

# STARS 3.0

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## Benchmarking

January 2024



This document outlines the methodology used to create benchmarks for the [Sustainability Tracking, Assessment & Rating System](#) (STARS) Technical Manual, version 3.0.

## Methodology

Under STARS 3.0, an institution’s performance on certain indicators related to water use, energy use, greenhouse gas (GHG) emissions, and waste is assessed in relation to that of other institutions of the same basic type – the institution’s peer group. To facilitate these assessments, two data points are required for each peer group and indicator: a maximum threshold (the point at which points begin to accrue) and a benchmark (the point at which maximum points are earned). This report summarizes the thresholds and benchmarks to be used.

The figures were derived from the most recent annual data for each institution that had, as of August 1, 2023, published at least one report under STARS version 2.0, 2.1 or 2.2. Outliers and missing data were excluded from the analysis.

Square meters are defined as gross floor area of building space. Population is defined as the sum of full-time equivalent student enrollment and full-time equivalent employees.

Maximum thresholds were defined at the 95th percentile for each institution type. Benchmarks were defined at the 5th percentile for each institution type, with the exception of GHG emissions, for which the benchmark is zero. Median values are provided for context only.

## Results

### Water Use

#### Potable water use (liters) per square meter

Type <sup>1</sup>	Number	Maximum threshold	Median	Benchmark
Associate + <sup>2</sup>	37	1,528.54	672.52	57.06
Baccalaureate	103	1,854.82	696.41	108.00
Masters	90	1,725.37	762.62	201.52
Doctoral	226	2,011.47	945.48	361.86

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<sup>1</sup> The institution types listed in the table were used to define four peer groups for scoring purposes in the STARS 3.0 Technical Manual: Associate’s colleges, short-cycle institutions, and pre-tertiary schools; Baccalaureate colleges and boarding schools; Master’s colleges and universities; and Doctoral universities and research institutions.

<sup>2</sup> Institutions that self-identified as “Other” were included in the Associate category.

## Potable water use (liters) per person

Type	Number	Maximum threshold	Median	Benchmark
Associate +	37	24,195.14	7,069.94	598.76
Baccalaureate	103	103,201.80	37,147.36	3,459.19
Masters	90	57,784.16	20,171.36	3,136.05
Doctoral	226	62,529.61	28,970.86	4,135.03

## Energy Use

### Energy consumption (kWh) per square meter

Type	Number	Maximum threshold	Median	Benchmark
Associate +	38	697.70	247.28	148.67
Baccalaureate	104	536.51	287.76	144.25
Masters	90	428.23	232.63	103.34
Doctoral	230	688.33	339.90	123.19

### Energy consumption (kWh) per person

Type	Number	Maximum threshold	Median	Benchmark
Associate +	38	11,731.48	3,480.00	1,123.37
Baccalaureate	104	31,005.46	15,522.60	2,419.23
Masters	90	17,894.86	5,393.74	1,281.88
Doctoral	230	28,585.02	10,400.21	2,830.07

## GHG Emissions

### Scope 1 and 2 GHG emissions (kg) per square meter

Type	Number	Maximum threshold	Median	Benchmark
Associate +	33	127.66	39.32	0
Baccalaureate	90	130.81	63.73	0
Masters	86	141.36	49.57	0
Doctoral	219	198.61	90.27	0

## Scope 1 and 2 GHG emissions (kg) per person

Type	Number	Maximum threshold	Median	Benchmark
Associate +	33	1,668.00	446.87	0
Baccalaureate	90	7,276.34	3,228.81	0
Masters	86	4,699.04	1,383.18	0
Doctoral	219	8,168.39	2,548.99	0

## Waste

### Non-hazardous waste generated (kg) per person

Type	Number	Maximum threshold	Median	Benchmark
Associate +	33	94.25	41.03	15.73
Baccalaureate	98	556.39	230.22	48.73
Masters	84	275.17	111.83	26.08
Doctoral	222	321.62	118.79	24.14

### Non-hazardous waste generated (kg) per square meter

Type	Number	Maximum threshold	Median	Benchmark
Associate +	33	7.94	3.60	1.64
Baccalaureate	98	12.12	4.31	2.09
Masters	84	14.12	4.10	1.46
Doctoral	222	10.99	4.13	1.37