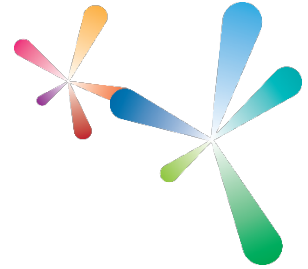


2025 Sustainability Annual Report

prepared by Cameron Bowen



EXECUTIVE SUMMARY

In 2025, Arapahoe Libraries continued advancing its commitment to sustainability through strategic investments in facilities, infrastructure, employee engagement, and responsible resource management. Its leadership was recognized externally with gold level certification with the Colorado Green Business Network and receipt of the Sustainability Innovation Award from the International Facilities Management Denver Chapter.

Rather than focusing on individual projects, sustainability efforts increasingly became part of how the library plans capital improvements, manages resources and serves the community. Investments in building modernization, water conservation, waste diversion and employee engagement continue to generate measurable environmental benefits while supporting responsible stewardship of public resources.

2025 sustainability at a glance

3,011,800 Million Gallons of Water Saved

District-wide water use decreased 25.1% through smart irrigation, landscape improvements, and turf reduction.

41,808+ Square Feet of Turf Converted

Sustainable landscaping reduced irrigation demand while creating more resilient, attractive outdoor spaces.

94,350 kWh generated by Castlewood solar

2014 installation of PV rooftop 65 kWh solar array produced 103.2% of expected production.

Energy Investments Deliver Results

HVAC modernization projects contributed to measurable energy reductions at several library locations despite temporary construction impacts.

393% Increase in Ink & Toner Recycling

Staff recycled 776 toner cartridges and 155 ink cartridges through Konica Minolta's Clean Planet Program.



Renovation advances sustainability goals

The former administration building was transformed into The Space and Cafe, a community coworking space featuring energy-efficient building systems and Arapahoe Libraries' second solar-powered location.



Employee engagement continues to grow

Green Teams expanded and participated in recycling, composting and specialty waste diversion programs across the district.

STRATEGIC OUTCOMES

Building more efficient facilities

Strategic investments in building infrastructure continue to improve long-term facility performance. Several library locations demonstrated significant improvements through equipment modernization and operational optimization.

Although district-wide electricity and natural gas consumption increased modestly in 2025, the increase was primarily due to temporary systems required to safely maintain occupancy of the administration building during renovation.

Key outcomes

- **15.4% reduction** in electricity use at Eloise May Library
- **25.3% reduction** in natural gas use at Eloise May Library
- **19.9% reduction** in natural gas use at Castlewood Library
- Continued improvement in building efficiency through HVAC modernization

Why this matters:

Strategic investments in building systems reduce long-term operating costs, improve occupant comfort and extend the useful life of district facilities.

Expanding renewable energy

2025 also marked a major investment in on-site renewable energy. The former administration building (now The Space and Cafe) became the second Arapahoe Libraries location to install solar panels. Solar installation includes a 97.58 kW DC photovoltaic system with battery storage designed to offset a substantial portion of the building's electricity demand while reducing greenhouse gas emissions.

- **97.58 kW DC / 125 kW AC** solar PV system with battery storage
- Approximately 80–90 metric tons of CO₂ avoided annually

- Environmental benefit equal to planting roughly 1,500–2,000 trees each year
- Supports long-term utility savings, grid resilience and public education

Proven performance at Castlewood Library

The Castlewood Library rooftop solar array continues to perform exceptionally well. An independent maintenance inspection found the 69-kW system operating in good condition with no repairs or upgrades recommended. The array generated 94,350 kWh during 2025, achieving approximately 103.2% of modeled production and demonstrating reliable performance more than a decade after installation.

- **69 kW** rooftop photovoltaic system installed in 2014
 - **94,350 kWh generated in 2025 (103.2% of expected production)**
 - No repairs or performance concerns identified
 - Annual inspections and monitoring support continued reliability
-

Conserving water through smart investment

Water conservation represented the district's most significant sustainability achievement in 2025.

Landscape improvements, irrigation technology, and sustainable site design reduced district-wide water consumption by more than **3,011,800 million gallons**, a **25.1% reduction** from 2024.

Beyond reducing utility costs, these improvements created healthier landscapes, expanded gathering spaces, and improved long-term resilience during periods of drought.

Key outcomes

- **25.1% reduction** in district-wide water consumption
- **41,808+ square feet** of turf converted to low-water landscaping
- Smart irrigation technology installed and monitored
- Reduced irrigated turf by **14.3%** while enhancing outdoor spaces

Why this matters:

These investments demonstrate responsible stewardship of public resources while reducing long-term operating expenses.

Advancing the circular economy

Waste diversion efforts continued to mature despite temporary impacts associated with the administration building renovation. While overall diversion volumes declined temporarily, employee participation and specialty recycling programs achieved substantial growth.

Key outcomes

- **23% increase** in Ridwell recycling collections
- **81% increase** in composting
- **23% increase** in electronics recycling
- **393% increase** in ink and toner recycling
- Stronger furniture reuse and asset stewardship practices

Why this matters:

These initiatives reduce waste disposal costs, maximize the value of district assets, and reinforce responsible procurement and resource management.

Investing in people

One of the district's greatest sustainability successes continues to be employee engagement.

Green Teams have become an important driver of innovation by increasing participation in recycling programs, identifying operational improvements, and fostering a culture of environmental stewardship throughout the organization.

Employee-led waste diversion continues to demonstrate that sustainable practices are most successful when supported by engaged staff and integrated into daily operations.

Why this matters:

Employee engagement strengthens organizational culture while creating measurable environmental and operational benefits.

Looking ahead

Arapahoe Libraries is well positioned to build on the progress achieved in 2025.

Future efforts will focus on:

- Optimizing our facilities

- Continuing energy benchmarking and performance improvements
 - Investing in renewable energy where feasible
 - Expanding sustainable landscape initiatives
 - Growing employee engagement through Green Teams
 - Advancing circular economy and waste reduction programs
 - Identifying new opportunities to improve operational efficiency
-

Conclusion

The 2025 results reflect more improvements in environmental performance and demonstrate the continued evolution of sustainability as a core strategy at Arapahoe Libraries.

Strategic investments in facilities, infrastructure and employee engagement are creating long-term value by improving operational efficiency, reducing resource consumption, strengthening organizational resilience and supporting responsible stewardship of public resources.

While the administration building renovation temporarily influenced several performance metrics, the broader story is one of continuous improvement and thoughtful investment in systems that will benefit the organization and the community for years to come.

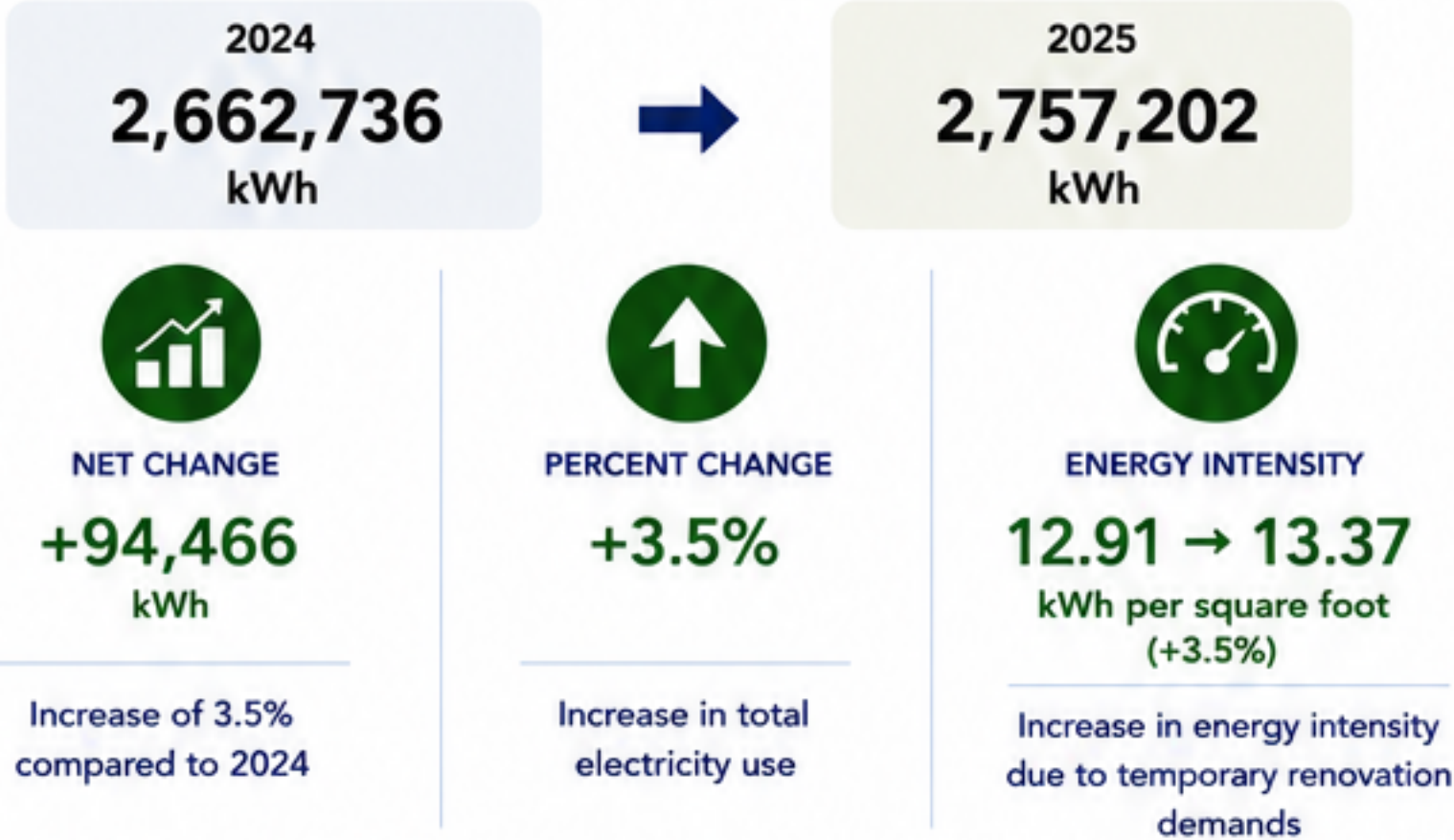
2025 ELECTRICITY REPORT

2025 COMPARED TO 2024



Temporary building renovation activities increased district electricity use in 2025; however, efficiency improvements at several libraries reduced consumption and positioned the district for long-term energy savings.

DISTRICT-WIDE IMPACT



Electricity use increased by 94,466 kWh (3.5%) in 2025, primarily due to temporary power demands associated with the Administration Building renovation. Efficiency improvements at several libraries helped reduce consumption and will continue to drive savings.

FACILITY-LEVEL HIGHLIGHTS

FACILITY	2024 kWh	2025 kWh	CHANGE (kWh)	% CHANGE
Administration	204,174	312,592	+108,418	▲ +53.1%
Castlewood	195,582	189,142	-6,440	▼ -3.3%
Kelver	227,160	235,200	+8,040	▲ +3.5%
Koelbel	476,694	480,210	+3,516	▲ +0.7%
May	420,350	355,658	-64,692	▼ -15.4%
Sheridan	169,969	173,193	+3,224	▲ +1.9%
Smoky Hill	645,880	669,696	+23,806	▲ +3.7%
Southglenn	322,919	341,511	+18,592	▲ +5.8%
DISTRICT TOTAL	2,662,736	2,757,202	+94,466	+3.5%

Green = Decrease (Improvement) • Red = Increase

STRATEGIC ENERGY IMPROVEMENTS

- ✓ Total electricity use increased by 94,466 kWh (3.5%).
- ✓ Energy-use intensity increased from 12.91 to 13.37 kWh per square foot.
- ✓ May Library achieved the largest reduction in electricity use (15.4% decrease).
- ✓ Castlewood Library also reduced consumption (3.3% decrease).
- ✓ The Administration Building renovation project required temporary equipment and supplemental systems to maintain occupancy during construction, which significantly increased electricity use.



SOLAR INVESTMENT AT THE SPACE & CAFE

A new rooftop solar array and battery storage system was installed in 2025. Beginning in 2026, the system is expected to reduce grid electricity consumption, lower greenhouse gas emissions, and improve long-term energy resilience.



97.6 kW DC solar array

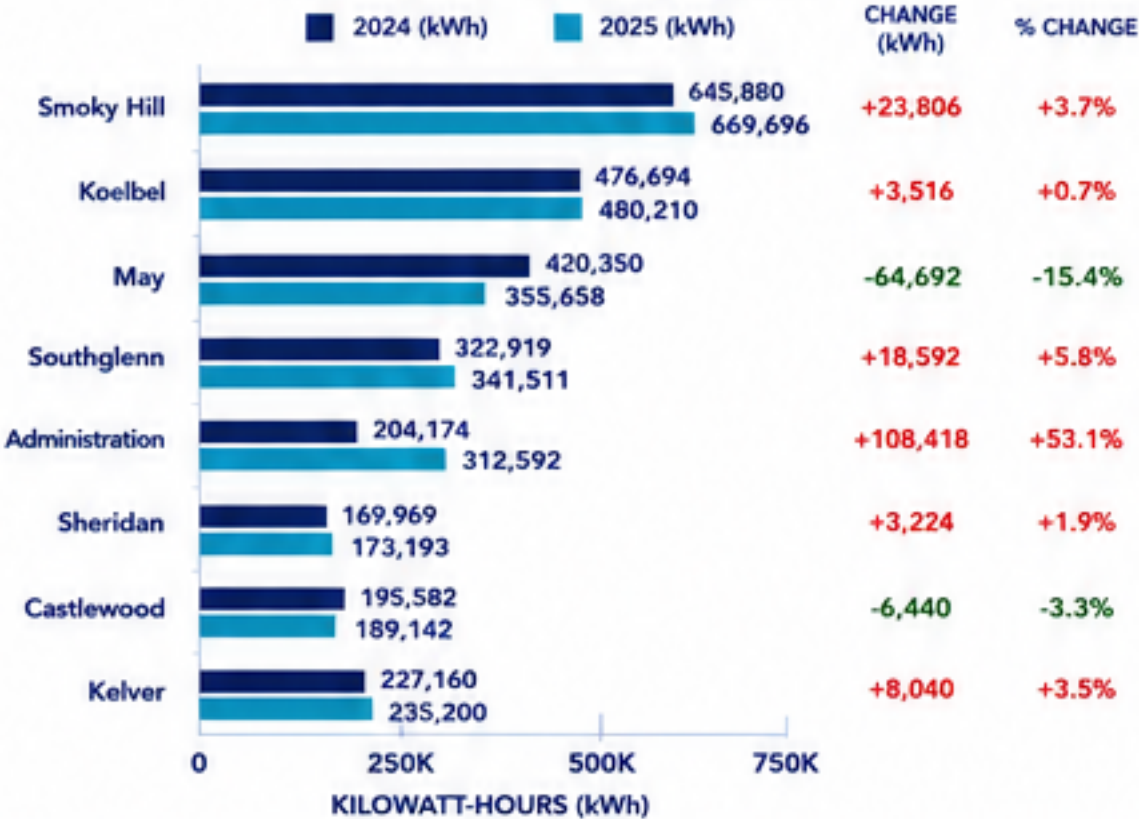


Battery energy storage to improve resilience and manage peak demand



Expected annual carbon reduction equal to planting approximately 1,500–2,000 trees or offsetting 80–90 metric tons of CO₂ each year

ELECTRICITY USE OVER TIME



THE BIGGER STORY

District electricity use increased by 94,466 kWh (3.5%) in 2025.

The increase was primarily driven by temporary power demands associated with the Administration Building renovation. Efficiency improvements at May Library and Castlewood Library helped offset some of the increase.

With the new solar and battery system at The Space & Café, the district is well positioned to realize long-term energy savings and emissions reductions beginning in 2026.



OUR SUSTAINABILITY IMPACT

- ✓ Lower energy consumption
- ✓ Reduce greenhouse gas emissions
- ✓ Lower utility expenses
- ✓ Improve energy resilience
- ✓ Support clean, renewable energy
- ✓ Invest in a sustainable future



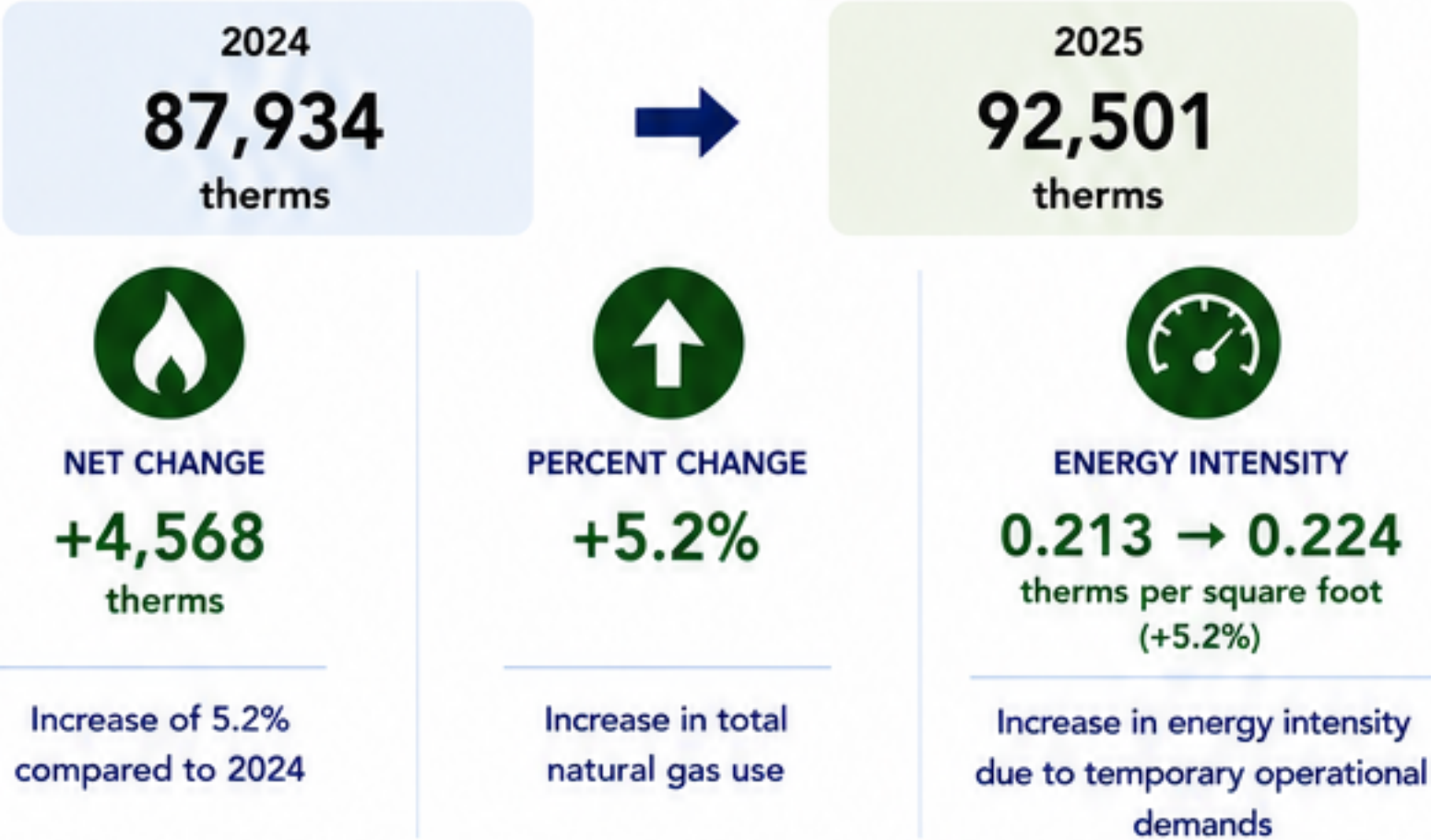
2025 NATURAL GAS REPORT

2025 COMPARED TO 2024



Temporary operational demands—including construction-related heating and seasonal weather variability—increased district natural gas use in 2025. Despite these short-term impacts, HVAC modernization projects delivered measurable reductions at several library locations, demonstrating the long-term value of strategic facility investments.

DISTRICT-WIDE IMPACT



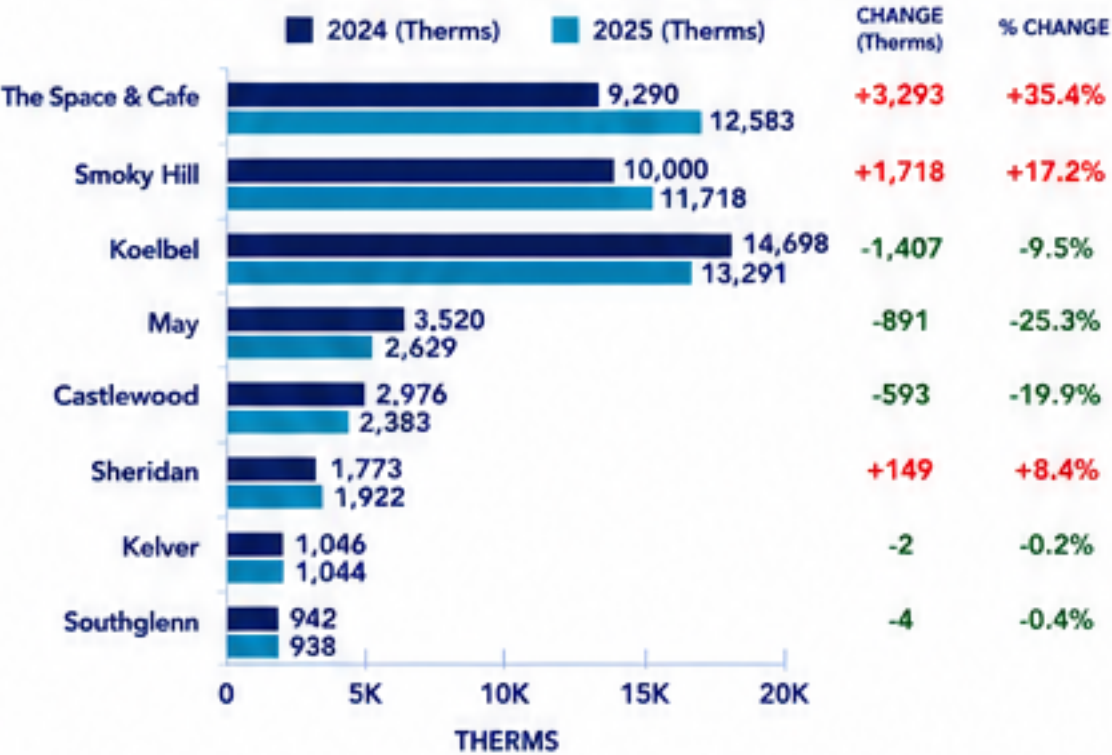
Natural gas use was impacted in 2025 by temporary operational demands, including construction-related heating and seasonal weather variability, and HVAC control issues at a few facilities. These factors increased operational demands and energy intensity.

FACILITY-LEVEL HIGHLIGHTS

FACILITY	2024 THERMS	2025 THERMS	CHANGE (THERMS)	% CHANGE
The Space & Cafe	9,290	12,583	+3,293	▲ +35.4%
Castlewood	2,976	2,383	-593	▼ -19.9%
Kelter	1,046	1,044	-2	▼ -0.2%
Koelbel	14,698	13,291	-1,407	▼ -9.5%
May	3,520	2,629	-891	▼ -25.3%
Sheridan	1,773	1,922	+149	▲ +8.4%
Smoky Hill	10,000	11,718	+1,718	▲ +17.2%
Southglenn	942	938	-4	▼ -0.4%
DISTRICT TOTAL	87,934	92,501	+4,568	+5.2%

Green = Decrease (Improvement) • Red = Increase

NATURAL GAS USE OVER TIME



THE BIGGER STORY

District natural gas use increased by 4,568 therms (5.2%) in 2025.

This increase was primarily due to temporary operational demands, including construction-related heating and seasonal weather variability.

Despite these short-term impacts, HVAC modernization projects delivered measurable reductions at several library locations, demonstrating the long-term value of strategic facility investments.

Continued investments in building systems will improve efficiency, reduce greenhouse gas emissions, and strengthen long-term operational resilience.

STRATEGIC ENERGY IMPROVEMENTS

- ✓ Total natural gas increased by 4,568 therms (5.2%).
- ✓ Energy-use intensity increased from 0.213 to 0.224 therms per square foot.



LARGEST REDUCTIONS

May Library	-25.3%
Castlewood Library	-19.9%
Koelbel Library	-9.5%



BUILDING SYSTEMS PERFORMANCE

Temporary heating demands and HVAC control issues at a few facilities increased natural gas use during 2025. These operational impacts are expected to decline as building improvements are completed.



BUILDING PERFORMANCE IMPROVEMENTS

HVAC modernization, building envelope improvements, and system upgrades continue to reduce natural gas use, improve comfort, and lower operating costs over time.



OUR SUSTAINABILITY IMPACT

- ✓ Improve HVAC efficiency
- ✓ Reduce greenhouse gas emissions
- ✓ Lower utility expenses
- ✓ Improve occupant comfort
- ✓ Extend equipment life
- ✓ Build resilient facilities



2025 WASTE DIVERSION REPORT

2025 COMPARED TO 2024



Construction activities and temporary operational changes affected overall diversion rates in 2025. Despite these short-term impacts, employee engagement and specialty recycling programs continued to expand, strengthening the district's long-term commitment to a circular economy.

DISTRICT-WIDE IMPACT

DIVERSION RATE

41.7%

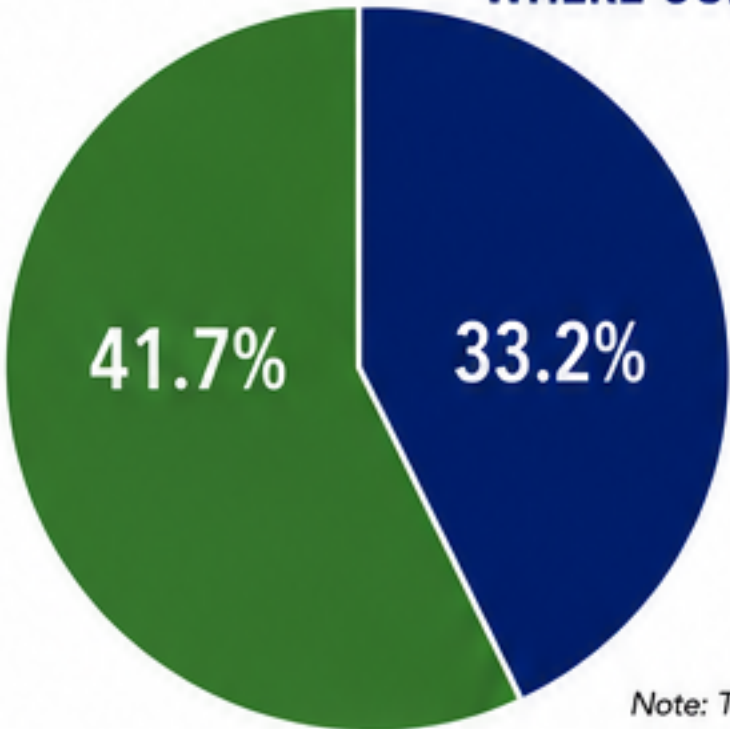
decrease of 3.5 percentage points from 2024

TOTAL DIVERSION VOLUME

427,325 POUNDS

↓ 21% decrease from 2024

WHERE OUR WASTE GOES



RECYCLING & COMPOSTING
178,225 lbs (41.7%)
2024: 188,356 lbs (43.6%)

LANDFILL (LAST RESORT)
142,090 lbs (33.2%)
2024: 151,157 lbs (35.0%)

Note: Totals may not sum to 100% due to rounding.

MATERIALS DIVERTED FROM LANDFILL

RECYCLING	COMPOSTING	RIDWELL & SPECIALTY	INK & TONER RECYCLING	ELECTRONICS RECYCLING
191,730 lbs (45%)	71,760 lbs (17%)	163,835 lbs (38%)	2,596 lbs (<1%)	5,558 lbs (1%)
2024: 182,301 lbs	2024: 6,055 lbs	2024: 132,786 lbs	2024: 527 lbs	2024: 4,511 lbs
↑ 5.2%	↑ 81.4%	↑ 23.4%	↑ 392.6%	↑ 23.2%

Percentages may not sum to 100% due to rounding.



THE BIGGER STORY

Overall diversion volume declined in 2025 due to construction-related materials and temporary operational changes. Despite these short-term impacts, employee participation and specialty recycling programs continued to grow, increasing composting, Ridwell collections, electronics recycling, and ink cartridge recovery. These efforts strengthen Arapahoe Libraries' long-term commitment to waste reduction and responsible resource management.

SUSTAINABILITY RECOGNITION



IFMA Denver Sustainability Innovation Award
Recognizing Arapahoe Libraries' innovative approach to sustainable facility management.



Colorado Green Business Network Gold Member
Recognizing our commitment to sustainable operations and continuous environmental improvement.

CIRCULAR ECONOMY IMPROVEMENTS

Employee engagement and specialty recycling programs continued to expand the district's circular economy by increasing material recovery, reducing landfill disposal, and supporting responsible resource management.



23%

increase in Ridwell collections
775 lbs in 2025 (632 lbs in 2024)



81%

increase in composting
10,985 lbs in 2025 (6,055 lbs in 2024)



393%

increase in ink & toner recycling
2,596 lbs in 2025 (527 lbs in 2024)



23%

increase in electronics recycling
5,558 lbs in 2025 (4,511 lbs in 2024)



158,562 lbs

books reused through DreamBooks
(206,602 lbs in 2024)



10,727 lbs

furniture reused or donated
(37,151 lbs in 2024)



Furniture, books, electronics, and specialty recycling programs continued to extend the life of valuable materials while reducing landfill disposal.

FURNITURE DISPOSAL PROCESS



Our process prioritizes reuse and recycling to keep materials out of the landfill.



OUR SUSTAINABILITY IMPACT

- ✓ Reduce landfill waste
- ✓ Conserve natural resources
- ✓ Lower disposal costs
- ✓ Promote a circular economy
- ✓ Support responsible purchasing
- ✓ Engage and empower employees



2025 WATER CONSERVATION REPORT

2025 COMPARED TO 2024



Strategic landscape improvements and smart irrigation reduced district-wide water use by more than 3.0 million gallons while creating healthier, more resilient outdoor spaces.

DISTRICT-WIDE IMPACT

TOTAL WATER USE DECREASED	WATER USE INTENSITY IMPROVED	TOTAL 2025 WATER USE	TOTAL SAVINGS
			
3.01	25.1%	8.99	25.1%
MILLION GALLONS	IMPROVEMENT	MILLION GALLONS	reduction in water consumption and irrigation costs at participating libraries
25.1% REDUCTION compared to 2024	Reduced from 58.24 to 43.64 gal/ft² in 2025	in 2025	

STRATEGIC LANDSCAPE IMPROVEMENTS



TURF REDUCTION & LANDSCAPE IMPROVEMENTS

41,817 sq ft of turf converted in 2024

Landscape improvements completed in 2024 reduced irrigation demand and contributed to district-wide water savings realized in 2025.

- 23,009 sq ft — Koelbel, Sheridan & Smoky Hill (combined)
- 18,808 sq ft — The Space & Cafe



14.3% REDUCTION IN IRRIGATED TURF

District-wide through strategic turf conversion projects completed in 2024.



SUSTAINABLE IMPROVEMENTS

Cobble & river rock, expanded rip rap drainage, native & drought-tolerant plants, outdoor seating, solar benches & picnic areas, and more.



SMART IRRIGATION

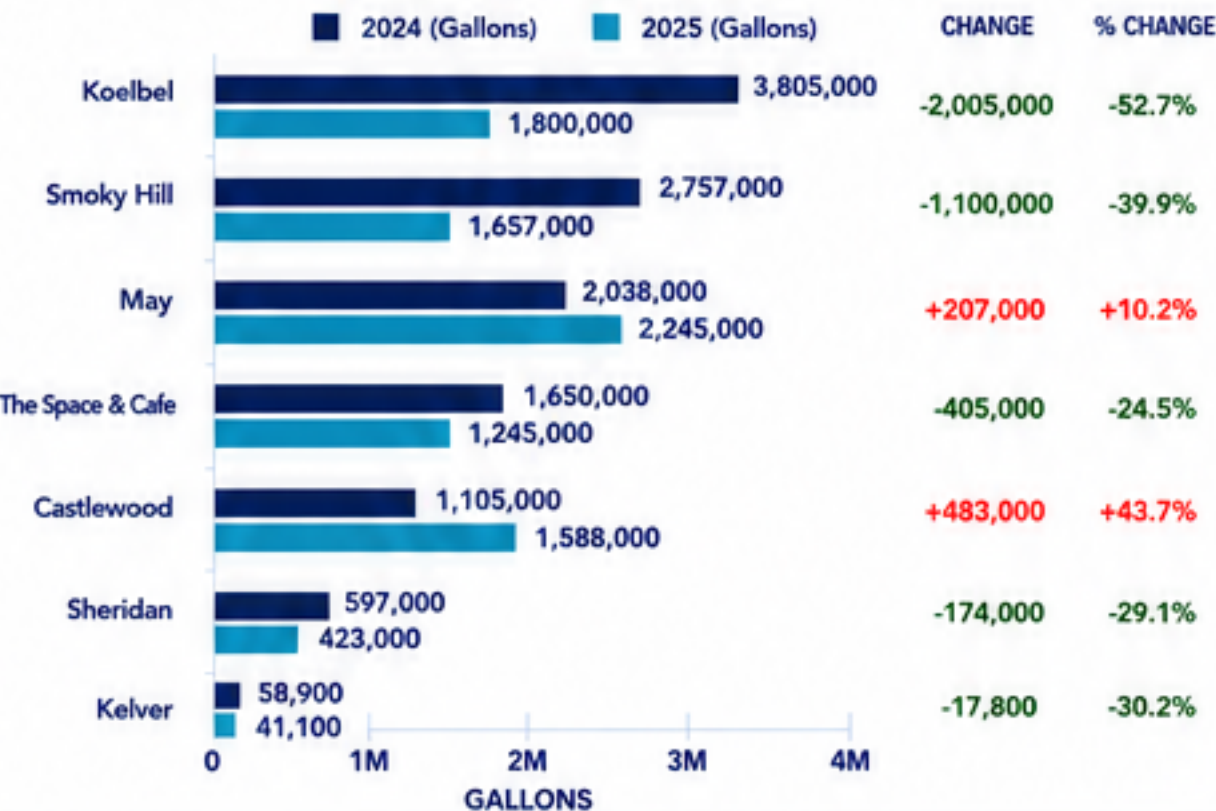
IT Water sensors optimize watering schedules based on real-time weather conditions, reducing waste and saving water.

FACILITY-LEVEL HIGHLIGHTS

FACILITY	2024 GALLONS	2025 GALLONS	CHANGE	% CHANGE
 The Space & Cafe	1,650,000	1,245,000	-405,000	-24.5%
 Castlewood	1,105,000	1,588,000	+483,000	+43.7%
 Kelter	58,900	41,100	-17,800	-30.2%
 Koelbel	3,805,000	1,800,000	-2,005,000	-52.7%
 May	2,038,000	2,245,000	+207,000	+10.2%
 Sheridan	597,000	423,000	-174,000	-29.1%
 Smoky Hill	2,757,000	1,657,000	-1,100,000	-39.9%
DISTRICT TOTAL	12,010,900	8,999,100	-3,011,800	-25.1%

Green = Decrease (Improvement) • Red = Increase

WATER USE OVER TIME



THE BIGGER STORY

District-wide water use decreased by **3.01 million gallons** (25.1%) in 2025.

Major reductions at Koelbel, Smoky Hill, Kelter, Sheridan, and The Space & Cafe demonstrate the impact of targeted landscape improvements, efficient irrigation, and operational best practices.

These investments deliver long-term water savings, lower costs, and healthier outdoor environments.



OUR SUSTAINABILITY IMPACT

- ✓ Conserve water
- ✓ Reduce irrigation costs
- ✓ Lower utility expenses
- ✓ Protect natural resources
- ✓ Promote native landscaping
- ✓ Engage and empower employees

