

THE ANN ARBOR PUBLIC SCHOOLS GREENHOUSE GAS INVENTORY

Elementary and K-8 Report

Greenhouse Gas Inventory (GHGI)

The **AAPS GHGI** is a report that quantifies the amount of direct and indirect greenhouse gas emissions produced by the district. Fiscal Year (FY) 2010 (July 1, 2009-June 30, 2010) was the first complete data set at AAPS and is used as the baseline year in the GHGI. The baseline year is the year against which progress in reducing emissions is measured.

For this FY 2010-2023 report, the sources of emissions measured include: Scope 1 emissions of natural gas, diesel, gasoline, and site sequestration; Scope 2 emissions of electricity; and Scope 3 emissions of water. In FY 2023, results indicated AAPS's greenhouse gas emissions sources were 55% from electricity, 39% from natural gas, 6% from diesel fuel, and less than 1% from water and gasoline. In addition, AAPS sites (grass, forests, and ponds) removed 2,200 metric tons of CO₂ from the atmosphere, equivalent to 6% of the District's annual emissions.

Since FY 2010, AAPS has seen a 24% reduction in total emissions, a 26% reduction in emissions per student, and a 25% reduction in emissions per 1,000 square feet.

Mission

The Ann Arbor Public Schools is committed to care for the environment, to model and achieve an environmentally sustainable existence. We demonstrate this commitment, both through our critical mission of educating generations of students as strong stewards of the environment, and also in living an environmental commitment with every decision across every area of the organization.

Vision

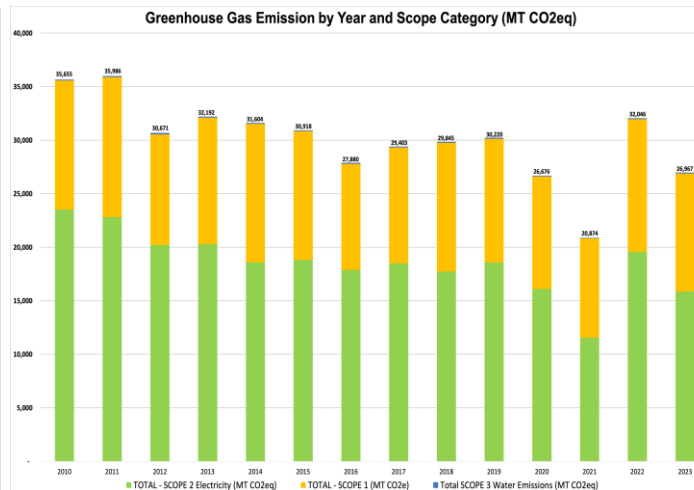
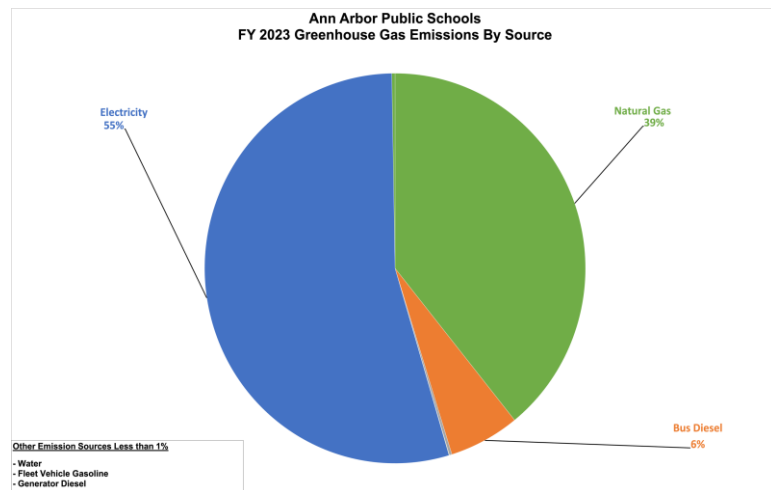
In all decisions, we embody and live the deeply held value of caring for the earth and our environment. Individual, team and district decisions are consistent with care for the earth.

AAPS Environmental Sustainability Framework

In December 2022, the Ann Arbor Public Schools adopted an Environmental Sustainability (ES) Framework. Advised by the District's Environmental Sustainability Taskforce and guided by Board Policy 8000: Environmental Sustainability. The AAPS ES Framework recognizes that while AAPS has been engaged in environmental sustainability efforts for decades, this is a critical time to renew, deepen and align those efforts. The current and looming climate crisis requires continued efforts to organize and institutionalize systemic changes. Included in the ES Framework is a commitment to conduct a greenhouse gas inventory annually.

View the AAPS Environmental Sustainability Framework here:

<https://www.a2schools.org/Page/18978>



The Intergovernmental Panel on Climate Change (IPCC) of the United Nations defines Scope 1, 2 and 3 emissions as:

'Scope 1' indicates direct greenhouse gas (GHG) emissions that are from sources owned or controlled by the reporting entity. 'Scope 2' indicates indirect GHG emissions associated with the production of electricity, heat, or steam purchased by the reporting entity. 'Scope 3' indicates all other indirect emissions, i.e., emissions associated with the extraction and production of purchased materials, fuels, and services, including transport in vehicles not owned or controlled by the reporting entity, outsourced activities, waste disposal, etc. (WBCSD and WRI, 2004).

Scope 1 - Direct Emissions

Scope 1 emissions are atmospheric GHG emissions directly generated by AAPS. The majority of these emissions at AAPS come from the burning of natural gas for space and water heating, as well as diesel and unleaded gasoline for buses and fleet vehicles.

A plan to outline, detail and confirm interim targets will be developed. Electrification of buildings and vehicles will be central elements of the plan.

GOAL: The AAPS will eliminate Scope 1 emissions by 2035.

Scope 2 - Indirect Energy Emissions

Scope 2 emissions are atmospheric GHG emissions attributed to purchased utilities. At AAPS, these are the emissions associated with purchased grid electricity. Currently AAPS uses approximately 30,000 megawatt hours of electricity annually. By combining on-site solar production, the Michigan Renewable Portfolio Standard, and utility-scale renewable energy from DTE Energy, AAPS will eliminate Scope 2 emissions by 2024.

In the last three years, AAPS has been installing 8 large rooftop solar arrays that when fully operational in 2023, will generate approximately 6% of the District's electricity, or 1800 megawatt hours annually.

In addition, the State of Michigan's Renewable Portfolio Standard (RPS) required all utilities to provide 15% of their electricity from renewable sources by 2021. This accounts for 4500 megawatt hours annually at AAPS.

To quickly secure an additional 80% Scope 2 emissions reduction, AAPS entered a 20-year contract with DTE Energy and the MIGreen Power program to supply 24,000 megawatt hours annually to AAPS from newly constructed utility-scale wind and solar projects built in Michigan by 2024.

GOAL: The AAPS will eliminate Scope 2 emissions by 2024.

Scope 3 - Other Indirect Emissions

Scope 3 emissions are atmospheric GHG emissions attributed to a wide range of other activities, including purchased goods and services, construction materials, waste, commuting and financial investments. For many institutions and businesses, Scope 3 emissions are the largest of the three scopes of GHG emissions.

At AAPS, many of the Scope 3 emissions are associated with purchased items such as laptops and other technology, books, paper, construction materials and other supplies - as well as contracted services such as lawn maintenance and snow removal, custodial and food services and other services.

Measuring Scope 3 emissions is challenging and requires an accounting of both Upstream carbon emissions (mining, logging, manufacturing, packaging, transportation, etc.) and Downstream carbon emissions (product use, disposal, etc.). While the global community is developing methods for calculating and reporting Scope 3 emissions, it is impossible at this time to accurately calculate the district's Scope 3 emissions for all areas.

Community partnerships will be critical in reducing Scope 3 emissions as many of the solutions are beyond the district's control and will require transforming the marketplace for goods and services to carbon neutrality. This effort will require creative strategies working at scale across our city, county, region, nation and world.

AAPS will continue to collaborate with local partner institutions to better measure, track and reduce Scope 3 emissions.

GOAL: In the 2023-2024 school year, develop purchasing and construction guidelines that reflect the district's commitments to reducing Scope 3 emissions and begin piloting the new guidelines in 2024.



Terms	Definitions
<i>100 Cubic Feet (CCF)</i>	A common unit of measurement for natural gas.
<i>Carbon Dioxide (CO2)</i>	A heat-trapping chemical compound that arises due to the burning of fossil fuels and contains one carbon atom double bonded with two oxygen atoms per molecule
<i>Metric Tons Carbon Dioxide Equivalent (MT CO2eq)</i>	A unit of measurement for emissions of greenhouse gases.
<i>CO2 Sequestration</i>	The process of capturing and storing carbon dioxide from the atmosphere.
<i>Greenhouse Gases</i>	Gases in the atmosphere such as water vapor, carbon dioxide, methane, and nitrous oxide that can absorb infrared radiation, trapping heat in the atmosphere. This greenhouse effect means that emissions of greenhouse gases due to human activity cause global warming.
<i>Kilogallon (kgal)</i>	A unit of measurement for volume that is equal to 1000 gallons.
<i>Kilowatt- Hour (kWh)</i>	A measurement of electrical energy that is equal to a power consumption of 1,000 watts for 1 hour.
<i>Scope 1 Emissions</i>	Direct greenhouse gas emissions that are from sources owned or controlled by the reporting entity.
<i>Scope 2 Emissions</i>	Indirect greenhouse gas emissions associated with the production of electricity, heat, or steam purchased by the reporting entity.
<i>Scope 3 Emissions</i>	All other indirect greenhouse gas emissions, i.e., emissions associated with the extraction and production of purchased materials, fuels, and services, including transport in vehicles not owned or controlled by the reporting entity, outsourced activities, waste disposal, etc.

Conversion Factors for MT CO₂eq Emissions Calculations

SCOPE 1

Emission Source	Factor	Units
Natural Gas	0.00671	MT CO ₂ eq/CCF
Diesel Fuel	0.01021	MT CO ₂ eq/gal
Gasoline 87 Octane 10% Ethanol	0.00706	MT CO ₂ eq/gal
Mowed Grass Sequestration	-0.80	MT CO ₂ eq/acre
Average Forest Sequestration	-2.50	MT CO ₂ eq/acre
Pond/Wetland Sequestration	-80.00	MT CO ₂ eq/acre

SCOPE 2

Electricity (2010)	0.000769	MT CO ₂ eq/kWh
Electricity (2011)	0.000759	MT CO ₂ eq/kWh
Electricity (2012)	0.000746	MT CO ₂ eq/kWh
Electricity (2013)	0.000786	MT CO ₂ eq/kWh
Electricity (2014)	0.000736	MT CO ₂ eq/kWh
Electricity (2015)	0.000726	MT CO ₂ eq/kWh
Electricity (2016)	0.000714	MT CO ₂ eq/kWh
Electricity (2017)	0.000678	MT CO ₂ eq/kWh
Electricity (2018)	0.000682	MT CO ₂ eq/kWh
Electricity (2019)	0.000691	MT CO ₂ eq/kWh
Electricity (2020)	0.000649	MT CO ₂ eq/kWh
Electricity (2021)	0.000527	MT CO ₂ eq/kWh
Electricity (2022)	0.000602	MT CO ₂ eq/kWh
Electricity (2023)	0.000526	MT CO ₂ eq/kWh

SCOPE 3

Water	3.179	MT CO ₂ e/MG
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Greenhouse Gas Inventory

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	52,765	52,765	52,765	52,765	52,765	52,765	52,765	52,765	52,765	52,765	52,765	52,765	52,765	52,765
Student Enrollment	297	317	297	296	317	301	293	300	313	301	295	288	323	341
CO2 Sequestration (tons)***	-11.8	-11.8	-11.8	-11.8	-11.8	-11.8	-11.8	-11.8	-11.8	-11.8	-11.8	-11.8	-11.8	-11.8
ELECTRICITY														
kWh	322,881	329,309	289,735	254,052	233,379	242,620	209,855	255,586	266,481	437,121	511,268	198,641	273,445	271,405
kWh/1000 SF	6,119	6,241	5,491	4,815	4,423	4,598	3,977	4,844	5,050	8,284	9,690	3,765	5,182	5,144
kWh/student	1,087	1,039	976	858	736	806	716	852	851	1,452	1,733	690	847	796
MT CO2eq	248	250	216	200	172	176	150	173	182	302	332	105	165	143
NATURAL GAS														
CCF	21,846	23,183	15,664	18,409	27,749	23,261	22,281	23,030	23,014	26,348	21,923	21,782	25,786	21,388
CCF/1000 SF	414	439	297	349	526	441	422	436	436	499	415	413	489	405
CCF/student	74	73	53	62	88	77	76	77	74	88	74	76	80	63
MT CO2eq	147	156	105	124	186	156	150	155	154	177	147	146	173	144
WATER														
kgal	213	242	215	209	201	200	211	209	228	239	166	320	977	1152
gal/ 1000 SF	4.04	4.58	4.08	3.96	3.82	3.80	4.00	3.96	4.32	4.52	3.15	6.06	18.51	21.83
gal/student	718	762	725	706	635	665	720	696	729	793	563	1110	3024	3378
MT CO2eq	0.678	0.768	0.685	0.664	0.640	0.637	0.671	0.663	0.725	0.759	0.528	1.016	3.105	3.662
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	384	395	310	312	347	321	288	317	325	468	468	240	329	278
MT CO2eq/1000 SF	7.27	7.48	5.88	5.92	6.57	6.09	5.46	6.00	6.16	8.87	8.86	4.55	6.23	5.27
MT CO2eq/student	1.29	1.24	1.04	1.05	1.09	1.07	0.98	1.06	1.04	1.55	1.59	0.83	1.02	0.82
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning ** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

Greenhouse Gas Inventory

A cartoon illustration of a brown eagle with a white head and neck. It has a large yellow beak and is standing with its wings spread. A red banner with the word 'ALLEN' in white capital letters is draped across its chest. The eagle is standing on a small patch of green grass.

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	65,388	65,388	65,388	65,388	65,388	65,388	65,388	65,388	65,388	65,388	65,388	65,388	65,388	65,388
Student Enrollment	384	387	387	377	370	389	388	402	394	414	434	425	372	407
CO2 Sequestration (tons)***	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1
ELECTRICITY														
kWh	342,798	318,853	315,202	274,496	252,506	290,438	264,464	291,065	301,472	333,996	340,872	242,644	352,672	338,160
kWh/1000 SF	5,243	4,876	4,820	4,198	3,862	4,442	4,045	4,451	4,611	5,108	5,213	3,711	5,394	5,172
kWh/student	893	824	814	728	682	747	682	724	765	807	785	571	948	831
MT CO2eq	264	242	235	216	186	211	189	197	206	231	221	128	212	178
NATURAL GAS														
CCF	26,840	30,502	23,712	27,959	34,817	28,455	26,975	30,948	38,747	41,104	35,213	32,490	44,210	32,675
CCF/1000 SF	410	466	363	428	532	435	413	473	593	629	539	497	676	500
CCF/student	70	79	61	74	94	73	70	77	98	99	81	76	119	80
MT CO2eq	180	205	159	188	234	191	181	208	260	276	236	218	297	219
WATER														
kgal	373	422	377	386	317	202	383	254	586	611	470	335	451	513
gal/1000 SF	5.71	6.45	5.77	5.91	4.84	3.09	5.86	3.88	8.96	9.34	7.19	5.13	6.90	7.84
gal/student	972	1090	975	1025	856	520	987	632	1488	1475	1083	789	1212	1260
MT CO2eq	1.186	1.341	1.199	1.228	1.006	0.643	1.217	0.807	1.863	1.941	1.494	1.066	1.434	1.630
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	440	443	390	399	415	397	366	401	462	503	454	342	505	394
MT CO2eq/1000 SF	6.73	6.77	5.97	6.11	6.35	6.08	5.60	6.13	7.07	7.70	6.94	5.23	7.73	6.02
MT CO2eq/student	1.15	1.14	1.01	1.06	1.12	1.02	0.94	1.00	1.17	1.22	1.05	0.80	1.36	0.97
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning								
						** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

Greenhouse Gas Inventory

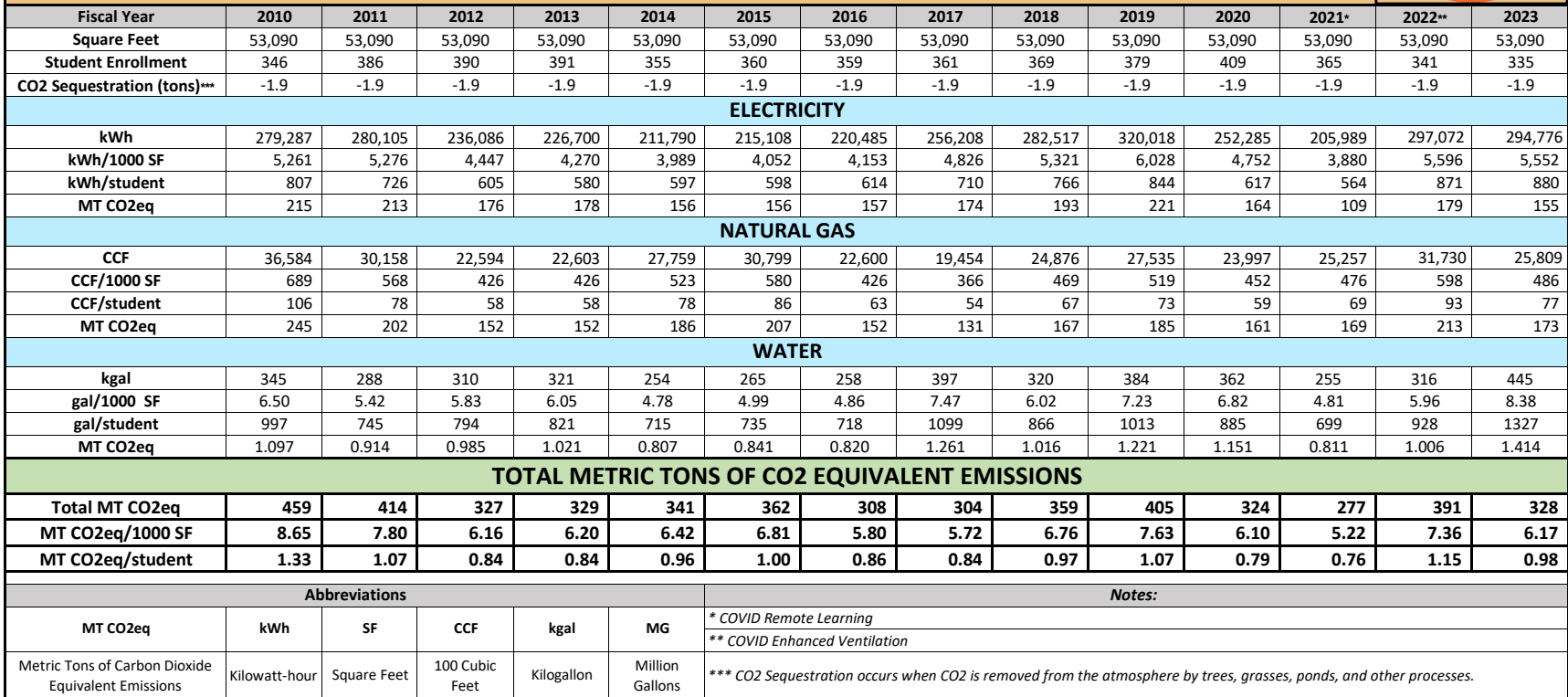
Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	36,868	36,868	36,868	36,868	36,868	36,868	36,868	36,868	36,868	36,868	36,868	36,868	36,868	36,868
Student Enrollment	309	297	289	294	289	326	343	336	336	351	357	332	295	294
CO2 Sequestration (tons)***	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9
ELECTRICITY														
kWh	139,891	128,200	124,730	105,903	95,161	102,060	94,546	137,006	111,642	103,870	121,600	73,415	110,954	209,909
kWh/1000 SF	3,794	3,477	3,383	2,872	2,581	2,768	2,564	3,716	3,028	2,817	3,298	1,991	3,009	5,694
kWh/student	453	432	432	360	329	313	276	408	332	296	341	221	376	714
MT CO2eq	108	97	93	83	70	74	68	93	76	72	79	39	67	110
NATURAL GAS														
CCF	32,014	35,533	29,018	34,205	32,971	34,071	22,608	25,719	26,256	29,942	30,567	25,859	49,337	34,435
CCF/1000 SF	868	964	787	928	894	924	613	698	712	812	829	701	1,338	934
CCF/student	104	120	100	116	114	105	66	77	78	85	86	78	167	117
MT CO2eq	215	238	195	230	221	229	152	173	176	201	205	174	331	231
WATER														
kgal	181	344	212	228	169	212	192	210	178	135	9	1	2	35
gal/1000 SF	4.90	9.34	5.74	6.20	4.59	5.76	5.19	5.68	4.83	3.65	0.25	0.04	0.06	0.94
gal/student	585	1160	733	777	586	652	558	624	530	383	25	4	8	117
MT CO2eq	0.575	1.095	0.673	0.726	0.539	0.675	0.609	0.666	0.566	0.428	0.029	0.004	0.007	0.110
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	322	336	288	313	291	302	219	265	252	272	283	211	397	341
MT CO2eq/1000 SF	8.74	9.11	7.80	8.48	7.89	8.20	5.94	7.19	6.83	7.38	7.68	5.73	10.77	9.24
MT CO2eq/student	1.04	1.13	0.99	1.06	1.01	0.93	0.64	0.79	0.75	0.78	0.79	0.64	1.35	1.16
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning								
						** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

Greenhouse Gas Inventory

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	88,513	88,513	88,513	88,513	88,513	88,513	88,513	88,513	88,513	88,513	88,513	88,513	88,513	88,513
Student Enrollment	487	501	501	512	513	500	540	528	518	521	521	535	513	519
CO2 Sequestration (tons)***	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7
ELECTRICITY														
kWh	611,924	541,931	518,011	493,667	468,189	514,481	539,047	629,552	419,292	223,904	182,768	32,360	189,899	213,348
kWh/1000 SF	6,913	6,123	5,852	5,577	5,289	5,812	6,090	7,113	4,737	2,530	2,065	366	2,145	2,410
kWh/student	1,257	1,082	1,034	964	913	1,029	998	1,192	809	430	351	60	370	411
MT CO2eq	471	411	386	388	345	374	385	427	286	155	119	17	114	112
NATURAL GAS														
CCF	42,469	50,712	44,989	47,046	54,273	56,173	43,210	40,958	53,777	65,167	48,795	46,441	53,756	52,032
CCF/1000 SF	480	573	508	532	613	635	488	463	608	736	551	525	607	588
CCF/student	87	101	90	92	106	112	80	78	104	125	94	87	105	100
MT CO2eq	285	340	302	316	364	377	290	275	361	437	327	312	361	349
WATER														
kgal	1,711	1,292	2,709	2,268	1,769	1,919	2,432	2,762	2,262	2,016	1,518	99	622	1,554
gal/1000 SF	19.33	14.59	30.60	25.63	19.98	21.68	27.48	31.20	25.56	22.78	17.15	1.12	7.03	17.56
gal/student	3513	2578	5407	4430	3448	3838	4504	5231	4367	3869	2913	186	1212	2994
MT CO2eq	5.439	4.107	8.611	7.211	5.623	6.100	7.731	8.780	7.191	6.409	4.825	0.316	1.977	4.940
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	757	752	693	707	711	753	679	707	650	595	447	325	473	463
MT CO2eq/1000 SF	8.56	8.50	7.83	7.99	8.03	8.51	7.67	7.98	7.35	6.72	5.05	3.67	5.35	5.23
MT CO2eq/student	1.55	1.50	1.38	1.38	1.39	1.51	1.26	1.34	1.26	1.14	0.86	0.61	0.92	0.89
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning								
						** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalents Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	48,564	48,564	48,564	48,564	63,776	63,776	63,776	63,776	63,776	63,776	63,776	63,776	63,776	82,369
Student Enrollment	275	259	232	218	189	403	527	599	606	631	634	630	591	621
CO2 Sequestration (tons)***	-12.4	-12.4	-12.4	-12.4	-12.4	-12.4	-12.4	-12.4	-12.4	-12.4	-12.4	-12.4	-12.4	-12.4
ELECTRICITY														
kWh	282,691	282,531	234,461	184,756	197,555	248,547	310,330	373,695	351,014	292,674	270,963	255,344	400,657	245,370
kWh/1000 SF	5,821	5,818	4,828	3,804	3,098	3,897	4,866	5,859	5,504	4,589	4,249	4,004	6,282	2,979
kWh/student	1,028	1,091	1,011	848	1,045	617	589	624	579	464	427	405	678	395
MT CO2eq	217	214	175	145	145	180	222	253	239	202	176	135	241	129
NATURAL GAS														
CCF	41,068	42,184	34,670	37,434	50,496	29,518	24,582	49,475	53,153	52,562	42,254	51,222	49,884	40,974
CCF/1000 SF	846	869	714	771	792	463	385	776	833	824	663	803	782	497
CCF/student	149	163	149	172	267	73	47	83	88	83	67	81	84	66
MT CO2eq	276	283	233	251	339	198	165	332	357	353	284	344	335	275
WATER														
kgal	347	273	258	285	251	466	505	519	396	443	234	658	882	583
gal/1000 SF	7.15	5.62	5.31	5.87	3.94	7.31	7.92	8.13	6.20	6.95	3.67	10.32	13.82	7.07
gal/student	1262	1053	1111	1307	1330	1157	958	866	653	703	369	1044	1492	938
MT CO2eq	1.103	0.867	0.819	0.906	0.799	1.483	1.606	1.649	1.257	1.410	0.744	2.092	2.803	1.852
SOLAR														
kWh											12,569	12,569	196,926	73,576
kWh/1000 SF											197	197	3,088	893
kWh/student											20	20	333	118
MT CO2eq avoidance****											-8	-7	-119	-39
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	482	486	396	385	473	368	376	575	585	544	448	468	566	393
MT CO2eq/1000 SF	9.92	10.01	8.15	7.93	7.41	5.76	5.89	9.01	9.17	8.53	7.02	7.34	8.88	4.78
MT CO2eq/student	1.75	1.88	1.71	1.77	2.50	0.91	0.71	0.96	0.97	0.86	0.71	0.74	0.96	0.63
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning ** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes. ****Not included in Total MT CO2eq								

A Greenhouse Gas Inventory (GHGI) is a report that quantifies the amount of direct and indirect greenhouse gas emissions produced by an organization. This document captures an individual AAPS school's electricity, natural gas, and water data to calculate the school's carbon emissions.



Greenhouse Gas Inventory

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	60,192	60,192	60,192	60,192	60,192	60,192	60,192	60,192	60,192	60,192	60,192	60,192	60,192	60,192
Student Enrollment	315	369	378	352	328	311	302	311	306	295	288	262	261	229
CO2 Sequestration (tons)***	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
ELECTRICITY														
kWh	484,482	449,468	448,187	399,172	326,585	367,997	361,728	402,172	508,662	483,806	396,916	304,767	351,316	226,074
kWh/1000 SF	8,049	7,467	7,446	6,632	5,426	6,114	6,010	6,681	8,451	8,038	6,594	5,063	5,837	3,756
kWh/student	1,538	1,218	1,186	1,134	996	1,183	1,198	1,293	1,662	1,640	1,378	1,163	1,346	987
MT CO2eq	373	341	334	314	240	267	258	273	347	334	258	161	211	119
NATURAL GAS														
CCF	12,903	12,428	9,358	11,828	15,217	13,170	9,428	16,037	17,001	18,229	17,949	16,207	19,688	13,205
CCF/1000 SF	214	206	155	197	253	219	157	266	282	303	298	269	327	219
CCF/student	41	34	25	34	46	42	31	52	56	62	62	62	75	58
MT CO2eq	87	83	63	79	102	88	63	108	114	122	120	109	132	89
WATER														
kgal	196	154	240	218	275	323	295	292	248	253	290	130	258	264
gal/1000 SF	3.26	2.55	3.99	3.63	4.58	5.37	4.90	4.84	4.12	4.19	4.81	2.16	4.29	4.38
gal/student	622	417	635	620	840	1039	976	938	809	856	1005	497	989	1151
MT CO2eq	0.623	0.489	0.763	0.694	0.875	1.027	0.937	0.927	0.787	0.803	0.920	0.414	0.820	0.838
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	450	415	388	384	333	347	313	371	452	448	369	260	335	198
MT CO2eq/1000 SF	7.47	6.90	6.45	6.38	5.54	5.76	5.19	6.17	7.51	7.43	6.13	4.32	5.56	3.30
MT CO2eq/student	1.43	1.12	1.03	1.09	1.02	1.11	1.03	1.19	1.48	1.52	1.28	0.99	1.28	0.87
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning								
						** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

Greenhouse Gas Inventory

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	60,992	60,992	60,992	60,992	60,992	60,992	60,992	60,992	65,826	65,826	65,826	65,826	65,826	65,826
Student Enrollment	423	428	418	413	414	448	470	468	521	535	512	468	446	497
CO2 Sequestration (tons)***	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2
ELECTRICITY														
kWh	307,225	301,978	258,091	222,944	218,531	275,632	253,048	261,066	165,457	228,620	355,794	229,167	360,160	294,663
kWh/1000 SF	5.037	4.951	4.232	3,655	3,583	4,519	4,149	4,280	2,514	3,473	5,405	3,481	5,471	4,476
kWh/student	726	706	617	540	528	615	538	558	318	427	695	490	808	593
MT CO2eq	236	229	193	175	161	200	181	177	113	158	231	121	217	155
NATURAL GAS														
CCF	12,903	12,428	9,358	11,828	15,217	34,890	40,579	30,713	36,196	36,242	31,548	33,615	35,274	33,846
CCF/1000 SF	212	204	153	194	249	572	665	504	550	551	479	511	536	514
CCF/student	31	29	22	29	37	78	86	66	69	68	62	72	79	68
MT CO2eq	87	83	63	79	102	234	272	206	243	243	212	226	237	227
WATER														
kgal	340	367	393	469	335	460	482	426	554	428	317	216	554	201
gal/ 1000 SF	5.58	6.01	6.44	7.69	5.49	7.54	7.90	6.98	8.41	6.50	4.82	3.28	8.41	3.05
gal/student	804	857	939	1135	808	1027	1025	909	1063	800	620	462	1241	404
MT CO2eq	1.082	1.166	1.248	1.491	1.064	1.463	1.531	1.353	1.760	1.360	1.008	0.687	1.760	0.638
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	323	313	255	255	263	434	453	383	356	401	442	346	454	382
MT CO2eq/1000 SF	5.29	5.12	4.19	4.18	4.31	7.12	7.43	6.28	5.41	6.10	6.72	5.25	6.90	5.80
MT CO2eq/student	0.76	0.73	0.61	0.62	0.63	0.97	0.96	0.82	0.68	0.75	0.86	0.74	1.02	0.77
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning								
						** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

A Greenhouse Gas Inventory (GHGI) is a report that quantifies the amount of direct and indirect greenhouse gas emissions produced by an organization. This document captures an individual AAPS school's electricity, natural gas, and water data to calculate the school's carbon emissions.

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	52,539	52,539	52,539	52,539	52,539	52,539	52,539	52,539	52,539	60,899	60,899	60,899	60,899	60,899
Student Enrollment	333	363	398	386	395	394	419	434	420	435	471	443	480	431
CO2 Sequestration (tons)***	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1
ELECTRICITY														
kWh	308,360	312,182	269,015	255,133	234,363	241,485	220,261	253,231	248,471	258,119	227,701	169,244	233,675	265,572
kWh/1000 SF	5,869	5,942	5,120	4,856	4,461	4,596	4,192	4,820	4,729	4,238	3,739	2,779	3,837	4,361
kWh/student	926	860	676	661	593	613	526	583	592	593	483	382	487	616
MT CO2eq	237	237	201	201	172	175	157	172	169	178	148	89	141	140
NATURAL GAS														
CCF	30,543	27,850	22,650	27,895	33,787	27,458	24,208	28,313	30,103	32,121	28,978	28,343	30,204	28,614
CCF/1000 SF	581	530	431	531	643	523	461	539	573	527	476	465	496	470
CCF/student	92	77	57	72	86	70	58	65	72	74	62	64	63	66
MT CO2eq	205	187	152	187	227	184	162	190	202	216	194	190	203	192
WATER														
kgal	134	247	192	320	236	140	70	80	79	82	45	89	242	166
gal/1000 SF	2.55	4.70	3.66	6.09	4.50	2.66	1.34	1.52	1.49	1.35	0.74	1.46	3.98	2.72
gal/student	402	680	483	830	598	355	168	184	187	189	95	201	505	384
MT CO2eq	0.426	0.785	0.611	1.018	0.752	0.445	0.223	0.254	0.250	0.262	0.143	0.283	0.771	0.527
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	437	419	348	384	395	355	315	357	367	389	337	275	339	327
MT CO2eq/1000 SF	8.32	7.98	6.63	7.30	7.51	6.75	5.99	6.79	6.98	6.39	5.54	4.51	5.57	5.37
MT CO2eq/student	1.31	1.16	0.87	0.99	1.00	0.90	0.75	0.82	0.87	0.89	0.72	0.62	0.71	0.76
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning								
						** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

A Greenhouse Gas Inventory (GHGI) is a report that quantifies the amount of direct and indirect greenhouse gas emissions produced by an organization. This document captures an individual AAPS school's electricity, natural gas, and water data to calculate the school's carbon emissions.

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	43,199	43,199	43,199	43,199	43,199	43,199	43,199	43,199	43,199	43,199	43,199	43,199	43,199	43,199
Student Enrollment	379	372	370	365	363	354	339	344	345	317	330	317	296	319
CO2 Sequestration (tons)***	-9.2	-9.2	-9.2	-9.2	-9.2	-9.2	-9.2	-9.2	-9.2	-9.2	-9.2	-9.2	-9.2	-9.2
ELECTRICITY														
kWh	255,131	277,132	237,192	180,819	176,006	180,199	159,105	184,636	206,345	183,142	170,589	140,736	219,995	238,110
kWh/1000 SF	5,906	6,415	5,491	4,186	4,074	4,171	3,683	4,274	4,777	4,239	3,949	3,258	5,093	5,512
kWh/student	673	745	641	495	485	509	469	537	598	578	517	444	743	746
MT CO2eq	196	210	177	142	130	131	114	125	141	127	111	74	132	125
NATURAL GAS														
CCF	20,541	22,058	14,307	15,955	21,364	18,435	19,019	21,989	23,651	22,541	20,460	19,373	33,699	23,199
CCF/1000 SF	475	511	331	369	495	427	440	509	547	522	474	448	780	537
CCF/student	54	59	39	44	59	52	56	64	69	71	62	61	114	73
MT CO2eq	138	148	96	107	143	124	128	148	159	151	137	130	226	156
WATER														
kgal	377	291	410	519	527	423	415	331	296	302	212	213	527	365
gal/1000 SF	8.72	6.74	9.50	12.02	12.20	9.79	9.62	7.65	6.85	6.99	4.90	4.93	12.19	8.44
gal/student	994	783	1109	1422	1452	1195	1225	961	857	952	641	672	1779	1143
MT CO2eq	1.198	0.926	1.304	1.650	1.676	1.345	1.321	1.051	0.940	0.960	0.672	0.677	1.674	1.159
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	326	350	265	242	265	247	233	265	291	270	239	196	351	273
MT CO2eq/1000 SF	7.55	8.10	6.14	5.59	6.14	5.71	5.40	6.13	6.74	6.24	5.54	4.53	8.13	6.32
MT CO2eq/student	0.86	0.94	0.72	0.66	0.73	0.70	0.69	0.77	0.84	0.85	0.73	0.62	1.19	0.86
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning ** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

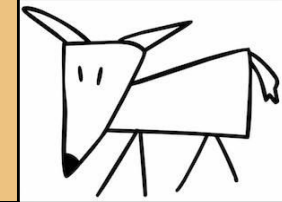
Greenhouse Gas Inventory



Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	62,117	62,117	62,117	62,117	62,117	62,117	62,117	62,117	62,117	62,117	62,117	62,117	62,117	62,117
Student Enrollment	335	359	366	349	338	331	318	356	351	383	389	340	390	374
CO2 Sequestration (tons)***	-86.6	-86.6	-86.6	-86.6	-86.6	-86.6	-86.6	-86.6	-86.6	-86.6	-86.6	-86.6	-86.6	-86.6
ELECTRICITY														
kWh	336,649	320,902	278,344	234,072	239,166	241,842	214,207	299,559	264,243	255,214	239,013	167,640	313,752	316,934
kWh/1000 SF	5,420	5,166	4,481	3,768	3,850	3,893	3,448	4,822	4,254	4,109	3,848	2,699	5,051	5,102
kWh/student	1,005	894	761	671	708	731	674	841	753	666	614	493	804	847
MT CO2eq	259	244	208	184	176	176	153	203	180	176	155	88	189	167
NATURAL GAS														
CCF	39,560	42,070	27,074	31,132	40,217	39,128	30,141	34,891	47,479	44,847	37,826	34,377	57,699	36,663
CCF/1000 SF	637	677	436	501	647	630	485	562	764	722	609	553	929	590
CCF/student	118	117	74	89	119	118	95	98	135	117	97	101	148	98
MT CO2eq	265	282	182	209	270	263	202	234	319	301	254	231	387	246
WATER														
kgal	304	264	436	418	361	597	375	451	556	384	443	339	528	560
gal/1000 SF	4.89	4.25	7.02	6.73	5.81	9.61	6.04	7.26	8.94	6.19	7.13	5.45	8.50	9.01
gal/student	907	736	1192	1198	1067	1804	1180	1267	1583	1003	1139	996	1354	1497
MT CO2eq	0.966	0.840	1.387	1.329	1.146	1.898	1.193	1.433	1.766	1.222	1.408	1.077	1.679	1.779
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	439	440	304	308	360	353	270	352	414	392	324	233	491	328
MT CO2eq/1000 SF	7.06	7.08	4.90	4.95	5.80	5.69	4.34	5.67	6.66	6.31	5.21	3.76	7.91	5.28
MT CO2eq/student	1.31	1.23	0.83	0.88	1.07	1.07	0.85	0.99	1.18	1.02	0.83	0.69	1.26	0.88
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning ** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

Greenhouse Gas Inventory

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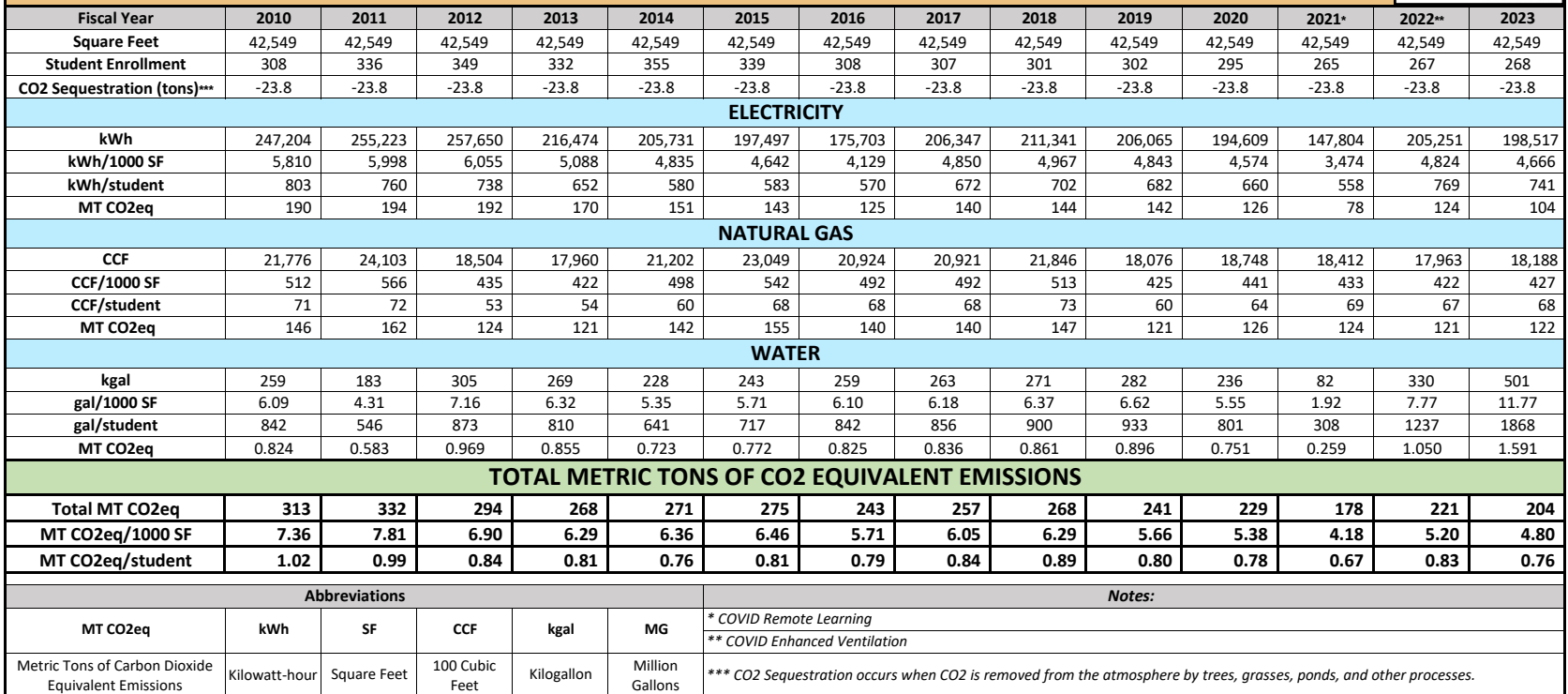
Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	58,032	58,032	58,032	58,032	58,032	58,032	58,032	58,032	58,032	58,032	58,032	58,032	58,032	58,032
Student Enrollment	416	416	421	419	399	408	367	333	336	342	363	354	336	368
CO2 Sequestration (tons)***	-10.7	-10.7	-10.7	-10.7	-10.7	-10.7	-10.7	-10.7	-10.7	-10.7	-10.7	-10.7	-10.7	-10.7
ELECTRICITY														
kWh	294,884	285,672	253,445	238,809	240,221	257,452	223,112	192,455	221,772	235,199	198,683	137,173	177,456	154,140
kWh/1000 SF	5,081	4,923	4,367	4,115	4,139	4,436	3,845	3,316	3,822	4,053	3,424	2,364	3,058	2,656
kWh/student	709	687	602	570	602	631	608	578	660	688	547	387	528	419
MT CO2eq	227	217	189	188	177	187	159	130	151	163	129	72	107	81
NATURAL GAS														
CCF	28,753	29,548	23,064	25,113	30,095	32,464	27,336	26,321	50,420	40,370	38,563	32,088	35,812	27,424
CCF/1000 SF	495	509	397	433	519	559	471	454	869	696	665	553	617	473
CCF/student	69	71	55	60	75	80	74	79	150	118	106	91	107	75
MT CO2eq	193	198	155	169	202	218	183	177	338	271	259	215	240	184
WATER														
kgal	388	279	414	444	456	489	476	443	390	459	416	244	365	563
gal/1000 SF	6.69	4.80	7.13	7.64	7.85	8.43	8.21	7.63	6.72	7.91	7.16	4.20	6.28	9.70
gal/student	933	670	982	1058	1142	1199	1298	1330	1160	1342	1145	688	1085	1529
MT CO2eq	1.233	0.886	1.315	1.410	1.448	1.555	1.514	1.408	1.239	1.459	1.321	0.774	1.159	1.789
SOLAR														
kWh													66,307	84,209
kWh/1000 SF													1,143	1,451
kWh/student													197	229
MT CO2eq avoidance****													-40	-44
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	410	405	334	347	369	396	334	298	480	424	378	278	338	256
MT CO2eq/1000 SF	7.07	6.98	5.76	5.98	6.37	6.82	5.75	5.13	8.27	7.31	6.52	4.78	5.82	4.41
MT CO2eq/student	0.99	0.97	0.79	0.83	0.93	0.97	0.91	0.89	1.43	1.24	1.04	0.78	1.00	0.70
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning								
						** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								
						****Not included in Total MT CO2eq								

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Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	52,200	52,200	52,200	52,200	52,200	52,200	52,200	52,200	57,034	57,034	57,034	57,034	57,034	57,034
Student Enrollment	415	408	412	446	444	441	483	494	504	523	522	488	501	520
CO2 Sequestration (tons)***	-7.4	-7.4	-7.4	-7.4	-7.4	-7.4	-7.4	-7.4	-7.4	-7.4	-7.4	-7.4	-7.4	-7.4
ELECTRICITY														
kWh	399,866	408,477	351,046	309,586	302,140	316,191	286,129	351,646	468,700	506,350	448,715	357,506	482,644	470,081
kWh/1000 SF	7,660	7,825	6,725	5,931	5,788	6,057	5,481	6,737	8,218	8,878	7,868	6,268	8,462	8,242
kWh/student	964	1,001	852	694	680	717	592	712	930	968	860	733	963	904
MT CO2eq	307	310	262	243	222	230	204	238	320	350	291	188	291	247
NATURAL GAS														
CCF	30,728	29,182	27,730	25,524	34,799	30,235	31,017	41,636	39,223	46,563	42,796	39,805	42,731	37,442
CCF/1000 SF	589	559	531	489	667	579	594	798	688	816	750	698	749	656
CCF/student	74	72	67	57	78	69	64	84	78	89	82	82	85	72
MT CO2eq	206	196	186	171	234	203	208	279	263	312	287	267	287	251
WATER														
kgal	272	256	277	312	316	328	354	370	428	509	392	161	503	592
gal/1000 SF	5.21	4.90	5.30	5.97	6.05	6.28	6.78	7.09	7.50	8.93	6.87	2.83	8.81	10.38
gal/student	656	627	671	699	711	743	732	750	849	974	750	331	1003	1138
MT CO2eq	0.865	0.814	0.879	0.991	1.004	1.042	1.124	1.177	1.360	1.619	1.245	0.513	1.598	1.882
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	507	499	441	408	450	426	406	512	577	657	572	449	572	493
MT CO2eq/1000 SF	9.72	9.57	8.46	7.82	8.61	8.16	7.78	9.80	10.11	11.51	10.03	7.87	10.02	8.64
MT CO2eq/student	1.22	1.22	1.07	0.92	1.01	0.97	0.84	1.04	1.14	1.26	1.10	0.92	1.14	0.95
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning ** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

A Greenhouse Gas Inventory (GHGI) is a report that quantifies the amount of direct and indirect greenhouse gas emissions produced by an organization. This document captures an individual AAPS school's electricity, natural gas, and water data to calculate the school's carbon emissions.



Greenhouse Gas Inventory



Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	59,009	59,009	59,009	59,009	59,009	59,009	59,009	59,009	59,009	59,009	59,009	59,009	59,009	59,009
Student Enrollment	467	421	415	453	433	477	475	501	506	524	532	494	466	440
CO2 Sequestration (tons)***	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7	-3.7
ELECTRICITY														
kWh	414,821	419,381	358,240	307,659	295,028	303,670	290,694	243,103	232,969	262,721	272,544	241,824	326,952	281,582
kWh/1000 SF	7.03	7.11	6.07	5.21	5.00	5.15	4.93	4.12	3.95	4.45	4.62	4.10	5.54	4.77
kWh/student	888	996	863	679	681	637	612	485	460	501	512	490	702	640
MT CO2eq	319	318	267	242	217	220	208	165	159	182	177	127	197	148
NATURAL GAS														
CCF	21,736	21,121	17,596	21,028	23,884	39,514	24,327	26,817	29,088	34,512	39,493	30,693	32,051	25,527
CCF/1000 SF	368	358	298	356	405	670	412	454	493	585	669	520	543	433
CCF/student	47	50	42	46	55	83	51	54	57	66	74	62	69	58
MT CO2eq	146	142	118	141	160	265	163	180	195	232	265	206	215	171
WATER														
kgal	642	295	274	269	271	325	335	299	326	327	229	71	320	369
gal/1000 SF	10.88	4.99	4.64	4.56	4.59	5.51	5.67	5.06	5.52	5.55	3.88	1.20	5.41	6.24
gal/student	1375	700	660	594	626	682	705	596	644	625	430	143	686	838
MT CO2eq	2.041	0.937	0.870	0.856	0.862	1.033	1.064	0.950	1.036	1.041	0.727	0.225	1.016	1.171
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	463	457	382	380	375	483	368	342	351	410	439	330	409	317
MT CO2eq/1000 SF	7.85	7.75	6.48	6.44	6.35	8.18	6.24	5.80	5.95	6.96	7.44	5.59	6.93	5.37
MT CO2eq/student	0.99	1.09	0.92	0.84	0.86	1.01	0.77	0.68	0.69	0.78	0.82	0.67	0.88	0.72
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning ** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

A Greenhouse Gas Inventory (GHGI) is a report that quantifies the amount of direct and indirect greenhouse gas emissions produced by an organization. This document captures an individual AAPS school's electricity, natural gas, and water data to calculate the school's carbon emissions.

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	59,970	59,970	59,970	59,970	59,970	59,970	59,970	59,970	59,970	59,970	59,970	59,970	59,970	59,970
Student Enrollment	346	347	356	334	348	336	318	329	319	335	365	337	357	374
CO2 Sequestration (tons)***	-32.3	-32.3	-32.3	-32.3	-32.3	-32.3	-32.3	-32.3	-32.3	-32.3	-32.3	-32.3	-32.3	-32.3
ELECTRICITY														
kWh	639,161	621,365	611,939	539,988	566,960	626,768	539,382	625,777	492,206	522,584	444,211	341,239	492,381	464,106
kWh/1000 SF	10,658	10,361	10,204	9,004	9,454	10,451	8,994	10,435	8,208	8,714	7,407	5,690	8,210	7,739
kWh/student	1,847	1,791	1,719	1,617	1,629	1,865	1,696	1,902	1,543	1,560	1,217	1,013	1,379	1,241
MT CO2eq	492	472	457	424	417	455	385	424	336	361	288	180	296	244
NATURAL GAS														
CCF	22,143	15,390	18,425	16,185	27,234	16,606	11,311	17,528	22,312	22,533	15,166	15,311	19,268	16,854
CCF/1000 SF	369	257	307	270	454	277	189	292	372	376	253	255	321	281
CCF/student	64	44	52	48	78	49	36	53	70	67	42	45	54	45
MT CO2eq	149	103	124	109	183	111	76	118	150	151	102	103	129	113
WATER														
kgal	285	473	452	339	353	286	264	305	244	256	206	100	393	353
gal/1000 SF	4.76	7.89	7.54	5.65	5.88	4.77	4.41	5.08	4.07	4.27	3.44	1.66	6.55	5.89
gal/student	825	1364	1269	1014	1013	851	831	926	765	764	565	295	1101	944
MT CO2eq	0.907	1.504	1.437	1.077	1.121	0.909	0.841	0.968	0.776	0.813	0.655	0.316	1.250	1.123
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	609	544	549	502	569	535	430	511	454	481	358	251	395	326
MT CO2eq/1000 SF	10.15	9.07	9.16	8.37	9.49	8.92	7.16	8.51	7.57	8.02	5.98	4.18	6.58	5.44
MT CO2eq/student	1.76	1.57	1.54	1.50	1.63	1.59	1.35	1.55	1.42	1.44	0.98	0.74	1.11	0.87
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning								
						** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

Greenhouse Gas Inventory

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	56,888	56,888	56,888	56,888	56,888	65,569	65,569	65,569	70,403	78,763	78,763	78,763	78,763	78,763
Student Enrollment	278	260	285	279	276	275	317	363	402	425	397	435	469	416
CO2 Sequestration (tons)***	-7.1	-7.1	-7.1	-7.1	-7.1	-7.1	-7.1	-7.1	-7.1	-7.1	-7.1	-7.1	-7.1	-7.1
ELECTRICITY														
kWh	283,369	288,224	252,024	196,386	200,086	202,236	371,093	263,897	260,141	275,975	262,505	230,681	284,254	278,764
kWh/1000 SF	4,981	5,067	4,430	3,452	3,517	3,084	5,660	4,025	3,695	3,504	3,333	2,929	3,609	3,539
kWh/student	1,019	1,109	884	704	725	735	1,171	727	647	649	661	530	606	670
MT CO2eq	218	219	188	154	147	147	265	179	177	191	170	122	171	147
NATURAL GAS														
CCF	24,489	23,696	16,428	20,071	27,432	23,779	19,268	25,242	29,430	31,152	27,585	27,208	33,044	25,714
CCF/1000 SF	430	417	289	353	482	363	294	385	418	396	350	345	420	326
CCF/student	88	91	58	72	99	86	61	70	73	73	69	63	70	62
MT CO2eq	164	159	110	135	184	160	129	169	197	209	185	183	222	173
WATER														
kgal	216	158	317	226	155	226	243	587	308	534	196	119	593	841
gal/1000 SF	3.79	2.77	5.57	3.97	2.72	3.45	3.71	8.96	4.37	6.78	2.49	1.51	7.53	10.67
gal/student	776	606	1112	810	561	822	767	1618	766	1256	494	274	1264	2020
MT CO2eq	0.685	0.501	1.007	0.719	0.492	0.719	0.772	1.867	0.979	1.697	0.623	0.379	1.885	2.672
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	376	371	292	283	325	300	388	343	369	394	349	297	388	315
MT CO2eq/1000 SF	6.61	6.52	5.14	4.97	5.71	4.58	5.92	5.23	5.24	5.01	4.43	3.78	4.92	4.00
MT CO2eq/student	1.35	1.43	1.03	1.01	1.18	1.09	1.22	0.95	0.92	0.93	0.88	0.68	0.83	0.76
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning ** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

Greenhouse Gas Inventory

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	53,800	53,800	53,800	53,800	53,800	53,800	53,800	53,800	53,800	53,800	53,800	53,800	53,800	53,800
Student Enrollment	312	322	329	330	340	334	285	298	302	276	253	232	220	228
CO2 Sequestration (tons)***	-7.5	-7.5	-7.5	-7.5	-7.5	-7.5	-7.5	-7.5	-7.5	-7.5	-7.5	-7.5	-7.5	-7.5
ELECTRICITY														
kWh	309,437	316,179	301,820	266,571	221,953	245,416	240,160	263,646	238,413	271,168	232,415	173,620	217,232	196,525
kWh/1000 SF	5,752	5,877	5,610	4,955	4,126	4,562	4,464	4,900	4,431	5,040	4,320	3,227	4,038	3,653
kWh/student	992	982	917	808	653	735	843	885	789	982	919	748	987	862
MT CO2eq	238	240	225	210	163	178	171	179	163	187	151	91	131	103
NATURAL GAS														
CCF	23,126	28,203	24,645	25,227	31,623	24,667	20,865	21,791	24,614	26,022	22,666	29,048	35,607	31,585
CCF/1000 SF	430	524	458	469	588	459	388	405	458	484	421	540	662	587
CCF/student	74	88	75	76	93	74	73	73	82	94	90	125	162	139
MT CO2eq	155	189	165	169	212	166	140	146	165	175	152	195	239	212
WATER														
kgal	428	263	209	185	276	383	300	319	313	217	209	113	305	267
gal/1000 SF	7.95	4.89	3.88	3.43	5.13	7.12	5.58	5.93	5.82	4.03	3.89	2.10	5.68	4.96
gal/student	1371	818	635	560	811	1147	1054	1070	1037	786	827	487	1388	1171
MT CO2eq	1.360	0.837	0.664	0.587	0.877	1.218	0.955	1.014	0.996	0.689	0.665	0.359	0.971	0.849
SOLAR														
kWh												80,750	115,425	56,515
kWh/1000 SF												1,501	2,145	1,050
kWh/student												348	525	248
MT CO2eq avoidance****												-43	-69	-30
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	387	423	384	372	369	337	305	318	321	355	296	279	363	309
MT CO2eq/1000 SF	7.19	7.85	7.13	6.91	6.86	6.27	5.67	5.92	5.97	6.60	5.50	5.19	6.75	5.74
MT CO2eq/student	1.24	1.31	1.17	1.13	1.09	1.01	1.07	1.07	1.06	1.29	1.17	1.20	1.65	1.35
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning ** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes. ****Not included in Total MT CO2eq								

Greenhouse Gas Inventory



Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	41,631	41,631	41,631	41,631	41,631	41,631	41,631	41,631	41,631	41,631	41,631	41,631	41,631	41,631
Student Enrollment	227	252	257	246	239	248	244	254	255	275	274	256	250	241
CO2 Sequestration (tons)***	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
ELECTRICITY														
kWh	294,400	260,960	224,044	197,739	193,577	197,710	201,983	224,167	231,752	218,308	203,300	159,600	259,840	253,777
kWh/1000 SF	7,072	6,268	5,382	4,750	4,650	4,749	4,852	5,385	5,567	5,244	4,883	3,834	6,242	6,096
kWh/student	1,297	1,036	872	804	810	797	828	883	909	794	742	623	1,039	1,053
MT CO2eq	226	198	167	155	142	144	144	152	158	151	132	84	156	133
NATURAL GAS														
CCF	30,278	22,140	14,231	15,825	21,927	30,332	16,906	21,452	25,624	23,667	22,274	25,361	33,706	24,256
CCF/1000 SF	727	532	342	380	527	729	406	515	615	568	535	609	810	583
CCF/student	133	88	55	64	92	122	69	84	100	86	81	99	135	101
MT CO2eq	203	149	95	106	147	204	113	144	172	159	149	170	226	163
WATER														
kgal	217	164	253	267	255	252	270	267	275	233	119	231	337	285
gal/1000 SF	5.21	3.94	6.08	6.40	6.13	6.05	6.48	6.41	6.61	5.60	2.86	5.55	8.09	6.84
gal/student	956	652	984	1084	1067	1016	1105	1050	1078	848	434	903	1348	1182
MT CO2eq	0.690	0.522	0.804	0.848	0.811	0.801	0.857	0.848	0.874	0.741	0.378	0.735	1.071	0.906
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	429	346	262	261	289	347	257	296	330	309	281	254	383	296
MT CO2eq/1000 SF	10.31	8.31	6.30	6.28	6.95	8.33	6.19	7.10	7.92	7.43	6.74	6.10	9.19	7.11
MT CO2eq/student	1.89	1.37	1.02	1.06	1.21	1.40	1.06	1.16	1.29	1.13	1.02	0.99	1.53	1.23
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning ** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	58,470	58,470	58,470	58,470	58,470	58,470	58,470	58,470	63,304	63,304	63,304	63,304	63,304	63,304
Student Enrollment	432	418	386	424	428	417	461	445	493	511	498	477	459	500
CO2 Sequestration (tons)***	-420.6	-420.6	-420.6	-420.6	-420.6	-420.6	-420.6	-420.6	-420.6	-420.6	-420.6	-420.6	-420.6	-420.6
ELECTRICITY														
kWh	351,757	338,323	319,041	259,373	260,017	277,786	245,483	292,246	376,770	371,151	318,669	226,860	390,375	400,856
kWh/1000 SF	6,016	5,786	5,456	4,436	4,447	4,751	4,198	4,998	5,952	5,863	5,034	3,584	6,167	6,332
kWh/student	814	809	827	612	608	666	533	657	764	726	640	476	850	802
MT CO2eq	271	257	238	204	191	202	175	198	257	256	207	120	235	211
NATURAL GAS														
CCF	27,545	30,616	18,420	20,034	23,417	16,781	14,456	18,061	27,180	24,975	23,166	25,433	29,466	21,065
CCF/1000 SF	471	524	315	343	401	287	247	309	429	395	366	402	465	333
CCF/student	64	73	48	47	55	40	31	41	55	49	47	53	64	42
MT CO2eq	185	205	124	134	157	113	97	121	182	168	155	171	198	141
WATER														
kgal	396	347	343	374	391	393	412	436	497	606	439	402	460	534
gal/1000 SF	6.77	5.94	5.87	6.40	6.68	6.71	7.05	7.46	7.86	9.58	6.93	6.36	7.27	8.44
gal/student	917	830	889	883	913	941	894	980	1009	1186	882	843	1003	1068
MT CO2eq	1.259	1.103	1.090	1.190	1.242	1.248	1.310	1.386	1.581	1.927	1.396	1.279	1.464	1.698
TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS														
Total MT CO2eq	36	43	-58	-81	-71	-105	-147	-100	20	5	-57	-129	14	-67
MT CO2eq/1000 SF	0.62	0.73	-0.99	-1.39	-1.21	-1.80	-2.51	-1.71	0.32	0.09	-0.90	-2.04	0.22	-1.05
MT CO2eq/student	0.08	0.10	-0.15	-0.19	-0.17	-0.25	-0.32	-0.22	0.04	0.01	-0.11	-0.27	0.03	-0.13
Abbreviations						Notes:								
MT CO2eq	kWh	SF	CCF	kgal	MG	* COVID Remote Learning ** COVID Enhanced Ventilation								
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.								

Wines Elementary & Forsythe Middle School

Greenhouse Gas Inventory

A Greenhouse Gas Inventory (GHGI) is a report that quantifies the amount of direct and indirect greenhouse gas emissions produced by an organization. This document captures the AAPS school's electricity, natural gas, water, and solar data to calculate the school's carbon emissions. Wines Elementary and Forsythe Middle School have shared utility meters at their



Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022**	2023
Square Feet	234,638	234,638	234,638	234,638	234,638	234,638	234,638	234,638	234,638	242,998	242,998	242,998	242,998	242,998
Student Enrollment	1,043	1,071	1,108	1,089	1,125	1,109	1,124	1,123	1,140	1,141	1,127	1,026	967	1,047
CO2 Sequestration (tons)***	-37.1	-37.1	-37.1	-37.1	-37.1	-37.1	-37.1	-37.1	-37.1	-37.1	-37.1	-37.1	-37.1	-37.1

ELECTRICITY

kWh	1,448,277	1,507,505	1,193,624	1,048,499	1,013,645	1,061,792	1,049,862	1,172,256	1,254,135	1,310,348	1,112,630	829,318	1,234,353	1,031,835
kWh/1000 SF	6,172	6,425	5,087	4,469	4,320	4,525	4,474	4,996	5,345	5,392	4,579	3,413	5,080	4,246
kWh/student	1,389	1,408	1,077	963	901	957	934	1,044	1,100	1,148	987	808	1,276	986
MT CO2eq	1,114	1,144	890	824	746	771	750	795	855	905	722	437	743	543

NATURAL GAS

CCF	132,669	137,198	111,939	120,326	128,887	109,648	110,178	125,638	137,477	160,823	121,420	112,491	136,598	124,544
CCF/1000 SF	565	585	477	513	549	467	470	535	586	662	500	463	562	513
CCF/student	127	128	101	110	115	99	98	112	121	141	108	110	141	119
MT CO2eq	890	921	751	807	865	736	739	843	922	1,079	815	755	917	836

WATER

kgal	2,242	1,565	3,070	2,292	2,571	1,971	2,086	2,670	2,374	2,390	1,767	1,145	2,950	2,167
gal/1000 SF	9.56	6.67	13.08	9.77	10.96	8.40	8.89	11.38	10.12	9.83	7.27	4.71	12.14	8.92
gal/student	2150	1461	2771	2105	2285	1777	1856	2377	2082	2094	1568	1116	3050	2070
MT CO2eq	7.128	4.974	9.760	7.288	8.173	6.266	6.631	8.487	7.545	7.597	5.618	3.639	9.377	6.888

SOLAR

kWh													94,654	114,449
kWh/1000 SF													390	471
kWh/student													98	109
MT CO2eq avoidance****													-57	-60

TOTAL METRIC TONS OF CO2 EQUIVALENT EMISSIONS

Total MT CO2eq	1,974	2,033	1,614	1,602	1,582	1,476	1,458	1,609	1,748	1,955	1,505	1,158	1,632	1,348
MT CO2eq/1000 SF	8.41	8.66	6.88	6.83	6.74	6.29	6.22	6.86	7.45	8.05	6.19	4.77	6.72	5.55
MT CO2eq/student	1.89	1.90	1.46	1.47	1.41	1.33	1.30	1.43	1.53	1.71	1.34	1.13	1.69	1.29

Abbreviations

MT CO2eq	kWh	SF	CCF	kgal	MG	Notes:
						* COVID Remote Learning
						** COVID Enhanced Ventilation
Metric Tons of Carbon Dioxide Equivalent Emissions	Kilowatt-hour	Square Feet	100 Cubic Feet	Kilogallon	Million Gallons	*** CO2 Sequestration occurs when CO2 is removed from the atmosphere by trees, grasses, ponds, and other processes.
						**** Not included in Total MT CO2eq