Targets

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From climate goals to results

Achieving Minnesota's climate vision requires large-scale, collective climate action around the state, led by individuals, communities, organizations, and governments at all levels. To succeed, we must clearly define the results we seek and establish measurable targets for the state's Climate Action Framework. Equally important is consistently tracking and reporting progress so we can see how our actions are moving us toward our shared vision and goals.

Monitoring, evaluation and reporting are essential to understanding Minnesota's progress toward a carbon-neutral, resilient, and equitable future. These efforts will help us determine whether our collective actions are effective and identify where improvement is needed. Identifying *key desired results, metrics,* and *targets* is important for monitoring, evaluation and reporting.

- **Key desired results** – The most important outcomes to be achieved from the collective efforts of governmental, public and private partners across the state.
- **Metrics** – The measurable units used to track progress toward the key desired results.
- **Targets** – A desired level of achievement for a metric. Setting targets includes identifying a level of achievement, a deadline by which progress should be achieved, and a baseline year against which progress will be measured.

The Climate Change Subcabinet has identified key desired results and targets for each pillar of Minnesota's climate vision—carbon neutrality, resilience, and equity—and, for most Climate Action Framework goals, at least one target per initiative. Relevant metrics, data sources, and baseline years are included for each target. These are based on learnings from the 2022 Climate Action Framework, 2024 progress report, and public engagement. The Minnesota Department of Health also developed a set of health impact metrics for extreme heat and poor air quality.

Notably, the metrics and targets for each framework goal are not uniformly developed. These differences result from the range of framework goals and factors such as variation in climate policy development and data availability. Some sectors and policy areas have a long-standing focus on climate issues, while others are newer and will require development. The key desired results, metrics, and targets are subject to change in response to data availability, feasibility of tracking, and other factors.

To accelerate action across sectors and across geography, we plan to hold a climate action convening in summer 2027 – approximately 18 months after publication of the updated framework. Sharing, and reflecting on, our collective progress will help catalyze further action.

Goal 1: Clean transportation targets

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Pillar: Carbon neutrality	Minnesota reduces annual net GHG emissions from the transportation sector.	Percentage change in transportation sector GHG emissions	MPCA GHG inventory	n/a	Reduce GHG emissions from the transportation sector 100% by 2050.
Pillar: Resilience	Minnesota's transportation system is resilient to climate change.	Percentage of culverts in poor or serious condition	MnDOT Performance Measure Dashboard	2016	Reduce percentage of culverts in poor or severe condition to no more than 10% of culverts by 2035.
Pillar: Equity	Transportation and housing costs are affordable for all households, including low-income households.	Percentage of household income needed to meet basic transportation and housing costs	US Bureau of Labor Statistics Consumer Expenditure Survey	n/a	Ensure transportation and housing costs account for less than 45% of household income for all Minnesotans.
Initiative 1.1: Travel options	Minnesotans are less dependent on driving to access services and opportunities.	Annual vehicle miles traveled per capita	MnDOT Performance Measure Dashboard	2019	Decrease vehicle miles traveled per capita 8% by 2030, 11% by 2035, 14% by 2040, and 20% by 2050.
	Nonmotorized transportation, including walking and biking, is safe.	Nonmotorized fatalities and serious injuries	MnDOT Performance Measure Dashboard	n/a	Eliminate traffic deaths and serious injuries among nonmotorized road users.
Initiative 1.2: Clean and efficient vehicles	Zero-emission vehicle adoption is increased across Minnesota.	Percentage of light-duty vehicles registered in Minnesota that are ZEVs	MnDOT Performance Measure Dashboard	n/a	Increase the proportion of zero-emission vehicles among all light-duty vehicles registered in Minnesota to 20% by 2030 and 65% by 2040.
	The EV charging station network is expanded to ensure coverage across Minnesota.	Number and distribution of public DC fast-charging and Level 2 chargers installed	Atlas Public Policy EValuateMN	n/a	Achieve statewide coverage of publicly accessible EV charging, with DC fast-charging stations installed along interstates and principal arterials every 50 miles in urban areas and every 75 miles in rural areas by 2035, and at least one Level 2 charger installed in every Minnesota ZIP code by 2035.

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Initiative 1.3: Resilient and low-carbon infrastructure and system management	Minnesota's transportation system is resilient to climate change.	Percentage of culverts in poor or serious condition	MnDOT Performance Measure Dashboard	2016	Reduce percentage of culverts in poor or severe condition to no more than 10% of culverts by 2035.

Goal 2: Climate-smart natural and working lands targets

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Pillar: Carbon neutrality	Minnesota reduces annual net GHG emissions from the agriculture sector.	Percentage change in annual net GHG emissions from the agricultural sector	MPCA GHG inventory	2005	Reduce GHG emissions from the agriculture sector 40% by 2050.
	Minnesota maintains or increases annual net GHG sequestration in the land use, land-use change, and forestry sector.	Percentage change in annual net GHG sequestration in the land use, land-use change, and forestry sector	MPCA GHG inventory	2005	Maintain levels of GHG sequestration within the land use, land-use change, and forestry sector through 2050.
Pillar: Resilience	Forests, wetlands, and grasslands are healthy ecosystems resilient to climate change.	Populations of indicator bird species.[1]	USFWS, USGS, and DNR databases[2]	2005	Maintain or increase abundance of key bird species in grassland, wetland, and forest habitats.
	Producers implement actions to increase soil carbon and reduce erosion.	Acres of cropland in cover crops, no-till, conservation tillage, and perennial crops	USDA National Agriculture Statistics Service (NASS)	n/a	Increase the share of cropland acres in Minnesota managed with conservation tillage, no-till, cover crops, and/or perennial crops to 60% by 2030 and 80% by 2050.
Pillar: Equity	All Minnesotans share in the benefits provided by natural lands and a diverse and sustainable agricultural economy.	Access to farmland by historically underserved population groups	USDA National Agriculture Statistics Service	n/a	Increase the share of farms operated by historically underserved farmers.
		Surface and groundwater quality across all of Minnesota (N, P, TSS)	MN Nutrient Reduction Strategy (NRS)	NRS baseline	Maintain or improve water quality in each major river basin, meeting the goals of the 2025 Nutrient Reduction Strategy.[3]

[1] To include 1 game bird and 4 songbird species that best characterize the quantity and quality of grassland, wetland, and forest habitats. These include species that are indicators of well-managed grazed and ungrazed grasslands, young and mature forests, and a range of wetland types.

[2] Long-term databases tracking bird abundance include USFWS and DNR waterfowl surveys, DNR Pheasant August Roadside Surveys, DNR Ruffed Grouse Survey, and USGS Breeding Bird Survey.

[3] For the Mississippi River Basin: 41% total nitrogen (40,451 metric tons (MT)) and 34% total phosphorus (1,695 MT) annual reduction at state line, equivalent to 16.8 million treated cropland acres. For the Red River Basin: Total nitrogen reduction of 42% (8,482 MT) and total phosphorus reduction of 57% (1,577 MT), equivalent to 3.8 million treated cropland acres. For Lake Superior Basin, no increase above baseline.

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Initiative 2.1: Carbon sequestration and storage in forested lands, grasslands, and wetlands	The Climate Change Subcabinet has identified a collaborative approach to tracking and managing progress in the natural and working lands sector. Each year, the lead state agencies in this area—the Minnesota Board of Water and Soil Resources, Minnesota Department of Agriculture, and Minnesota Department of Natural Resources—will convene a panel of partners and stakeholders from the natural and working lands sector to discuss the pace and direction of progress relative to the Climate Action Framework goals, initiative and actions; identify what is working well and where there are gaps; and discuss needed areas of focus for the coming year. This approach will be data-centered, making use of the latest available data/information as well as collective professional experience and judgement. The result of this annual convening would be a short, written report that captures the findings, which would be used to guide progress going forward. The natural and working lands sector is rich with data—and the interpretation and presentation of that data will play an important role in this convening. To the extent possible, existing and proposed datasets will be used to illustrate and evaluate progress towards achieving climate adaptation and mitigation objectives for this sector. For example: • State fee title acquisition of conservation lands (state Wildlife Management Areas, Scientific and Natural Areas, State Forests, State Parks) • State conservation easements through DNR and BWSR • Easements and fee title through partners, including The Nature Conservancy and Minnesota Land Trust • Federal conservation programs, including Conservation Reserve Program, FSA/NRCS programs, and US Fish and Wildlife Service protection and restoration programs • Improved spatial analysis and monitoring results from peatland restoration efforts [needs further development] • National Agriculture Statistics Survey Census of Agriculture and various other NASS surveys • Enhanced remote sensing of conservation practices, particularly on private lands not enrolled in government programs [needs further development] • Fertilizer sales data • Enrolled acres in the Minnesota Ag Water Quality Certification Program • U.S. Forest Service Forest Inventory and Analysis data				
Initiative 2.2: Resilient landscapes and ecosystems					
Initiative 2.3: Healthy farmland					
Initiative 2.4: Sustainable landscapes and water management					
Initiative 2.5: Enhanced investments in emerging crops, products, and local economies					

Goal 3: Resilient communities targets

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Pillar: Resilience	All Minnesotans live in communities with plans that identify actions to build resilience to extreme weather events or adapt to climate impacts.	Percentage of communities that report having incorporated resilience into their planning	MPCA Resilience Planning Survey	2016	By 2031, 100% of Minnesota communities have incorporated resilience into their planning.
	All Minnesotans communities take action to adapt or increase resilience.	Percentage of communities that report taking action to adapt or increase resilience	MPCA Resilience Planning Survey	2016	Increase the share of Minnesota communities that have taken action to adapt or increase resilience to 50% by 2031 and 100% by 2050.
Pillar: Equity	Minnesota communities have expanded community services that support climate resilience.	Percentage of Minnesotans that have reasonable access to a resilience hub or cooling center	Data sources needed to track resilience hub/cooling center locations.	n/a	By 2035, 100% of Minnesotans know where to find and have access to a resilience hub or cooling center within a reasonable distance or travel time from home.
Initiative 3.1: Climate-smart communities	All Minnesota communities have access to financial resources for implementing resilience actions.	Percentage of communities with resilience plans that have received funding toward implementation	Annual budget and grant distribution reports; prior demand of resilience grants; MPCA Resilience Planning Survey	n/a	Increase the share of Minnesota communities that have access to financial resources for implementing resilience actions to 50% by 2031 and 100% by 2050.
	All Minnesota communities have access to technical assistance and resources to support identification of climate risks and actions to plan for and implement resilience actions.	Number of communities participating in the GreenStep or Gold Leaf Challenge program	GreenStep and Gold Leaf programs	2011	By 2030, 225 communities participate in the GreenStep or Gold Leaf Challenge programs.

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Initiative 3.2: Healthy community green spaces and water resources	All Minnesotans live in communities with sufficient and equitable tree canopy coverage to support climate resilience.	Percentage of communities with at least 30% of area covered by tree canopy	LiDAR tree canopy survey each decade, and community tree surveys	2020	Achieve 30% tree canopy coverage by 2030 and 40% by 2050 in all Minnesota communities.
	Minnesota lakeshores are resilient to climate impacts and promote water quality.	Percentage of Minnesota's lakeshores with natural shorelines	DNR lake surveys	n/a	Achieve natural shorelines along 75% of Minnesota's lakeshores by 2040.
Initiative 3.3: Resilient infrastructure	Infrastructure in Minnesota communities is resistant to climate hazards.	Percentage of infrastructure projects designed with consideration of future climate conditions.	State and Federal design guidelines; Minnesota Environmental Review documents; MPCA resilient planning survey	n/a	By 2035, 100% of Minnesota communities use future climate conditions for infrastructure project design.
	Buildings in Minnesota communities are resilient to climate hazards.	Percentage of Minnesota jurisdictions that have adopted climate hazard resistant building policies	FEMA's Building Code Adoption Tracking; Dept. of Labor & Industry; League of MN Cities, Association of MN Counties; B3 Building design guidelines; MPCA resilient planning survey	n/a	By 2035, 50% of Minnesota communities have adopted climate hazard resistant building policies.

Goal 4: Clean energy targets

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Pillar: Carbon neutrality	Minnesota achieves its 100% clean electricity standard by 2040.	Annual net GHG emissions in the electricity sector; percentage carbon-free electricity	MPCA GHG inventory	n/a	By 2040, all of Minnesota's electricity is carbon-free.
Pillar: Resilience	Minnesota's electrical grid and fuel distribution system are reliable and stable.	Frequency and duration of energy and fuel outages	Regulated electric utilities' reliability and service PUC dockets; natural gas utilities service quality dockets; Commerce fuels monitoring reports	2023	All regulated utilities exceed their reliability goals, which are set by the Minnesota Public Utilities Commission (PUC), each year between now and 2030.
Pillar: Equity	Energy prices are stable and affordable for all Minnesotans.	Reduction in the energy burden for low-income households	2024 Energy Policy and Conservation Quadrennial Report; American Community Survey	2024	All households that are income-eligible for energy assistance programs spend less than 5% of their household income on energy costs.
Initiative 4.1: Grid adaptation and enhancement	Capacity of electric service in Minnesota is increased.	To be determined	State modeling efforts and PUC, MISO, and FERC processes	n/a	Build out electricity generation and transmission capacity, optimized for reliability and cost to achieve the 100% carbon-free electricity by 2040 law.
Initiative 4.2: Clean energy sources	Energy project review is effective and efficient.	Number of projects sited and permitted in a given timeframe	PUC eDockets and project webpages	n/a	Energy project review meets or exceeds goals for timeliness established in the Minnesota Energy Infrastructure Permitting Act.
	Distributed clean energy generation is expanded.	Installed distributed energy resources	PUC Distributed Energy Resources data dashboard	2025	Increase installed capacity of distributed energy resources, optimized to achieve the 100% carbon-free electricity by 2040 law.

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Initiative 4.3: Dispatchable clean energy and storage	Wasted surplus energy is reduced.	Renewable energy curtailment (in megawatt-hours) due to lack of demand or grid capacity	MISO curtailment events	2025	Reduce megawatt-hours of wind energy curtailed by 10% per year by year.
	Energy storage capacity is increased.	Installed storage capacity in megawatts and megawatt-hours	REIS reporting and utility IDP reporting	n/a	Increase energy storage capacity installed, accounting for both capacities and durations, optimized to achieve the 100% carbon-free electricity by 2040 law.

Goal 5: Healthy lives and communities targets

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Pillar: Equity	Funding for climate mitigation and adaptation initiatives meaningfully benefits communities facing disproportionate climate impacts.	Percentage of funding for climate mitigation and adaptation initiatives that benefits environmental justice areas	Data source needed	n/a	By 2035, 40% of funding for climate mitigation and adaptation initiatives benefits communities facing disproportionate climate impacts.
Initiative 5.1: Cooler, safer communities	All Minnesota communities protect residents from extreme heat through planning, infrastructure, and nature-based adaptation.	Percentage of jurisdictions whose all-hazards plan includes preparation and response for extreme heat events	Minnesota Department of Public Safety	n/a	Increase the share of communities that address extreme heat in their all-hazards plan to 90% by 2030.
		Percentage of communities with at least 30% of area covered by tree canopy	LiDAR tree canopy survey each decade, and community tree surveys	2020	Achieve 30% tree canopy coverage by 2030 and 40% by 2050 in all Minnesota communities.
Initiative 5.2: Protection from poor air quality	All Minnesotans monitor air quality so that they can be safe during poor air quality days.	Number of Minnesota-based EPA AirNow app users	EPA AirNow app	2025	Increase the number of Minnesota-based AirNow app users by 10% by 2030.
Initiative 5.3: Safe water	Minnesota drinking water systems are prepared for climate disruptions.	Percentage of community water systems that have more than one well for their water source	Minnesota Drinking Water Action Plan	2024	Increase the share of community public water systems that have more than one well for their water source to 94% by 2035.
		Percentage of community water systems that have emergency power backup systems	Minnesota Drinking Water Action Plan	2024	Increase the share of community public water systems that have emergency power backup systems to 70% by 2035.

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Initiative 5.4: Community care	Minnesota communities have increased social cohesion and expanded community services that support climate resilience and health protection.	Percentage of Minnesotans that have reasonable access to a resilience hub or cooling center	Data sources needed to track resilience hub/cooling center locations.	n/a	By 2035, 100% of Minnesotans know where to find and have access to a resilience hub or cooling center within a reasonable distance or travel time from home.
Initiative 5.5: Climate-smart public health	State, local, and Tribal governments have strengthened capacity, communications, and preparedness to protect health amid climate change.	Percentage of local governments and Tribal Nations with health and safety plans that specifically discuss how to increase local resilience to extreme weather events and/or adapt to climate impacts.	MPCA Resilience Planning Survey	2025	By 2030, increase the percentage of local governments and Tribal Nations with health and safety plans that specifically discuss how to increase local resilience to extreme weather events and/or adapt to climate impacts.
Initiative 5.6: Advance equity, resilience, and justice	Funding for climate mitigation and adaptation initiatives meaningfully benefits communities facing disproportionate climate impacts.	Percentage of funding for climate mitigation and adaptation initiatives that benefits environmental justice areas	Data source needed	n/a	By 2035, 40% of funding for climate mitigation and adaptation initiatives benefits communities facing disproportionate climate impacts.

Goal 6: Clean economy targets

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Pillar: Carbon neutrality	Minnesota reduces annual net GHG emissions from the industrial sector.	Annual net GHG emissions in the industrial sector	MPCA GHG inventory	2005	Reduce GHG emissions from the industrial sector by 30% by 2050.
	Minnesota reduces annual net GHG emissions from the waste sector.	Annual net GHG emissions in the waste sector	MPCA GHG inventory	2005	Reduce GHG emissions from the waste sector by 70% by 2050.
Pillar: Resilience	Minnesota's businesses are resilient to climate change impacts.	Persistence rate of clean economy businesses; persistence rate of businesses overall	Quarterly Census of Employment and Wages (QCEW); Business Employment Dynamics (BED)	n/a	Ensure clean economy businesses remain open at the same or higher rate across the state than businesses overall.
Pillar: Equity	Increased economic well-being of communities.	Growth of clean economy businesses across Minnesota (by statewide and by region)	QCEW	2024	Grow clean economy businesses throughout Minnesota by 10% by 2035.
Initiative 6.1: Clean, sustainable, and resilient industrial businesses	Expanded adoption of low-carbon technologies in industrial facilities.	Percentage of onsite renewable industrial energy	U.S. Energy Information Administration's (EIA) State Energy Data System (SEDS)	n/a	Increase the share of onsite renewable energy use in the industrial sector by 50% by 2040.
Initiative 6.2: Clean fuel and clean technology innovation	Accelerate deployment of clean fuels and technology.	Energy intensity (industrial output per unit of energy use)	MPCA GHG inventory	2005	Reduce emissions per dollar of economic output produced by 90% by 2050.
Initiative 6.3: Strong circular economy	Decreased landfilling and incineration due to increased waste reduction, reuse, and recycling.	Percentage change in the amount of waste landfilled or incinerated	SCORE report	2005	Reduce trash in Minnesota by 70% by 2050.
Initiative 6.4: Resilient and equitable clean economy workforce	High-quality clean economy jobs are created and accessible to all.	Growth of clean economy jobs	QCEW	2024	Add 50,000 clean economy jobs by 2035 across the state.

Goal 7: Efficient and resilient buildings targets

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Pillar: Carbon neutrality	Minnesota reduces annual net GHG emissions from the commercial buildings sector.	Annual net GHG emissions from the commercial buildings sector in Minnesota	MPCA GHG inventory	2005	Reduce GHG emissions from commercial buildings 40% by 2050.
	Minnesota reduces annual net GHG emissions from the residential buildings sector.	Annual net GHG emissions from the residential buildings sector in Minnesota	MPCA GHG inventory	2005	Reduce GHG emissions from residential buildings 40% by 2050.
Pillar: Resilience	All Minnesotans live in homes and places where resilience actions are being taken.	Percentage of Minnesota communities that report taking resilience actions; number of buildings incorporating climate resilience upgrades	MPCA Resilience Planning Survey; Strengthen Minnesota homes program	n/a	By 2030, 100% of Minnesotans live in homes and places where resilience actions are being taken within their community.
Pillar: Equity	Access to decarbonization and resilience programs is more equitable.	Number of eligible households served annually by pre-weatherization and weatherization assistance programs	Pre-weatherization and weatherization program data	2023	Increase the number of eligible households served annually by pre-weatherization and weatherization assistance programs to 6,000 homes per program by 2050.
Initiative 7.1: Decarbonized residential and commercial buildings	Energy use in buildings is reduced.	Code compliance metrics (e.g., annual modeled energy cost, air leakage)	DLI Commissioner's annual report on progress	2004 (comm.) 2006 (resid.)	Reduce energy use in new commercial buildings by 80% by 2036 and in new residential buildings by 70% by 2038.
Initiative 7.2: Resilient residential and commercial buildings	All Minnesotans live in homes and places where resilience actions are being taken.	Percentage of Minnesota communities that report taking resilience actions; number of buildings incorporating climate resilience upgrades	MPCA Resilience Planning Survey; Strengthen Minnesota homes program	n/a	By 2030, 100% of Minnesotans live in homes and places where resilience actions are being taken within their community.

Vision pillar or initiative	Key desired result	Metric	Data source	Baseline year	Target
Initiative 7.3: Reuse of buildings and building materials	Building deconstruction for building material reuse is increased.	Amount of waste sent to construction and demolition landfills	Data from state and local diversion and reuse programs and deconstruction grants; SCORE reporting; construction and demolition landfill data	2025	Double the number of buildings that are deconstructed for building material reuse by 2030.

Health impact metrics

The following metrics help us track climate-related health risks and outcomes so we can see trends, understand who is most impacted, and focus our actions and resources where they're needed. Many initiatives across the Climate Action Framework as well as factors beyond climate action influence these health outcomes. Working across industries and sectors on climate action is necessary to reduce these health impacts and inequities for all Minnesotans. We will continue to track the following metrics and add new ones to further our understanding of how climate change affects Minnesotans' health and well-being.

Climate-related impact	Metric for health risks and outcomes	Key desired result	Examples of climate actions that could impact the key desired result
Extreme heat	Emergency room visits for heat-related illness	Heat-related illnesses and deaths are reduced.	Increase in multimodal and active transportation, compact and multimodal-oriented development, resilient landscapes and ecosystems, community capacity and empowerment, green space, tree planting, building weatherization, heat mitigation in communities, social cohesion, access to resilience hubs and cooling centers, and resilience planning.
Poor air quality	Emergency room visits for asthma due to poor air quality	Air pollution-related illnesses and deaths are reduced.	Reduction in air pollutants (particulate matter, nitrogen oxides, and ozone) through implementation of GHG reduction initiatives in the transportation, electricity generation, industrial, and buildings sectors. Increase in multimodal and active transportation, compact and multimodal-oriented development, resilient landscapes and ecosystems, community capacity and empowerment, green space, tree planting, building weatherization, social cohesion, access to resilience hubs, and resilience planning.
	Number of Minnesota census tracts with air pollution below the health benchmark for poor air quality	Air quality in Minnesota is improved, especially in communities facing the highest burden.	
	Number of Minnesota census tracts in environmental justice areas with air pollution below the health benchmark for poor air quality		