2023

ENVIRONMENTAL IMPACT ASSESSMENT

clearwater
CREDIT UNION

clearwatercreditunion.org/environment

INTRODUCTION

This report details Clearwater Credit Union's 2023 environmental impact. To assess our environmental impact, we focus on issues that are important to local and global sustainability, that we significantly impact, and that cover most of our impact. These issues are greenhouse gas emissions (operational and balance sheet), water use, paper use, and municipal solid waste production. Our impact in each of these areas is detailed in the following report. The complete disclosures and methods can be found in the technical appendix.

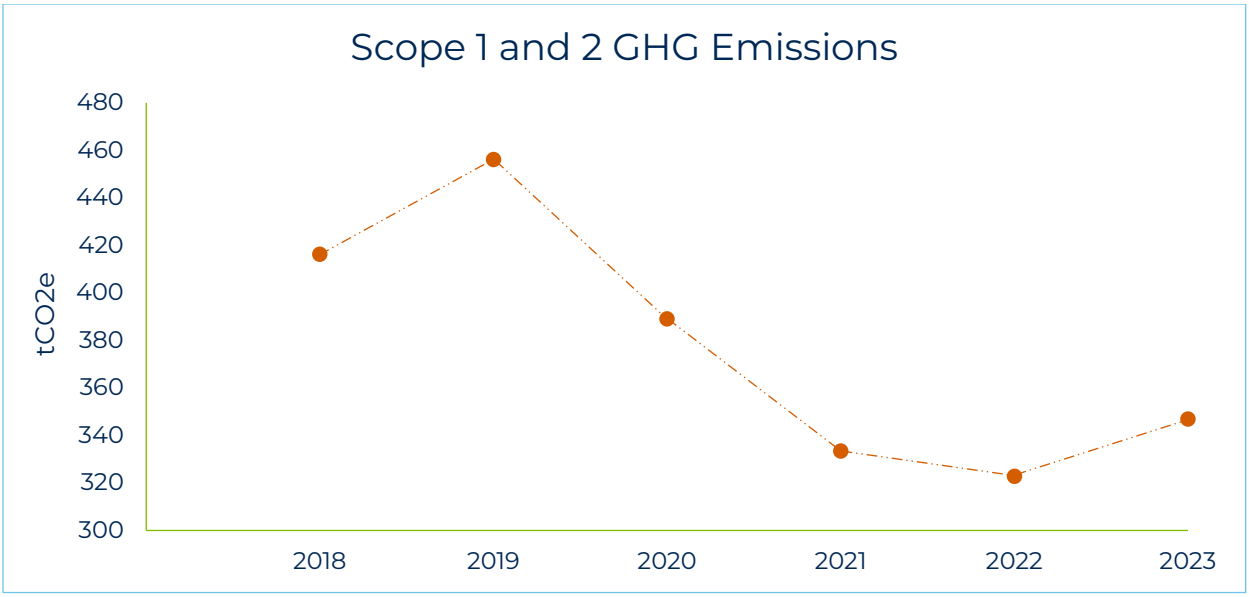
GREENHOUSE GAS EMISSIONS

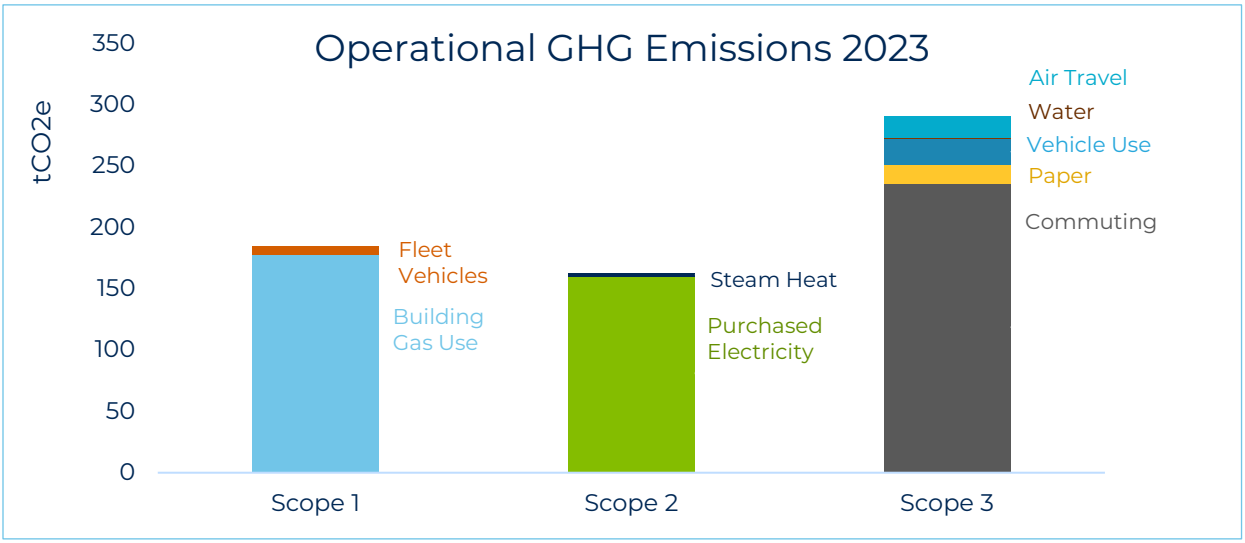
Clearwater measures and reports Scope 1 (direct) and Scope 2 (energy indirect) emissions as well as some Scope 3 (other indirect) emissions that we believe can be influenced by management decisions. This includes the greenhouse gas (GHG) impact on our balance sheet. Because the greenhouse impact of our balance sheet is roughly 100 times larger than our operational impact, it is described separately. Clearwater Credit Union's greenhouse gas emissions are reported following The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition[1]. Our balance sheet greenhouse gas emissions are reported under the Partnership for Carbon Accounting Financials (PCAF) standard[2].

OPERATIONAL GREENHOUSE GAS EMISSIONS

Clearwater's Scope 1 and 2 GHG emissions increased by 7% (24.1 metric tons of CO_2 equivalent, tCO_2e) from 2022 to 2023. This change was driven by increased building gas and electricity use in roughly equal amounts. Operational Scope 3 emissions decreased by 4% (12.9 tCO_2e) from 2022 to 2023. Changes to EPA emissions factors led to a significant decrease in calculated commuting emissions. At the same time, employee use of personal vehicles increased significantly, reflecting Clearwater's geographic expansion and the resulting business travel throughout Montana. Our operational GHG emissions intensity (Scope 1 and 2 emissions per full-time equivalent, FTE) increased by 5% (85 $kgCO_2e$ / FTE).

Clearwater offset our 2023 Scope 1 and 2 emissions using registered greenhouse gas offset credits. We acknowledge that the carbon offset market is being increasingly criticized, and we continue to prioritize Montana-based offset projects whenever possible.

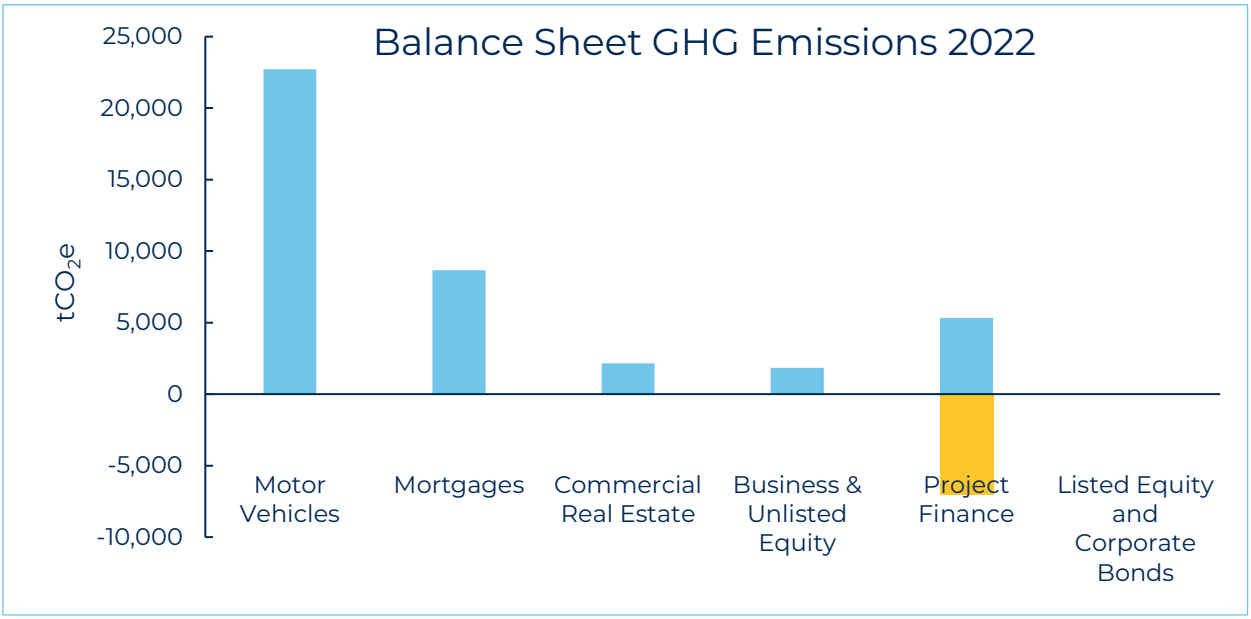

Scope 1 and 2 GHG Emissions
tCO2e
480
460
440
420
400
380
360
340
320
300
2018
2019
2020
2021
2022
2023

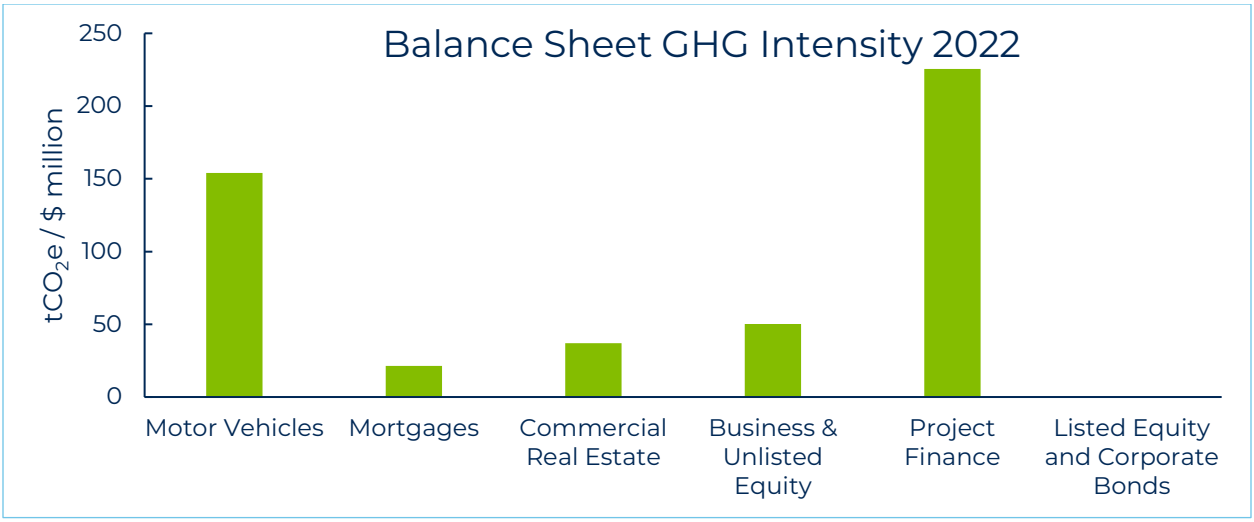

Operational GHG Emissions 2023
tCO2e
350
300
250
200
150
100
50
0
Fleet Vehicles
Building Gas Use
Steam Heat
Purchased Electricity
Air Travel
Water
Vehicle Use
Paper
Commuting
Scope 1
Scope 2
Scope 3

Operational Greenhouse Gas Emissions		2017	2018	2019	2020	2021	2022	**2023**	**YOY Change**
Scope 1 - Operational	(t CO2e)	190	202	236	177	145	173	**185**	**12**
Scope 2 - Operational	(t CO2e)	238	214	220	212	188	150	**162**	**12**
Scope 3 - Operational	(t CO2e)	273	306	284	280	283	303	**290**	**-13**
Scope 1 & 2 Total	(t CO2e)	428	416	456	389	333	323	**347**	**24.1**
Scope 1 & 2 per FTE	(kg CO2e)	2,993	2,656	2,939	2,447	1,964	1,824	**1,909**	**85**

BALANCE SHEET GREENHOUSE GAS EMISSIONS

Clearwater's balance sheet greenhouse gas emissions grew by 24% (7,897 tCO2e) from 2022 to 2023. Some of this increase can be attributed to an increase in the size of our balance sheet, while the proportion of assets covered by the standard and assessed remained roughly the same. In addition, the GHG intensity increased by 13% to 60.4 tCO_2e per million dollars. Paradoxically, one cause of this increase is a dramatic increase in solar lending. The Project Finance asset class has the highest emissions intensity of all asset classes in Clearwater's portfolio. As Clearwater's clean lending continues to grow, this unexpected result will require further inquiry.

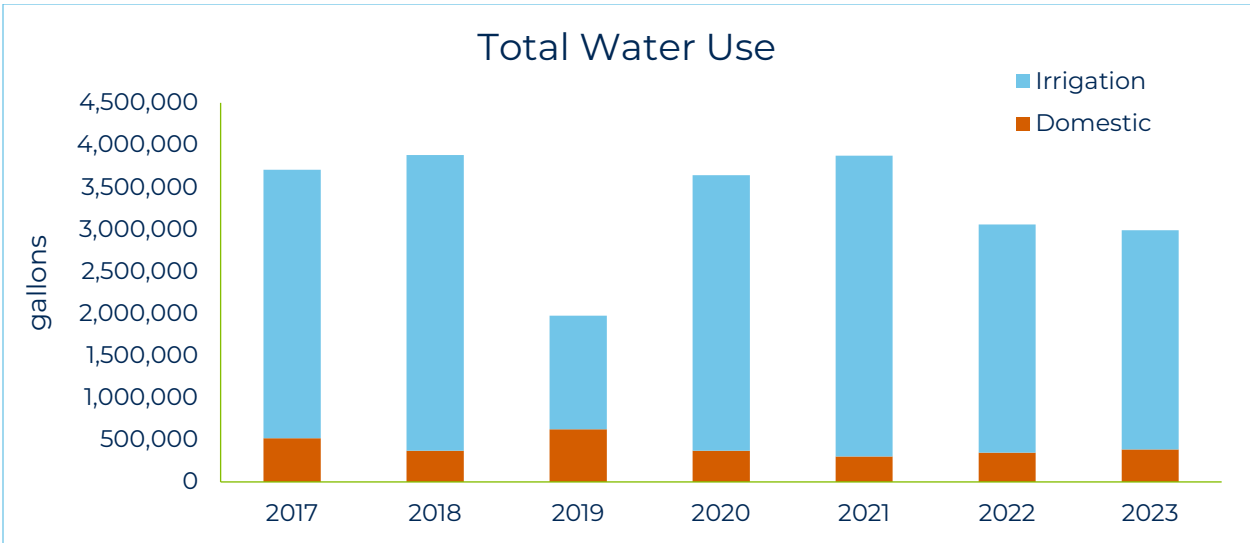


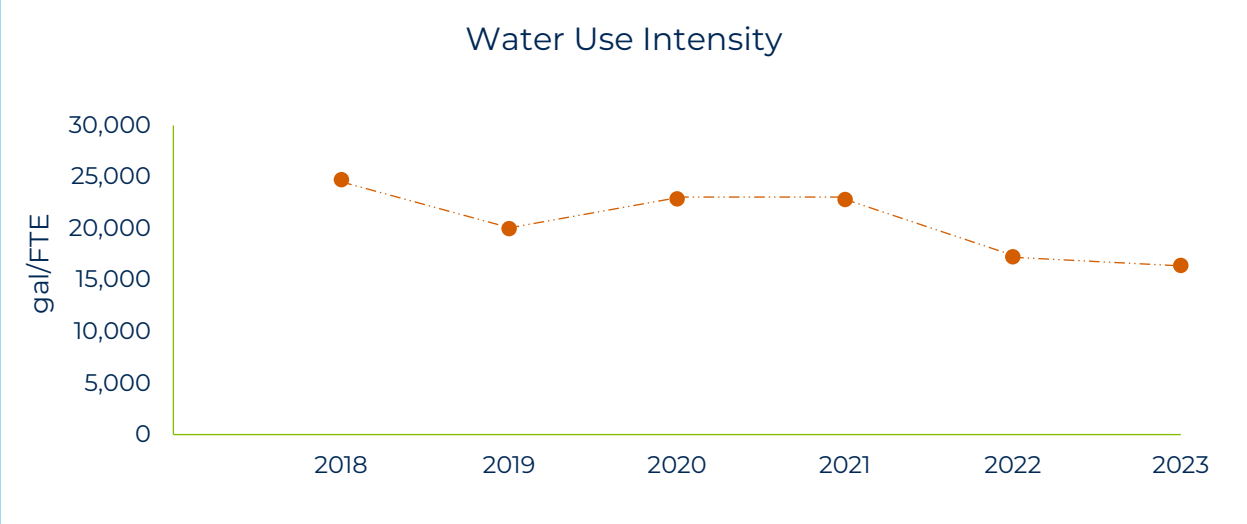


Balance Sheet Greenhouse Gas Emissions		2020	2021	2022	2023	YOY Change
Total Balance Sheet Assets	(million $)	753	874	939	**1,032**	**93**
Assets Covered by PCAF	(million $)	549	591	662	**725**	**63**
Assets Assessed	(million $)	510	541	614	**673**	**59**
Total GHG	(tCO2e)	32,703	28,880	32,799	**40,697**	**7,897**
% of Total Assets Assessed	(%)	68%	62%	65%	**65%**	**0%**
% of Covered Assets Assessed	(%)	93%	91%	93%	**93%**	**0%**
GHG Intensity	(tCO2e /million $)	64.2	53.4	53.4	**60.4**	**7.0**
Weighted Average DQ Score	(1=highest; 5=lowest)	4.1	3.9	3.9	**3.9**	**0.0**

WATER

Clearwater's total water use continues to remain roughly constant despite continuous increases in the size of the staff and the balance sheet. This is due to increasing overall efficiency (number of staff required to support the size of the balance sheet) and decreasing water use intensity (water use per FTE). Much of Clearwater's total water use is from irrigation, and many of our additional staff members have so far been in low-irrigation-use leased space. As we open new, full-sized branches, it may be harder to continue this trend, and we will need to be especially careful in the parts of our market with more pressured water resources.



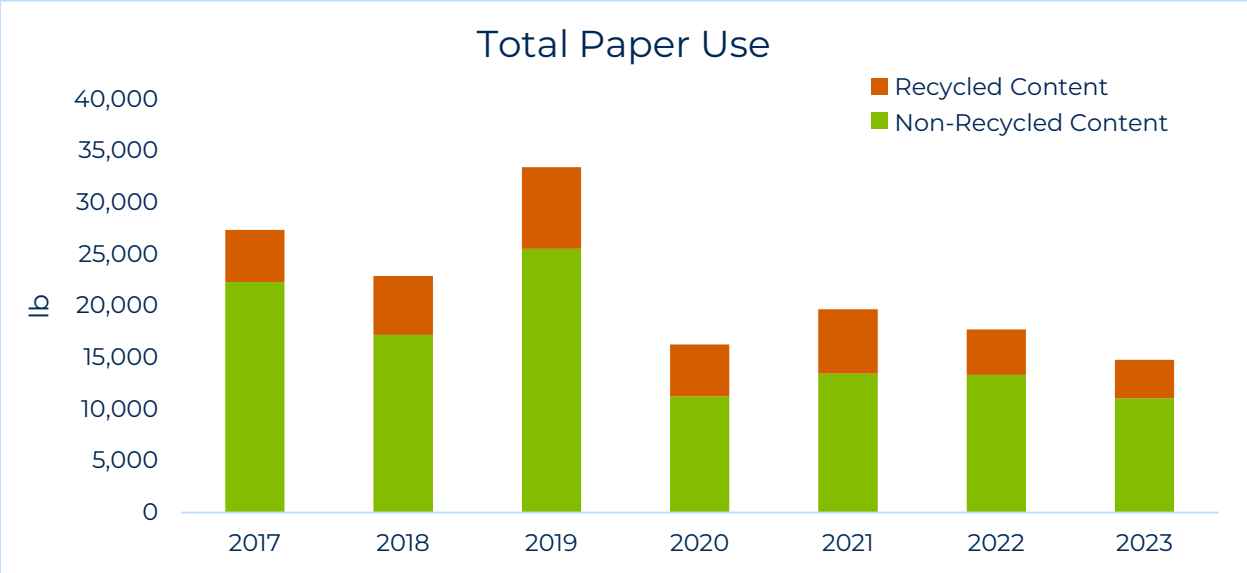


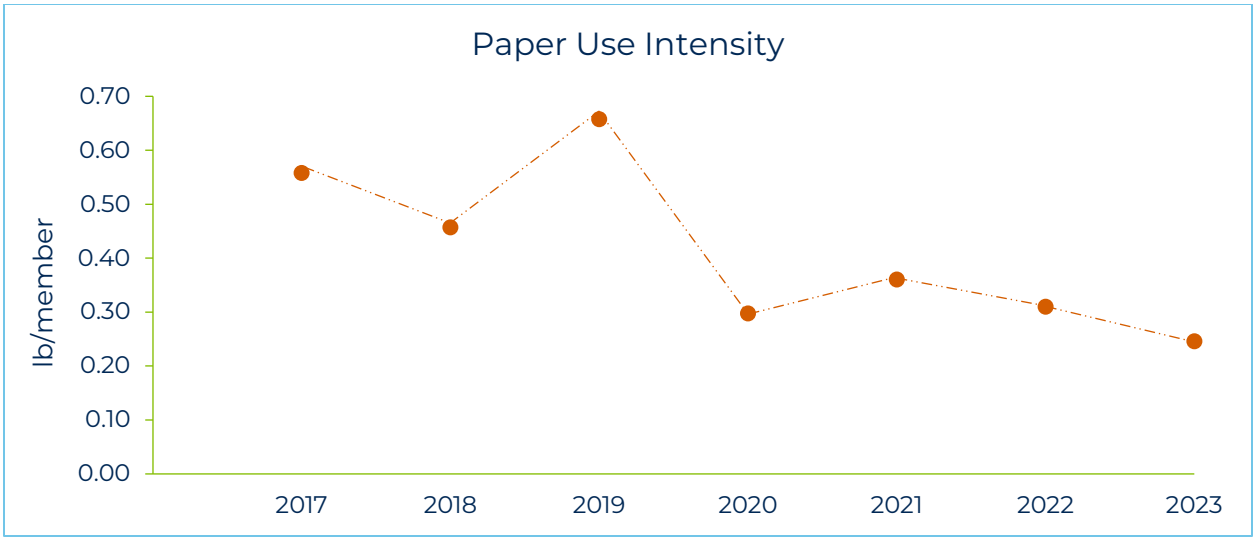
Total Water use		2017	2018	2019	2020	2021	2022	2023	YOY Change
Domestic	(gal)	517,206	370,282	623,224	370,654	301,182	345,903	**385,205**	**39,302**
Irrigation	(gal)	3,187,440[a]	3,510,975[a]	1,351,255[a]	3,270,545	3,571,486	2,710,712	**2,600,606**	**275,099**
Total Use	(gal)	3,704,647	3,881,256	1,954,891	3,641,199	3,872,668	3,056,615	**2,985,811**	**314,401**
Total Use per FTE	(gal)	25,907	24,761	19,992	22,901	22,821	17,274	**16,428**	**1,274**
Total Use per Member	(gal)	76	76	38	69	71	54	**50**	**18,494**

[a] *estimated.*

PAPER

Clearwater's total paper use declined by 16% (2,914 lbs.) from 2022 to 2023, continuing a general downward trend. The percentage of recycled content remained nearly constant during that time. Precise tracking of paper use is difficult, and some measurement error is expected, but overall, Clearwater's paper use shows a declining trend.

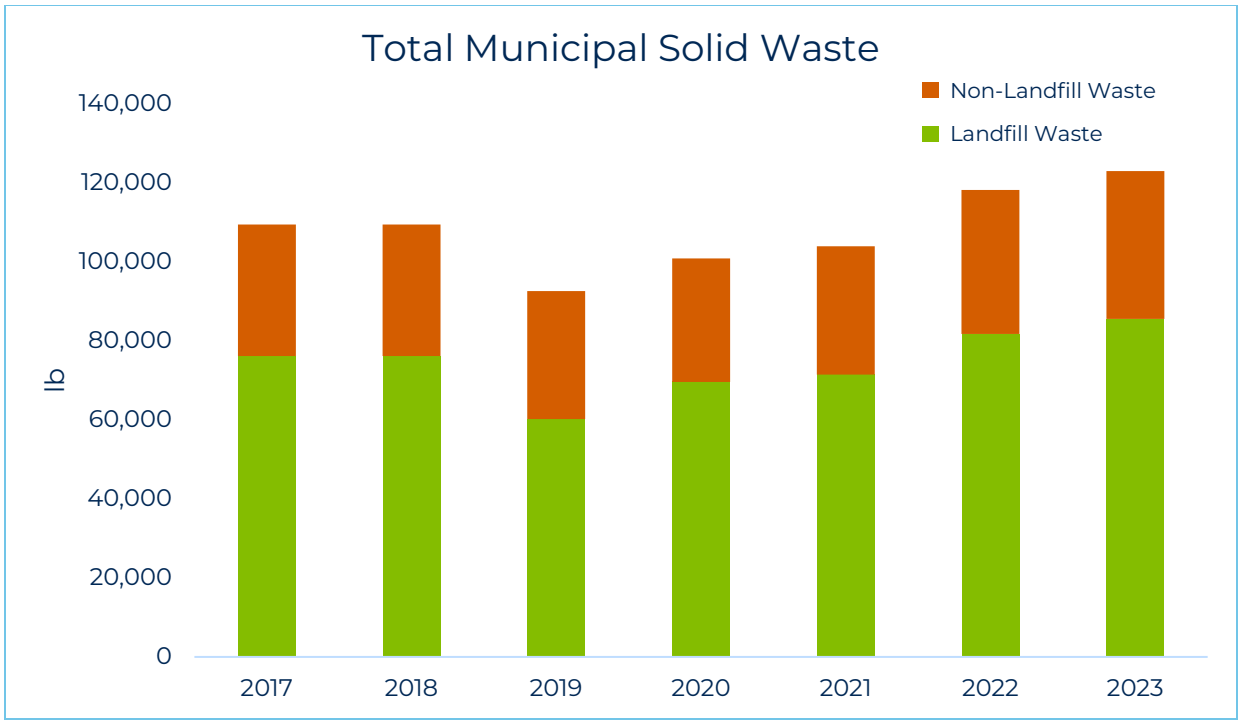


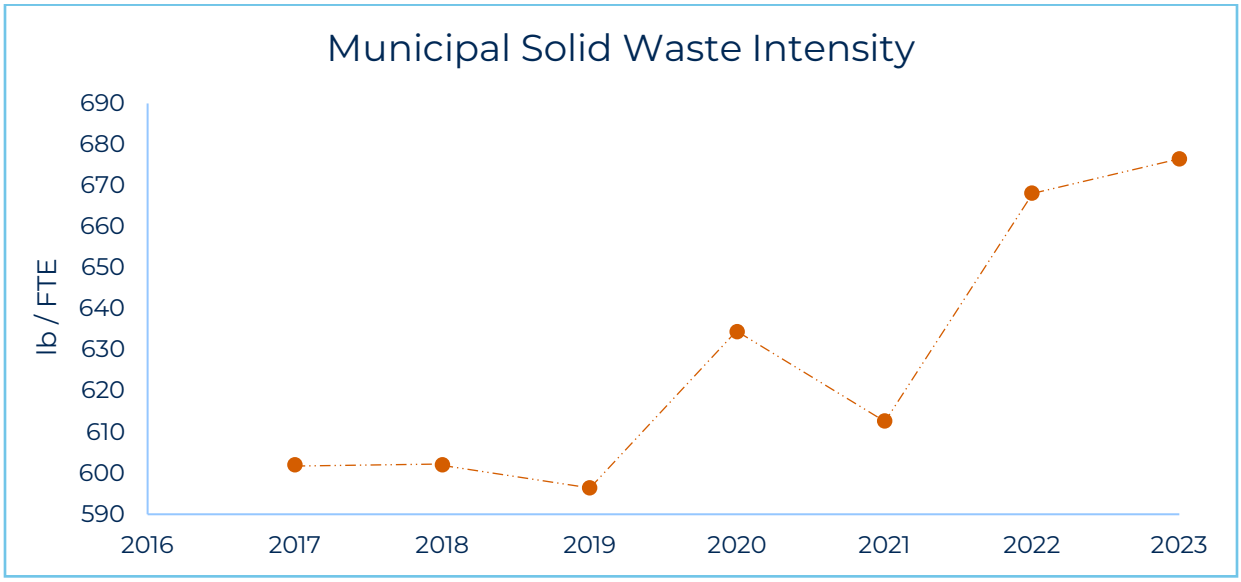


Total paper use		2017	2018	2019	2020	2021	2022	2023	YOY Change
Recycled Content	(lbs)	5,053	5,700	7,921	5,018	6,244	4,376	**3,740**	**-636**
Non-recycled Content	(lb)	22,320	17,192	25,522	11,248	13,445	13,340	**11,062**	**-2,278**
% Content Recycled	%	18%	25%	24%	31%	32%	25%	**25%**	**0.57%**
Total Paper Use	(lb)	27,373	22,892	33,443	16,266	19,689	17,716	**14,802**	**-2,914**
Total Use per FTE	(lb/FTE)	191	146	215	96	116	97	**81**	**-16**
Total Use per Member	(lb/member)	0.558	0.457	0.657	0.298	0.360	0.310	**0.246**	**-0.064**

MUNICIPAL SOLID WASTE

Clearwater's total municipal solid waste (MSW) production increased by 4% (4,727 pounds) from 2022 to 2023, and the percentage diverted from the landfill remained nearly constant. As with paper, precise measurement of MSW weight is challenging, and the measurement method is somewhat variable. Nevertheless, Clearwater's MSW production appears to be increasing slightly, and the percentage of waste diverted from the landfill is holding steady.


Total Municipal Solid Waste
Non-Landfill Waste
Landfill Waste
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
lb
2017
2018
2019
2020
2021
2022
2023


Municipal Solid Waste Intensity
690
680
670
660
650
640
630
620
610
600
590
lb / FTE
2016
2017
2018
2019
2020
2021
2022
2023

Solid waste generated		2017[a]	2018[a]	2019	2020	2021	2022	2023	YOY Change
Landfill Waste	(lb)	76,124	76,124	60,190	69,637	71,444	81,719	85,537	3,818
Recycling	(lb)	24,150	24,150	21,131	19,981	21,275	24,973	27,136	2,163
Compost	(lb)	9,149	9,149	11,261	11,261	11,261	11,535	10,281	-1,254
Total solid waste	(lb)	109,424	109,424	92,582	100,879	103,980	118,227	122,954	4,727
Percent waste diverted from landfill	%	30.4%	30.4%	35.0%	31.0%	31.3%	30.9%	30.4%	-0.4%
Total solid waste per employee (FTE)	(lb)	602	602	596	634	613	668	676	8
Landfill waste per employee (FTE)	(lb)	419	419	388	438	421	462	471	9

[a]*The 2017 waste audit was conducted in early 2018, and the results were used for 2017 and 2018.*

TECHNICAL APPENDIX & GREENHOUSE GAS DISCLOSURES

This appendix provides the technical details of our environmental assessment. It is intended to offer greater depth for interested readers, assist other financial institutions with their environmental assessments, and meet disclosure requirements. Please feel free to reach out to us with any questions at clearwatercreditunion.org.

Our greenhouse gas assessment follows the World Resources Institute's Greenhouse Gas Protocol Corporate Accounting and Reporting Standard, Revised Edition[1]. Our balance sheet greenhouse gas assessment follows the PCAF Global GHG Accounting and Reporting Standard for the Financial Industry[2].

Company Description

Clearwater Credit Union is a member-owned, not-for-profit financial cooperative headquarters in Missoula, Montana. Founded in 1956 as a policemen's cooperative credit union, Clearwater has grown to serve 60,139 members with total assets of $1,031,816,267 at year-end 2023. We serve anyone who lives, works, worships, studies, or participates in an association headquartered in Montana's 20 westernmost counties. At year-end 2023, Clearwater had 181.75 full-time equivalent positions and occupied six owned buildings and four leased locations.

Organizational Boundaries

Clearwater is a member-owned financial cooperative with no subsidiaries or equity positions in other organizations. Therefore, we selected the operational control approach to set organizational boundaries for this assessment. Under this approach, we will report all greenhouse gas emissions for organizations and operations over which we have direct operational control. No sources, facilities, or operations were excluded.

Operational Boundaries

Clearwater measures and reports our Scope 1 and Scope 2 greenhouse gas emissions and selected Scope 3 emissions: balance sheet impacts, coworker commuting, paper, business use of personal vehicles, water use, and airline travel.

To account for emissions from leased space, we followed GHG Protocol Appendix F and included emissions from on-site natural gas combustion in Scope 1 emissions and purchased electricity in Scope 2 emissions.

Scope 1 (Direct Emissions)

As a financial institution, Clearwater has few sources of direct emissions. These sources are (1) on-site combustion of natural gas for space and water heating; (2) operation of a small vehicle fleet.

Scope 2 (Energy Indirect)

Energy indirect emissions result from the production of electricity purchased by Clearwater and steam heat used at Clearwater's University Center branch. Scope 3

Scope 3 (Other Indirect)

Scope 3 emissions are those that result from business operations but are not covered under Scopes 1 & 2. Clearwater reports Scope 3 emissions from activities that significantly impact the total GHG emissions and are potentially responsive to management activities. We assessed the greenhouse gas impact of our balance sheet (Scope 3, chapter 15) using the Platform for Carbon Accounting Financials (PCAF) methodology. The Scope 3 emissions sources reported here are corporate air travel, business travel in non-fleet vehicles, water use, paper use, employee commuting, and balance sheet assets.

Base Year

The GHG Protocol requires an organization to define a base year as a point of comparison for reporting emissions, progress toward targets, and compliance with applicable reporting requirements. Clearwater has defined 2017 as its base year for our operations and 2020 as the base year for our balance sheet emissions. 2017 was the first year an operational greenhouse gas inventory was completed; 2020 was the first year a balance sheet assessment was completed. Recalculation of base

year emissions shall follow the guidance and procedures in the GHG Protocol. Per GHG Protocol, base year emissions shall be recalculated in the case of:

- Acquisitions or divestments.
- Outsourcing or insourcing of emitting activities.
- Changes in calculation methodology result in a significant impact on the base year emissions data.
- Discovery of significant errors or several cumulative errors that are collectively significant.

What constitutes a significant impact on base year emissions data is left to the organization; Clearwater has set this threshold at 10% of total GHG emissions in CO_2e.

Base year recalculation is not required for:

- Organic growth or decline.
- Acquisition or insourcing of facilities that did not exist in the base year.
- Outsourcing or insourcing of Scope 2 and Scope 3 emissions.

Greenhouse Gas Emissions 2023	CO2e	CO2		CH4		N20		HFCs		PFCs		SF6	
	t	t	tCO2e	t	tCO2e	t	tCO2e	t	tCO2e	t	tCO2e	t	tCO2e
Scope 1	185	185	185	3.55E-03	0.0994	4.71E-04	1.25E-01	b	b	b	b	b	b
Scope 2	162	161	161	1.48E-02	0.4149	2.11E-03	5.60E-01	b	b	b	b	b	b
Scope 3 operations	290	a	a	a	a	a	a	a	a	a	a	a	a
Scope 3 balance sheet	40,697	a	a	a	a	a	a	a	a	a	a	a	a
Direct biogenic emissions	0	0	0	0	0	0	0	0	0	0	0	0	0

US EPA and PCAF emission factors are not available for HFCs and PFCs.

		2017	2018	2019	2020	2021	2022	**2023**
Scope 1	(t CO2e)	190	202	236	177	145	173	**185**
Scope 2	(t CO2e)	238	214	220	212	188	150	**162**
Scope 3, operational	(t CO2e)	273	306	284	280	283	303	**290**
Scope 3, balance sheet	(t CO2e)	-	-	-	30,735	28,880	32,799	**40,697**

METHODOLOGY

Due to the nature of Clearwater's operations, emissions are not measured directly. Instead, emissions were estimated for each source using the following model:

$$emissions = activity\ level\ x\ emissions\ factor$$

The units and sources of the activity levels and emission factors are described below.

NATURAL GAS COMBUSTION

Activity Level

Natural gas use is metered directly at all of Clearwater's owned facilities. In two of four leased locations, the gas use of the entire building is metered, and Clearwater's share of the total building consumption was calculated based on proportional floor space. The two remaining leased spaces have small staffs and footprints. In these cases, a per-FTE gas use metric was calculated for the known facilities and applied to these two.

Emission Factors

The emission factors used were from the US EPA Emission Factors for Greenhouse Gas Inventories, Table 1—Stationary Combustion[3].

FLEET VEHICLE USE

Activity Level

Fleet vehicle use for the reporting period was measured directly in miles. In some cases, interpolation between recorded services was required to match vehicle mileage to the reporting period.

Emission Factors

Emissions were calculated for vehicle miles for each vehicle class (light truck and passenger car). Emission factors used were from the US EPA Emission Factors for Greenhouse Gas Inventories, Table 3 – Scope 3 Category 6: Business Travel and Category 7: Employee Commuting[3]. Note that the US EPA class "passenger car" includes "passenger cars, minivans, SUVs, and small pickup trucks (vehicles with wheelbase less than 121 inches)." The US EPA class "light truck" includes "full-size pickup trucks, full-size vans, and extended-length SUVs (vehicles with a wheelbase greater than 121 inches)." In the case of one hybrid vehicle, the emissions were estimated as one-half of the emissions of a passenger car.

BUILDING ELECTRICITY USE

Activity Level

Electricity use is directly metered at all owned Clearwater facilities and at two of our four leased spaces. The two unmetered spaces were assigned a per-FTE electricity use number calculated from the known data.

Emission Factors

Emissions were calculated using US EPA eGRID total production emission factors for the Northwest Power Pool (NWPP) subgrid from the US EPA Emission Factors for Greenhouse Gas Inventories, Table 6 – Electricity[3].

STEAM HEAT

Activity Level

Steam heat is used only at Clearwater's leased University of Montana branch. In this case, Clearwater's share of the total building consumption was calculated based on proportional floor space.

Emission Factors

Emission factors used were from US EPA Emission Factors for Greenhouse Gas Inventories– Table 7 Steam and Heat[3].

CORPORATE AIR TRAVEL

Activity Level

Origins, intermediate stops, and destinations for all corporate air travel were collected. Distances between airports were calculated along Great Circle routes, and an additional 9% was added to account for route deviations and airport traffic control patterns. Flight segments were then classified as short-, medium-, and long-haul following US EPA emissions factor categories (<300 miles, ≥300 and <2300 miles, and ≥2300 miles, respectively).

Emission Factors

Emissions were calculated per passenger-mile for each of the three flight length categories (short-, medium-, and long-haul) using US EPA Emission Factors for Greenhouse Gas Inventories, Table 3 – Scope 3 Category 6: Business Travel and Category 7: Employee Commuting[3]. Because aviation emissions have an enhanced radiative forcing effect on the atmosphere, emissions from aviation were multiplied by a radiative forcing coefficient of 2,[4] [5].

BUSINESS TRAVEL IN NON-OWNED VEHICLES

Activity Level

Business travel in non-owned vehicles occurred almost entirely in employees' personal vehicles. Total miles traveled were collected from accounting records. Vehicle class is not recorded, so vehicle miles are assumed to be 75% in passenger cars and 25% in light trucks

Emission Factors

Emission factors used were from the US EPA Emission Factors for Greenhouse Gas Inventories, Table 3 – Scope 3 Category 6: Business Travel and Category 7: Employee Commuting[3]. Note that the US EPA class "passenger car" includes "passenger cars, minivans, SUVs, and small pickup trucks (vehicles with wheelbase less than 121 inches)." The US EPA class "light truck" includes "full-size pickup trucks, full-size vans, and extended-length SUVs (vehicles with a wheelbase greater than 121 inches)." In the case of one hybrid vehicle, the emissions were estimated to be one-half of the emissions of a passenger car.

PAPER USE

Activity Level

Clearwater uses a wide variety of paper from several sources, and total paper use is an estimate with significant uncertainty. Efforts to quantify paper use focused on the major categories of use and most common products. It is recognized that, given the quantity and variety of paper products used, not all paper use will be captured. A simplifying assumption is that paper *used* during the reporting period is equivalent to paper *ordered* during the reporting period.

Generally speaking, paper use is recorded as quantity of products which must then be converted to weight. This can be accomplished in four ways, listed here in decreasing order of preference: (1) Shipping weights determined from product specifications; (2) unit weights determined from product dimensions and paper specification weights[6]; (3) paper products may be subsampled and directly weighed; (4) estimated using fixed conversion factors.

As described in emission factors (below), paper is separated into the total weight of recycled (pre- and post-consumer content) and non-recycled content by multiplying the total weight of each particular paper product by its recycled content percentage:

$$recycled\ content = total\ weight\ x\ \%\ recycled\ content$$

Where the recycled percentage is unknown, it was assumed to be zero.

Emission Factors

Environmental impact estimates were made using the Environmental Paper Network Paper Calculator Version 3.2.1. For more information, visit www.papercalculator.org. It was determined that GHG emissions were a perfect linear function of recycled percentage. As a result, paper can be aggregated into total recycled content (100% recycled) and total non-recycled content (0% recycled) using the formula in the activity level above. The emission factors used were for uncoated groundwood for uncoated freesheet. Note that the emission factors provided by the Environmental Paper Network are lifecycle emissions, including emissions from disposal.

WATER USE

Activity Level

Water use at Clearwater falls into two categories: domestic (i.e. facilities use) and irrigation. Water use can also be separated by source: municipal water supplies or groundwater wells.

Most Clearwater facilities use metered municipal water supplies. In the case of our leased locations, Clearwater's water use was calculated from the building total on the basis of proportional floor area. Most facilities also had separate meters for irrigation supply. In the case that a building had a single meter for domestic and irrigation use, the domestic use was estimated by averaging the use over the winter months when no irrigation was taking place and then subtracting this value from the summer months.

Emission Factors

For this assessment, emission factors for municipal supply and wastewater treatment were taken from the City of Missoula's Greenhouse Gas Inventory[7].

EMPLOYEE COMMUTING

Activity Level

Employee commuting emissions were calculated using a survey of annual commuting behavior. The survey asks:

- How many days per week do you work?
- How far do you live from your office?
- Is your primary vehicle:
  - Gas/diesel?
  - Hybrid?
  - Full electric?
- In an average week, how many days do you travel to work by:
  - Driving alone?
  - Carpooling?
  - Taking the bus?
  - Riding a bike/walking?
  - Working from home?
- Any other notes?

From these responses, the total miles to work can be calculated. Emission factors used were from the US EPA Emission Factors for Greenhouse Gas Inventories[3]. As elsewhere, vehicle miles were assumed to be split by 75% passenger car and 25% light truck. Hybrids and carpooling were assumed to have ½ the

emissions of passenger cars per occupant mile. Electric vehicle miles were converted to kWh at a rate of 0.346 kWh/vehicle-mile, and then kWh were converted to emissions using the same emissions factors as building electricity use. Total weekly commuting emissions as surveyed were converted to per-FTE emissions, then multiplied by total FTE and 50 weeks to calculate total annual commuting emissions.

MUNICIPAL SOLID WASTE

Solid waste is not included in our greenhouse gas inventory, but the activity level estimation method is presented here for reference.

Activity Level

Very little data is available on solid waste generation. Each facility is contracted for regular pickup of a fixed-size container, but there is no data on the weight or percentage fullness of each container. To estimate annual weight, the average fullness of the containers was estimated visually over several weeks, and a density coefficient was applied to convert volume to weight. There is considerable uncertainty in this method and in the resulting estimates of the total weight of solid waste.

All conversion factors are from US EPA Volume-to-Weight conversion factors[8].

BALANCE SHEET GREENHOUSE GASES

We assessed the greenhouse gas impact of our balance sheet assets using the Platform for Carbon Accounting Financials methodology (PCAF)[2]. The standard is designed to fit into the World Resources Institute's GHG Protocol Corporate Accounting and Reporting Standard, Revised Edition as Scope 3, Chapter 15 emissions, and shares several features, but is essentially its method.

The PCAF standard covers six asset classes: Business Loans and Unlisted Equity, Commercial Real Estate, Listed Equity and Corporate Bonds, Mortgages, Motor Vehicles, and Project Finance. These categories, as defined in the standard, likely do not align perfectly with the categorization used by the institution. For example, PCAF would categorize a loan to a business for a truck as a motor vehicle loan. Throughout this appendix, we will refer to "accounting classifications" to describe how we organize our balance sheet and "asset class[es]" to describe how loans are organized for PCAF analysis. We used emission factors from the PCAF emission factors database throughout our analysis.

BUSINESS AND UNLISTED EQUITY

This asset class covers "all loans and lines of credit for general corporate purposes (i.e. with unknown use of proceeds as defined by the GHG Protocol) to businesses, nonprofits, and any other structure or organization that are not traded on the market and are on the balance sheet of the financial institution." All of Clearwater's loans in this asset class were in-house.

Using our accounting classification, we identified business loans and then removed loans with known business purposes that would put them in another PCAF asset class (e.g., vehicle or real estate purchases). We then selected those loans for which the business North American Industry Classification System (NAICS) code was available (roughly 40% of the total portfolio balance). We did not have the

business total value (equity + debt) for most of our loans. In these cases, the emission factor was from the PCAF database, NAICS-specific emissions per dollar were financed, and the attribution factor was 1. For loans where we did know the business revenue, the emission factor used was NAICS-specific per $ revenue, and the attribution factor was the loan balance outstanding divided by the business revenue.

COMMERCIAL REAL ESTATE

This asset class covers on-balance sheet loans to purchase and refinance commercial real estate, including multi-family housing (> 4 units) and on-balance sheet investments. Clearwater's Commercial Real Estate (CRE) assets were of three types: in-house loans, loan participations, and investments.

The in-house loans were identified in our business portfolio by the NAICS industry classification as "Real Estate, Rental, and Leasing." Details on the building type (to match PCAF database categories), size (where available), and value at origination were obtained by manually reading appraisal documents for the loans. The emission factors used were state- and building-type specific from the PCAF database. Per-area emission factors were used where the building size was available, and per-unit emission factors where it was not. The attribution factor was calculated as the outstanding loan balance divided by the total value at origination.

Clearwater had a single CRE loan participation. The emissions were calculated similarly to those for the in-house loans.

Clearwater's CRE investments were in the form of commercial loan-backed securities and made up a significant portion (~67%) of our CRE asset class. To assess these loans, we first selected a random sample of the securities (roughly 16% of the portfolio by dollar amount) and requested detailed loan records from our broker. These records provided the state the building was located in, the building type, the number of units, the appraised value at origination, the balance outstanding, and the portion of the loan owned by Clearwater. These were used to calculate the financed emissions as for in-house CRE loans, with the additional step of including the proportion of the outstanding balance owned by Clearwater in the attribution factor. The calculated emissions intensity (t CO_2e/million $) was then applied to the remaining investment portfolio to calculate total financed emissions.

LISTED EQUITY AND CORPORATE BONDS

This asset class covers "all listed corporate bonds and all listed equity for general corporate purposes (i.e., unknown use of proceeds as defined by the GHG Protocol) that are traded on a market and are on the balance sheet of the financial institution." Clearwater did not have any assets that fit this definition.

MORTGAGES

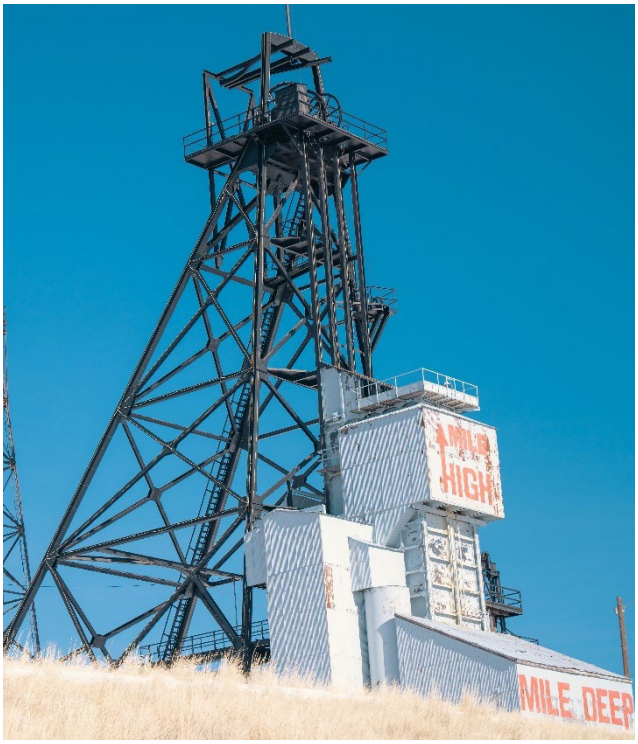
This asset class covers on-balance sheet loans for the purchase and refinance of residential real estate, including multi-family housing with ≤4 units. The class does not include home equity loans or lines of credit. Clearwater's Mortgage asset class includes four components: in-house, participations, investments, and business loans (i.e., loans that we classify internally as business loans but that are for the purchase or refinance of rental properties with ≤4 units).

In-house loans were identified as mortgages by Clearwater's existing accounting classification. The loan details gave the balance outstanding and the value at origination. A Python script matched the property tax IDs to the Montana cadastral database to obtain the size (square footage) of the buildings and the property class (e.g. single-family home, condominium, etc.). Emission factors were from the PCAF database and were state and property class-specific by area where available and by unit if not. The attribution factor was the balance outstanding divided by the balance at origination.

Clearwater's participation was in the form of Hybrid ARMs. The loan data gave the value outstanding and value at origination. Loan data also gives the state and property class but not the building size. The emission factors were from the PCAF database and were state and property class-specific per unit. The attribution factor was calculated as the outstanding loan balance divided by the total value at origination.

The business loans (loans for residential properties with ≤4 units) were identified during our assessment of the Commercial Real Estate asset class. Appraisals were reviewed by hand to determine property type and size, if available. Property tax IDs were then mapped to the Montana cadastral database to determine building size if it was not available from the appraisal reports. The emission factors were from the PCAF database and were state and building type-specific per area if available, per unit if not. The attribution factor was the value outstanding divided by the value at origination.

Clearwater's investments are in the form of purchased mortgage-backed securities and make up a significant portion of the Mortgage asset class (36%). To calculate these emissions, we sampled a portion of the securities (roughly 10% by dollar total) and requested detailed loan records from our broker. These records gave the value outstanding, the value at origination, the portion owned by Clearwater of the overall tranche, the property type, and the state. The emission factor was from the PCAF database and was state and property type-specific per unit. The attribution factor was the amount outstanding times the percentage of the tranche owned by Clearwater, divided by the value at origination.



MOTOR VEHICLES

This asset class covers on-balance sheet loans to individuals for the purchase of motor vehicles. Clearwater's loans of these types were entirely in-house and originated in both our consumer and business banking portfolios.

We identified these loans using internal loan classifications. Consumer loans were already listed in our system as motor vehicles, and our loans to businesses for motor vehicles were identified by collateral type. Internal loan data includes vehicle make, model, and VIN. These VINs were matched to a National Highway Traffic Safety Administration website to procure a second set of vehicles make and model descriptions. These were then both matched to the PCAF database using a fuzzy match package in Python, and the best match was used to select the emission factor from the PCAF database. These emission factors were vehicle-specific per-year numbers. A small number of loans failed to match based on vehicle make and model; these were assigned an emission factor based on vehicle type. The attribution factor was the loan amount outstanding divided by the value at origination.

PROJECT FINANCE

This asset class covers loans or equities to projects for specific purposes. Clearwater Project Finance loans were all for solar photovoltaic projects. This includes in-house loans and purchased participations.

The emission factors used were from the PCAF database and were per-dollar emissions for the NAICS code 221114. Because a per-dollar investment EF was used, the attribution factor was 1. It is worth noting that this asset class had the highest emissions intensity of all classes, higher even than motor vehicles. This is surprising, given that these projects were exclusively solar PV installations.

Clearwater also estimated the avoided emissions of these projects. To do so, we started with the outstanding amount of the loan and converted that to installed capacity using a rate of $\$3/W_{dc}$ for small-scale projects ($<50kW_{dc}$) and \$2/W for larger-scale projects. We then used the web application PVWatts (National Renewable Energy Laboratory) to determine a production factor (kWh/kW_{dc}-year) for the system. This was used to calculate the total annual production of the system. The total annual production was then multiplied by the marginal emission factor for the eGRID subgrid where the project was located[3].

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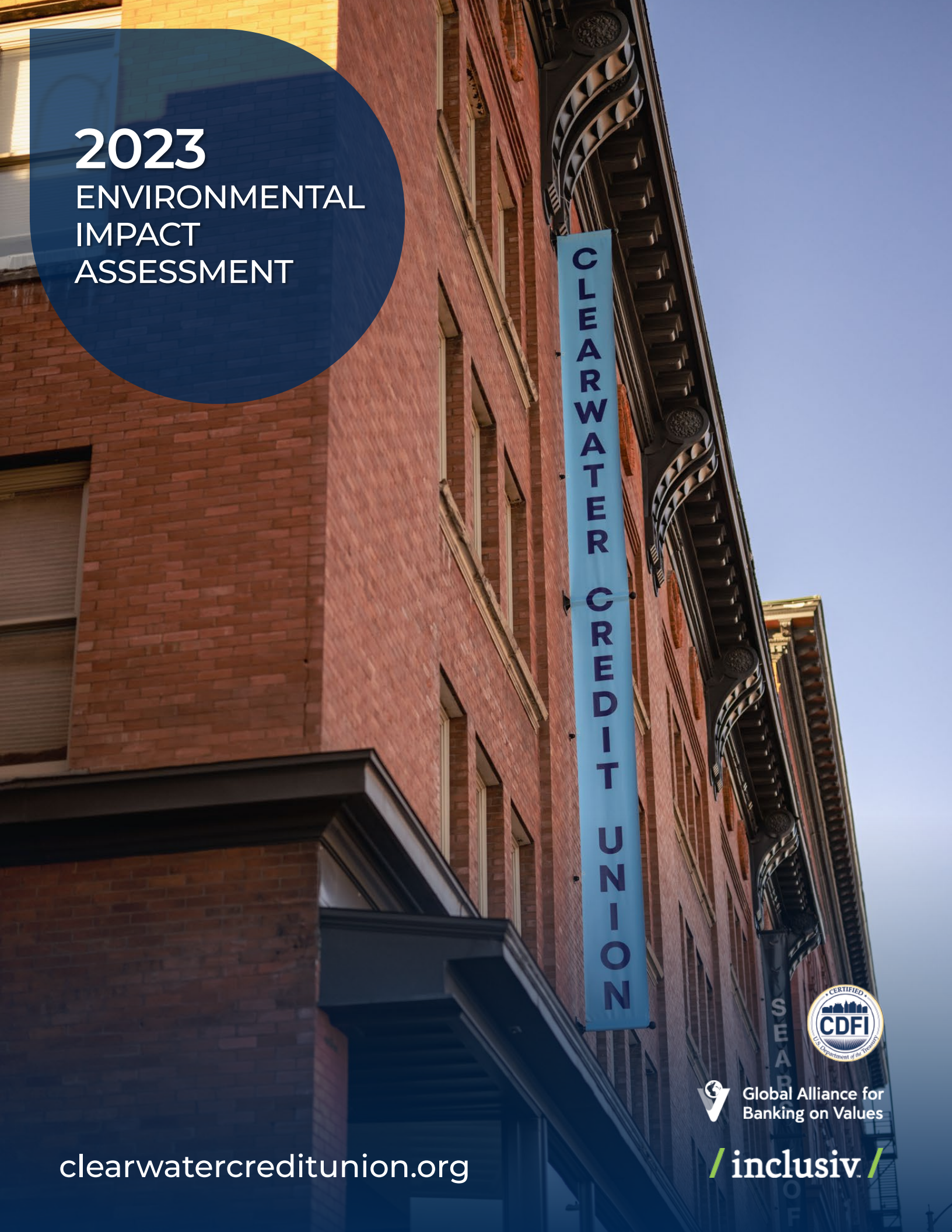
2023
ENVIRONMENTAL IMPACT ASSESSMENT



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