Minnesota's Climate Action Framework

Summary of climate actions

Overview of proposed action steps included in the Climate Action Framework

m1 MINNESOTA

SUMMARY OF CLIMATE ACTIONS

Minnesota's Climate Action Framework outlines work we must do to achieve a carbon-neutral, resilient, and equitable Minnesota. The following tables summarize action steps the state can take to advance us towards this vision.

Some actions expand on work state agencies are doing, to achieve greater greenhouse gas reductions or adaptation benefits. Others may be supported by federal funding and policy, while some can be taken with existing funding and expertise. Some will require legislation to create new laws, programs, and grants. All will require partnership and collaboration beyond state government.

These actions accelerate critical progress toward reducing Minnesota's greenhouse gas emissions and preparing our communities for the impacts of climate change.

Understanding the tables:

- The tables are organized by the goals outlined in each Framework chapter.
- Initiatives describe areas of action, with sub-initiatives further specifying areas of work.
- The action steps are categorized as actions the state agencies can **lead** on by taking administrative action alone, actions the state legislature can **enact** through their authorities to write laws and allocate funds, and actions state agencies can **encourage** others to do.

GOAL 1: CLEAN TRANSPORTATION

Initiative 1.1: Connected communities

Maintain and improve multimodal transportation connections to reduce emissions and congestion

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
1.1.1 Create more opportunities for biking, walking, transit, and telecommuting	Scope transportation projects, including projects in Greater Minnesota, to include facilities for people walking, bicycling, rolling, and taking transit.	✔		✔
	Evaluate current funding priorities and direct more resources towards non-motorized transportation to support improved pedestrian and bicycle facilities that increase separation from vehicles and are attractive to people of all skill levels.	✔		✔
	Prioritize transit and high occupancy vehicles on Minnesota Department of Transportation (MnDOT)-owned right of way.	✔		
	Increase transit service to create more reliable and convenient transit networks, with initial priority given to routes in communities where transit is essential for travel to jobs, services, schools, grocery stores, and parks and residents are disproportionately impacted by air pollution.	✔		
	Provide cost-sharing opportunities for developers, employers, and communities to include spaces for people to walk.			✔
	Collaborate with partners on the transportation element of local government comprehensive plans through coordination and review, and explore opportunities to provide technical assistance to local partners to make climate-smart land use and zoning updates, such as land use regulations that encourage more compact development.			✔
	Explore updating MnDOT's project prioritization process in collaboration with Metropolitan Planning Organizations to prioritize projects that enhance transit-oriented and walkable land uses.	✔		
	Promote land use planning that supports multimodal transportation options.			✔
	Evaluate actions that reduce vehicle demand for highways to reduce congestion in upcoming transportation planning processes.	✔		✔
	Deploy projects that temporarily demonstrate improvements for people walking and biking to assess opportunities for permanent improvements.	✔		✔
	Use data and community input to understand active transportation needs and preferences of underserved communities.	✔		✔

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
1.1.1 Create more opportunities for biking, walking, transit, and telecommuting	Develop resource guides and provide technical assistance for transportation project managers to integrate complete streets into transportation projects.	✔		✔
	Lead by example with telecommuting as an emissions reduction strategy through state employee telework and flexible work approaches.	✔		
	The Twin Cities-Milwaukee-Chicago Intercity Passenger Rail Service project is currently in the final design phase for railroad infrastructure improvements, with construction anticipated to start in 2023.	✔		✔
1.1.2 Plan land use that supports multimodal transportation	Encourage local governments to implement transportation demand management policies.			✔
1.1.3 Maximize resiliency and GHG mitigation in infrastructure projects	Prioritize the reuse of materials throughout construction process to the minimize carbon footprint of transportation construction projects.	✔		✔
	Examine opportunities to advance Next Generation Highways by co-locating broadband and electricity transmission in highway right-of-way.	✔		
	Support broadband connectivity, particularly for rural and underserved areas, to provide more options to access services.	✔		
	Coordinate with partners to manage stormwater and support transportation infrastructure resilience to extreme weather.	✔		✔

Initiative 1.2: Clean and efficient vehicles

Accelerate the transition to electric vehicles, alternative fuels, and greater fuel efficiency

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
1.2.1 Increase the use of clean fuels, including lower-carbon biofuels	Implement the Minnesota Strategic Electric Vehicle (EV) Plan that includes state actions to increase EV charging infrastructure, increase EV access and availability, and educate communities about the benefits of EVs.	✔		
	Coordinate with neighboring states, tribal nations, and other potential partners to implement the Regional Electric Vehicle (REV) Midwest Memorandum of Understanding which will establish an EV charging network across the Midwest.	✔		
	Continue exploring opportunities for a clean fuels standard which will incentivize increased investment in a broad portfolio of cleaner fuels, including advanced biofuels, renewable natural gas, other renewable fuels, electricity, and charging infrastructure.		✔	
	Follow the Governor's Council on Biofuels recommendations.	✔		
1.2.2 Expand electric vehicle (EV) charging infrastructure	Establish a transparent and equitable process to distribute more grant funding for EV owners, workplaces, local governments, and other site hosts for Level 2 and DC fast charger stations.	✔		✔
	Provide more grant funding for medium- and heavy-duty vehicle charging, including transit.	✔		✔
	Create opportunities to better connect co-ops, municipal utilities, and investor-owned utilities to discuss best practices related to EV chargers.	✔		✔
	Engage fuel providers to understand the role they would like to play in EV charger deployment.			✔
	Amend state building code to support accessible EV charging and make new construction and commercial buildings EV-ready.	✔		
1.2.3 Increase electric vehicle availability and access	Provide point-of-purchase rebates for new and used EVs, including e-bikes.			✔
	Develop dealer and salesperson recognition and incentive program, building off efforts like the Xcel Energy Gold Status Dealer program.			✔
	Provide more grant funding for medium- and heavy-duty vehicles, including transit and school buses, including funding available from the Infrastructure Investment and Jobs Act.	✔		✔
	Encourage EV targets for government and corporate fleets, including light-duty, medium-duty, and heavy-duty vehicles.	✔		✔

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
1.2.3 Increase electric vehicle availability and access	Coordinate with state and federal agencies to identify opportunities for battery recycling and reuse.	✔		✔
1.2.4 Accelerate the transition to EVs and clean transportation	Develop a marketing campaign in collaboration with stakeholders (e.g., auto dealers) to improve consumer understanding of EVs and electrified off-highway equipment.	✔		
	Provide financial incentives to BIPOC and low-income community organizers to educate about EVs.			✔
	Develop partnerships with trade schools and colleges to develop a clean transportation workforce.	✔		✔
	Create a multi-stakeholder initiative with the private sector, University of Minnesota, and public sector to assess opportunities and attract EV-related jobs and investment.	✔		✔
1.2.5 Improve vehicle efficiency and emissions standards	Advocate for stricter standards at the federal level.			✔
	Implement Clean Cars Minnesota rules, adopted in 2021.	✔		
	Create income-based car swap programs to replace older vehicles.			✔
	Retire and replace inefficient on- and off-road diesel vehicles across segments using state and federal funds.	✔		

GOAL 2: CLIMATE-SMART NATURAL AND WORKING LANDS

Initiative 2.1: Carbon sequestration and storage in forested lands, grasslands, and wetlands

Manage forests, grasslands, and wetlands for increased carbon sequestration and storage

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
2.1.1 Maintain, expand, and actively manage forestlands	Accelerate tree planting to expand forest cover where ecologically appropriate.		✔	✔
	Increase statewide seedling production to support tree planting efforts, including rectifying pinch points in seed supply and enhancing production of climate-adapted species.		✔	✔
	Invest in active forest management as a tool for promoting carbon uptake and reducing emissions from diseases, pests, and wildfires.		✔	✔
	Avoid conversion of forestland to other uses through private forest owner assistance, land acquisition, conservation easements, and sustainable timber harvests.	✔		✔
	Broaden understanding of climate mitigation options among private forest owners.	✔		✔
2.1.2 Protect, restore, and manage peatlands and other wetlands	Promote restoration of drained peatlands with an emphasis on cropped and pastured peatlands.			✔
	Protect and restore existing peatlands and other wetlands through conservation easements, wetland banking, and other land management programs and tools.		✔	✔
2.1.3 Protect, restore, and manage grasslands	Permanently protect and restore prairie and wetlands, particularly drained wetlands with organic-rich soils that are losing CO_2, through fee title, easement and cost-share projects.	✔		✔
	Use high diversity seed mixes in restoration and rectify pinch points in seed sourcing and supply.	✔	✔	✔
	Avoid grassland conversion as a potential unintended consequence in the development of other climate policies	✔		
2.1.4 Encourage individual actions that increase carbon storage	Explain how many small-scale actions – whether an urban pollinator garden, a suburban boulevard tree, or an agricultural woodlot planting – add up to meaningful climate benefits.	✔	✔	✔
	Help all Minnesotans understand their influence on ensuring climate-smart land management.	✔	✔	

Initiative 2.2 Resilient landscapes and ecosystems

Enhance the ability of plants and animals, including crops, to adapt to the effects of climate change

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
2.2.1 Conserve and enhance biodiversity	Restore and expand habitat complexes and corridors to protect wildlife and allow species to shift their range.	✔	✔	
	Work with local governments in developing regional and local land conservation plans identifying priority locations for protection and restoration.	✔		✔
	Promote climate resilience via effective management of invasive species through programs such as the Cooperative Weed Management Area Program and recreation outreach.	✔		✔
2.2.2 Use land management practices that enhance climate resilience	Increase native species diversity in grasslands and forests through restoration and management using locally appropriate seed and plant mixes.	✔		✔
	Plant, seed, or promote tree species projected to do well under changing conditions.	✔		✔
2.2.3 Promote the benefits of natural lands in climate adaptation	Broaden understanding of climate adaptation management options among private forest owners.	✔		✔
	Invest in new markets and supply chains for new products that help land managers adapt to a changing climate (e.g., drought-resistant or anti-erosion crops and drought-resistant tree seedlings).	✔		✔

Initiative 2.3: Healthy farmland

Accelerate soil health and nitrogen and manure management practices that reduce emissions and enhance carbon storage, water quality, and habitat

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
2.3.1 Increase soil organic carbon content and reduce erosion	Increase incentives and expand/enhance markets for practices such as cover crops, conservation tillage, and perennial crops that sequester carbon and increase resilience by restoring soil health.		✔	
	Investigate feasibility and develop programs for use of biochar and other soil amendments on cropland, pastureland, and forestland.	✔		
	Expand incentive programs for farmers to preserve woodlands and incorporate new trees and natural habitat into agricultural landscapes to protect against wind and water erosion and store carbon.		✔	
2.3.2 Manage fertilizer and manure to reduce emissions	Manage use of nitrogen and encourage and incentivize nitrogen and methane management practices that will reduce emissions through grants, education, and the Groundwater Protection Rule.	✔		
	Increase use of nitrogen management practices that will increase nitrogen use efficiency and reduce nitrous oxide emissions, such as nitrification inhibitors, split N applications, and others.			✔
	Investigate feasibility and implementation of methane reduction activities related to livestock and manure, such as livestock feed management and anaerobic digestion and acidification management of manure storage.		✔	
2.3.3 Manage land for multiple benefits	Increase options for working lands approaches such as haying, grazing, or tree crops on protected lands.	✔	✔	
	Promote conversion of marginal farmland to pastureland, perennial crops, woodland, and forage crops to enhance carbon capture, water quality protection, and wildlife habitat through set-aside programs.	✔		✔
	Coordinate with federal agencies to promote and fund production forestry, short rotation woody crops, and using trees as windbreaks.			✔
	Incentivize and expand climate-resilient agricultural and forestry Best Management Practices (BMPs) implementation assistance, such as access to technologies, equipment, and seed and plant material.	✔		
	Provide support to farmers to combine practices that decrease emissions, improve soil health, sequester carbon and improve water quality, through programs such as the Minnesota Agricultural Water Quality Certification Program's Climate Smart Farms endorsement.	✔		✔

Initiative 2.4: Sustainable landscapes and water management

Reduce GHGs and improve landscape resiliency through multipurpose water storage and management practices that protect farmland, water supplies, and infrastructure

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
2.4.1 Manage agricultural landscapes to hold nitrogen and retain rainfall and snow melt	Prioritize groundwater and drinking water protection in vulnerable areas.	✔		
	Protect, restore, and increase perennial cover in priority Drinking Water Supply Management Areas.	✔		
	Protect, restore, and increase wetlands to absorb, filter, and use excess nutrients and help recharge and protect groundwater and drinking water.	✔		
	Implement the Nitrogen Fertilizer Management Program in vulnerable areas as defined by township testing results.	✔		
	Promote fertilizer and manure application practices that minimize nitrogen loss through implementation of the Feedlot Rule and General Permit.	✔		
2.4.2 Manage agricultural landscapes to hold water and reduce runoff	Increase water storage, infiltration, and drainage management to reduce runoff and minimize downstream flooding, erosion, and habitat loss.	✔		
	Restore natural stream stability where possible to reduce erosion, increase habitat diversity, and decrease maintenance and infrastructure costs.	✔		
	Assist local government units with identifying and prioritizing locations for water storage as part of watershed planning, emphasizing practices such as wetland and floodplain restoration, drainage water management, and buffer establishment.	✔		✔
	Encourage water recycling where feasible to sustain aquifers and lessen demands on drinking water supplies.			✔
	Encourage multipurpose drainage design and retrofitting that provides adequate drainage capacity while reducing downstream peak flows, erosion, and sedimentation, and improving water quality and aquatic habitat.			✔

Initiative 2.5: Investments in emerging crops, products, and local economies

Support emerging agricultural and forest technologies and products that reduce waste, create jobs, and expand economic opportunities

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
2.5.1 Invest in climate-smart agriculture and develop markets for climate-benefitting products	Invest in new markets and supply chains for perennial crops and harvestable crops that keep soil covered year-round.	✔	✔	
	Support and expand research and market/supply-chain development for crops that increase carbon sequestration and reduce nitrogen loss.			✔
	Identify opportunities for farmers and landowners to participate in ecosystem services markets (e.g., for carbon removal, flood protection, and water quality) that incentivize best management practices for climate mitigation and adaptation.			✔
2.5.2 Promote forest products that store carbon and reduce GHG emissions	Enhance markets for existing long-lived wood products that increase carbon storage and replace more fossil-fuel-intensive materials.		✔	
	Stimulate markets for emerging forest products — such as engineered wood, biochemicals, biofuels, and environmental remediation products — that have the ability to reduce GHG emissions by providing a low-carbon alternative to fossil-fuel-intensive products.			✔
	Extract the energy in waste wood and wood residuals (e.g., emerald ash borer waste wood and sawdust) to diversify forest products markets and reduce the need for energy from other sources.		✔	✔
	Increase competitiveness of lower-value wood products that are generated from climate adaptation management practices.	✔		✔
	Launch educational campaigns to tell the story of Minnesota products and climate impacts to increase understanding and drive individual consumption and behavior change related to purchasing, diet, and services.	✔		
2.5.3 Support local food markets, urban agriculture, and emerging farmers	Promote local and community-based agriculture to reduce transportation needs and increase food access, especially in underserved communities.	✔		
	Continue and expand the Emerging Farmer Program and similar programs for farmers and agricultural/food entrepreneurs, with particular attention to advancing inclusion and equity.	✔		
2.5.4 Reduce waste and promote beneficial use of materials	Investigate feasibility and develop programs to increase the use of composting in Minnesota to build soil health.		✔	
	Incentivize and reduce barriers for local and regional food donation and food rescue organizations, food-to-animal programs, and public or commercial compost facilities.	✔	✔	

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
2.5.4 Reduce waste and promote beneficial use of materials	Support local governments with guidance and resources to conduct public education campaigns such as prevention of wasted food and zero waste challenges.			✔
	Incentivize beneficial uses (wood products, mulch, waste-to-energy, etc.) for waste wood that results from increased tree pests and diseases.	✔		

GOAL 3: RESILIENT COMMUNITIES

Initiative 3.1: Climate-smart communities

Build the capacity of Minnesota communities to protect against and withstand the effects of climate change

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
3.1.1 Provide needed technical assistance, tools, and data	Provide training to expand local capacity to assess vulnerabilities, and to plan for and implement adaptation strategies that increase public and critical facilities' resilience, reduce private property damage, and limit public health impacts from climate change.	✔		
	Develop resilient metrics to align with Goal 3 initiatives that identify baselines, set clear objectives, and evaluate capacity, scalability, and cost-effectiveness.	✔		
	Create an interactive, comprehensive website that improves visibility of and access to climate information and identifies strategies to help communities expand resilience capacity.	✔		
	Integrate ongoing adaptation strategies into county hazard mitigation plans using Minnesota's state hazard mitigation plan as a guide. Encourage all communities have a preparedness plan for extreme weather events, including contingencies for multiple events such as a heat wave after flooding.		✔	✔
	Implement the use of high-resolution, dynamically downscaled climate projections for planning and design efforts across Minnesota.			✔
	Accelerate updates to FEMA maps statewide using LiDAR and improved forecasting tools to identify locations subject to repeated localized flooding.			✔
	Advance and promote use of Blue Spot mapping tools and update the Infrastructure Stress Transparency Tool that provides interactive maps of Minnesota's civil infrastructure.	✔		✔
	Map areas where people at greatest risk to climate impacts live and address environmental justice areas of concern across the state. Add climate-related data overlays (e.g., urban heat island effect, drought) as needed.	✔		
3.1.2 Deliver necessary funding	Expand funding and staff resources for the assessment, data monitoring and analysis, planning, design and implementation of adaptation and resiliency projects.		✔	
	Prioritize the use of state bonding funds in support of resilient infrastructure, including water quantity projects, and seek federal funding to address climate vulnerabilities and strengthen resilience.		✔	
	Use existing revolving loan funds and created new public/private resilience financing such as green banks, and other financial tools to provide additional funds.		✔	✔
	Establish a state tree canopy fund.		✔	

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
3.1.3 Share best practices through learning networks	Increase capacity of the GreenStep Cities program to develop and share resilience best practices and adaptation resources with communities, and expand pilot programs that include tribal nations, schools, counties, and townships.	✔	✔	
	Engage with the Minnesota Climate Adaptation Partnership (MCAP) and other partners to provide climate modeling data, technical assistance, and adaptation strategies.	✔		✔
	Hold regular town halls with communities and tribal governments throughout Minnesota to ask what would most help with increasing resilience and more sustainable community consumption.	✔		✔
	Provide community education resources on local climate impacts and actions to describe climate-related hazards and extreme weather events, and prioritize those groups most-at-risk from climate change.	✔		✔
	Increase capacity to develop and implement programs, best practices, and resources with communities to encourage more sustainable consumption and behaviors and sustainable materials and products.	✔	✔	

Initiative 3.2: Healthy community green spaces and water resources

Expand and protect tree canopies; parks and other green spaces; and lakes, rivers, and wetlands that provide multiple community resilience benefits

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
3.2.1 Expand tree planting and preservation	Preserve existing mature trees by encouraging heritage tree preservation and establishing tree maintenance – and assist communities in developing tree ordinances and policies to protect urban tree canopy especially within commercial and residential building projects.			✔
	Manage emerald ash borer and other emerging plant pests and diseases in communities through treatment, removal/replacement, proper disposal and financial assistance.	✔	✔	
	Assess urban canopy cover and other urban tree baseline data across the state for 2010 and 2020 and thereafter in ten-year intervals to help communities track and measure tree canopy goals.	✔		
	Educate communities on available tree inventory data tools including Tree Equity Score, Metropolitan Council "Growing Shade" tool, and the University of Minnesota's Land Cover and Urban Tree Canopy tools.	✔		
	Increase funding for urban tree care and forestry, and dedicate resources for education, job training and community-led planning and decision-making.	✔	✔	✔
	Grow and support climate-adaptive shade trees in urban areas, prioritizing disproportionately impacted communities, to decrease energy use in homes and buildings, mitigate heat islands and replace pest infected or diseased trees.			✔
3.2.2 Plant beneficial vegetation on urban land	Expand pollinator, prairie, and climate-adapted plantings to increase biodiversity and ecosystem resiliency on public and private lands.		✔	✔
	Support parks, community gardens, and green spaces in communities at greater risk from climate impacts.			✔
	Promote incorporation of prairie vegetation as part of ground-mounted solar development to support pollinators.	✔		✔
	Increase the resilience of ecosystems and native species to provide habitat and water quality benefits, promote the right to exist and inherent value of wildlife and plants, and support tribal authority to hunt and gather.	✔		✔
3.2.3 Protect and improve water quality and quantity	Implement the 2020 State Water Plan. Updated every five years, the current plan's focus is how to best prepare for the impact of climate change on Minnesota's water resources.	✔		

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
3.2.3 Protect and improve water quality and quantity	Prioritize the strategies identified to achieve the Water Plan's five primary goals: (1) Ensure drinking water is safe and sufficient; (2) Manage landscapes to protect and improve water quality; (3) Manage landscapes to hold water and reduce runoff; (4) Manage built environments and infrastructure for greater water resiliency; (5) Promote resiliency in quality of life.	✔		✔

Initiative 3.3: Resilient buildings, infrastructure, and business

Help the built environment and local economies become more resilient to climate change

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
3.3.1 Plan for climate adaptation in residential and commercial development	Research ways to increase resiliency of buildings to extreme precipitation, flooding, extended heat waves, urban heat island effects, grid failure from extreme weather, and other climate change impacts – especially in multi-family housing upgrades and for under-resourced communities. Enable the use of the Guaranteed Energy Savings Program for community resilience to multiple climate perils including design and audit assistance.	✔		✔
	Adopt resiliency provisions in codes, permits, and policies for new construction, rehabilitation and adaptive reuse, and create resilient design standards that also maximize material reuse when possible.	✔	✔	
	Incorporate climate resiliency into engineering best practices; and partner with engineering and architecture professional associations to provide education and training opportunities.	✔		✔
	Encourage new construction and rehabilitation of housing to plan for resiliency/adaptation (e.g., waterproofing basements, raising mechanicals and coordinating with energy improvements, installing mold resistant and passive cooling building features), prioritizing rehabilitation first before new construction, and ensuring new developments build outside of higher risk flood areas that retain the natural benefits those areas often provide.			✔
3.3.2 Fund resilient infrastructure and critical facilities	Assess vulnerabilities of critical facilities and use climate projections to identify ways to ensure continuity of operations.	✔		✔
	Modify infrastructure and update state floodplain management rules for critical facilities, mitigate risk in areas beyond current FEMA-mapped floodplain areas, and encourage no-net-loss of floodplain storage in response to projected climate conditions. Create resilient design standards for building and updating critical facilities and infrastructure.	✔	✔	✔
	Design transportation infrastructure for long-term resiliency, including expanding use of culverts and crossings designed to allow better natural flow distribution, capacity for increased volume where appropriate, and aquatic organism passage.	✔		✔
3.3.3 Expand green infrastructure and stormwater management	Provide funding and technical assistance to establish green infrastructure and other nature-based adaptation in urban areas to control flooding, reduce urban heat, improve water quality, and restore lost habitat.	✔		✔
	Expand the use of green stormwater infrastructure practices in developments within stormwater regulatory programs.	✔		✔

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
3.3.3 Expand green infrastructure and stormwater management	Promote water storage and water management to hold or distribute water during and after large rain events in urban landscapes, including restoring wetlands to support water storage in flood-prone areas, to protect buildings and infrastructure and support watershed health. Support reuse of water to increase resilience.			✔
3.3.4 Reduce the urban heat island effects	Provide funding and technical assistance to help communities reduce their urban heat islands, prioritizing disproportionately impacted communities.	✔		✔
	Encourage the development of resilience hubs which provide and coordinate culturally sensitive, multilingual services to better meet the needs of diverse groups of community members in response to extreme heat and other climate-driven impacts.			✔
3.3.5 Support adaptation for local businesses	Offer planning, funding, and technical support to help businesses such as tourism, sports and recreation, and construction and remodeling adapt to climate change impacts.		✔	✔
	Develop adaptation job training and certification programs and prioritize employment opportunities to frontline communities seeking to build resilience.	✔		✔
	Support resilience through local and regional economic development and community energy transition. Encourage flood preparedness and business disruption assistance for small businesses disproportionately impacted by climate change.	✔		✔

GOAL 4: CLEAN ENERGY AND EFFICIENT BUILDINGS

Initiative 4.1: Clean energy

Transition to 100% carbon-free, reliable, and affordable electrical power and heat through policies, investments, and partnerships

Initiative/Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
4.1.1 Transition to 100% carbon-free electricity	Establish a standard to achieve 100% carbon-free electricity by 2040.		✔	
	Increase Renewable Energy Standard to 40% by 2025 and 55% by 2035.		✔	
	Promote electrical grid upgrades, load flexibility, greater access to renewable energy and fund research and development to integrate more renewable energy in the grid.		✔	✔
	With a goal of reducing thermal emissions by at least 20% by 2030, explore and evaluate new regulatory and policy options such as, but not limited to, a clean thermal standard and incentive programs and maximize emission reductions through implementation of the Energy Conservation Optimization Act and the Natural Gas Innovation Act.	✔	✔	✔
	Capitalize on existing sustainability programs such as Energy Star, LEED, Green Communities, and others, which contribute to market demand for carbon-free living and work environments.			✔
	Broaden existing renewable energy incentives and establish new options for families and businesses to achieve greater resilience and address energy burden.		✔	
	Look for opportunities to find greater efficiencies, maximizing community benefits and minimizing negative impacts, in permitting processes for low-carbon energy projects.	✔		
	Support the deployment of energy storage and demand response, which ensure grid optimization and modernization, as well as the ability to dispatch resources to shift and shape load to reduce the effects of peak usage periods.	✔		
	Encourage the development of renewable natural gas and hydrogen hubs for difficult to decarbonize end uses.			✔
4.1.2 Utilize waste heat	Lower operating costs by expanding combined heat and power systems and energy efficiency measures in wastewater and water treatment plants and other potential systems.		✔	
	Work with industry to identify strategies to enable greater utilization of waste heat, with the goal of a total cumulative 10% reduction in industrial waste heat by 2030.			✔
	Explore policies to promote cross-sector coupling and district energy to facilitate the recovery and reuse of wasted thermal energy from industrial and other facilities to heat and cool neighboring buildings.	✔		

Initiative 4.2: Smarter buildings and construction

Reduce GHG emissions in the building sector by promoting conservation, efficiency, and lower-carbon design, materials, and fuels

Initiative/Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
4.2.1 Increase efficiency and reduce emissions in existing buildings	Provide financial support, incentives, and technical assistance in an informed and equitable manner for residential, commercial, educational, and government building owners to make energy improvements such as upgrading to more efficient appliances, windows, insulation, and heating and cooling systems. Continue support of solar photovoltaic installations on existing buildings.		✔	
	Identify opportunities to consolidate and streamline programs such as energy assistance, weatherization, and utility efficiency programs to make them easier to access, navigate, and scale up in both multifamily and single-family buildings. Develop strategies specific to both renters and homeowners.	✔		
	Ensure that utility energy audit programs are equitably available across the state, regardless of fuel type, and that all buildings throughout the state have access to assessment tools that compare existing performance to target standards so that building owners can clearly understand where their investments will have the most impact.		✔	
	Develop incentives, rate designs, and research and development for decarbonized heat pumps and systems, encouraging net-zero emissions district energy systems, and deploying multiple approaches to cost reduction that address barriers for all customers.	✔		
	Work with industry to identify opportunities to improve efficiency across Minnesota's diverse industrial sectors, and provide incentives and technical assistance to advance the energy efficiency and other process improvements necessary to achieve significant reductions in industry energy usage.			✔
	Improve codes and standards for all existing commercial and large multi-family projects to optimize energy efficiency, resilience, energy production and lower carbon outputs.	✔		
	Consider developing additional energy and building code enforcement mechanisms both within municipalities that have adopted the state building code and statewide for portions of the code specific to energy and resiliency.	✔		
	Expand access to building performance assessment tools to inform strategic decisions for investing in structural upkeep, adaptive building reuse, building material uses, and building efficiency upgrades, including in government buildings, institutional buildings, commercial buildings and large multi-family buildings.			✔
	Provide assistance and funding for multi-family and single-family home structure repair and maintenance to reduce the number of buildings that go into disrepair and require demolition and replacement.	✔	✔	✔

Initiative/Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
4.2.2 Design and build climate-smart new buildings	Combine energy efficiency and climate resiliency design that considers building siting and design with on or off-site renewable energy.			✔
	Develop clear options for building owners and families to make informed environmentally-preferable selections for their building materials and products, including appliances such as furnaces, water heaters, and cooktops/ovens.			✔
	Explore supply-side support of highly efficient appliances, heating and cooling equipment, and domestic water heating equipment such that the short-term low-cost option is also one of the most energy efficient options. Consumers with fewer resources will then be able to opt for more efficient choices.	✔		
	Continue the uniform statewide energy code adoption process, evaluating and adopting national model energy codes to ensure aggressive energy savings and address energy code enforcement.	✔		
	Improve codes and standards for all new commercial and large multi-family buildings to achieve net-zero buildings by 2036.	✔		
	Expand the use of low-carbon construction materials such as concrete, steel, and reused and recycled construction materials or renewable materials like sustainably harvested timber which captures GHG emissions and stores carbon in the building itself (e.g., mass timber panels).			✔
	Promote real-time monitoring of building or tenant space energy consumption to facilitate energy consumption reduction and provide immediate feedback to the owner.			✔
4.2.3 Building reuse and preventing waste	Support and promote adaptive reuse of existing buildings to reduce construction waste and retain embodied carbon in existing construction materials.			✔
	Expand deconstruction and reuse of construction materials where demolition cannot be avoided.			✔
	Expand recycling of construction waste that cannot be reused in the construction market, investing in the development and expansion of recycling markets for building materials.			✔
	Develop incentives and research and development for reincorporating used building materials to reduce the life cycle Global Warming Potential (GWP) of the building's construction materials in the renovation, preservation, and maintenance of existing buildings and the construction of new buildings.			✔
	Provide financial support, incentives, and technical assistance in an informed and equitable manner for residential, commercial, educational and government building owners to maintain existing structures, incorporate used building materials, and deconstruct structures where demolition cannot be avoided.		✔	✔
	Expand the use of material conservation and waste management plans, establishing targets and guidance to increase material salvage, reuse, and recycling of materials		✔	✔

GOAL 5: HEALTHY LIVES AND COMMUNITIES

Initiative 5.1: Healthy communities

Protect communities from the direct and indirect health effects of climate change

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
5.1.1 Support healthy communities and workplaces	Develop a plan in partnership with disproportionately impacted communities to implement the intent and approach of the federal Justice40 Initiative, which targets 40% of benefits of certain federal investments in disadvantaged communities, to parallel state investments and develop tools, guidance, and other resources to support agencies in implementing the plan.	✔	✔	
	Build partnerships to enhance education and raise awareness about the health impacts of climate change, including physical and mental impacts, as well as impacts on the social determinants of health.	✔	✔	✔
	Partner with educational agencies and institutions to ensure curriculum on climate change mitigation and adaptation is included in K-12 schools and higher educational institutions.	✔	✔	✔
	Fund and support community-led initiatives across Minnesota that address health risks from climate change and improve health outcomes.	✔	✔	✔
	Work with communities, local organizations, emergency management and local governments to create resilience hubs based in community centers or other public buildings to provide support during climate-related events, such as extreme heat, flooding, air quality alerts, and power loss.		✔	✔
	Create an innovative climate and health communications plan that meets people where they are and reaches multiple parts of society with important data and stories.	✔		✔
	Provide guidance on extreme heat and poor air quality for the health and safety of outdoor workers, recreators, local sports, and recreational programs.	✔		✔
	Work with businesses and other employers to promote or expand telecommuting opportunities where possible within all sectors of employment to improve wellbeing, reduce traffic injuries, and mitigate greenhouse gas emissions.			✔
	Create a coalition of public health, private health, payors, and community leaders to co-create mitigation efforts to lessen the impact of climate-related illnesses on physical and mental health, specifically for communities at greatest risk.	✔	✔	✔
	Work with appropriate government agencies, law enforcement, community- and faith-based organizations to ensure the health and safety of incarcerated persons during extreme weather events, including heat waves.	✔	✔	✔

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
5.1.1 Support healthy communities and workplaces	Work with local organizations and government to promote actions that reduce food insecurity and increase access to culturally appropriate foods in the face of climate change.		✔	✔
	Work with government agencies, businesses, advocacy organizations and others to create healthier communities by prioritizing environmental justice areas of concern for pollution reduction through clean-up and consideration of cumulative impacts in siting and permitting of new polluting industries.	✔	✔	✔
	Integrate climate change impacts into Air Quality Index forecasting to improve accuracy of forecasts and ensure Minnesotans have the information they need to protect their health when air quality is poor.	✔		
	Prioritize climate actions that also reduce other types of pollution, especially in areas disproportionately impacted by pollution and climate change.	✔	✔	✔
	Increase capacity to develop and implement programs, best practices, and resources with communities to encourage more sustainable consumption and behaviors and sustainable materials and products.	✔	✔	
5.1.2 Protect culturally important activities	Work with communities and tribal nations to support and co-develop research projects and share knowledge to address the impacts of changing ecosystems on mental health and well-being.			✔
	Adapt outdoor recreation on public lands for a changing climate and to serve changing demographics.	✔		✔
	Ensure public lands are managed in a way that restores or conserves healthy ecosystems, while balancing the needs of communities to interact with healthy landscapes.	✔		✔
	Protect and restore outdoor spaces from extreme weather impacts by collaborating with outdoor recreational stakeholders and partners that have staff and leadership that represent their communities.	✔		✔
	Collaborate with tribal nations, ethnic communities, and other organizations to identify and protect culturally significant places.	✔		✔

Initiative 5.2: Climate-smart public health and healthcare systems

Bolster public health resources and promote strategies to reduce GHGs in healthcare facilities

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
5.2.1 Increase public health capacity and adaptation resources	Build capacity of and fund local public health departments and local communities to work together to build resiliency and protect public health in the face of climate change.	✔	✔	✔
	Track, monitor, and compile a regular report on the health impacts of climate change in diverse populations in Minnesota.	✔	✔	✔
	Continue to fund and support state and local public health emergency preparedness and response programs for planning and responding to climate-related events and disasters.	✔	✔	✔
	Explore working with healthcare organizations and healthcare professionals on better reporting and coding of injuries, diseases, and illnesses caused or exacerbated by climate change for improved tracking and documentation of climate-related health issues.	✔	✔	✔
	Partnering with diverse communities, research and describe the interplay between the social determinants of health and the indirect and direct health impacts of climate change, including changes to vector-borne diseases, respiratory diseases, cardiovascular diseases, waterborne diseases, heat illnesses, and mental health illnesses.	✔		✔
	Support and expand the Minnesota Climate & Health Program at the Minnesota Department of Health to implement and evaluate interventions to protect public health from climate change.	✔	✔	
	Ensure access to uninterrupted, culturally appropriate healthcare and mental health services during and after disasters.	✔	✔	✔
	Ensure access to culturally appropriate, affordable, and responsive healthcare and mental health services to protect public health and create a healthy foundation for climate resiliency.	✔	✔	✔
	Improve local air and water quality monitoring and related public communications, including expanding pollen monitoring.	✔	✔	✔
	Develop a public interface using GIS with data on social determinants of health (e.g., education access, economic stability), health information, and climate projections to identify and anticipate harmful health effects related to climate change and develop vulnerability assessments.	✔	✔	✔
	Work with community organizations and leaders to create a Climate & Health Equity Index that identifies communities at greater risk for negative health impacts from climate change.	✔		
	Promote use of climate projection data in applications at the state and local level, particularly in efforts to characterize future exposures, disease outcomes, and economic burden.		✔	✔

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
5.2.1 Increase public health capacity and adaptation resources	Establish a state Climate & Health Equity Committee that reviews climate-related state policies, programs, and processes to ensure equitable distribution of resources.	✔	✔	
5.2.2 Support climate-smart healthcare systems	Ensure hospitals and healthcare facilities perform extreme weather and multiple hazard assessments, planning, and implementation to build climate resiliency.	✔	✔	✔
	Encourage and incentivize use of green building materials, chemicals, and supplies in healthcare.			✔
	Reduce the carbon footprint of healthcare systems by improving energy efficiency, switching to renewable energy sources, and implementing process improvements that reduce waste.		✔	✔
	Ensure that healthcare systems develop and implement plans to reduce health disparities through equity reviews of institutional policies and cultural competency training of staff in the face of climate change.		✔	✔
	Partner with educational institutions to provide healthcare professionals education and training on the health impacts of climate change and populations that are disproportionately impacted by climate change.			✔

Initiative 6.1: Business innovation and entrepreneurship

Invest in research and development, innovation, and partnerships

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
6.1.1 Become a national leader in clean innovation	Grow clean economy businesses and jobs through innovation and partnerships with tribal nations, educational institutions, commercial consortiums, and private research labs.			✔
	Encourage clean energy and technology start-up growth through existing efforts to foster entrepreneurship.	✔		✔
	Work with industry to advance process and operational improvements that improve worker health, productivity, and sustainability.			✔
	Work with regional partners to assess opportunities to develop strategies that foster business development, tailored to each area of the state.			✔
	Provide adequate funding for demonstration and other early-stage clean technology projects.		✔	✔
	Support businesses owned by women, people of color, veterans, people with disabilities, and others who have historically been left out of investment opportunities.	✔		
	Assist existing businesses that are transforming to a cleaner future and contributing to a low-carbon economy by identifying supply chain needs and supporting business environmental and sustainability goals.			✔
	Provide funding and technical assistance for businesses that grow the circular economy through more durable products, sharing, reuse/resale, rental, and repair.	✔		✔
	Support the transition to a more sustainable consumption economy where products are more durable, easier to repair, rent, or share through training of employees, education of Minnesotans, and financial incentives for MN businesses.	✔	✔	
	Pursue policies that expand transparency and documentation on the durability and repairability of products and materials.	✔	✔	

Support workers to adapt and evolve their skills through inclusive strategies, ensuring family-sustaining jobs

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
6.2.1 Support transitions as industries evolve	Complete a clean economy workforce and economic development plan for the state that includes an assessment of future high-growth sectors and sectors at risk of job disruption, whether the jobs are inclusive of a diverse workforce, employers' workforce and skillset needs, and existing training resources, using an inclusive definition of clean jobs	✔		
	Support existing large electricity generation power plant host communities to plan and implement strategies for a successful transition. Listen to community needs, work with communities to identify economic development strategies. Transition planning and support should be long-term and take into account the time it may take to train workers, execute economic development strategies, and other key considerations.	✔	✔	
	Identify and address barriers for displaced workers to successfully transition to a new occupation.	✔		✔
	Be responsive to employer needs, with workforce programs that ensure the inclusion of disadvantaged workers into family-sustaining career pathways in the carbon-neutral economy.	✔	✔	✔
	Support inclusion strategies to boost access to disadvantaged populations in occupations where there are good jobs and an aging workforce.	✔	✔	✔
	Make job opportunities and training accessible for communities that have faced structural bias and discrimination and that are disproportionately impacted by climate change.	✔	✔	✔
	Create workforce strategies that train, upskill, and reskill workers to adapt to repair needs for products.	✔	✔	
6.2.2 Develop career pathways	Create and support inclusive workforce strategies, such as apprenticeship programs, that train, upskill, and reskill workers to adapt to changing technologies and job needs, in collaboration with businesses, labor, nonprofits, philanthropy and education institutions.	✔	✔	
	Expand or replicate community and K-12 school-based programs that support STEM learning, career awareness, and technical education programs.			✔
	Publicize information to job applicants and businesses regarding job market trends and positions available in the clean economy.		✔	
	Conduct education and outreach to professional organizations (in particular, those focused on women and people of color), community organizations, and employment service providers to raise awareness of clean economy jobs and the career pathways and skill sets needed, helping to expedite diversifying a trained workforce.			✔

Sub-initiative	State action steps	LEAD	ENACT	ENCOURAGE
6.2.2 Develop career pathways	Focus training on communities disproportionately impacted by climate change and disadvantaged workers.	✔	✔	✔