

Methodology for the State of Minnesota’s Enterprise Sustainability Program:

Welcome to the methods page. Feel free to click below on any topic that interests you.

Table of Contents

- Methodology for the State of Minnesota’s Enterprise Sustainability Program: 1
- Measuring progress towards goal: scope and practice 1
- Energy: 2
- Water: 2
- Waste: 2
- Fleet: 2
- Greenhouse Gas Emissions: 2
- Procurement: 2
- Method of calculating percent of “sustainable spend” 2
- Calculation of percent score, “Progress Towards Goal” 3
- Energy, water, waste, and fleet focus areas: 3
- Solid waste and procurement focus areas: 3
- Data Sources 3

Measuring progress towards goal: scope and practice

Measuring progress begins with good data collection. Without accurate data, we cannot make sound decisions.

The Office of Enterprise Sustainability (OES) helps to coordinate and standardize data collection across the enterprise. The enterprise tracks energy and fuel consumption, water usage, and solid waste at over 3,497 buildings and 222 pieces of equipment—spanning a diverse range of building types, from fish hatcheries to offices and correctional facilities. In the fleet focus area, the enterprise tracks fuel consumption to the vehicle level which includes over 16,000 on and off-road vehicles and road-equipment (e.g. cranes, portable generators, etc.). The collection of these data requires significant contributions from all agency partners.

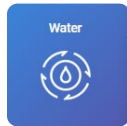
Methodology

The scope of reporting includes the following:



Energy: all energy consumed

- Unit of measure: total kilo-British thermal units (kBtu) per total square feet footprint (kBtu/SF).



Water: all consumptive water use

- Unit of measure: gallons of consumptive water use. Consumptive water use is water removed from available supplies without return to a water resource system.



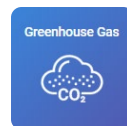
Waste: all general recycling, trash, and organics. The trash diversion rate is measured as the sum of organics and recycling pounds (lbs.) divided by the sum of recycling, trash, and organics lbs. The goal is to recover as much “waste” as possible and divert it away from landfills.

- Unit of measure: pounds (lbs.)



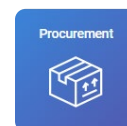
Fleet: all fossil-based fuel consumed by on and off-road vehicles and associated equipment.

- Unit of measure: fossil fuel gallons. The “bio” component subtracted from the total gallons. For example, gasoline contains up to 10% ethanol and the national average [indicates](#) it is approximately 10%, thus we assume 1 gallon of conventional gasoline equals .9 gallon of fossil fuel.



Greenhouse Gas Emissions: all scope 1 emissions and scope 2 emissions

- Scope 1 are direct emissions from processes and activities owned and controlled by the enterprise (e.g., cars, natural gas combustion for heating etc.)
- Scope 2 includes emissions from the generation of delivered energies purchased by the enterprise (e.g., hot water, chilled water, and electricity)
- Unit of measure: metric tons of carbon dioxide equivalent using the [IPCC's AR5](#) global warming potential protocol.



Procurement: see next question below.

Method of calculating percent of “sustainable spend”

The procurement area focuses on a subset of state spending called “priority contracts”. Procurement is tracked only at the enterprise level. The calculation is:

$$\% \text{ Sustainable spend} = \frac{\text{Total sustainable spend within priority contracts}}{\text{Total spend on all priority contracts}}$$

The numerator is total dollar spend on sustainable contracts. The enterprise defines a sustainable contract as, “A contract that incorporates sustainability requirements to improve the environmental, social, and

Methodology

economic impacts associated with purchasing.” The enterprise often relies on third party certifications, for example [EPEAT](#) for computer equipment, to determine whether a product or contract is sustainable.

The denominator is the total dollar spend on priority contracts. Priority contract categories include: IT hardware, indoor building materials/furnishings, office supplies (including copy paper and toner), and janitorial and maintenance supplies.

For more information on the enterprise efforts to procure sustainable products and services, check out the Minnesota Pollution Control Agency’s resources, linked [HERE](#).

Calculation of percent score, “Progress Towards Goal”

Energy, Water, Greenhouse Gas, and Fleet focus areas:

The progress towards goal is calculated by dividing a percent change calculation by the focus area target:

$$\% \text{ Progress towards goal} = \frac{\frac{(\text{Annual value} - \text{Baseline})}{\text{Baseline}}}{\% \text{ Reduction}}$$

For example, if an agency has reduced energy consumption by 15% from the baseline and the goal is a 30% reduction, the agency would be at 50% progress towards goal, $(-15\%)/(-30\%)$.

Solid Waste and Procurement focus areas:

The solid waste and procurement focus areas are a little simpler to calculate because the goal itself is a ratio. Progress towards goal is the ratio of ratios.

Solid waste % progress towards goal = $(\% \text{ Diversion rate})/(75\%)$

Procurement % progress towards goal = $(\% \text{ Sustainable spend})/(25\%)$

Data Sources

Measuring progress and calculating key performance indicators requires an immense amount of data. OES employs a recently built software-as-a-service (SaaS) called the “Sustainability Reporting Tool.” The Sustainability Reporting Tool serves three core functions:

- 1) Warehouse and provide analytical functions for over +6 million sustainability related data points;
- 2) Provide planning functions and modules for agencies; and
- 3) Communicate progress towards the six sustainability goals on the sustainability.mn.gov website.



Through a best-value request for proposal (RFP) process, OES contracted with [FigBytes Inc.](#) to build out both the internal warehouse and analytics tool and the website.

Methodology

OES facilitates the data transfer from currently existing databases, assists agencies with data quality control, and more conducts more advanced statistical analysis and modeling as needed.

The Sustainability Reporting Tool was designed to integrate data from existing databases:

- Energy: [B3 Benchmarking](#), a web-based graphic user interface database.
- Water: [B3 Benchmarking](#), a web-based graphic user interface database.
- Fleet: [M5](#), an internally managed Oracle data base.
- Solid waste: data is reported directly into the Sustainability Reporting Tool
- Greenhouse gas emissions: most emissions are calculated in the Sustainability Reporting Tool, other miscellaneous emissions are reported directly into the tool
- Procurement: data and key results are calculated internally taking data from a large SQL database called SWIFT. Results are calculated only at the enterprise level. Results are compiled by the Minnesota Pollution Control Agency and provided to the Office of Enterprise Sustainability.

OES also leverages other data sources for specific analyses such as the National Weather Service and the Lawrence Berkeley National Laboratory's Building Performance Database.

If you have more questions about the methodology, feel free to send an email to [mnsustainability@state "dot" mn "dot" us](mailto:mnsustainability@state.mn.us).