Sustainability Report

2019 / 2020





Chief Executive Officer's Message

Western Health continues to recognize the scientific evidence supporting climate change and its negative impact on our health and wellbeing.

We understand the need to approach this challenge as a partnership between society, businesses, scientists and policy makers. Together with our staff and community, we will continue to advocate for positive action on climate change and solution finding.

Western Health continues to strive for implementation of latest innovations and practices that will allow us to reduce our environmental foot print and reduce the burden of our operations on existing natural resources. We are currently working on strategies and frameworks to enable the implementation of change that sees us move into that direction. Our ability to innovate, adapt and effectively respond to the landscape change of our operations, will continue to be tested as we face greater challenges such as the COVID-19 pandemic. In order to foment that responsiveness, we have partnered with the University of Melbourne to launch an Innovation Accelerator Program (IAP), a collaborative partnership connecting innovators from Western Health to world-class research and commercialization. Through initiatives like these, Western Health commits to empowering our staff and potentiate the development of the solutions of tomorrow.



Russell Harrison Chief Executive Western Health

Analysis & discussion

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This report provides an update on our progress toward achieving the goals we committed to in our Environmental Management Roadmap 2015–2020.

Despite the challenges, at Western Health (WH), we continue to do our best in identifying alternative ways to maintain business as usual operations and turn threats into opportunities. For the past months, most of the world has, and continues to face, a major challenge in dealing with the COVID-19 pandemic. This unprecedented event, has seen us adapt and reshape the way we do business. The pandemic has created a massive strain across the supply chain, with a major effect on WH's waste management, environmental operations and performance. Many external recycling operators have been forced to close or reduce services. Some of our signature programs have been negatively impacted including sterile wraps recycling and the recently implemented food donation program (alongside Oz Harvest) had to be put "on hold. However, we continue to show resilience and remain focused on delivering best sustainable practices.

In this document you will be able to grasp a deeper insight to our programs, operations and performance indicators. Our Roadmap 2015 -2020 specific aims were established to provide clarity in the way we approach our business operations:

- Align Western Health's environmental sustainability priorities with the needs and expectations of patients, staff and its wider community.
- 2. Establish clear responsibilities and accountabilities for all staff at Western Health to move further into environmental sustainability and build a culture of corporate social responsibility.
- Provide appropriate resources and training to staff to support and develop Western Health as an environmentally sustainable healthcare service.
- 4. Manage environmental resources responsibly and efficiently in an effort to reduce the impact of Western Health's operations.
- Connect broadly on issues of sustainable development to inform the direction and 'greening' in Western Health operations and services.

In alignment with these aims, we have developed strategies and projects to be delivered during FY 2019/20. Below is a description of some of our achievements.

Aim 1: Align WH's environmental sustainability priorities with the needs and expectations of community.

As part of identifying opportunities to reduce waste and contribute to our community, WH joined forces with Oz Harvest to implement a food donation program. Designed to support people in need, this initiative repurposes suitable "portion controlled" food collected from patient's rooms that would otherwise end up in landfill. The program was successfully implemented at Sunshine, Footscray and Williamstown hospitals. Through this initiative WH and Oz Harvest were able to collect over 700 Kg of food (Approx. 2000 meals) during the first month of implementation. Yearly, this program will donate over 25,000 meals, divert approximately 8000 kg of waste from landfill and generate around \$1700 in savings from waste disposal operational costs. Unfortunately, due to Health and Safety concerns and operational risks, this project will remain on hold until COVID-19 restrictions are lifted.

Western Health's strategic plan 2020/25 (currently under development) has identified the need to implement innovative approaches in order to improve in areas that go beyond our standard operations. Therefore, we are currently developing a research program to implement and foster innovation within our engineering and sustainability teams. Additionally, we have developed an Engineering Master's degree internship program to support the implementation of innovative practices and provide engineering professionals with the opportunity to utilize their skills in a different and ever changing working environment.

Aim 2: Establish clear responsibilities and accountabilities for all staff at WH to move further into environmental sustainability and build a culture of corporate social responsibility.

With the aim to grasp a deeper understanding of the current status within WH, the Sustainability Coordinator has implemented an ongoing data gathering process. This review has served to further understand stakeholders' perception and needs, identify opportunities, gaps and issues within the organisation. So far, over 50 interviews have been conducted with both internal and external stakeholders. Among the identified issues, stakeholders commonly mentioned the need to have a better understanding of sustainability (often confused with recycling) and how it can be implemented within everyday activities at work. In other words, despite the existing desire and willingness to participate, there's a missing link between context and practical implementation. Therefore, WH is currently developing a comprehensive training program to eliminate this gap and upskill staff. Additionally, with the aim to embed sustainability as a core aspect of our daily activities, a decision making tool in the shape of an options analysis framework is currently been designed.

Aim 3: Provide appropriate resources and training to staff to support and develop Western Health as an environmentally sustainable healthcare service.

As mentioned above, WH is currently developing a training package that will facilitate the adoption of sustainable practices. This innovative training tool will play a key role in the implementation of the strategic framework and further improvement of sustainable practices. Additionally, and responding to staff needs, a decision making tool will facilitate comprehension around the specific criteria required for projects, capital works, procurement and operations. Therefore, a multi-disciplinary team has been put together to ensure the training is tailored to meet staff needs and practical in its application. The team meets not only to discuss the training package but to create and implement new projects.

Aim 4: Manage environmental resources responsibly and efficiently in an effort to reduce the impact of WH's operations.

Western Health is continually looking at opportunities to improve operations and maximise the benefits of implemented strategies. As part of our waste management initiatives, WH, alongside Egan's undertook a pilot program to repurpose, reuse, resell, recycle and dispose used furniture and other category items. Egan's Wise Office Furniture Program results are available in Table 1.

Furthermore, the COVID-19 Logistics' team were able to identify additional opportunities to repurpose furniture as part of the pandemic relocation efforts. A furniture management program was established to repurpose, reuse and relocate assets in an efficient manner. This initiative allowed WH to create a furniture stocktake and redistribute assets as required, saving thousands of dollars from purchasing new furniture. The program will continue to run after the pandemic is over. So far, this program was able to relocate over 420 furniture items including chairs (office, patients and visitor), desks, bedside and over bed tables.

COVID-19 infection prevention practices generate large amounts of single use PPE waste. In order to reduce the volume of gowns used per day, Dr. Forbes McGain joined forces with Melbourne University's Mechanical Engineers Jason Monty, Max Rounds, et al, to design a suitable solution. Together, they developed a "safety gauntlet" that allows ICU nursing staff to slide in and out their gowns. This reusing practice, reduced the volume of gowns waste by a tenth. Unfortunately, despite the early adoption enthusiasm, the project was put on hold and its awaiting to return after COVID.

Dr. Forbes McGain innovative approach also allowed him and his team to develop an entirely reusable isolation hood with the aim to minimize the aerosol spread of COVID-19 in the ICU. His approach was focused on shifting the efforts towards 'cleaning the air' of SARS-CoV-2 and creating a safer working space for our staff. The hood's extraction fan uses about 50W/hour, about the same as a standard laptop.

Aim 5: Connect broadly on issues of sustainable development to inform the direction and 'greening' in Western Health operations and services.

Western Health is committed to implement and support sustainable practices not only within our organisation but also externally. Currently, Western Health is working alongside major players in the supply chain to find innovative solutions to the plastic issue within the Health Sector. This multi-disciplinary group is looking at different alternatives to support the industry in moving away from unnecessary plastic use. Although still at an early stage, this project is considered a priority and highly relevant by the work group. Some of the members of this research group include CSIRO, RMIT, Melbourne University, Government entities and suppliers across the supply chain, among others.

Table 1. Egan's recycling program results

Items Reused Pending Sa	l / Disposed Items le	Recovered/Diverted (Kg)	Landfill (Kg)
2	20 54	324	544
	0 74	609	1,950
2	6 302	3,995	3,338
Total 6	6 430	4,928	5,832

Operational analysis



Energy

Energy Consumption	2012/13	2013/14	Baseline 2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	% change from baseline	% change previous year
Total stationary energy consumption by energy type (GJ)										
Electricity	103,545	104,845	110,113	114,551	111,517	111,165	115,911	118,360	7.5%	2.1%
Natural Gas	119,523	102,013	117,040	110,240	112,920	102,452	99,147	125,184	7.0%	26.3%
Total	223,104	206,858	227,153	224,791	224,437	213,617	215,057	243,544	7.2%	13.2%
Normalised sta	ationary en	ergy consu	mption							
Energy per unit of floor space (GJ/m²)	1.94	1.80*	1.97	1.95	1.95	1.85	1.86	1.75	-11.2%	-6.3%
Energy per unit of Separations	1.93	1.76	1.97	1.84	1.71	1.54	1.51	1.76	-10.4%	16.5%
Energy per unit of bed-day (LOS+Aged Care OBD) (GJ/OBD)	0.67	0.62	0.68	0.66	0.63	0.59	0.58	0.69	1.2%	17.8%

Western Health's yearly energy usage increased by 13.2% with respect to the previous year. This increase can be attributed to the addition of Joan Kirner Women and Children's Hospital to the organization's portfolio. Despite a minor increase in electricity consumption (2.1%), the large increase in gas use (26.3%) is a reflection of this year's performance when compared to FY18/19.

A more accurate indicator to depict the operation's performance is the energy consumed per m² (Figure 1). At first glance, this year's performance seems to be more efficient per m² when compared to FY18/19 (1.75 GJ/m² vs 1.86 GJ/m² respectively). However, the COVID-19 pandemic's influence on performance requires further discussion.

A closer look at Figure 2, shows a clear trend in higher energy consumption from July to February FY19/20, when compared to the previous year. As discussed above, this can be attributed to the increase in the portfolio's size. However, since March, restrictions were implemented on elective surgeries, visitors and staff attending sites (Stage 4 Lockdown commenced in July). As consequence, the energy consumption for the portfolio (Mar – Jun) saw a reduction that returned energy usage levels to the previous year's performance. Therefore, this year's energy performance does not represent a true reflection of standard operations and the comparison to the previous year performance is not quite accurate.



Figure 1. Yearly Energy Usage Comparison (GJ)

Figure 2. Energy Usage Monthly Comparison (GJ)



Greenhouse Gas Emissions

Assumptions and clarifications

Figure 4 calculations for 2050 Carbon emissions projection:

- A lineal approach was considered to calculate CO2 emissions reduction rate required to achieve Net Zero Emissions by 2050. The graphic is designed to be a simplified projection.
- CO2 reduction rate (4.1%) was estimated based on the performance over the past 5 years.
- Calculations were simplified to generate an estimation, no other variables were included in the projection (New Footscray Hospital, ED expansion, etc).

The yearly CO2 emissions have increased in average by 1.1%, however, when assessing emissions per m2, the organization achieved a 16.3% improvement in performance when compared to the previous financial year. It's is also important to note that those results are influenced by a 6.3% average reduction in emissions during the March-June period – due to COVID. The real escalation in CO2 emissions due to the portfolio's growth will be reflected on the next year's sustainability report when/if operation returns to normal. Despite the increase in size and CO2 emissions, the organization's performance remains in average 4.6% below the baseline established in FY 14/15 (See Figure 3).

Greenhouse gas emissions	2012/13	2013/14	Baseline 2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	% change from baseline	% change previous year
Total greenho	use gas emi	ssions (ton	nes CO2e)							
Scope 1	6,137	5,236	6,008	5,679	5,819	5,465	5,289	6,625	10.3%	25.3%
Scope 2	34,227	34,075	36,093	36,054	33,765	33,349	34,451	33,535	-7.1%	-2.7%
Total	40,364	39,311	42,100	41,734	39,584	38,815	39,740	40,160	-4.6%	1.1%
Normalised gr	eenhouse g	as emissior	IS							
Emissions per unit of floor space (kgCO2e/m²)	350.55	341.40	364.96	361.78	343.14	336.48	344.50	288.18	-21.0%	-16.3%
Emissions per unit of Separations (kgCO2e/ Separations)	349.52	334.92	365.02	340.76	301.17	280.07	279.79	290.98	-20.3%	4.0%
Emissions per unit of (LOS+Aged Care OBD) (kgCO2e/OBD)	120.36	118.64	126.15	123.26	111.66	106.91	108.08	113.60	-9.9%	5.1%

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Figure 4 below, presents a comparative for the portfolio's carbon emissions over the past 5 years. Additionally, the yellow trend depicts WH's required lineal performance (theoretical), if it is to comply with Victorian Government target to achieve net zero emissions by 2050. The pink trend, despite simplified (see assumptions), represents a projection of WH's performance based on a 4.1% average reduction in CO2 emissions per financial year. Based on the above mentioned assumptions and data analysis, WH's current performance would be insufficient to achieve the goal of Net Zero Emissions by 2050. These results, support the recommendation to strategize towards securing a clean energy agreement that allows WH to achieve such targets.

Actual emissions for FY19/20 (red trend) were 4.29% below the projected performance required to achieve net zero emissions, however, this performance was dampened by the influence of COVID-19. As the effects of COVID-19 subside, a return to typical energy usage will facilitate for a clearer understanding of the effects of WH's sustainability initiatives on our carbon emissions.

Further analysis will be considered in order to plan and readjust the required strategies for the development of the 2020-2025 Environmental–Sustainability Strategy.



Figure 3. Total Carbon Emissions (Tonnes CO2)





Figure 4. Carbon Emissions performance and 2050 projection



Water

Assumptions and clarifications

 FY14/15 water consumption data presents two drops in usage during the months of October and December. The latter, more importantly, seems to have occurred during a summer month, a period where water usage is expected to be at its peak, as observed during the month of November and January. This inconsistency, brings the question about the veracity of this data. No further information was available at time of finalizing this document (See Figure 5).

Water Consumption	2012/13	2013/14	Baseline 2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	% change from baseline	% change previous year
Total water co	nsumption	by type (kL)							
Class A Recycled Water	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Potable Water	222,989	253,835	229,160	222,189	211,631	224,549	228,996	227,634	-0.7%	-0.6%
Reclaimed Water*	200	200	2,497	3,374	5,236	5,499	5,502	N/A	N/A	N/A
Total	223,189	254,035	231,657	225,563	216,867	230,051	228,996	227,634	-1.7%	-0.6%
Normalised wa	ter consum	ption (Pota	able + Class	A)						
Water per unit of floor space (kL/ m2)	1.94	2.20	1.99	1.93	1.83	1.95	1.99	1.63	-17.8%	-17.7%
Water per unit of Separations (kL/ Separations)	1.93	2.16	1.99	1.81	1.61	1.62	1.61	1.65	-17.0%	2.3%
Water per unit of bed-day (LOS+Aged Care OBD) (kL/OBD)	0.66	0.77	0.69	0.66	0.60	0.62	0.62	0.64	-6.2%	3.4%

*Reclaimed Water data not available due to issues with the metering system.

This year's performance saw the organization face operational issues beside COVID-19. During the month of December, a faulty valve was identified in the cooling towers system at JKWC. Additionally, faulty water meters were replaced due to inaccurate readings. These combined issues generated an increase in the organization's monthly water consumption of 31.8%, compared to the previous year (See Figure 5). Despite the above mentioned issues and the increase in size of the organization's portfolio, water consumption presented a minor average reduction. Overall, water usage reduced on average by 0.6%, when comparing the performance against FY18/19. The influence of COVID-19 in water usage is difficult to assess as the performance remained virtually unchanged from March to June, despite the reduction on separations and patients treated.

The overall water usage for the organization slightly decreased by 1.7% with reference to the baseline. When assessing the water usage per m2 against FY18/19, a 17.7% improvement can be noticed. The water efficiencies implemented within the organization, seem to be the catalyst for the performance to remain virtually unchanged, despite the surge in size and operations.









Waste Management

Energy Consumption	2012/13	2013/14	Baseline 2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	% change from baseline	% change previous year
Waste type										
Clinical waste (tonnes)	278	297	317	376	336	336	338	330	3.9%	-2.5%
CW Bagged (tonnes)	257	270	290	345	305	305	308	301	3.6%	-2.4%
CW Sharps (tonnes)	21	28	27	31	31	31	29	29	8.3%	0.9%
Landfill (tonnes)	1,380	1,309	1,444	1,290	1,359	1,358	1,244	1,384	-4.2%	11.2%
Recycling* (tonnes)	367	430	546	558	554	570	604	698	27.8%	15.6%
Total waste to landfill generated (kg clinical waste+kg general waste)	1,658	1,606	1,761	1,666	1,695	1,694	1,582	1,687	-4.2%	6.6%
Total waste generation	2,205	2,036	2,307	2,224	2,249	2,265	2,186	2,385	3.4%	9.1%
Normalised wa	ste data									
Waste / OBD(kg)	6.15	6.38	6.91	6.57	6.34	6.24	5.95	6.75	-2.4%	13.5%
Waste / patient treated (kg)	4.18	3.53	3.99	3.73	3.59	3.51	3.34	3.73	-6.4%	11.6%
Total waste to landfill per patient treated (kg clinical waste+kg general waste)/PPT)	3.42	2.79	3.04	2.80	2.71	2.63	2.42	2.64	-13.3%	9.1%
Rate of diversion from landfill (%)	21.01%	24.73%	27.44%	30.19%	28.96%	29.56%	32.68%	33.53%	6%	1%
Normalisers										
Aged Care OBD	10,203	17,012	-	-	-	-	-			
ED Departures	123,398	127,716	129,415	134,737	140,127	142,904	143,985	147,390		
LOS/OBD	329,114	319,362	333,738	338,586	354,517	363,068	367,683	353,530		
M2	103,012	115,091	115,356	115,356	115,356	115,356	115,356	139,356		
Total patients treated	484,221	576,428	578,490	595,796	626,079	644,560	653,701	638,935		
Separations	109,245	111,150	115,337	122,473	131,435	138,588	142,033	138,015		

*Recycling includes all recycling (See table 2)



Figure 7. Total Waste Generation with Normalizers

Overall total waste generation at WH increased by 9%. These results are heavily influenced by the JKWC Hospital opening and particularly evident in the results for the recycling waste stream (15.6% increase) with respect to the previous year. As seen on Figure 8 (pre-COVID), there's a clear increasing trend in monthly recycling and general waste generation when comparing the organisation's performance to the previous year. However, when assessing clinical waste, the opposite trend is observed (Figure 9). Despite the increase in size, monthly clinical waste was reduced. This could be attributed to effective clinical staff training/awareness in regards to clinical waste segregation. When analysing the performance (March – June) for clinical waste, the trend is reversed and clinical waste generation increased by 9.3%. This is directly related to the large amounts of PPE required to carry out business as usual operations during COVID.

Unfortunately, waste to landfill over the FY 19/20 increased by 7%, when compared to the previous year. However when assessing the landfill diversion rate, the result is a 1% increase with respect to the previous year and 6% increase in reference to the baseline.



Figure 8. Waste Generation Comparison

Figure 9. Clinical Waste Generation Comparison



Western Health's non-commingled recycling program (FY 19/20), supported the additional diversion of over 26 Tonnes of waste from landfill. As shown in the table below, these programs also save over \$4,600 in operational costs.

Recyclable items	Kg	Operational savings
PVC	2,828	566
Metals	4,800	960
Sterilization wrap	3,000	600
Batteries	1,434	-359
Printer cartridges	630	126
E-waste	2,887	577
Furniture	4,928	986
Aluminium gas bottles	3	1
Polystyrene	5,800	1,160
Total	26,310	4,616

Appendix FY19/20 Update

Category	Aim	FY 19/20				
Energy	Install solar electricity in new buildings, as roof space allows.	Issues with the cladding on the ASB building have impeded the solar generation increase within the organization.				
	Reduce electricity / energy consumption at Williamstown Hospital by 5% compared to 2014/15 baseline.	Electricity consumption at Williamstown was reduced by 4%, however, energy consumption increased by 7% due to the increase in gas use.				
	Return to 2014/15 energy efficiency /m2 floor space and in relation to activity at Sunshine Hospital, in the face of additional energy intensive services (by July 2016).	Energy efficiency per m2 has reduced by 14% when compared to the FY14/15 baseline.				
	Return to 2014/15 energy efficiency /m2 floor space and in relation to activity in the face of additional energy intensive services (by July 2016) across WH.	In average the energy/m2 was reduced by 11.2% when compared to the baseline for the period assessed.				
GHG	Reduce the greenhouse intensity of energy portfolio in operations compared to 2014/15 baseline by July 2020.	The portfolio's performances reduced by 21% when compared to the baseline.				
Water	Increase harvested water volume and reuse by 5% in comparison to 2014/15 baseline.	Not achieved				
	Improve water efficiency in relation to floor space and activity compared to 2014/15 baseline.	Water consumption reduced by 17.8% when compared to the baseline.				
Waste	Continue to increase diversion of waste from landfill by 2.5% per annum compared to 2014/15 baseline.	Landfill diversion in FY19/20 increased by 1% compared to the previous year. When comparing to the baseline it represents a 6% increase				
	Develop comprehensive Local Sustainability Action Plans in 25 business units (5 per FY).	Work continues within LSA's with several local initiatives ensuring interest at the frontline continues to grow. A new sustainability working group has been established to discuss and implement different staff requested projects				
	Reduce the environmental impact of paper by 10% per FTE in relation to 2014/15 baseline by 2020.	Target maintained.				
	Develop Clinical Action Plans in 25 clinical areas (5 per FY).	Work continues within LSA's with several local initiatives ensuring interest at the frontline continues to grow. A new sustainability working group has been established to discuss and implement different staff requested projects				





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