

Waste Reduction and Recycling Plan Annual Status Report

October 2021

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Document control options

Departmental approvals

Refer to the appropriate Risk Assessment Tool for relevant reviewer and approver

Date	Name	Position	Action required (Review/endorse/approve)	Due
12/10/2021	Carmen Garbe	Manager (Environment)	Review	
14/10/21	Ramses Zietek	Director (Environment)	Endorse	
19/10/21	Neil Scales	Director-General (TMR)	Approve	

Risk level

- GACC major GACC minor High risk (but not GACC) Medium risk

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Executive summary

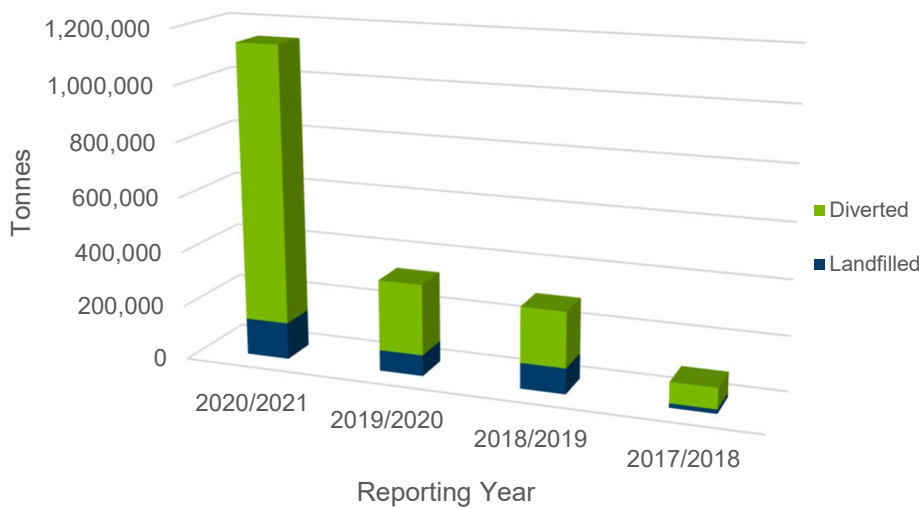
The Department of Transport and Main Roads (TMR) is a large, complex and diverse, decentralised organisation, responsible for the management of different modes of transport ranging from motor vehicles, rail, bus, bike, pedestrian and boating. TMR operations include the construction and maintenance of linear transport infrastructure, transport related and office facilities, general public rest areas and customer service centres all of which generate a wide variety of waste streams, due to the diversity and scale of operations.

The wastes generated from TMR operations have been identified in TMR’s *Waste Reduction and Recycling Plan 2016 -2021*.

Queensland’s *Waste Reduction and Recycling Act 2011* imposes a requirement on each Queensland Government department to develop a Waste Reduction and Recycling Plan and to report on waste management achievements.

COVID 19 restrictions continue to have an impact on waste generation and management, primarily in relation to impacts to TMR facilities from work-from-home arrangements, and impact of travel restrictions on use of the transport network. The leased facility data has been provided for in Appendix B: Leased building waste data.

TMR Annual Waste Trends

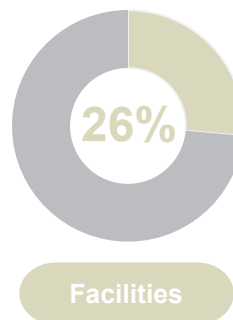
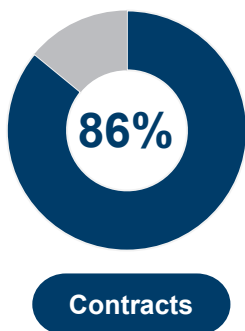


88% 
Overall Diversion Rate

 **76%**
Of All TMR waste was: Excess Earthworks/Embankment/Fill

\$4.1M 
Spent on Litter and Illegal Dumping Collection

Diversion Rates by Source



 **33**
Infrastructure Delivery Contracts Reported

Quick Statistics

- **The total waste calculated as generated by TMR in 2020/2021 is 1,142,750 tonnes,**
 - of which **88%** was diverted (reused or recycled) and
 - **12%** disposed to landfill.
 - This diversion rate is **above** the 75% target for all waste by 2025 in the Queensland Government 2020 Waste Management and Resource Recovery Strategy (WMRRS) released by the Department of Environment and Science (DES).
 - There was a substantial **increase of 809,140 tonnes of waste generated** in 2020/2021 from 2019/2020.
 - These rates focused on departmental waste consisting of infrastructure delivery contract work, RoadTek work, TMR facility use and management, and litter and illegal dumping management.
- **33 Infrastructure Delivery Contracts reported in 2020/2021.**
 - This is a minor improvement on the 32 contracts that reported in 2019/2020.
 - Most of the **increase in tonnes of waste generated can be attributed to 5 major contracts** which reached practical completion in 2020/21:
 - Ipswich Motorway Upgrade – Rocklea to Darra – 241,274 tonnes
 - Pacific Motorway Upgrade – M1/M3/Gateway Merge – 224,420 tonnes
 - Mt. Lindesay Highway Upgrade – Rosia Rd to Stoney Camp Rd – 83,742 tonnes
 - Pacific Motorway Upgrade Works from Mudgeeraba to Varsity Lakes – 53,531 tonnes
 - Everton Park Link Road – 53,455 tonnes
- **Waste generated from infrastructure delivery contract work accounts for 73% of TMR's annual reported waste.**
 - Excess earthworks/ embankment/ fill accounts for 74% of infrastructure delivery contract waste generated in 2020/2021.
- **RoadTek continues to excel at waste management with a diversion rate of 96% of its generated waste.**
 - RoadTek continues to progress their Resource Efficiency and Sustainability Action Plan to divert waste from landfill and increase recycling.
 - The high diversion of rate for waste from Council landfill is due to the majority of waste generated being excess spoil and pavement materials. These can generally be reused on site for embankment, subgrade pavement layers, or off site by adjacent landowners to maintain access roads, establish hardstands, or rehabilitation of degraded areas.
- **TMR Owned Facilities reported a diversion rate of 26% which is down markedly from 40% last financial year.**
 - A combination of the changes to waste data collection and reporting as well as a decrease in facilities reporting is thought to have led to this change.
 - 41 facilities reported in 2020/2021, down from 49 in 2019/2020.
- **Litter and illegally dumped waste cost TMR \$4,116,861 to collect, transport and dispose to landfill in 2020/2021.**
 - Management and disposal of litter and illegal dumping incurs significant costs for the department each annum.
 - This cost figure does not include an estimated 1,046 tonnes of vessel weight based on length of vessels removed by contractors and salvors engaged by MSQ or compliance partners under the War on Wrecks program.

1. Introduction

The Queensland Government is committed to influencing the waste management practices across Queensland to deliver sustainability and circular economy benefits. The 2020 Waste Management and Resource Recovery Strategy (WMRRS) released by the Department of Environment and Science (DES) identifies strategic targets for waste reduction and resource recovery in Queensland. The WMRRS waste diversion and recovery targets are outlined in Table 1 and Table 2 below.

Table 1: Waste Diversion from Landfill Targets – Queensland's Waste Management and Resource Recovery Strategy

Stream	2018 (baseline)	2025	2030	2040	2050
Municipal Solid Waste	32.4%	55%	70%	90%	95%
Commercial and Industrial Waste	47.3%	65%	80%	90%	95%
Construction and Demolition Waste	50.9%	75%	85%	85%	85%
Overall	45.4%	65%	80%	85%	90%

Table 2: Recycling Rates Targets (as a percentage of total waste generated) – Queensland's Waste Management and Resource Recovery Strategy

Stream	2018 (baseline)	2025	2030	2040	2050
Municipal Solid Waste	31.1%	50%	60%	65%	70%
Commercial and Industrial Waste	46.5%	55%	60%	65%	>65%
Construction and Demolition Waste	50.9%	75%	80%	>80%	>80%
Overall	44.9%	60%	65%	70%	75%

Transport and Main Roads (TMR), as a Queensland Government entity, is committed to contributing to the Queensland Government waste reduction and recovery targets. Further to this commitment, TMR also has obligations under the *Waste Reduction and Recycling Act 2011* to develop and implement a waste reduction and recycling plan, report on waste and to enact continuous improvement to reduce waste and divert from landfill. TMR's *Waste Reduction and Recycling Plan 2016 - 2021*, published in 2016, sets out a strategy for TMR to reduce waste and to monitor waste amounts. TMR is obligated under the *Waste Reduction and Recycling Act 2011* to report waste amounts generated from its operations each annum. In order to do this, TMR has developed and implemented reporting systems to collect and collate waste data from across the organisation.

This Waste Reduction and Recycling Plan – Annual Summary Report has been compiled to collate and report TMR's waste data and waste recovery performance over the 2020/2021 financial year as well as review and evaluate progress made in implementing the TMR *Waste Reduction and Recycling Plan*.

The official Department of Environment and Science State Entity Report – TMR is attached to this Annual Summary Report in Appendix A: Department of Environment and Science State Entity Reporting Template.

1.1 Key Terms

The following key terms will be used consistently throughout this report:

Diversion/Diverted – waste that is either reused, recycled.

Recovered – waste from which energy or fuel can be recovered.

Diversion rate – the amount of waste diverted divided by the amount of waste generated

1.2 Waste Data Collection

Due to the breadth of TMR as an organisation, the waste data that makes up this report comes from a variety of different sources (refer to the following figure). Except for infrastructure delivery contract work, all data is for waste generated, diverted and disposed of to landfill in 2020/2021.



Further details on these sources are provided below:

- Infrastructure Delivery Contract Work (Contracts):
 - For most contracted works, it is a requirement for the Contractor to report waste generated, recovered and disposed to landfill on behalf of TMR. These works range from the construction of new infrastructure to regular maintenance or upgrade of existing infrastructure. Where the contracted works are delivered by RoadTek, they are reported as RoadTek Waste and not as Infrastructure Delivery Contract Waste.
 - This report details the amounts of waste generated by TMR infrastructure delivery contracts that have achieved practical completion in 2020/2021:
 - 33 contracts submitted waste data for 2020/2021, up from 32 contracts in 2019/2020.
 - Although waste data submitted by contractors is reported in the year the contract reaches practical completion, the waste can be generated over different time spans ranging from a few months to several years.
- RoadTek Work (RoadTek):
 - RoadTek, TMR's operational branch, reports on the waste generated by the variety of maintenance and infrastructure work they do, including any infrastructure delivery contract work.
 - RoadTek works are captured locally, entered monthly, and captured centrally in the Resource Efficiency report.
- TMR Owned and Leased Facility Use and Management (Facilities):
 - TMR owned facilities include office buildings, customer service centres and depots throughout the state.
 - For 2020/2021, 41 TMR owned facilities completed a waste register.
 - Additionally, there are facilities which are not owned by TMR. TMR generally leases these facilities directly from the third parties or leases via the Department of Energy and Public Works (DEPW). Information for those sites managed by DEPW is presented in Appendix B: Leased building waste data.
 - Where TMR shares a site with another entity, reporting may not be available.
 - For this 2020/2021 report, Secure Waste is included under TMR Owned Facility Waste.
- Litter and Illegal Dumping Management (Litter and Illegal Dumping):
 - Roadside Litter Collection: Maintenance contractors and RoadTek report on the litter and illegally dumped waste that they collect as part of their works under the activity of Roadside Litter Collection (Rural and Urban). This is waste that is generated and dumped by a third party on to the State-controlled road network.
 - MSQ War on Wrecks: Maritime and Safety Queensland (MSQ) division of TMR in collaboration with its compliance partners, remove wrecked vessels under the War on Wrecks program. An estimated total

tonnes of wrecked vessels disposed of under this program is recorded in the litter and illegal dumping data.

2. Waste Reporting

2.1 Overall Departmental Waste

A summary of the combined Departmental waste amounts from all sources is provided in Table 3: Annual Departmental Waste Data Summary for 2020/2021. The table identifies the amounts generated, diverted (reused and recycled combined) and disposed to landfill. The summarising diversion rate is the amount diverted from landfill as a percentage of the amount generated by waste stream.

The overall waste diversion rate for TMR is 88% for 2020/2021, above the 75% target for 2025.

TMR's waste recovery performance for 2020/2021 was very good, surpassing the 2025 waste recovery target set by the Queensland Government WMRRS.

Comparison of the 2020/2021 annual waste data with previous years identifies that the overall amount of waste generated is greatly increasing. This is primarily accounted for by the increase in waste reporting from infrastructure delivery contract work. Despite the increased amounts reported, the amount of waste diverted is increasing and the amount of waste disposed to landfill is decreasing.

The Queensland Waste Levy was introduced on the 1st July 2019. Based on the waste amounts disposed to landfill and the waste categories, an estimate of the waste levy paid by TMR for 2020/2021 is \$4,956,758. It is noted that this figure only multiplies the tonnes disposed to landfill by the Queensland Waste Levy and does not include other landfill gate fees, transport and handling costs associated with waste management and disposal. Considering these additional costs, the real cost of waste disposal for the Department is far greater than \$4.9M. Due to the increase of \$5 for each levy type in January 2021, an average levy rate was used for the 2020/2021 financial year.

Within the summarised Departmental waste figures, 73% of the waste is generated by infrastructure delivery contract work. This is further analysed in Section **Error! Reference source not found.**

Analysis of the waste by waste stream, identifies that 76% of the Department's waste was Excess earthworks/Embankment/Fill. Since 90% of this stream was diverted, this had a significant influence on the overall diversion rate of the Department. The next largest waste streams, Asphalt & Profiles (RAP), and Concrete also have very high diversion rates due to either

- their ability to be reused within the road asset; or
- the financial incentive for diversion.

Table 3: Annual Departmental Waste Data Summary for 2020/2021

Waste Stream	Generated (t)	Diverted (t)	Landfilled (t)	Diversion Rate
Excess Earthworks / Embankment / Fill	863,229	793,734	69,494	92%
Vegetation	8,922	8,213	709	92%
Acid Sulphate Soil	2,808	0	2,808	0%
Other Contaminated Earthworks	13,166	0	13,166	0%
Regulated Waste Category 1	0	0	0	0%
Regulated Waste Category 2	5,977	1,929	4,048	32%
Septic General	668	2	667	0%
Asphalt & Profiles (RAP)	139,536	131,510	8,026	94%
Other Recovered Pavement Materials	8	0	8	0%
Concrete	71,686	68,022	3,664	95%
Metal	3,961	3,957	4	100%
Other Construction Waste (Timber, glass, plastic, bricks)	2,954	275	2,679	9%
Tyres & Rubber	237	236	1	100%
General Refuse	25,432	117	25,314	0%
Litter and Illegal Dumping	2,462	0	2,462	0%
Office - Paper	378	332	45	88%
Office - Recyclables	103	74	30	71%
Office - General & Food waste	1,223	1	1,222	0%
Grand Total	1,142,750	1,008,403	134,347	88%

Annual Departmental Waste Management Quantities by Destination

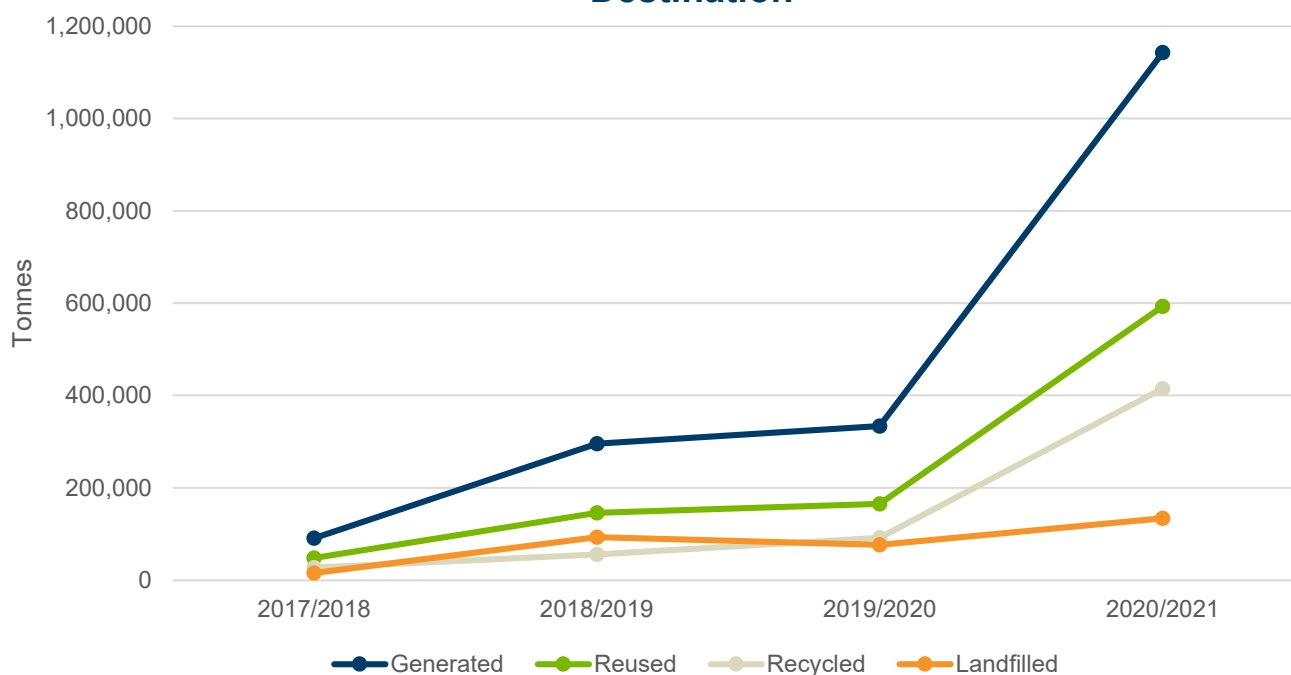


Figure 1: Annual Departmental Waste Management Quantities by Destination

Table 4: Estimated Annual Departmental Waste Levy Costs for Disposal to Landfill for 2020/2021

Waste Streams	Levy Cost per (t) *	Landfilled (t)	Total Levy Cost
Excess Earthworks / Embankment / Fill	\$ -	69,494	\$ -
Vegetation	\$ 78	709	\$ 54,924
Acid Sulphate Soil	\$ 78	2,808	\$ 217,643
Other Contaminated Earthworks	\$ 78	13,166	\$ 1,020,345
Regulated Waste Cat 1	\$ 158	0	\$ -
Regulated Waste Cat 2	\$ 108	4,048	\$ 435,171
Septic General	\$ 78	667	\$ 51,681
Asphalt & Profiles (RAP)	\$ 78	8,026	\$ 622,027
Other Recovered Pavement Materials	\$ 78	8	\$ 645
Concrete	\$ 78	3,664	\$ 283,987
Metal	\$ 78	4	\$ 328
Other Construction Waste (Timber, glass, plastic, bricks)	\$ 78	2,679	\$ 207,621
Tyres & Rubber	\$ 78	1	\$ 44
General Refuse	\$ 78	25,314	\$ 1,961,863
Illegally Dumped Refuse	\$ -	2,462	\$ -
Office - General & Food waste	\$ 78	1,222	\$ 94,682
Office - Recyclables	\$ 78	30	\$ 2,294
Office - Paper	\$ 78	45	\$ 3,503
Grand Total		134,347	\$ 4,956,758

*Note: Levy cost was averaged as levy increased by \$5 on 1 Jan 2021.

Departmental Waste - Quantities Generated and Diversion Rate by Waste Stream

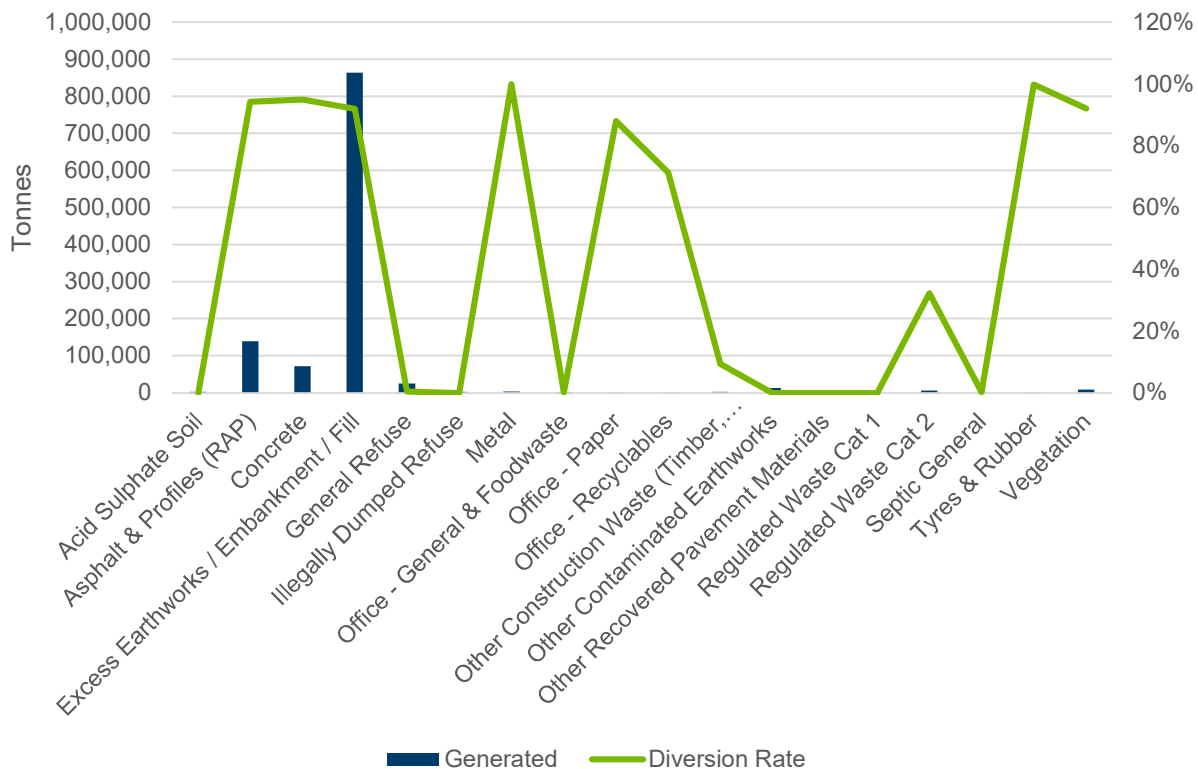


Figure 2: Departmental Waste Generated and Diversion Rate by Waste Stream

2.2 Contract Waste

TMR delivers new infrastructure and maintenance works throughout the state via the use of contracts for work. The requirement to report waste via the TMR Waste and Recycling Calculator is sent out with each contract and the contractor (except for RoadTek) is required to report all of the waste generated by the contract once the contract has reached practical completion. Previously, reporting has referred to projects instead of contracts, but contracts is the most accurate way of looking at the work as a project may be made up of multiple contracts and may have multiple stages, some of which do not produce significant waste (i.e. concept or design). In the case of a major project, it is often the principal contractor that reports on behalf of the whole project.

For the past two years, TMR has worked deliberately to improve waste data collection from infrastructure delivery contracts. The Waste and Recycling Calculator was introduced at the start of 2020/2021 and there was a subsequent change to the reporting requirements. This change has resulted in a similar number of contracts reporting in the two financial years (33 in 2020/2021, 32 in 2019/2020) as shown in **Figure 4**. TMR expects increased compliance with reporting requirements as contractors become more familiar with the new process and the requirements are enforced by contract administrators.

TMR infrastructure delivery contract work achieved an increased diversion rate of 86% for 2020/2021, up from 53% in 2019/2020.

Table 5: Annual Contract Waste Data Summary for 2020/2021

Waste Stream	Generated (t)	Diverted (t)	Landfilled (t)	Diversion Rate
Excess Earthworks / Embankment / Fill	620,524	558,348	62,177	90%
Vegetation	4,588	3,974	614	87%
Acid Sulphate Soil	2,808	0	2,808	0%
Other Contaminated Earthworks	13,166	0	13,166	0%
Regulated Waste Category 1	0	0	0	0%
Regulated Waste Category 2	2,947	0	2,947	0%
Septic General	229	2	228	1%
Asphalt & Profiles (RAP)	96,660	89,422	7,238	93%
Other Recovered Pavement Materials	0	0	0	0%
Concrete	67,079	64,409	2,670	96%
Metal	730	730	0	100%
Other Construction Waste (Timber, glass, plastic, bricks)	2,839	221	2,618	8%
Tyres & Rubber	157	157	1	100%
General Refuse	22,306	65	22,240	0%
Litter and Illegal Dumping	1	0	1	0%
Office - Paper	100	99	1	99%
Office - Recyclables	24	24	0	100%
Office - General & Food waste	145	0	145	0%
Grand Total	834,304	717,450	116,854	86%

Comparison of annual trends identifies that the diversion rate has improved for the 2020/2021 financial year, up from 53% in 2019/2020. This increase in diversion rate, despite the marked increase in reported waste generated, may be attributable to the five significant contracts that achieved practical completion this financial year, listed in **Table 6**.

Table 6: Top 5 Contract Waste Producers for 2020/2021

Overall Project Name	Tonnes of waste generated
Ipswich Motorway Upgrade – Rocklea to Darra *	241,274
Pacific Motorway Upgrade – M1/M3/Gateway Merge *	224,420
Mt. Lindesay Highway Upgrade– Rosia Rd to Stoney Camp Rd	83,742
Pacific Motorway Upgrade Works from Mudgeeraba to Varsity Lakes	53,531
Everton Park Link Road	53,455

* ISCA Certified Projects

The large majority of the waste generated for these contracts (and in general, all contracts as shown in **Figure 3**) was Excess Earthworks / Embankment / Fill, a highly reused waste. Another contributing factor was that some of these projects also achieved ISCA (Infrastructure Sustainability Council of Australia) sustainability project certifications, so there was a stronger and more embedded focus on waste management and reduction.

In 2020/2021, those contracts that were fulfilled by RoadTek were excluded from the Infrastructure Delivery Contract Waste data. These contracts were included in the RoadTek data in order to more accurately reflect the source of reporting and prevent duplication of the data.

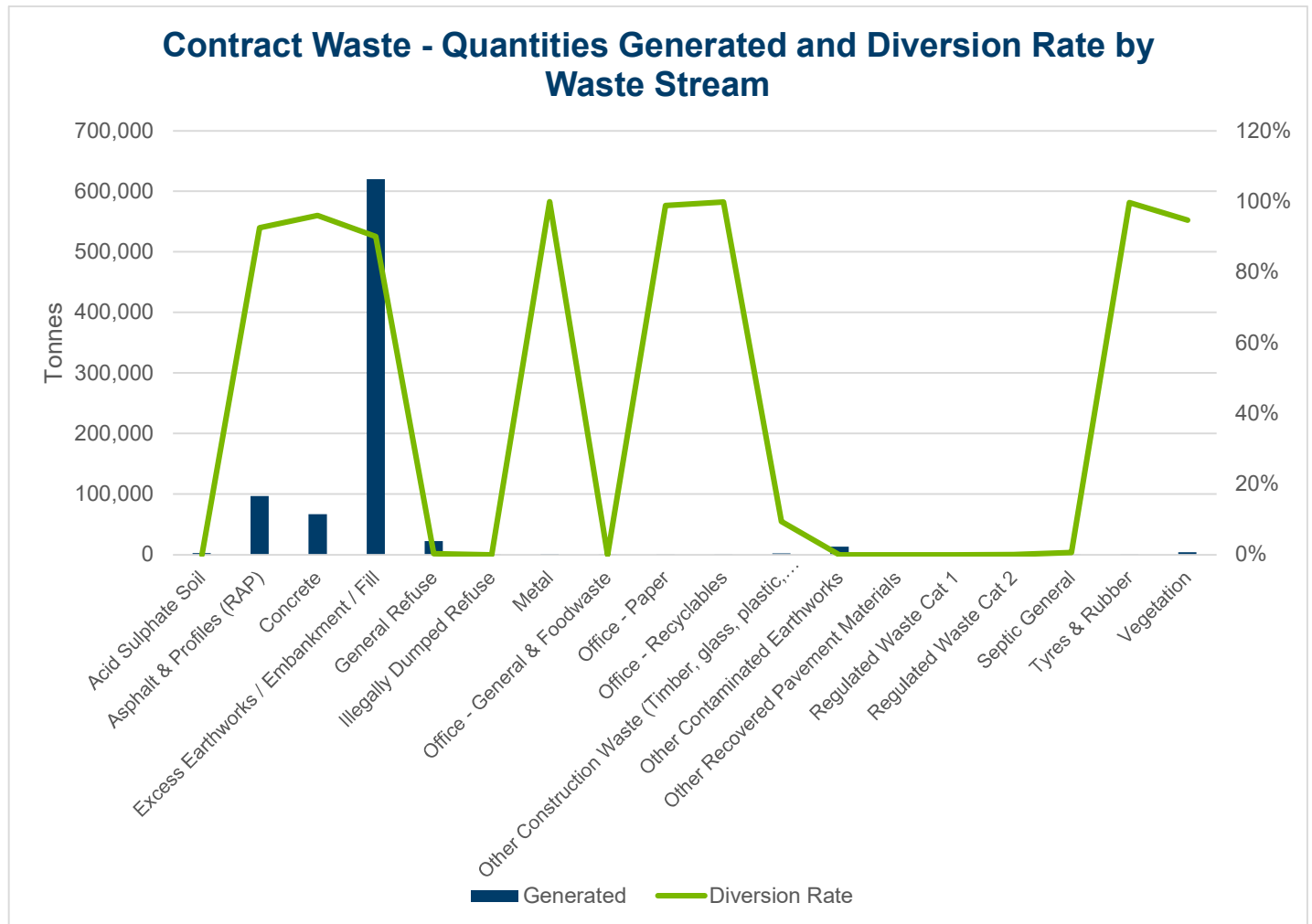


Figure 3: Contract Waste Generated and Diversion Rate by Waste Stream

Annual Trends in Contract Waste Management

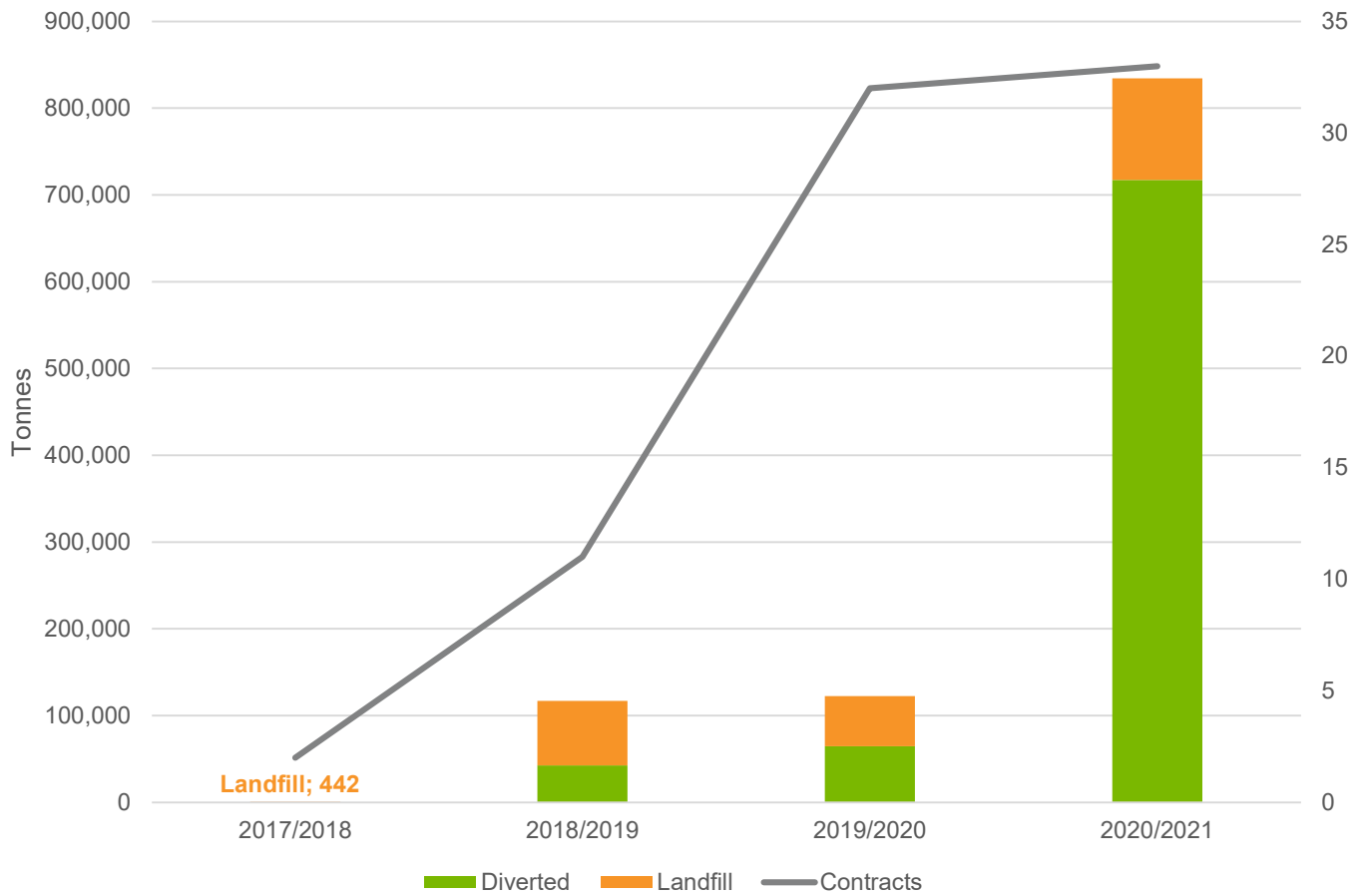


Figure 4: Contract Waste Trends

Note 1: the summary above includes data provided by 33 contracted construction and maintenance projects that reached practical completion in 2020/2021.

Note 2: waste data is limited to the records received from TMR's contractors and may not provide a full and complete record of waste generated from the Queensland Transport and Road Infrastructure Program for 2020/2021.

2.3 RoadTek Waste

RoadTek is TMR's operational branch with crews involved in infrastructure asset construction, maintenance and electrical system operations. RoadTek also delivers Infrastructure Delivery Contracts on behalf of TMR and for 2020/2021 the waste from these activities has been separated from those contracts delivered by external contractors and reported as part of RoadTek waste. The total waste diverted by RoadTek for 2020/2021 was 96%. The rate of diversion exceeded the 2020 WMRRS target of 90% for waste diversion from landfill in 2050, as noted in Table 1. RoadTek has successfully increased the rate of diversion across the last 4 years, as shown in Figure 6, despite an increase in generated waste. This has been achieved through improved reuse on site, stockpiling for future reuse, and opportunities for local reuse under local waste to resource agreements.

Table 7: Annual RoadTek Waste Data Summary for 2020/2021

Waste Stream	Generated (t)	Diverted (t)	Landfilled (t)	Diversion Rate
Excess Earthworks / Embankment / Fill	242,565	235,258	7,307	97%
Vegetation	4,284	4,238	46	99%
Acid Sulphate Soil	-	-	-	-
Other Contaminated Earthworks	-	-	-	-
Regulated Waste Category 1	-	-	-	-
Regulated Waste Category 2	3,029	1,928	1,101	64%
Septic General	439	0	439	0%
Asphalt & Profiles (RAP)	42,877	42,088	788	98%
Other Recovered Pavement Materials	-	-	-	-
Concrete	4,607	3,613	994	78%
Metal	2,786	2,782	4	100%
Other Construction Waste (Timber, glass, plastic, bricks)	102	54	48	53%
Tyres & Rubber	80	80	0	100%
General Refuse	2,257	52	2,206	2%
Litter and Illegal Dumping	75	0	75	0%
Office - Paper	140	117	23	84%
Office - Recyclables	-	-	-	-
Office - General & Food waste	-	-	-	-
Grand Total	303,241	290,210	13,031	96%

RoadTek Waste - Quantities Generated and Diversion Rate by Waste Stream

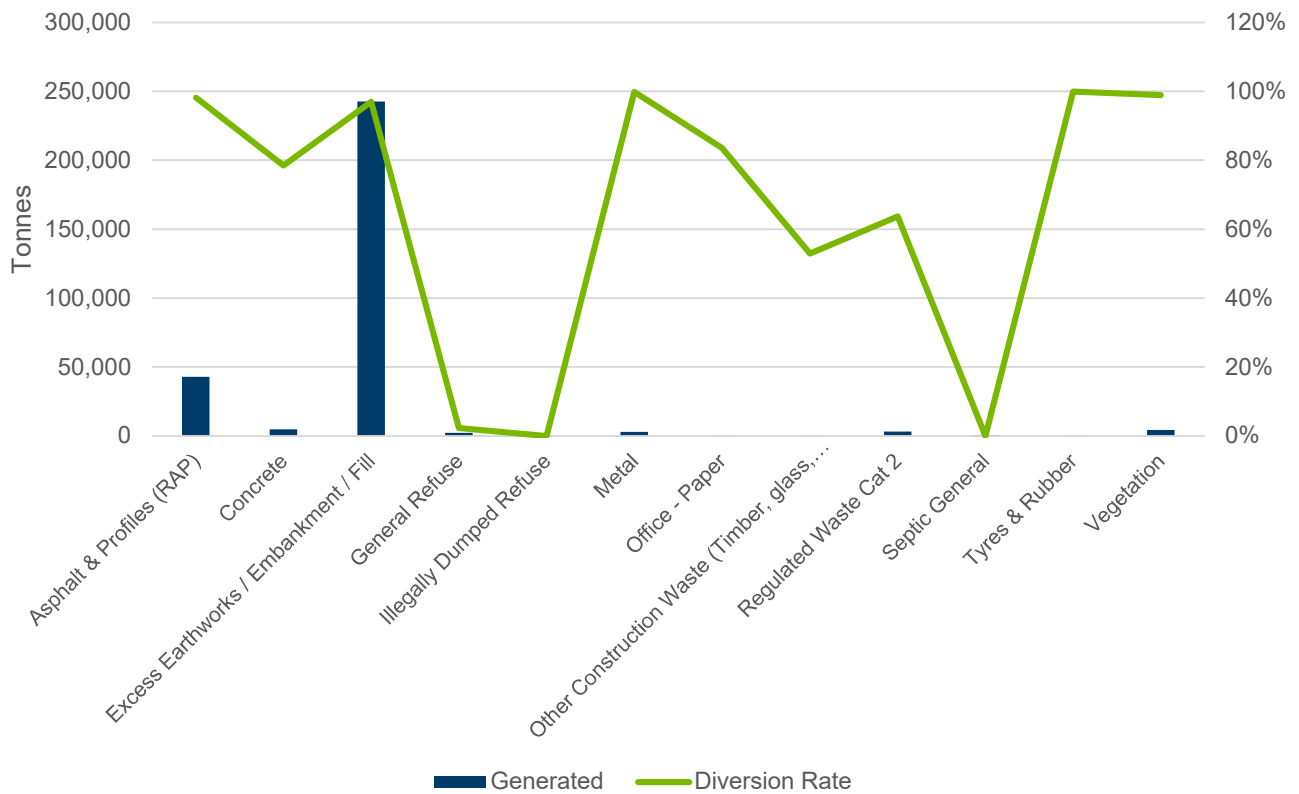


Figure 5: RoadTek Waste Generated and Diversion Rate by Waste Stream

Annual Trends in RoadTek Waste Management

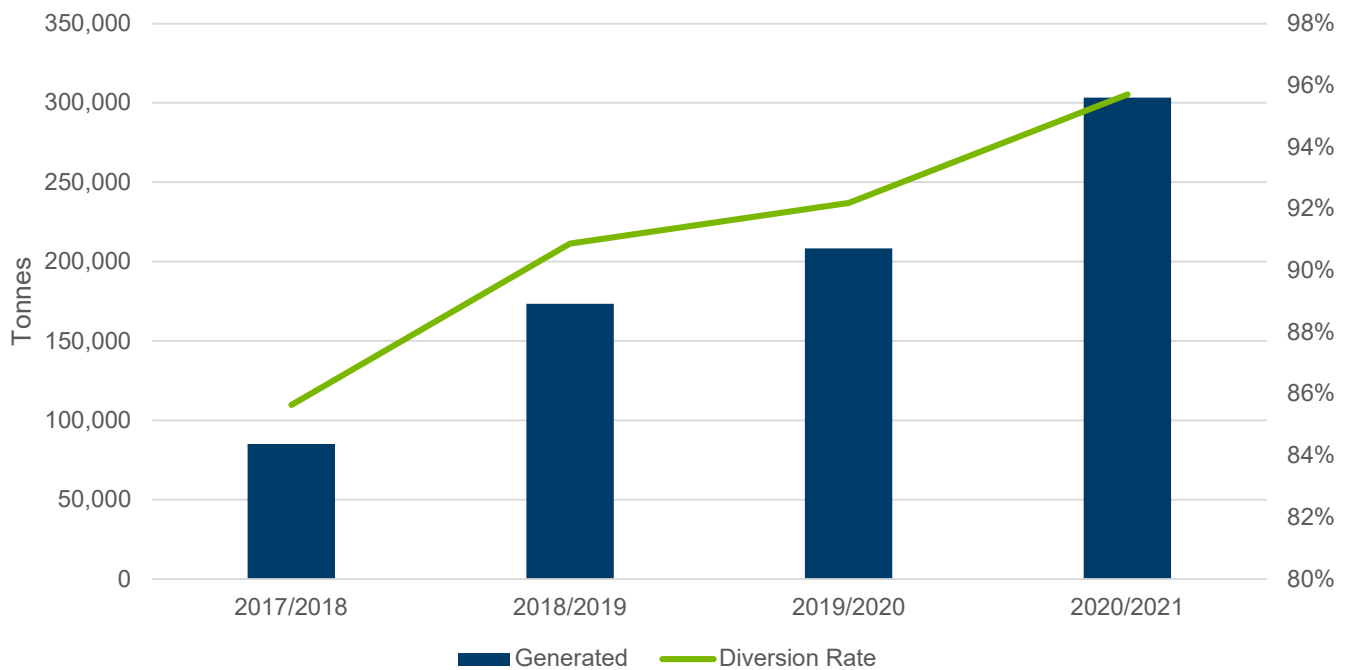


Figure 6: RoadTek Annual Waste Quantity Generated and Diversion rates

2.4 Facility Waste

Waste data was obtained from 41 TMR owned facilities across Queensland is provided in Table 8. Waste data for TMR owned facilities was obtained from responsive officers who reported their usage for this financial year. Data for leased facilities was obtained from the Department of Housing and Public Works and is provided in Appendix B: Leased building waste data.

Despite the continuing disruptions from COVID 19 in 2020/2021, the annual waste quantity recorded is higher than was reported for 2019/2020. However, there has been a decrease in the waste diversion rate from 40% in 2019/2020 to 26% for 2020/2021 as presented in Figure 7. When assessed by waste stream as presented in Table 8 below, the diversion rate is strongly linked to the recovery of metal from TMR facilities; the recycling of metal number plates.

For the first time, TMR is including data on secure waste generated and recycled. During preparation of this report it was determined that secure waste was managed differently to regular facility waste and the secure waste contractors were contacted for data. Most of this waste is reflected in the 'Office - Paper' waste stream. Secure waste contractors advise that the waste is recycled as much as possible.

Table 8: Annual TMR Owned Facilities Waste Summary for 2020/2021

Waste Stream	Generated (t)	Diverted (t)	Landfilled (t)	Diversion Rate
Excess Earthworks / Embankment / Fill	139	129	10	93%
Vegetation	49	1	48	1%
Acid Sulphate Soil	-	-	-	-
Other Contaminated Earthworks	-	-	-	-
Regulated Waste Category 1	-	-	-	-
Regulated Waste Category 2	1	0	0	50%
Septic General	-	-	-	-
Asphalt & Profiles (RAP)	-	-	-	-
Other Recovered Pavement Materials	8	0	8	0%
Concrete	-	-	-	-
Metal	445	445	0	100%
Other Construction Waste (Timber, glass, plastic, bricks)	13	1	13	4%
Tyres & Rubber	-	-	-	-
General Refuse	869	1	868	0%
Litter and Illegal Dumping	-	-	-	-
Office - Paper	137	116	21	85%
Office - Recyclables	79	50	30	63%
Office - General & Food waste	1,078	1	1,077	0%
Grand Total	2,819	743	2,076	26%

The summary above includes:

- data provided by TMR facilities across a 12-month period. Now includes secure waste managed by separate waste contractors. Secure waste is mostly composed of paper that is then recycled. A small minority is other solid media such as Compact Discs.

TMR Owned Facility Waste - Quantities Generated and Diversion Rate by Waste Stream

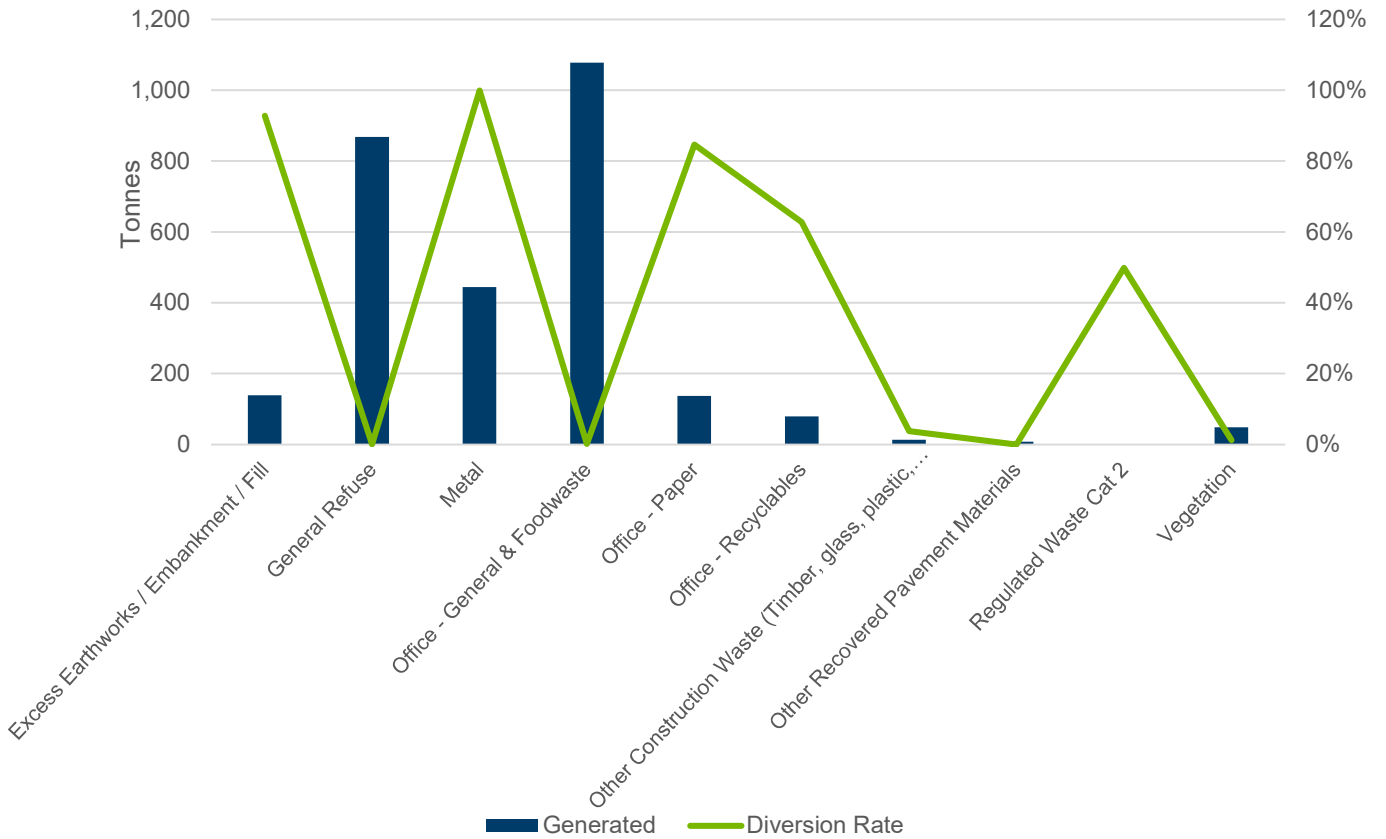


Figure 7: TMR Owned Facility Waste Generated and Diversion Rate by Waste Stream

Annual Trends in TMR Owned Facility Waste Management

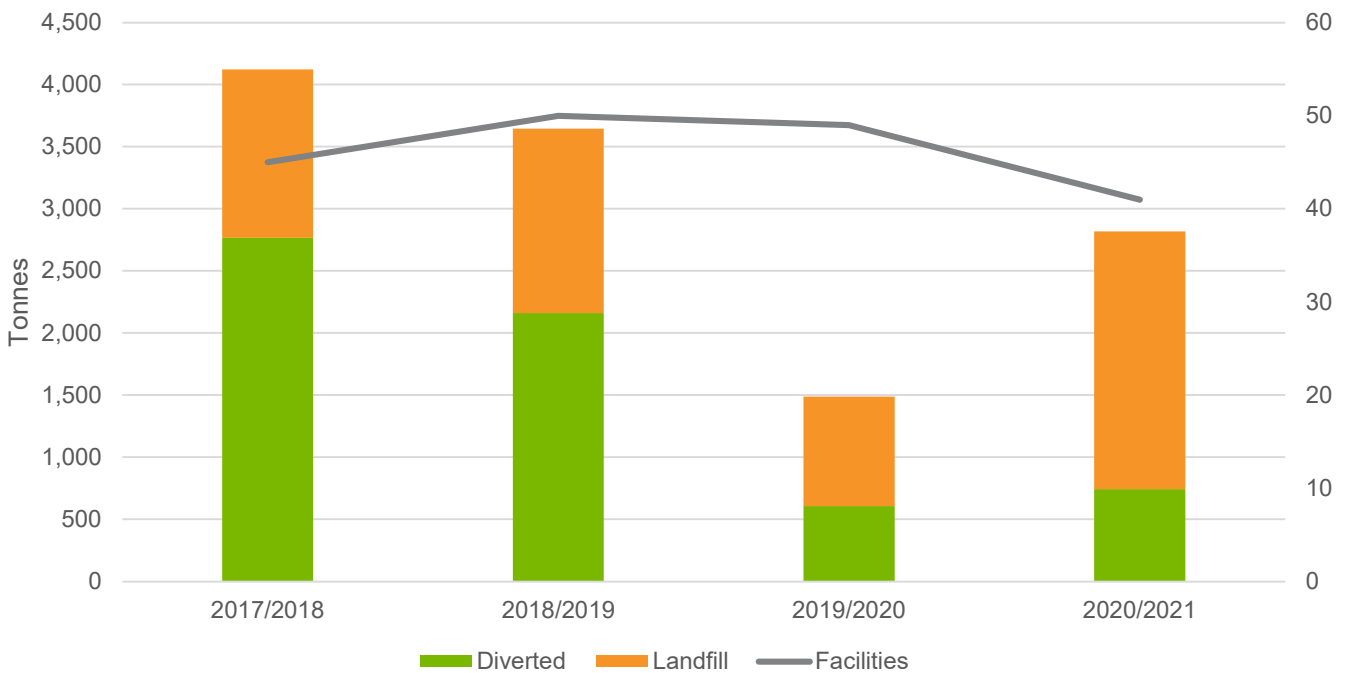


Figure 8: TMR Owned Facility Waste Trends

2.5 Litter and Illegal Dumping

TMR regularly removes litter and illegally dumped items from the State-controlled road network. Included in this report are the following:

- The cost and amounts of Roadside Litter Collection (Urban and Rural): The collection and disposal of litter and rubbish, whether from bins located along the right of way or from the right of way itself. Includes the repair and maintenance of receptacles.
- Estimated weight of vessels removed from Queensland waterways by Maritime Safety Queensland (MSQ) or its compliance partners as part of the War on Wrecks Program¹. Estimates are based on the length of the vessel.
 - o Cost not included as not comparable with those of roadside litter collection.

TMR collected approximately 1,341 tonnes of litter and illegally dumped waste from the State-controlled road network at a cost of \$4,116,861 during 2020/2021. The amount of litter and illegally dumped waste has decreased in comparison to prior financial years as depicted in Table 9 and Figure 9. The reduction in the volume of roadside litter and illegal dumping could be, in part, due to COVID-19 related restrictions and the reduced vehicle movements on roads and reduced use of roadside rest areas and other facilities.

Some assumptions have been applied to the raw data sourced from TMR's Road Asset Data and Road Maintenance Performance Contractors who undertake roadside litter collection. These assumptions are explained in the caveat below and have been applied using the same methodology as prior years for consistency.

Table 9: Four-year Trend - Litter and Illegally Dumped Waste collected by TMR Roadside Litter Collection

Litter and Illegal Dumping Trends	2017/2018	2018/2019	2019/2020	2020/2021
Cost (\$)	\$5,670,602	\$5,770,248	\$4,636,566	\$4,116,861
Volume (m ³)	11,950	11,636	10,531	9,185
Mass (tonnes)	1,743	1,697	1,538	1,341

^^ Caveat – Litter and illegally dumped waste is sourced from TMR's Road Asset Data, Road Maintenance Performance Contractors. The data output is calculated as either fixed (m³) or lump sum quantity (single unit measure or duplication of amount in dollars) and therefore exact figures are unable to provided. To determine an approximated total fix and lump sum quantity of waste collected the following process was undertaken -

- All lump sum quantities were removed with only fixed and unit quantities calculated, this equalled a total fix and unit quantity of 2351.49 m³.
- The total fixed and unit quantity 2351.49 m³ was used to divide the total amount in dollars \$1,053,998.96 by this volume, providing a cost rate of \$448.23/m³
- The total cost value of \$4,116,860.72 was then divided by the cost rate of \$448.23/m³ to provide the overall estimated volume of, 9,184.77 m³ collected, transported and disposed to landfill.
- To convert the volume to tonnes a conversion factor of 0.146t/m³ was utilised. The quantity in tonnes = 1,340.98 tonnes.

¹ MSQ War on Wrecks: <https://www.msq.qld.gov.au/About-us/News-and-stories/Taskforce-continues-gaining-ground-in-war-on-wrecks>

Litter and Illegal Dumping Quantities and Costs

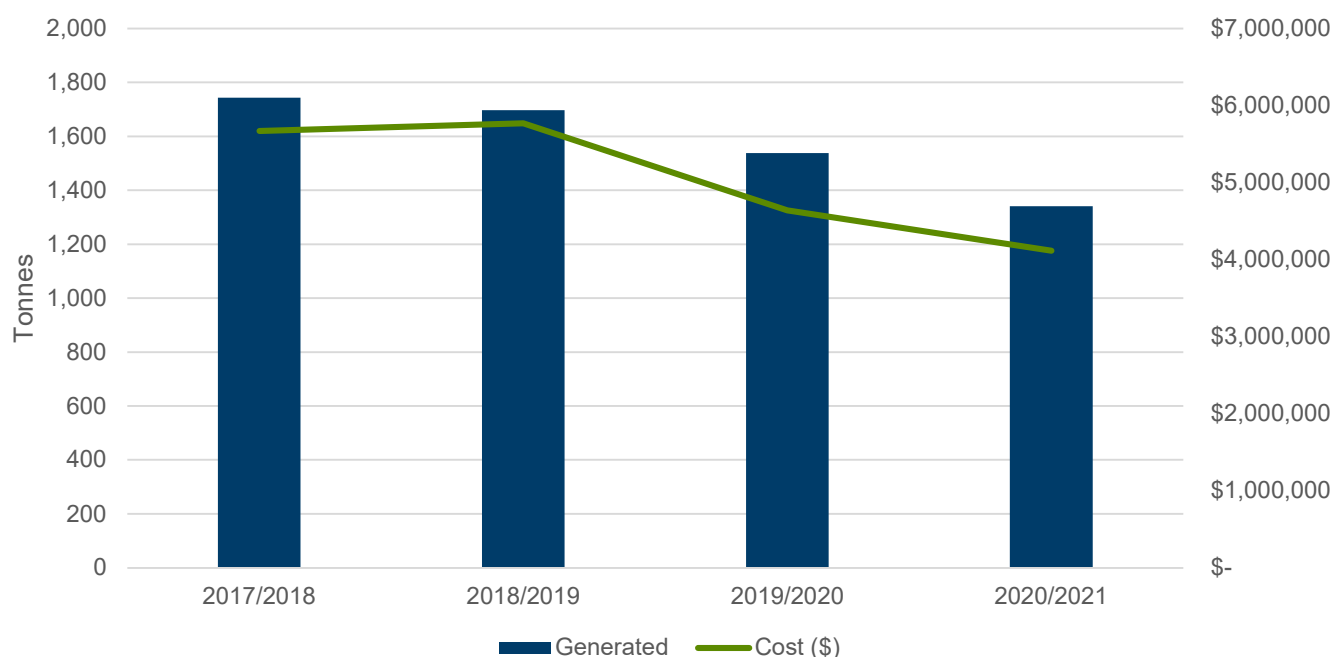


Figure 9: Litter and Illegal Dumping Waste Quantities Managed and Costs Incurred as part of Roadside Litter Collection

In 2020/2021, MSQ reported an estimated 1,046 tonnes of vessel weight removed from Queensland's waterways. For the purposes of this report, the vessels are all assumed to be disposed to landfill. Costs and tonnage have not been included as part of **Table 9** or **Figure 9** as MSQ functions as a regulator for Queensland's waterways and incurs significant additional costs to proactively identify, investigate, establish ownership of, manage, and recover costs from the owners of derelict and illegally dumped vessels.

These are costs that are not incurred by TMR's Roadside Litter Collection as that activity only includes the cost of waste removal, disposal and repair and maintenance of receptacles.

3. TMR's Waste Reduction and Recovery Actions

TMR's *Waste Reduction and Recycling Plan 2016-2021* outlines three phases of implementation. At the end of the 2020/2021 financial year, TMR has completed all actions as specified across the three phases of the Plan. Further details are provided in Appendix C: TMR Waste Reduction and Recycling Plan Progress. TMR is now developing a *Waste 2 Resource Strategy* to replace the *Waste Reduction and Recycling Plan 2016-2021*. The re-focused strategy will address both the "waste out" challenges as well as the "waste in" opportunities in relation to greater uptake of recycled materials and circular economy principles. The proposed *Waste 2 Resource Strategy* will fulfil TMR's obligations under the *Waste Reduction and Recycling Act 2011* as well as align TMR's actions and objectives with the Queensland Government's WMRSS. It is intended that the *Waste 2 Resource Strategy* will be finalised and implemented early in the new year.

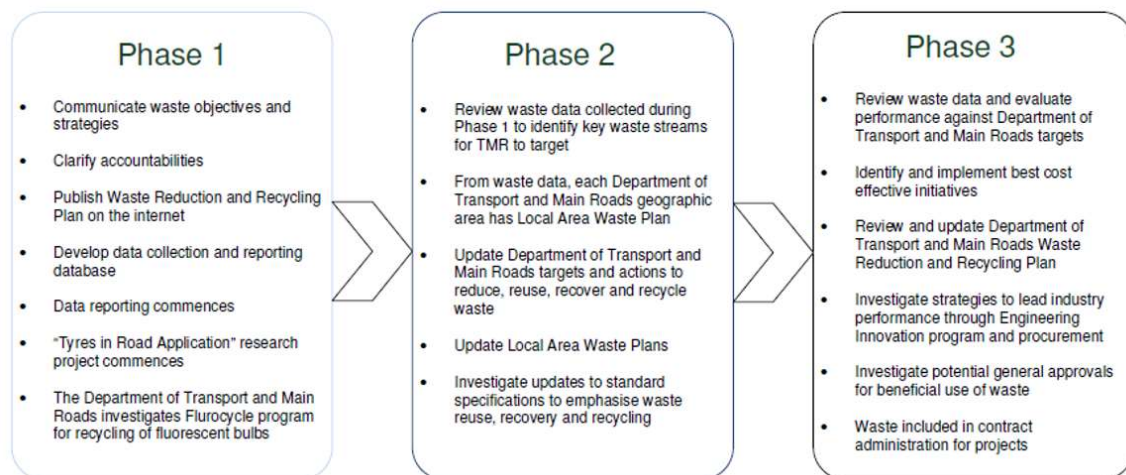


Figure 10: TMR Waste Reduction and Recycling Plan 2016- 2021 phases

As part of the actions under the current TMR *Waste Reduction and Recycling Plan 2016 – 2021*, TMR has been very active over the 2020/2021 financial year in delivering waste management and recycled materials initiatives. These initiatives are outlined in the sections below and include TMR's projects in the National Asset Centre of Excellence (NACOE) Program. Considerable work has been undertaken in research and development to test and verify the feasible use of alternative recycled materials within pavements, understand emissions profiles of the use of innovative pavement materials and quantify the sustainability of pavement materials.

3.1 Waste Reduction Initiatives

3.1.1 Waste 2 Resource Plan - Tender Schedule S12

Following on from the release of the Waste and Recycling Calculator in July 2020, TMR published and began implementing the Waste 2 Resource Plan - Tender Schedule S12² (W2R Tender Schedule) to infrastructure construction contract tenders. The W2R Tender Schedule is an initiative to increase awareness across industry of the opportunities for utilising recycled materials in accordance with the specifications on TMR infrastructure construction contracts. The tender schedule identifies where recycled materials may be used and requires that the tender includes an indicative proportion and quantity of recycled materials that would be intended to be used for the works. The Tender Schedule also requires that where the tenderer is not intending to utilise recycled materials where the specifications allow, that they justify that decision with an explanation.

² W2R Tender Schedule: <https://www.tmr.qld.gov.au/-/media/busind/techstdpubs/Contract/Infrastructure-Contract/Transport-Infrastructure-Contract/Part-3/C7810S12.docx?la=en>

The schedule also links to the Waste and Recycling Calculator by requesting that the tenderer provide an estimate of waste they would expect to be generated from the scope of works and suggests that the tenderer may use the Waste and Recycling Calculator to generate this estimate. The intent of this is to embed the consideration of waste management, reduction and recycling as early as possible by being included as part of the tender preparation for infrastructure construction contracts.

3.2 Waste Re-use and Recycling Initiatives

3.2.1 NACOE Project P75 – Transfer gap graded asphalt with crumb rubber to QLD and WA (Completed)

Following on from the research reported on in the 2019/2020 report:

- Another update to TMR's *MRTS18 Polymer Modified Binder (including Crumb Rubber)* suite was published in July 2020. It specifies that only waste Australian tyres are to be used in crumb rubber sprayed seals.
- Pilot (performance-based) specifications have been developed as part of TMR's sprayed sealing review that introduce the option for contractors to choose to use Class 170 bitumen with 5 and 10 parts crumb rubber, in addition to existing options to use 15 or more parts crumb rubber. These have been used or are in use on seven contracts that commenced in 2021/2022.
- By the end of June 2021, it is estimated that about 1,100,000 Equivalent Passenger Unit recycled tyres (or about 44,105,000 litres of Crumb Rubber Modified binder) will have been used on TMR reseal projects from 2015–16 to 2020–21.
 - o These are indicative figures only.
- Further demonstrations using TMR's pilot specifications for Crumb Rubber Modified binder open-graded asphalt and gap-graded asphalt will be constructed in TMR's North Coast and South Coast districts during 2021/2022

3.2.2 NACOE Project P76 – The use of recycled glass in asphalt (Update)

As a result of the work from Project P76, TMR updated *MRTS30 Asphalt Pavements* specifications suite in July 2020 to allow for recycled glass as a fine aggregate substitute for sand within asphalt mixtures. This allows contractors to substitute recycled glass for fine aggregate within their TMR approved asphalt mixes, other than gap graded or stone mastic asphalt, without requiring additional approval by TMR. While the creation of *MRTS36 Recycled Glass Aggregate* in July 2020 covered the general requirements applicable to recycled glass aggregates, this update of *MRTS30* indicates the proportion of recycled glass aggregate allowed in asphalt pavements.

In late 2020, TMR's Far North District, in collaboration with Engineering and Technology, delivered a project that included TMR's first significant use of recycled glass in asphalt. This took place along a 1.2 kilometre section of Millaa Millaa – Malanda Road and used recycled glass produced from over a million bottles, which created more than 200 tonnes of crushed glass. The asphalt with recycled glass was manufactured to include 5 per cent recycled glass in the top (surfacing) layer with underlying repairs completed using asphalt manufactured with 10 per cent recycled glass.

3.2.3 NACOE Project P106 – Sustainability assessment of innovative pavements (Part 2)

The Part 2 project scope incorporated sustainability and economic assessments of the use of recycled crushed glass, recycled crushed concrete and warm-mix asphalt technologies. The aim of the project was to evaluate whether use of recycled materials can provide both an economic and sustainability benefit. The outcomes are intended to be used to be communicated across TMR as well as the broader road infrastructure industry as an incentive to utilise these recycled materials.

3.3 Actions to Increase the Use of Recycled Materials across TMR

3.3.1 Recycled Materials Fact Sheet

Complementing the release of *Technical Note 193 Use of Recycled Materials in Road Construction*, TMR also generated a "Recycled Materials in Queensland's Roads" Fact Sheet³. The Fact Sheet is another communication and awareness raising tool generated by TMR to try to influence behaviours and perceptions of recycled materials and the suitability for road construction materials. The Factsheet has been published on TMR's external website under "Building Sustainable Roads".

3.3.2 NACOE Project P94 – Optimising the Use of Recycled Materials in Queensland for Unbound and Stabilised Products (Year 2, 2020/2021)

Year 2 of the project focused on the recycled material assessment undertaken through laboratory evaluation of several recycled pavement materials sourced from various suppliers in Queensland. The assessment showed:

- Several of the recycled materials consistently met the characterisation and reporting requirements of *MRTS35 Recycled Materials in Pavements*.
- Materials showed improved performance compared to natural quarried materials and may provide a suitable alternative.
- One recycled material mix incorporating up to 20% glass showed improved mix characterisation properties and performance compared to the same material with 0% glass.

As a result of this project, *MRTS05 Unbound Pavements* specification was updated in July 2020 to provide a single specification for the supply of natural, quarried and recycled materials based on the findings of this project. This allows contractors and suppliers to substitute recycled aggregates in place of virgin quarried aggregates where they conform with the specification and have commercially viable and available.

3.3.3 NACOE Project P117 – Sustainability Assessment Tool (2020/2021 update)

TMR, in partnership with the Australian Road Research Board (AARB) and Main Roads Westerns Australia through the NACOE and Western Australian Road Research Implementation Program, is delivering project P117, the development of a Sustainability Assessment Tool. This project is developing a publicly available online tool to assist industry to undertake comparative assessments of traditional and innovative designs from for both economic and greenhouse gas emissions perspective. The tool is initially being developed for pavements but is proposed to be expanded to other applications and will be freely available to industry (nationally) to access and use.

In relation to waste management and circular economy principles, the tool enables projects to evaluate alternative design options and materials. The tool enables projects to include the following in assessments:

- The costs and greenhouse gas emissions of waste disposal including transport;
- The salvage value of in-situ materials, including the cost and greenhouse gas emissions avoided by utilising in-situ materials; and
- Calculated amounts of recycled materials utilised within alternative designs.

The intent of the tool is to provide Engineers and project teams with improved information of the comparative whole of life costs and sustainability performance of alternative road designs. This information can be an additional input into decision making for road designs.

³ Recycled Materials in Queensland's Roads Fact Sheet: <https://www.tmr.qld.gov.au/-/media/communityandenvironment/Planning-for-the-future/Sustainable-roads/Recycled-Materials-in-Queensland-Roads.pdf?la=en>

3.3.4 NACOE Project O20 – Recycled material Assessment Framework (New)

In order to meet sustainability commitments, TMR look to identify and evaluate emerging materials and waste re-use opportunities. In doing so, it is imperative that a robust, fit-for-purpose evaluation methodology is in place to provide clear guidance to TMR, industry and manufacturers to ensure that workplace health, safety and environmental risks are assessed. This NACOE project is aimed at the development of a consistent, science-based assessment framework for evaluating risks associated with emerging and recycled materials.

The final framework is intended to be utilised by TMR to evaluate innovative and emerging materials or technologies in future to ensure risks are lower or at least equivalent to those of existing materials and technologies. This evaluation methodology and process will provide TMR and our agents with a robust method for applying due diligence in preventing environmental harm and ensuring the health and safety of workers and the public.

3.3.5 NACOE Project O25 – Use of Recycled Materials in Earthworks (Update)

TMR published updates to its recycled glass aggregate (*MRTS36 Recycled Glass Aggregate* suite) and earthworks (*MRTS04 General Earthworks* suite) specifications in late 2020. These updates included changes to widen the permitted uses of recycled glass in earthworks, conduit and pipe bedding and backfill applications.

In mid-2021, the project progressed to the evaluation of recycled crushed concrete. The assessment has included engineering suitability as well as environmental and safety risk assessment undertaken by an environment and safety risk assessor and suitably qualified person (SQP) for contaminated land investigations. The final report into recycled crushed concrete will be finalised by late 2021.

TMR's South Coast Region, in collaboration with TMR's Engineering and Technology Branch, delivered a demonstration project using recycled crushed glass as an alternate to natural sand for conduit bedding and backfill on the M1 – Sportsman's Drive to Gateway Motorway project. It is estimated that over 1.8 million bottles were used to create approximately 360 tonnes of recycled crushed glass. This is the first time TMR has used recycled glass as bedding/backfill sand for conduits.

3.3.6 Additional TMR technical specifications updates to allow for recycled materials

TMR updates and maintains a series of specifications to allow for alternative materials to be used in pavement material, thus minimising the carbon footprint. In addition to those mentioned in previous sections a number of specification updates enabling use of foam bitumen, cement, fly ash and lime to stabilised existing pavement material have been made. These specification updates include:

- *MRTS07A – In situ Stabilised Subgrades using Quicklime or Hydrated Lime,*
- *MRTS07B – In situ Stabilised Pavements using Cement or Cementitious Blends,*
- *MRTS07C – In situ Stabilised Pavements using Foamed Bitumen and*
- *MRTS09 - Plant-Mixed Foamed Bitumen Stabilised Pavements*

As a result:

- Since the year 2018, over 200,000 tonnes of existing material were in situ stabilised using foam bitumen
- During the above period a significant amount of existing material, nearly a million tonnes, was stabilised using cement, fly ash and lime.

3.3.7 End of Waste (EoW) Code – Collaboration with the Department of Environment and Science (DES)

TMR continues to actively collaborate with DES's waste compliance teams in relation to the development of EoW codes applicable to transport infrastructure construction and maintenance. TMR's collaboration efforts are made

possible by the hard work done by the different key stakeholders in TMR, primarily Engineering & Technology and RoadTek to identify opportunities for waste reuse, test novel materials and organise and conduct trials of materials. TMR will continue to progress with these discussions to promote resource recovery opportunities that encourage the reuse of waste and diversion from landfill.

- TMR is collaborating with industry to provide input to the development of an End of Waste Code for Ground Granulated Blast Furnace Slag and Silica Fume that are well established inputs into the concrete and infrastructure industry.
- TMR is currently providing feedback to DES with regards to the Draft End of Waste Code for Glass Fines, which, if approved, will allow the use of waste glass fines generated by the crushing, milling, grinding and screening of waste glass to produce a 'sand-like' material. The EOW code will allow the for the beneficial reuse of glass fines as aggregate in unbound pavement; as sand replacement in asphalt; and as sand replacement in civil engineering applications.

4. Future Challenges

From the 2020/2021 waste data collated, TMR is performing well in relation to meeting the Queensland Government's WMRRS targets for waste diverted from landfill. One of the key continuing challenges for TMR is to drive update of recycled materials across the transport infrastructure sector. A lot of work has been done to modernise specifications to enable the use of recycled materials however update by the supply chain and market for recycled material remains in its infancy. TMR, as a prominent government procurer of good and services, looks to set objectives and direction for the sector through conscious procurement strategies and supply chain engagement. Finding the right mix of procurement incentive and specification facilitation will be critical to ensure the right outcomes for sustainability and value for money. Another area of focus for TMR will be the management of reuse of excess earthworks/fill to try and maximise reuse and appropriately characterise any reuse risks to the environment. TMR is also looking to improve data collection and analysis to ensure that all TMR operations are accurately reflected and performance can be tracked and managed.

Appendix A: Department of Environment and Science State Entity Reporting Template

State Entity Waste Reporting 2021

Within 2 months after the end of each financial year, the chief executive officer of a State entity must give the chief executive under [the Waste Reduction and Recycling Act 2011] a report, in the approved form, about the operation, in the financial year, of the State entity's waste reduction and recycling plan. (WRRRA 2011 s 148)

1. Name of the State Entity

Department of Transport and Main Roads

2. Please list the types and amounts of waste generated, recycled or disposed of by your department/agency in carrying out its activities during 2020-21.

Details are provided in Section 2.1 of the TMR Waste Reduction and Recycling Plan – Annual Status Report

3. Please list actions taken by your department/agency to reduce the amount of waste generated during 2020-21.

Details are provided in Section 3.1 of the TMR Waste Reduction and Recycling Plan – Annual Status Report.

4. Please discuss actions taken by your department/service to recover, and re-use or recycle waste during 2020-21.

Details are provided in Section 3.2 of the TMR Waste Reduction and Recycling Plan – Annual Status Report

5. Please discuss actions taken by your department/agency to increase the use of recycled materials during 2020-21.

Details are provided in Section 3.3 of the TMR Waste Reduction and Recycling Plan – Annual Status Report.

6. Please discuss progress made by your department/agency in relation to its waste and recycling performance indicators during 2020-21.

The status update of the actions stipulated under the TMR Waste Reduction and Recycling Plan 2016-2021 are provided in Appendix C: TMR Waste Reduction and Recycling Plan Progress of the TMR Waste Reduction and Recycling Plan – Annual Status Report.

7. Please discuss the ways in which your department/agency has contributed towards achieving the goals and targets under Queensland's waste management strategy during 2020-21.

Analysis of the progress made in relation to meeting the Queensland Government's Waste Reduction and Resource Recovery Strategy targets released in 2020 are provided in Section 2 of the TMR Waste Reduction and Recycling Plan – Annual Status Report.

8. Please list the amounts and types of litter or illegally dumped waste that were collected by your department/agency during 2020-21.

Details of the litter and illegally dumped wastes collected by TMR during 2020/2021 are provided in Section 2.5 of the TMR Waste Reduction and Recycling Plan – Annual Status Report.

Appendix B: Leased building waste data

Scope

Return to full 12-month reporting

- For the 2020-21 FY, data has once again been sourced across the full 12 months from July 2020 to June 2021, following advice from DES.
- This 12-month data forms the basis of agency statistics, as well as WOG statistics used for comparisons between the 2019-20 FY and the 2020-21 FY.
- This contrasts with the 2019-20 FY, when the scope was reduced to an 8-month data set in response to government offices being significantly vacated from March to June 2020, as large numbers of government office workers were required to work from home due to the COVID19 pandemic.

October 2020 Machinery of Government Administrative Arrangements

- As a result of the MOG changes to the Administrative Arrangements following the October 2020 Queensland Election, there were major changes to the structure and responsibilities of all but seven (7) State Government agencies.
- This year QGAO has prepared reports for 20 separate agencies and the Public Sector Commission (including the Integrity Commission) as well as a separate (other) combined Commissions Report and a (combined) Statutory Authorities Report.

2020/2021 TMR Leased Building Waste Data

TMR's leased building waste data has been provided by the Queensland Government Accommodation Office (QGAO) – Department of Energy and Public Works.

TMR data has been collected from 15 sample sites covering 70,658 m² of occupied space.

Table 10: Agency (TMR) Sample Buildings Set

Site	Diversion %	Comments
Brisbane, 1 William St	52.51%	Includes Ministerial and DG floors (proportioned by no of departments). Includes Green/Confidential Waste streams
Brisbane, Mineral House 41 George St	16.03%	New waste service provider in FY21. Includes Confidential waste stream
Brisbane, 61 Mary Street	20.25%	New waste service provider in FY21. Includes Confidential waste streams
Brisbane, 313 Adelaide St	31.70%	
Brisbane, 30 Makerston Street	8.03%	FY reports used 18/19 substitute data
Brisbane, 53 Albert Street	15.60%	
Beaudesert, 1 Telemon Place	0.00%	Landfill only
Carseldine, Government Office Precinct	38.34%	Includes green waste
Wynnum, 139 Tingal Road	100.00%	Paper service only
Zillmere, TMR MVIC 70 Pineapple Street	33.05%	
Hervey Bay, Brendan Hansen 50-54 Main Street	7.41%	New Site estimate based on bin collections. Landfill/Co-mingle only
Maroochydore, Mike Ahern Building 12 First Avenue	23.49%	
Townsville, Verde Tower 435 Flinders Street	21.11%	
Mackay Verde Central 44 Nelson Street	14.71%	
Cairns, Corporate Tower 15 Lake Street	7.88%	Landfill/Co-mingle only

Appendix C: TMR Waste Reduction and Recycling Plan Progress

Progress and achievements against the *TMR Waste Reduction and Recycling Plan 2016 -2021*

Phase	Requirement	Status	Comment
1	Publication TMR's Waste Reduction and Recycling Plan 2016-2021 on website.	<input type="checkbox"/>	TMR's Waste Reduction and Recycling Plan 2016-2021 was endorsed by the Director General and published on TMR's website at the following link 26 August 2016. http://www.tmr.qld.gov.au/Community-and-environment/Environmental-management/Land/Waste-management
1	Review TMR's Waste Reduction and Recycling Plan 2016 -2021 at three-year intervals.	In Progress	Program Delivery and Operation's Program Management and Delivery Unit have commenced a project to review and adapt the TMR Waste Reduction and Recycling Plan into a Resource Efficiency and Recovery Strategy. The re-focused strategy will address both the "waste out" challenges as well as the "waste in" opportunities in relation to greater uptake of recycled materials and circular economy principles. The Strategy will fulfil TMR's obligations under the Waste Reduction and Recycling Act 2011 as well as align TMR's actions and objectives with the Queensland Government's Waste Management and Resource Recovery Strategy.
1	Commencing from mid-2016, report within two months after the end of the financial year to the Department of Environment and Science concerning the status of TMR's Waste Reduction and Recycling Plan 2016 -2021.	<input type="checkbox"/>	This document forms the reporting against the plan required to be supplied to the Department of Environment and Science.
2	Review waste data collected during Phase 1 to identify key waste streams for TMR to target.	<input type="checkbox"/>	Waste data collected from RoadTek, contracted construction and maintenance projects and TMR owned facilities, identified key waste streams. These waste streams have been used to develop Waste Data Collection Forms to enable easy collation and analysis of key waste streams to target future reduction and recycling campaigns and initiatives within TMR.
2	Each TMR geographic area has a Local Area Waste Plan.	<input type="checkbox"/>	Each facility is to provide a Local Area Waste Plan of how they will manage their waste reduction and recycling reporting. 90% of Local Waste Management Plans have been submitted.
2	Update TMR targets and actions to reduce, reuse, recover and recycle waste.	<input type="checkbox"/>	TMR's targets will align with the Queensland Government's targets as set by the WMRRS

2	Investigate updates to standard specifications to emphasise waste reuse, recovery and recycling.	□	<p>MRTS36 recycled glass aggregate</p> <p>MRTS05 unbound granular pavements has been modified to enable the use of recycled materials</p> <p>MRTS30 has been updated to allow recycled glass in asphalt.</p> <p>MRTS51 has been updated to mandate the use of the Waste and Recycling Calculator.</p>
3	Investigate strategies to lead industry performance through Engineering Innovation program and procurement.	□	<p>Waste reduction and recycling opportunities are incorporated into TMR's Engineering Innovation strategies including review of information around composition and recyclability of approved products.</p>
3	Investigate potential general approvals for beneficial use of waste.	□	<p>TMR supports the Queensland Government's circular economy framework and maximum waste recovery initiative through consultation with the Department of Environment and Science to increase the number of end of waste codes for TMR's recoverable waste to ensure waste is legally managed when recovered. TMR has been largely successful in collaborating with DES to progress a draft End of Waste Code for Recycled Aggregate. TMR has also recently submitted an application to DES for an End of Waste Code for Slag and other supplementary cementitious materials.</p>
3	Waste included in contract administration for projects.	□	<p>TMR Construction Specification MRTS51 has been updated to mandate waste reduction, recycling and reporting for all TMR projects that produce waste.</p> <p>TMR's Engineering and Technology Branch have developed Technical Specification MRTS35 that enables the inclusion of glass cullet and other waste material into road pavement and general use, a specification for EME2, High Modulus Asphalt which offers a reduction in asphalt base thickness of up to 20 percent.</p>

Appendix D: Waste classification alignment

TMR's collected waste stream alignment with the Department of Environment and Science waste classification.

General Waste	2019/2020 TMR Waste Streams	Description
Office Waste	Office – Recyclables	Mixed recyclables including plastic plates, bottles, aluminium cans etc.
	Office – Paper	Paper and cardboard recyclable waste.
Construction and demolition waste	Excess Earthworks / Embankment / Fill	Any excess earthworks, embankment or fill generated by a project which is then exported outside the project boundary for either reuse, recycle or landfill beyond the project boundary.
	Other Contaminated Earthworks	Any other contaminated earthworks, but not acid sulphate soils.
	Asphalt and Profiles (RAP)	Asphalt only (not chip seals and other pavements)
	Other Recovered Pavement Materials	Spray seal pavements, stabilised pavements (not asphalt)
	Concrete	Structural concrete, shotcrete, hardened grout, concrete washout
	Metal	Sign posts, guardrails etc.
	Other Construction Waste (Timber, glass, plastic, bricks)	Any construction waste not accounted for in other construction waste categories, such as uncontaminated timber, glass, plastic and bricks).
	Acid Sulphate Soil	Acid Sulphate Soils.
Green waste (land clearance, parks and gardens)	Vegetation	Timber vegetation, stripped grasses etc.
	General Refuse	Cardboard, plastic packaging.
Food waste (kitchen waste)	Office – General and Food waste	Putrescibles, kitchen waste, non-recyclable packaging.
Mechanical/workshop waste	Tyres and Rubber	Waste tyres.
E-waste	Regulated Waste Cat 2	N/A
Clinical wastes	N/A	N/A
Chemical wastes	Regulated Waste Cat 1	Regulated waste is category 1 regulated waste if it meets the requirements of section 43 of the EP Regulation.
	Regulated Waste Cat 2	Regulated waste is category 2 regulated waste if it is not category 1 regulated waste.
Sewage	Septic General	Septic waste generated by projects.
Litter or illegally dumped waste	Illegally Dumped Refuse	Waste collected from road reserve.