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,

Mark Dayton
Governor
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

**FLEET**
- Goal: 30% reduction in state fleet consumption of fossil fuels by 2027 relative to a 2017 adjusted baseline.
- 13% of goal

**ENERGY**
- Goal: 30% reduction in consumption of energy per square foot by 2025 relative to a 2017 adjusted baseline.
- 49% of goal

**WATER**
- Goal: 15% reduction of water use by 2027 relative to a 2017 adjusted baseline.
- 1.7% of goal

**SOLID WASTE**
- Goal: 75% combined recycling and composting rate of Solid Waste by 2030.
- 40% of goal

**PROCUREMENT**
- Goal: 25% of total spending on priority contracts are sustainable purchases by 2025.
- 64% of goal

**GREENHOUSE GAS**
- Goal: 30% reduction of greenhouse gas emissions by 2025 relative to a 2005 calculated baseline.
- 56% of goal

**Avoided Costs**

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

CURRENT STATUS: 
13% of goal

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

Count of Vehicles by Segment

- Bulk Fuel Adjustment
- Off
- Light
- Medium
- Heavy

Gas
Diesel
B-20
B-10
E85

Heavy
Light
Medium
Off road

1,950
1,315
1,309
7,048
GOAL:
30% reduction in consumption of energy per square foot by 2027 relative to a 2017 adjusted baseline.

CURRENT STATUS:

49% of goal

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
110 kBTU per square foot consumed
Energy Significant Indicators

$2.4M Estimated average annual avoided energy costs

Annual Avoided Energy Costs due to Energy Conservation Measures
GOAL: Reduce water consumption 15% by 2025 relative to a 2017 adjusted baseline.

CURRENT STATUS: 1.7% of goal

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
4.74 billion gallons
consumed
Water Significant Indicators

72 Number of water efficiency audits completed

Breakdown of Water Consumption (gallons)

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

- 2,632,027,560 gallons
- 1,589,171,369 gallons
- 520,681,946 gallons
GOAL:
Reduce Solid Waste: 75% combined recycling and composting rate of Solid Waste by 2030.

CURRENT STATUS:
40% of goal

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):

- Trash: 23,529,717 pounds
- Organics: 3,576,756 pounds
- Recycling: 6,472,149 pounds
PROCUREMENT
$20.7 million in sustainable spending annually

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

CURRENT STATUS:
64% of goal

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 Electric Product Environmental Assessment Tool-registered units purchased out of all EPEAT-eligible units

Breakdown of Sustainable Spending ($)

- Carpet & Flooring
- Electronics
- Furniture
- Janitorial products
- Office Supply

Total: $14,940,586
- $526,644
- $1,864,567
- $1,324,231
- $2,058,878
- $1,864,567
GOAL: 30% reduction of Greenhouse Gas emissions by 2025 relative to a 2005 calculated baseline.

CURRENT STATUS:

954,711 metric tons $CO_2e$ of greenhouse gas emissions

56% of goal

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)

- 2005 Emissions
- 2016 Emissions
- 2017 Emissions

Legend:
- Purchased Electricity
- Mobile Combustion
- Stationary Combustion
- Stationary Biomass Combustion
- Process Emissions (e.g., waste water treatment plants)
- Fugitive Emissions (e.g., landfills)
- Purchased Heating and Cooling
## Agency Score Cards

### Percent Progress towards Goals

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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.