Air pollution
Condition: Air and climate

This metric is fair because the number of days that air quality has been "green" over the past five years has remained the same. The downward trend in this metric is due to more frequent occurrence of events that trigger poor air quality as we continue to see impacts from climate change. The Air Quality Index (AQI) was developed by the EPA to provide a simple, uniform way to report daily air quality conditions. Minnesota AQI numbers are determined by measurements of six pollutants: fine particles (PM2.5), particulate matter (PM10), ground-level ozone (O3), sulfur dioxide (SO2), nitrogen dioxide (NO2), and carbon monoxide (CO). The pollutants that most commonly influence the daily AQI, however, are fine particles and ozone. The AQI categories developed by the EPA are green (good), yellow (moderate), orange (unhealthy for sensitive groups or USG), red (unhealthy), and purple (very unhealthy).

GOOD	FAIR	POOR
5-year trend of statewide green AQI days increasing.	5-year trend of statewide green AQI days steady.	5-year trend of statewide green AQI days decreasing.
UPWARDS TREND	**STEADY TREND**	**DOWNWARDS TREND**
		Fewer green AQI days.

Asthma
Condition: Air and climate

This metric previously looked at the rates of Minnesota asthma ER visits within three age groups; 0-4, 5-64, and 65+ and was compared against the Healthy People 2020 national target rates for asthma ER visits. However, the new Healthy People 2030 (HP 2030) national target rates are only for two age groups, 0 to 4 and 5 & older. Therefore, this metric for asthma ER visits is adjusted to fit the new HP 2030 goals.

GOOD	FAIR	POOR
Meeting 2 age group targets	Meeting 1 age group target	Meeting 0 age group targets
UPWARDS TREND	**STEADY TREND**	**DOWNWARDS TREND**
Meeting more age group targets than previous year	Meeting the same number of age group targets as previous year	Meeting fewer age group targets than previous year

Heat and rainfall
Condition: Air and climate

In Minnesota, our trends towards warmer years are strongly influenced by winter, which is warming 4 times faster than summer. Winter nights are warming fastest of all, as represented by increases in average daily minimum (or "low") temperatures between December and February. This metric represents Minnesota's most direct physical response to increased greenhouse gas concentrations.

GOOD	FAIR	POOR
1896-2023 statewide winter low temperatures either not changing or decreasing (indicating that nighttime winter warming has stopped or been reversed)	1896-2023statewide winter low temperatures increasing by less than 0.2° F per decade	1896-2023 statewide winter low temperatures increasing by average rate of at least 0.2° F per decade
UPWARDS TREND	**STEADY TREND**	**DOWNWARDS TREND**
The lack of any upward trend would suggest there is no long-term warming	Smaller upward trends generally are not	Long-term (since 1896) increases of at least 0.2°F per decade are usually statistically significant

MINNESOTA
ENVIRONMENTAL QUALITY BOARD

Reducing climate pollution   Condition: Air and climate

This metric shows progress toward meeting Minnesota's statutory GHG reduction goals. The goals use a 2005 baseline and are as follows:

        (1) 15 percent by 2015;

        (2) 30 percent by 2025;

        (3) 50 percent by 2030; and

        (4) to net zero by 2050.

These statutory goals were updated in 2023 and replace those set in the Next Generation Energy Act of 2007. This measure shows trends in GHG total emissions since 2005 in comparison to the goal of reducing GHG emissions by 30% from a 2005 baseline by 2025.

Emissions in 2020 were 23% below 2005 levels. Significant emissions reductions in electricity generation and transportation have been made. COVID-19 created unusual circumstances where emissions were reduced more than would be expected otherwise, so it is possible that years after 2020 may see an increase in GHG emissions, particularly in the transportation sector. This is why the 2023/2024 rating has been marked as yellow even though we technically meet the requirements for green. When transportation emissions return to pre-COVID levels, it is likely we will no longer meet the requirements for green.

GOOD	FAIR	POOR
Meeting or better than Next Generation Climate Act Reduction Goal	80%-99% of Next Generation Climate Act Reduction Goal	Less than 80% of Next Generation Climate Act Reduction Goal

Fuel and transportation   Condition: Air and climate

This measure is evaluated against goals defined in the Next Generation Energy Act to reduce GHG emissions from 2005 levels by 15% by 2015, 30% by 2025, and 50% by 2030. Further the 2022 Minnesota Climate Action Framework set goals to reduce emissions 50% by 2030 achieve net-zero emissions by 2050.

A good result (green) is defined as a 3-year average that is ahead of the pace needed to achieve these goals. Defining a good result in this way aligns the criterion with Minnesota's statutory goal of reducing greenhouse gas emissions from the transportation sector. The 3-year average is used to smooth out the effects of year-to-year fluctuations due to gas prices or the economy. Three-year averages that are less than 5% behind the pace needed to meet the emission goals are scored as okay (yellow). The 5% cutoff was chosen as a reasonable threshold for significant change. The criterion uses the same 5% threshold for significant change to determine whether a year-to-year change in the 3-year average warrants an up, down, or flat arrow.

GOOD	FAIR	POOR
3-year average ahead of pace to meet Next Generation Energy Act and MN Climate Action Framework targets AND year-over-year decrease greater than target.	3-year average ahead of pace to meet Next Generation Energy Act and MN Climate Action Framework targets but year-over-year decrease less than target OR 3-year average behind pace to meet target, but year-over-year decrease greater than target.	3-year average behind pace to meet Next Generation Energy Act and MN Climate Action Framework targets and year-over-year decrease less than target.
UPWARDS TREND	**STEADY TREND**	**DOWNWARDS TREND**
Fuel use decreases by more than the reduction target.	Fuel use decreases by less than the reduction target.	Fuel use increases.

Carbon-Free electricity
Condition: Air and climate

In order to meet the 2040 carbon free standard, Minnesota will need to see a steady increase in the amount of electricity generated by carbon free sources each year. In the past there have been minor fluctuations up and down that aren't reflective of the overall trend, but with the 2040 carbon-free electricity standard, the share of electricity from carbon-free sources needs to increase by at least 2.6 percentage points each year for Minnesota to reach that goal. The trend currently shows carbon-free electricity generation steadily increasing year over year. This trend is expected to accelerate in the coming years. Renewable generation is driving this increase.

GOOD	FAIR	POOR
Share of electricity generated from carbon free sources is up by more than 2.6 percentage points from the previous year.	Share of electricity generated from carbon free sources is greater than 0 but not at 2.6 percentage points.	Share of electricity generated from carbon free sources has declined from the previous year.
UPWARDS TREND	**STEADY TREND**	**DOWNWARDS TREND**
Carbon-free electricity is expected to accelerate.		

Household heating
Condition: Air and climate

Household heating is one of Minnesota's biggest residential energy demands, and with the passage of the Inflation Reduction Act, analysts are expecting a shift away from heating homes with natural gas and towards using electricity to heat homes, specifically with the use of heat pumps. While some electric-heating technologies are not necessarily more efficient than heating with natural gas we expect future increases in households using electricity to heat their homes will come from heat pump adoption. If 100% of Minnesota households were to heat their homes using electricity by 2050, then the share of households that heat using electricity would need to increase by roughly 2.8 percentage points each year between 2021 (the year of the most recent Census estimates) and 2050.

GOOD	FAIR	POOR
The share of households that report heating with electricity has increased from the previous year by at least 2.8 percentage points.	The share of households that report heating with electricity is greater than 0 but is less than 2.8 percentage points.	The share of households that report heating with electricity decreased.
UPWARDS TREND	**STEADY TREND**	**DOWNWARDS TREND**
Electric heating is expected to increase.		

Sustainable materials management
Condition: Air and climate

In 1989, Minnesota legislation set county recycling goals. Each Greater Minnesota county (outside of the seven-county Metro Area) must recycle a minimum of 35% by weight of total solid waste generation. The 2014 Legislature increased the recycling goal for counties in the seven-county metro to the following: by December 2030, counties in the Twin Cities metropolitan area will be required to recycle 75% of the solid waste they generate. Reuse is included in statutory recycling definitions. Since 2017, recycling and reuse has decreased.

GOOD	FAIR	POOR
≥ 48.6% Recycling & Reuse	44.5-48.5% Recycling & Reuse	≤ 44.4% Recycling & Reuse
UPWARDS TREND	**STEADY TREND**	**DOWNWARDS TREND**
Recycling and Organics management rates are on track to meet goals.	Recycling and Organics management rates are at or above historical levels but are not on track to meet goals.	Recycling and Organics management rates are below historical levels.

MINNESOTA
ENVIRONMENTAL QUALITY BOARD

Lakes and rivers
Condition: Water and land

State and national goals for the Clean Water Act are to have all waters be fishable and swimmable (100% attainment). In Minnesota, the surrogate for swimmable in lakes is analogous to the trophic state – amount of nutrients, amount of algae, and how clear the water is and the surrogate for fishable instreams is aquatic life health – that rivers and streams support a healthy fish and macroinvertebrate (bug) community. The Clean Water Fund Roadmap lays out a path towards achieving the attainment desired; setting the pace of expected progress, given climatic, economic, and social shifts, rates of implementation of Best Management Practices, and ease with which waters can be restored. For the 25-year life of the Clean Water Land and Legacy Amendment, an improvement of 8% in swimability of lakes and 7% in fishability of streams is projected.

GOOD	FAIR	POOR
Greater than 60% lakes and streams support swimming and fishing.	40 to 60% of lakes and streams support swimming and fishing.	Less than 40% of lakes and streams support swimming and fishing.
UPWARDS TREND	**STEADY TREND**	**DOWNWARDS TREND**
Lakes and streams show improving trends in water quality over the last 10 years.		

Nitrate (Public wells)
Condition: Water and land

These are the number of community and noncommunity public water systems that exceed the Maximum Contaminant Level (MCL) for nitrate under the Safe Drinking Water Act. The MCL is 10 mg/L. The U.S. Environmental Protection Agency sets performance goals for Safe Drinking Water Act compliance, including a goal that 95% of public water systems meet health-based standards. Minnesota consistently exceeds this performance goal, so we also aim to have a decreasing trend of nitrate exceedances over time. Our public health goal is to have zero nitrate exceedances in community and noncommunity water systems. However, nitrate levels in source water can be affected by factors outside of public water systems' control, so it is beneficial to have achievable performance benchmarks to mark progress and trends over time.

GOOD	FAIR	POOR
At least 95% of community and noncommunity systems are meeting the nitrate MCL and the number of nitrate exceedances is decreasing since the last reporting year (or zero).	At least 95% of community and noncommunity systems are meeting the nitrate MCL and the number of nitrate exceedances is static or increasing since the last reporting year.	Fewer than 95% of community and/or noncommunity public systems are meeting the nitrate MCL.

Nitrate (Private wells)
Condition: Water and land

This metric is based on Minnesota Department of Agriculture's private well monitoring network for nitrate in two vulnerable areas of the state (southeast and central Minnesota) to determine nitrate concentrations and trends. In many areas, drinking water aquifers are not vulnerable to surficial contamination. Wells may have low levels of nitrate-nitrogen. In some areas it can be a significant concern. New local partnerships continue to be established for nitrate-nitrogen monitoring and reduction activities. The state-wide dataset does not have enough information to support a trend currently.

GOOD	FAIR	POOR
≤2% nitrate at or above the HRL in Central Sands Regional Network ≤5% nitrate at or above the HRL in southeast regional network	4% at or above HRL- status in Central Sands Regional Network 11% at or above the HRL- status in SE Regional Network	>4% of wells have nitrate at or above the HRL in the Central Sands Regional Network >11% of wells are at or above the HRL in southeast regional network

MINNESOTA
ENVIRONMENTAL QUALITY BOARD

Land conversion Condition: Water and land

This metric is based on levels of land conversion and how efficiently we develop land as our population and economy grows. As our population and economy grows, we need room for housing, businesses, recreation, shopping, transportation, government services, and more. Since 2002, the rate at which farmland, forest, wetlands, and wildlife habitat is converted to urban and suburban development has decreased. There is no stated goal, but we are looking at historic trends for how to use land efficiently. We want to better understand land conversion patterns and the impact of trends.

GOOD	FAIR	POOR
Decrease in rate of land conversion.	Stable rate of land conversion.	Increase in rate of land conversion.

UPWARDS TREND	STEADY TREND	DOWNWARDS TREND
15-year trend is greater than 0.5% downward (i.e., is negative).	15-year trend is relatively flat (0.5% or less positive or negative).	15-year trend (percent change) in developed acres per 1,000 persons is greater than 0.5% upward (i.e., is positive).

Water sustainability Condition: Water and land

Annual data will be based on the previous calendar year reported water use and state population. The criteria are an indication of the overall trend in water use statewide. The impact of water use depends on the source and geographic concentration of the use which varies across the state. Specifying a goal of 1.5% reduction of generally consumptive water use is in line with the goal of reducing non-residential public water supply water use by 15% over 10 years. That goal is in line with a general goal to reduce energy use based on water use by 15% over 10 years. The broad goal is water resource sustainability. Public water suppliers are directed to achieve the objectives: 1.5% annual water use reduction of non-residential consumption and 75 gallons per capita, per day residential water use. There are not parallel objectives in other classes of appropriations.

GOOD	FAIR	POOR
Decreasing per capita water consumption – exceeding 1.5 percent per year.	Per capital water consumption change between +.5% to -1.5% per year.	Per capita water consumption increasing > .5% per year.

UP ARROW	STEADY TREND	DOWN ARROW
10-year linear trend line for rolling 3-year average per capita water consumption has a negative slope of at least -500 gal.	10-year linear trend line for rolling 3-year average per capita water consumption has a slope of between 500 gal. and -500 gal.	10-year linear trend line for rolling 3-year average of per capita water consumption has a positive slope of at least 500 gal. per person

Public land protection and management Action: Water and land

DNR strives to have 80% of proposed acquisitions meet SLAM goals because we want most of our acquisitions to meet multiple acquisition goals and ensure we're layering the benefits of acquisition. We are currently meeting these goals

GOOD	FAIR	POOR
At least 80% of proposed land acquisitions meet three or more SLAM goals.	60-80% of proposed land acquisitions meet three or more SLAM goals.	Less than 60% of proposed acquisitions meet three or more SLAM goals.

UPWARDS TREND	STEADY TREND	DOWNWARDS TREND
On track to meet goals.		

MINNESOTA
ENVIRONMENTAL QUALITY BOARD