection data.