

Enterprise Sustainability 2017 ANNUAL REPORT





STATE OF MINNESOTA

Office of Governor Mark Dayton

130 State Capitol ♦ 75 Rev. Dr. Martin Luther King Jr. Boulevard ♦ Saint Paul, MN 55155

Managing a large government enterprise presents challenges and opportunities. In Minnesota, one of those opportunities is reforming operations to fully incorporate *sustainability* into the way we work and do business.

Through prudent use of resources, we aim to meet the needs of the present in a way that ensures that future generations of Minnesotans will be able to also meet their needs.

With those values in mind, I established a set of goals for each state agency to meet by 2027 in the areas of energy use, waste reduction, water use, fleet utilization, procurement, and reducing greenhouse gases. The goals reflect the best practices of large public and private entities, and will ensure the State of Minnesota is leading by example in confronting climate change and protecting our precious natural environment.

These standards are high, but attainable - and we are off to a good start. This first *Annual Sustainability Report* gives Minnesotans a measure of our progress toward the 2027 goals.

With continued dedication and effort, we will lead the nation in yet another area – toward better and more sustainable government operations for the people we serve.

Sincerely,

A handwritten signature in black ink that reads "Mark Dayton".

Mark Dayton
Governor

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Executive Summary

Beginnings

2017 was a foundational year for the State Government of Minnesota's Enterprise Sustainability efforts. In 2017, Minnesota's state government formally established its sustainability program and governance structure through Governor Dayton's Executive Order 17-12. State agencies established baselines in each of the six sustainability focus areas and have provided more transparency in state government operations. These findings are reflected in this first ever *Enterprise Sustainability Annual Report*.

Measured

State agencies gathered water and energy data for over 3,000 buildings, logged fuel consumption for 13,401 vehicles, and tallied 32 million pounds of recycling, organics, and trash to establish agency level baselines. It's from these baselines that agencies will measure progress and prove the economic value of future sustainable practices. Yet, for many agencies, 2017 was not the inaugural year for sustainability achievements. With accurate data and documented initiatives, many agencies have adjusted their baselines to reflect conservation projects completed during the 2005-2016 period. This gave credit to those agencies that have invested in previous sustainable improvements.

Progress

From activities during 2017 and prior documented initiatives, the enterprise has made the following progress towards goals:

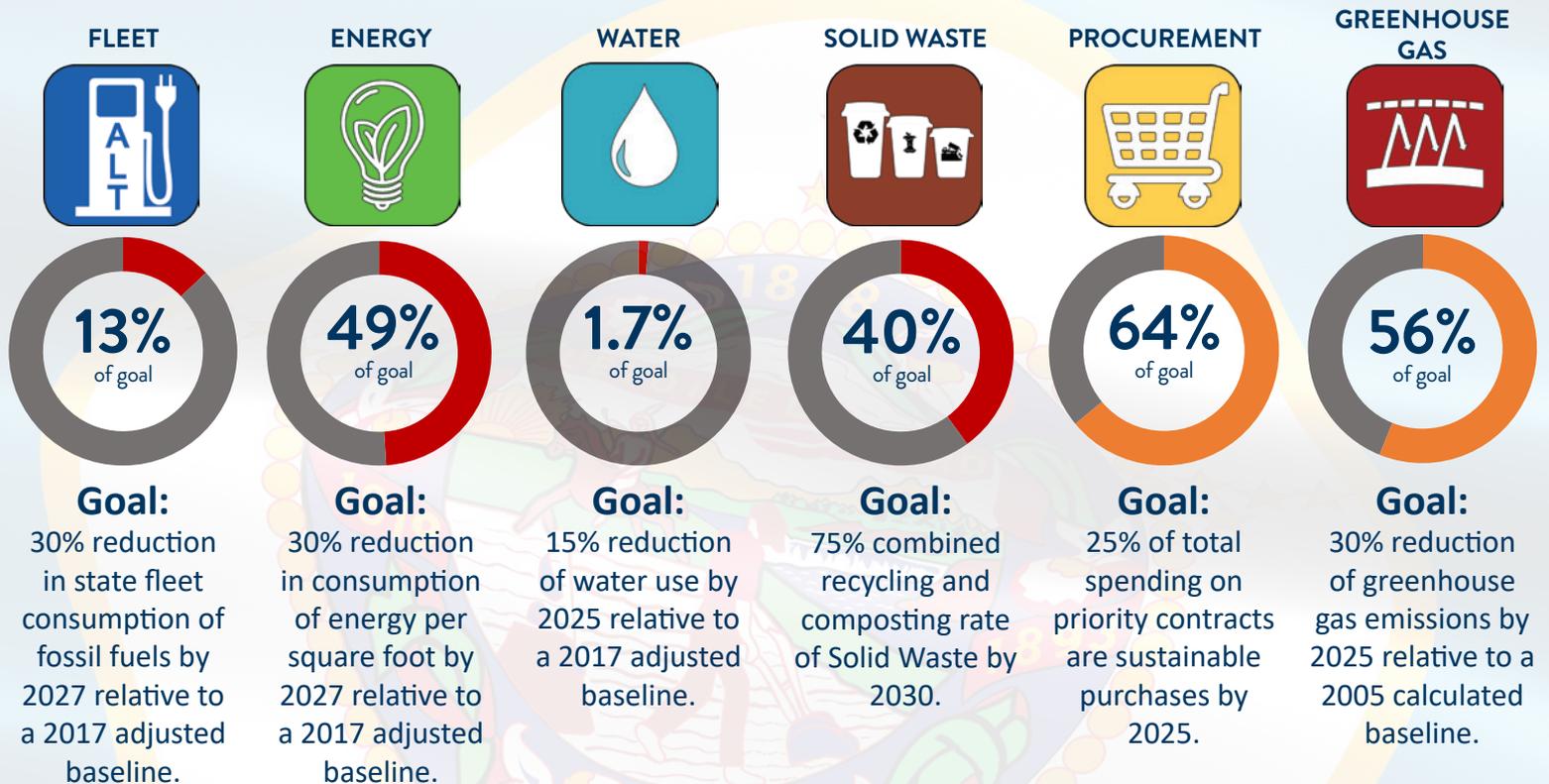
- **Fleet** – Agencies modestly reduced fossil fuel consumption by 702,669 gallons primarily through recent purchases of more efficient vehicles such as gas powered hybrids and electric vehicles.
- **Energy** – The enterprise has achieved a reduction in energy intensity per square foot by implementing 308 documented energy conservation measures.
- **Water** – Progress toward water reduction began for all but one agency in 2017 and simply just accounting for water consumed was a good first step for most agencies.
- **Solid Waste** – Renewed emphasis on recycling and organics collection is starting to make a difference and those results are reflected in the increase of material diverted from landfills.
- **Procurement** – Concerted efforts to make more sustainable contracts available have resulted in procurement making the most progress.
- **Greenhouse Gas** – Reductions in energy consumption, increases in agency-procured renewable energy, and a cleaner mix of purchased electricity continue to reduce enterprise emissions.

Looking Forward

2017 was a year for setting baselines, strengthening accountability and providing transparency concerning the impact of government operations on the environment and society. The real work is about to begin. The emphasis for 2018 will be on completion of the enterprise focus area action plans while developing agency sustainability plans for achieving focus area goals.



2017 Enterprise Score Card



\$25,927,180

In avoided costs due to conservation measures (2005-2017)

Best Practices



Fleet

State Fleet Services partnered with the Office State Procurement to make available on state contract the Chevy Bolt which is the first electric vehicle (EV) in the state fleet with a battery range of over 200 miles. Twenty-two vehicles were procured in the initial order that included 13 vehicles purchased by state agencies and nine vehicles purchased by local governments. By the end of 2017 there were 60 EVs in the state fleet with over 77 level two charging stations available.



Energy

In January 2017, the Department of Military Affairs completed a two million dollar renovation of their 13,700 square foot Litchfield Armory. The project replaced all interior electrical, mechanical, and plumbing systems, insulated exterior walls, and replaced heating and cooling systems. The project brought the 60 year old building up to current construction criteria for National Guard armories and reduced energy intensity by 39%. The building is now more comfortable for full-time occupants, provides better training spaces for the Soldiers, while using less energy.



Water

The Department of Military Affairs (DMA) has reduced water consumption by 24% from the period 2010-2017. Water conservation measures such as beneficial reuse of water for cleaning military vehicles, water capture for landscape irrigation and low-flow fixtures in existing buildings were implemented. This impressive reduction was achieved over a period when the number of transient customers using DMA facilities steadily increased.



Solid Waste

In 2016, the Department of Administration implemented best practices in recycling and organics collection in 23 buildings on the Capitol Complex, serving 9,000 state employees and government officials, and 300,000 visitors annually. Best practices included central multi-sort stations in offices, removing desk-side garbage bins, and using consistent signage and receptacles across the Complex. The effort increased the waste diversion rate on the Complex from 68 to 78% for the calendar year 2017. These receptacles and signage are now available to all agencies on state contract.



Procurement

The Minnesota Pollution Control Agency and the Office of State Procurement are adopting a participating addendum (PA) for a larger, nationwide contract on office furniture. The PA will prioritize the purchase of furniture not containing chemicals of concern, coined “the hazardous handful.” These chemicals have documented indoor air quality, environmental, and health concerns. This PA will increase the quality of State employees’ work environment and help push the furniture market towards more sustainable and health conscious choices.



Greenhouse Gas

In November of 2017 the Department of Administration began installation on a 133 kilowatt solar photovoltaic array on the roof of the Minnesota Senate Building, which is now operational. A second phase will add an additional 50 kilowatts to the Senate Building’s rooftop. The Department of Administration has entered a master contract for on-site solar installations to make it easier for state agencies and local communities to install on-site solar. Through this contract the State is working with local communities in a program called Solar Possible to install an additional 3 megawatts of solar capacity on public buildings by the end of 2019, including five additional sites on the Capitol Complex.



FLEET

16.9 million fossil fuel
gallons consumed

GOAL:

30% reduction in state fleet consumption of fossil fuels by 2027 relative to a 2017 adjusted baseline

CURRENT STATUS:



ACCOMPLISHMENTS:

- Number of electric vehicles in the state fleet is 60.
- Significant reductions in fossil fuel consumption by the Metropolitan Council (5%) and the Department of Natural Resources (12%).

BARRIERS:

- Lack of electric vehicle Level 2 chargers at agency locations.
- Lack of direct current fast chargers (DCFC) along the most traveled highways.

BASELINE: 17.7 million fossil fuel gallons

Fleet Significant Indicators

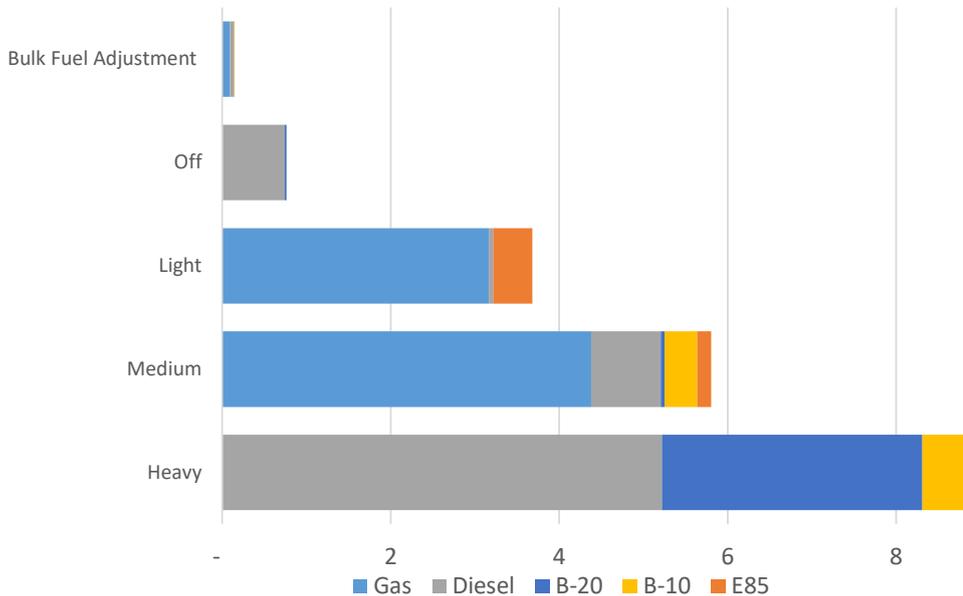
95,921,562 Fleet miles driven in 2017

605 Fleet vehicles with EPA score of 7 or higher (electric vehicles, hybrids, plug-in hybrid electric vehicles, and highly efficient conventional automobiles)

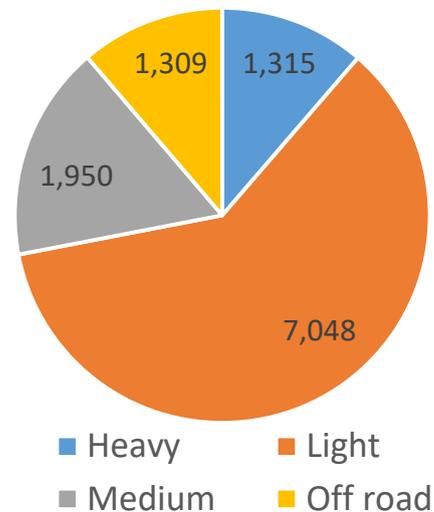
77 Electric vehicle Level 2 chargers installed

Gallons of Fuel by Vehicle Segment

(millions of gallons)



Count of Vehicles by Segment





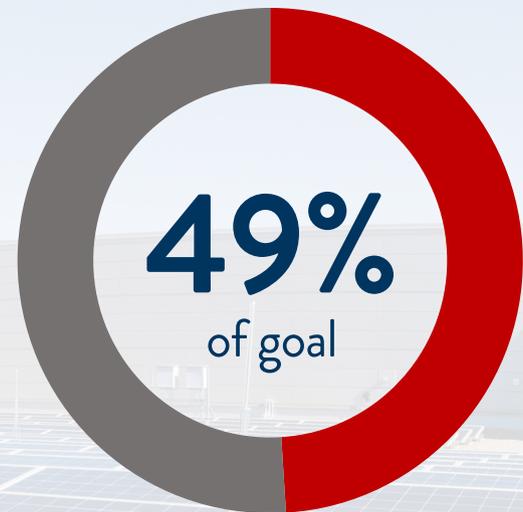
ENERGY

110 kBTU per square foot
consumed

GOAL:

30% reduction in consumption of energy per square foot by 2027 relative to a 2017 adjusted baseline.

CURRENT STATUS:



ACCOMPLISHMENTS:

- Energy conservation measures, (ECMs) implemented is 308.
- Leased space added to Buildings, Benchmarks and Beyond (B3).

BARRIERS:

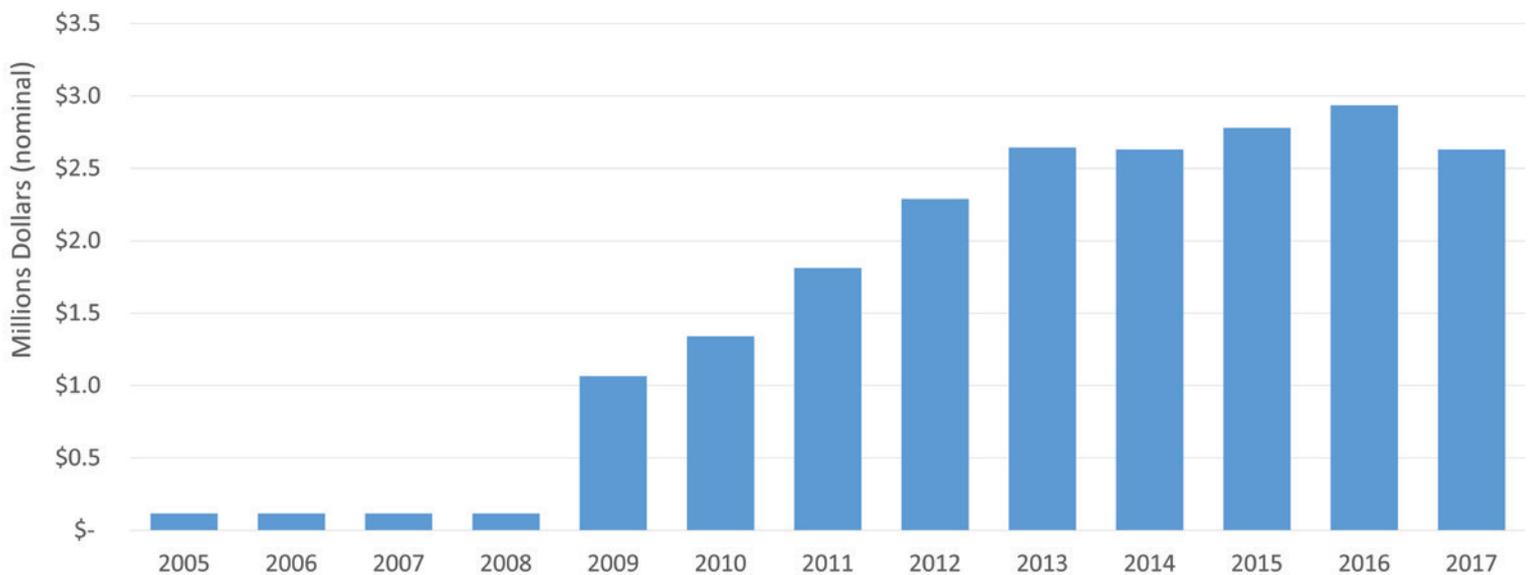
- Building information systems, (BIS) needed to increase awareness to drive behavior change.
- Funding required for the Building Efficiency Revolving Loan Fund (BERLF) to implement ECMs.

BASELINE: 129 kBTU/SF

Energy Significant Indicators

\$2.4M Estimated average annual avoided energy costs

Annual Avoided Energy Costs due to Energy Conservation Measures





WATER

*4.74 billion gallons
consumed*

GOAL:

Reduce water consumption 15% by 2025 relative to a 2017 adjusted baseline.

CURRENT STATUS:



ACCOMPLISHMENTS:

- Department of Military Affairs is the first agency to achieve water goal.
- Department of Corrections conducted 72 water audits.

BARRIERS:

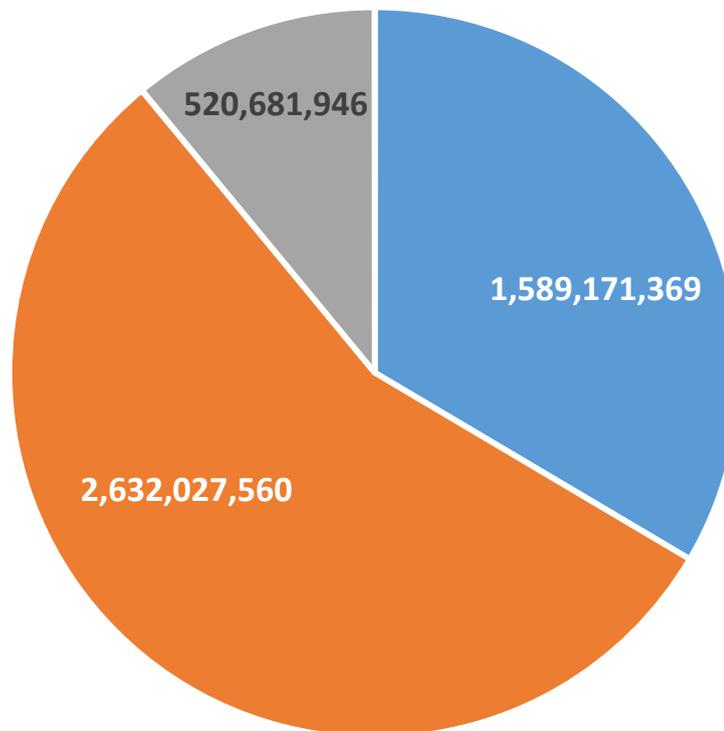
- Many campuses are not metered at the building level.
- Landscape irrigation is a significant contributing factor to enterprise water consumption.

BASELINE: 4.75 billion gallons

Water Significant Indicators

72 Number of water efficiency audits completed

Breakdown of Water Consumption (gallons)



■ Mixed use consumption ■ Process use: METC and DNR ■ Irrigation



SOLID WASTE

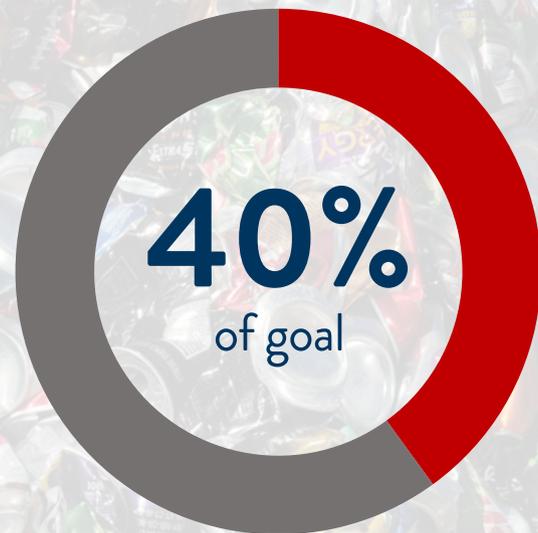
33 million pounds of municipal solid waste.



GOAL:

Reduce Solid Waste: 75% combined recycling and composting rate of Solid Waste by 2030.

CURRENT STATUS:



ACCOMPLISHMENTS:

- Three agencies achieved 75% solid waste diversion (ADM, MDOR and MDHR) at 100% progress towards goal.
- Launched Re-TRAC solid waste reporting system.

BARRIERS:

- Lack an adequate number of vendors who accept organic waste in Greater Minnesota.
- Lack a solid waste hauling contract for the entire state.

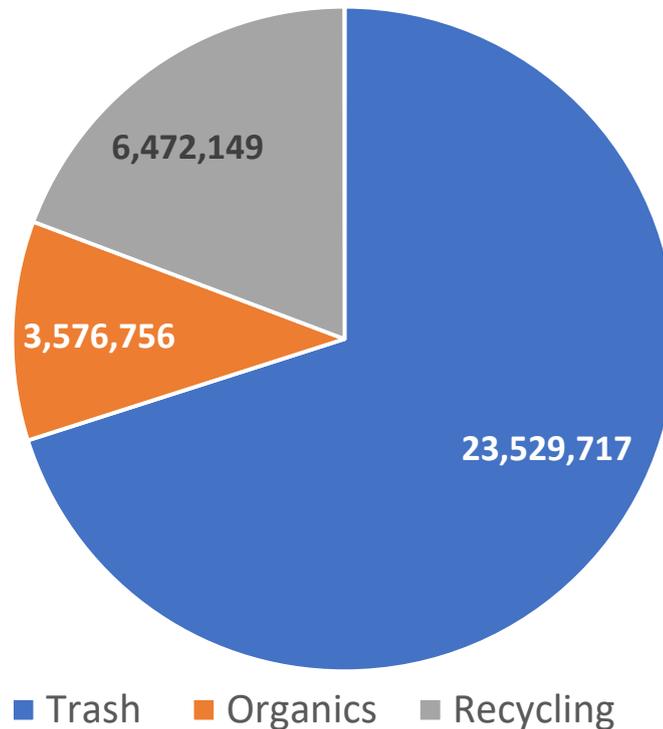
Solid Waste Significant Indicators

84 pounds Organics composted per FTE

13% Percent of sites with both recycling and organics collection

9% Percent of sites with “Re-use” areas

Breakdown of Solid Waste (pounds)





PROCUREMENT

\$20.7 million in sustainable spending annually



GOAL:

25% of total spend on priority contracts are sustainable purchase by 2025.

CURRENT STATUS:



ACCOMPLISHMENTS:

- Six priority spend contracts are 100% sustainable.
- Calculated first sustainable spend on priority contracts.

BARRIERS:

- Training currently unavailable for buyers to identify and select sustainable products.
- Reporting at the agency level cannot be determined due to constraints in the SWIFT system.

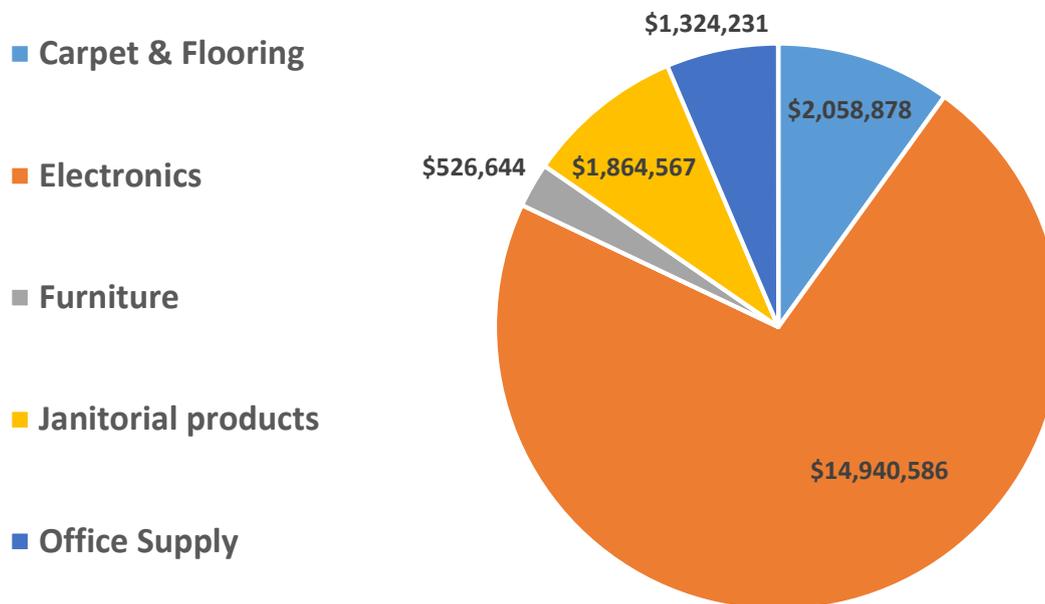
Procurement Significant Indicators

32% Percent of priority contracts that are sustainable

32% Percent of priority contracts with targeted vendors

86% Percent of **E**lectric **P**roduct **E**nvironmental **A**ssessment **T**ool-registered units purchased out of all EPEAT-eligible units

Breakdown of Sustainable Spending (\$)





GREENHOUSE GASES

*954,711 metric tons CO₂e of
greenhouse gas emissions*

GOAL:

30% reduction of Greenhouse Gas emissions
by 2025 relative to a 2005 calculated baseline.

CURRENT STATUS:



ACCOMPLISHMENTS:

- In 2017, 8% of all enterprise energy was from renewable sources.
- 10 MW of new Solar was installed at Camp Ripley through a public/private partnership between the Dep't. of Military Affairs and Minnesota Power.

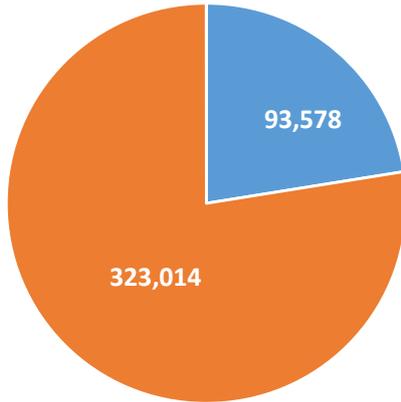
BARRIERS:

- Fleet emissions have remained unchanged due to more miles driven.
- More focus needs to be placed on the electrification of the fleet and the built environment.

Baseline: 1,148,351 metric tons

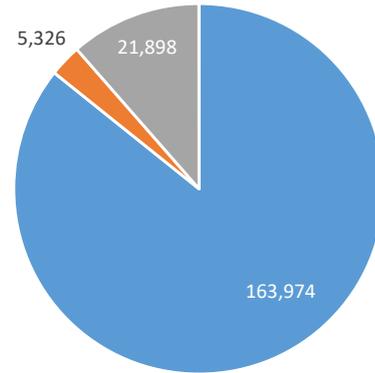
Greenhouse Gas Significant Indicators

Building Emissions
(metric tons CO2 equivalent)



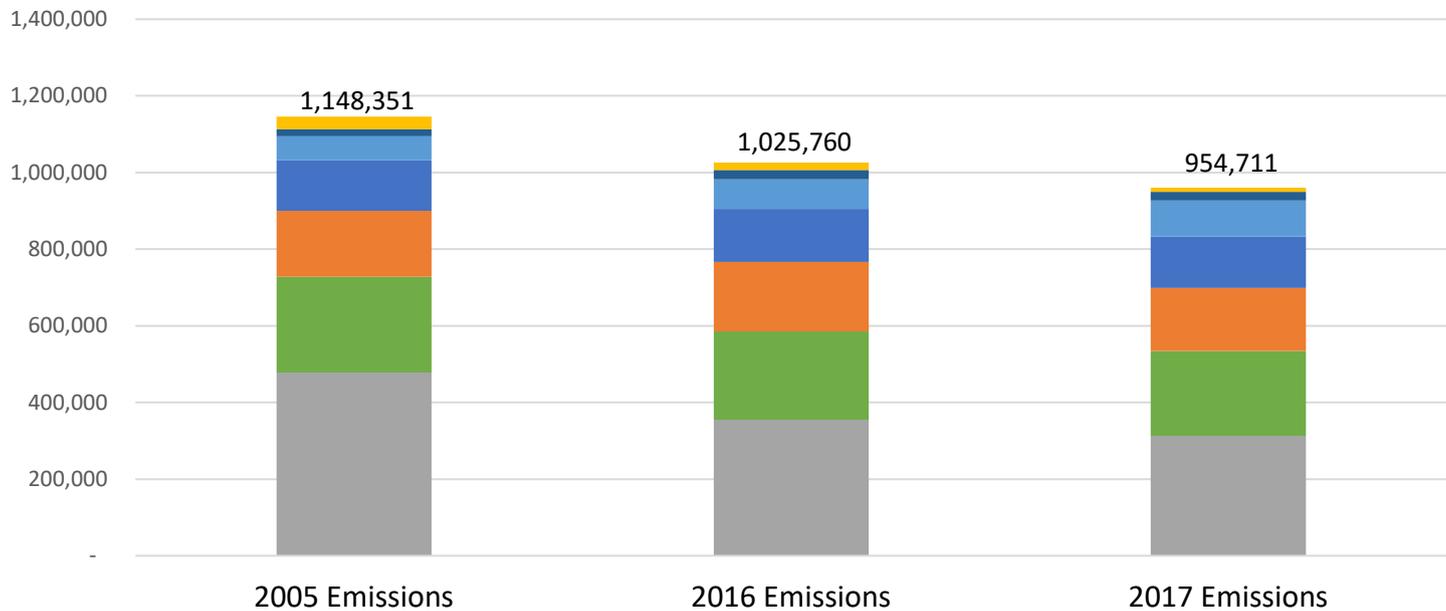
■ Combusted fuel on-site ■ Purchased energy

Transportation Emissions
(metric tons CO2 equivalent)



■ Fuel ■ Reimbursed Miles ■ Electricity (EV, Light Rail)

Enterprise Emissions (metric tons CO2 equivalent)



■ Purchased Electricity
 ■ Mobile Combustion
 ■ Stationary Combustion
 ■ Purchased Heating and Cooling
 ■ Fugitive Emissions (e.g., landfills)
 ■ Stationary Biomass Combustion
 ■ Process Emissions (e.g., waste water treatment plants)

Agency Score Cards

Percent Progress towards Goals



					
ADM	0	89	0	100	76
BMS	0	0	0	0	100
COMM	0	0	0	7	100
DEED	0	0	0	0	42
DHS	0	0	0	0	100
DLI	0	0	0	23	-60
DMA	0	79	100	24	100
DNR	45	66	0	47	100
DOC	0	22	0	52	53
DOT	0	84	0	14	64
DPS	0	0	0	75	-3
IRRRB	0	0	0	16	15
MDA	0	0	0	72	-14



MDE	0	0	0	0	100
MDH	0	0	0	98	14
MDHR	N/A	0	0	100	100
MDOR	0	0	0	100	0
MDVA	0	12	0	8	-18
METC	17	70	0	37	50
MHFA	0	26	0	30	100
MMB	N/A	0	0	96	100
MN.IT	0	0	0	93	76
MPCA	0	0	0	80	34
OHE	0	0	0	23	100
Enterprise	13	49	1.7	40	56

An aerial photograph of the MN Senate Building, a large, modern, multi-story building with a prominent glass facade and a flat roof. The roof is covered with a large array of solar panels. The building is surrounded by other city buildings and a parking lot. The sky is clear and blue.

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The newly-installed solar panel array on the MN Senate Building is the first on the Capitol campus. Its 414 twenty-one square foot panels produce 133,000 peak watts of direct current power for the building.