

Vermont Climate Council

Building the Climate Action Plan Initial Suite of Pathways and Strategies

House Energy and Technology, August 18, 2021

Julie Moore, Agency of Natural Resources

Liz Miller, Green Mountain Power

Chris Company, Windham Regional Commission

Global Warmings Solutions Act

Vermont Climate Action Plan Requirements

1. Reduce greenhouse gas emissions from the transportation, building, regulated utility, industrial, commercial, and agricultural sectors;
2. Encourage smart growth and related strategies;
3. Achieve long-term sequestration and storage of carbon and promote best management practices to achieve climate mitigation, adaption, and resilience on natural working lands;
4. Achieve net zero emissions by 2050 across all sectors;
5. Reduce energy burdens for rural and marginalized communities;
6. Limit the use of chemicals, substances, or products that contribute to climate change; and
7. Build and encourage climate adaptation and resilience of Vermont communities and natural systems.

Global Warmings Solutions Act

Clear Sequence of Work

1. Five Subcommittees (four defined in statute) to develop the work
 - Rural Resilience and Adaptation, Agriculture and Ecosystems, Cross Sector Mitigation, Just Transitions and Science and Data
2. Technical Subcommittees utilized a similar approach to their work:
 - Inventory existing programs to meet GWSA requirements
 - Identify, analyze and evaluate new strategies/programs needed to meet requirements
 - Identify, analyze and evaluate financing strategies to support implementation
3. Develop monitoring strategy for assessing implementation efficacy
4. Identify rules to be adopted (by ANR)
5. Adopt the Vermont Climate Action Plan (CAP) by Dec 1, 2021
 - Update the CAP at least once every four years thereafter

Framework for Climate Action Plan

Pathways  Strategies  Actions

Cross-Sector Mitigation, Agriculture and Ecosystems and Rural Resilience and Adaptation

- A **pathway** is a high-level means of reducing GHG emissions or achieving the GWSA's adaptation, resilience, and sequestration goals. While written broadly, pathways must be specific enough to assess whether progress has been made in achieving them.
- A **strategy** is a statement of measurable activity, a benchmark, to be reached in pursuit of the pathway. Strategies are measurable and are more specific than pathways.
- **Actions** are the “operational” tasks that are needed to implement the pathways and strategies. Actions may be written around existing, or propose new, policies, programs, projects, initiatives, plans, etc.
 - *Actions will be further developed in the coming months, informed by public engagement and technical analyses, and ultimately prioritized.*

Leading with Equity as a Core Component of the CAP

The term “Just Transitions” is a way of framing for government and business action on climate change.

Its work encompasses both public policies and business action to deal with the impacts of industry transition away from greenhouse gas emissions for jobs and livelihoods (the transition “out”) and aims to generate the low or zero greenhouse gas emission jobs and livelihoods of a sustainable society (the transition “in”).

Recommendations must acknowledge that the status quo continues to perpetuate ingrained systems of discrimination, inequality, inequity and racism. Recommendations must examine existing practices and redress historical injustices through concrete actions that will lead to a more equitable future.

[Guiding Principles for a Just Transition, June 2021](#)

Guiding Principles for a Just Transition

Inclusive, Transparent & Innovative Engagement

Accountable & Restorative

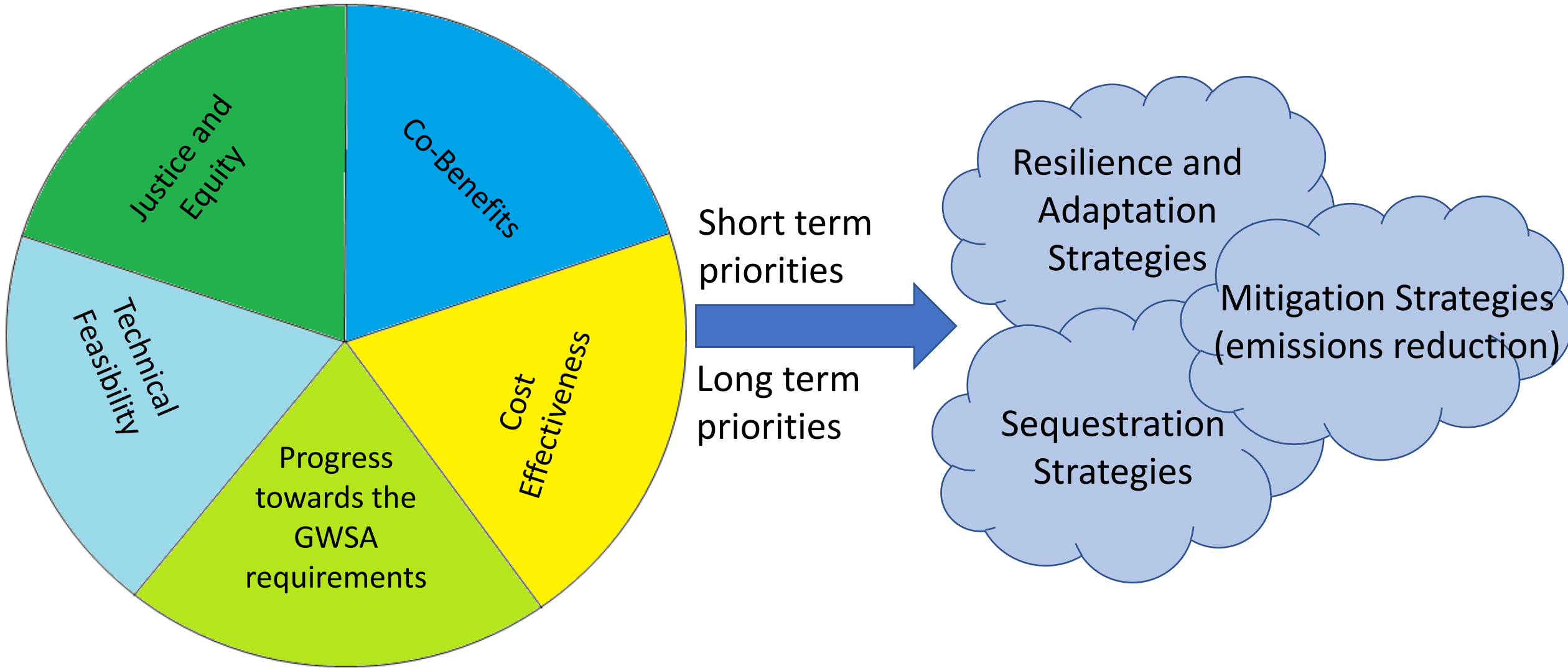
Moving at the Speed of Trust

Solidarity

The Most Impacted First

Supports Workers, Families & Communities

Climate Action Plan



Broad Categories of Climate Action

- **Climate Change Mitigation:** efforts to reduce or prevent emission of greenhouse gases into the atmosphere
 - Using new technologies and renewable energies;
 - Making older equipment more energy efficient; and,
 - Changing management practices and consumer behavior.
- **Climate Change Adaptation:** adjusting to actual or expected future climate to reduce vulnerability to the harmful effects of climate change
 - Building flood defenses, including nature-based solutions;
 - Land use planning to support smart growth strategies and improve social, community and landscape-level resilience;
 - Planning for heatwaves and higher temperatures; and,
 - Harden and enhance infrastructure to withstand more frequent and intense storms.
- **Carbon Sequestration:** capturing and storing atmospheric carbon through biological, chemical or physical processes

Process to Date

1. Subcommittee “scope of work” defined and refined by Full Council
2. Subcommittee membership developed - technical expertise and diversity considered
3. Initial ideas explored by task leads
4. Draft Pathways presented by task leads to Subcommittee for discussion
5. Draft Pathways presented by Subcommittee to Full Council for discussion

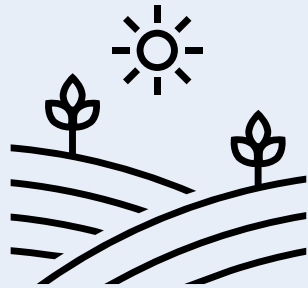


Initial Sectoral Pathways

- Agriculture and Ecosystems
- Rural Resilience and Adaptation
- Sector-Based Mitigation
 - Transportation
 - Buildings/Thermal
 - Electricity
 - Non-Energy Emissions

NOTE: pathways are not presented in priority order

Agriculture and Ecosystems Recommended Pathways



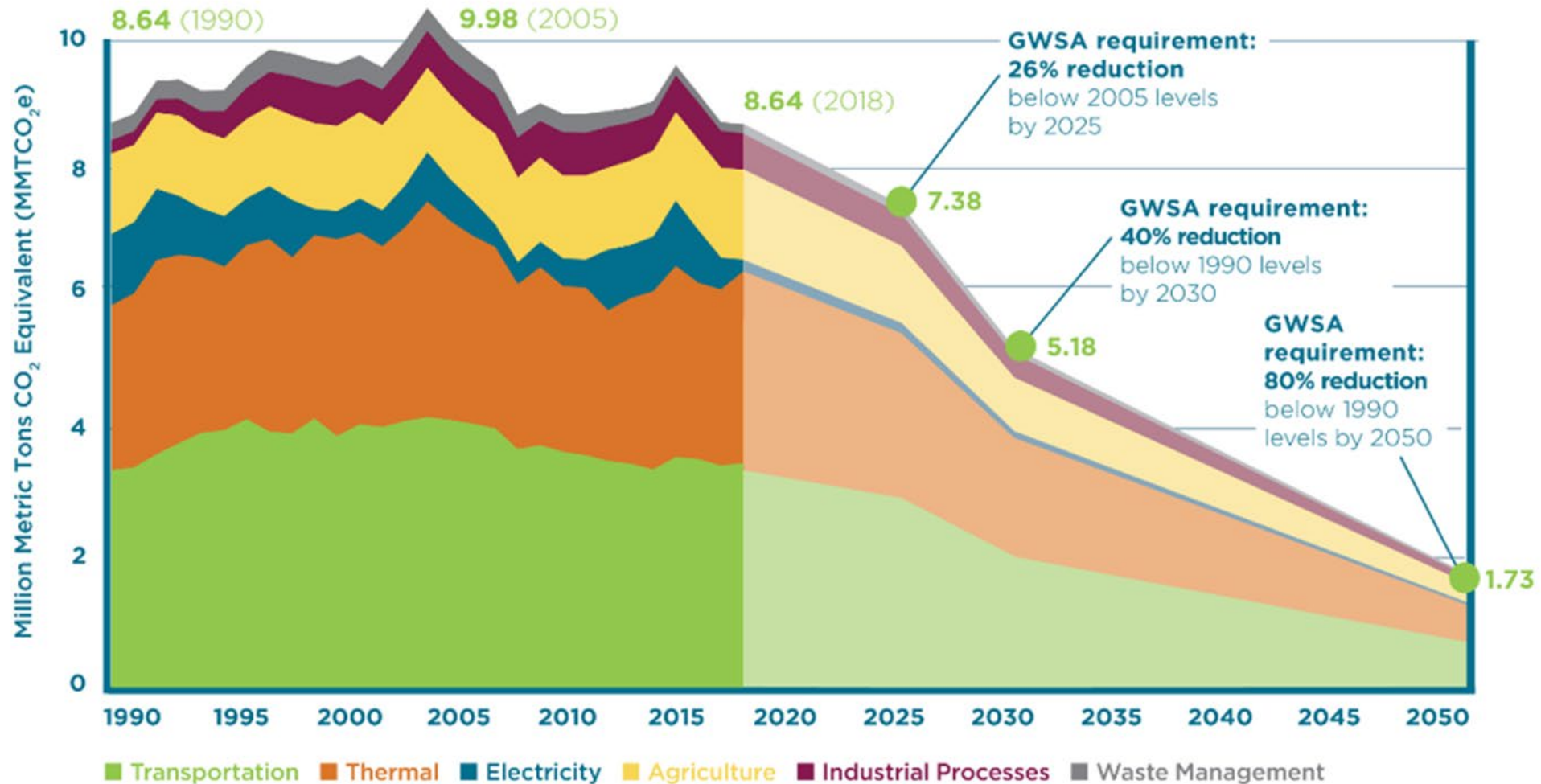
- Maintain and expand carbon sequestration and storage in Vermont's natural and working lands, soils, and waters
- Sustain, restore, and enhance the health and function of Vermont's natural and working lands, soils, and waters, which support both natural and human communities in adapting to and building resilience for climate change
- Support and empower Vermont's farmers, foresters, and land workers to reduce greenhouse gas emissions from their operations
- Support and empower Vermont's natural and working lands owners, managers, and caretakers to enhance farm and forest viability and make informed decisions to increase resilience and adaptation to climate change
- Grow and connect local, sustainable natural and working lands economies, markets, and food systems, and provide equitable access to them
- Shape land use and development that support landscape scale carbon sequestration and storage, climate resilience and adaptation, and natural and human communities for a sustainable and equitable future
- Create accessible, equitable research, partnerships, and education, promote shared understanding, and invest in sustainable and equitable workforce development for the sectors that depend on and benefit from natural and working lands, soils, and waters

Rural Resilience and Adaptation Recommended Pathways



- Increase local and regional capacity, including community and civic networks (local volunteer efforts, non-government organizations, faith-based groups, etc.), for resilience planning and implementation, and address inequities of under-resourced communities.
- Proactively and strategically invest to enhance resilience in transportation, communications, water/wastewater, and energy infrastructure statewide.
- Support the reduction of municipal, school district and residential fossil fuel use in rural areas through equitable best practices that address the unique challenges of rural communities.
- Change Vermont's land-use policies so current and future land development will be adaptive and resilient to climate change impacts by promoting compact development, enhancing the capacity of natural and working lands, and reducing greenhouse gas emissions.
- Ensure that all people have access to safe, accessible, energy efficient, and affordable housing in location-efficient, compact, and mixed-use neighborhoods areas with diverse housing types and equitable access to jobs, services, schools, recreation and diverse transportation options.

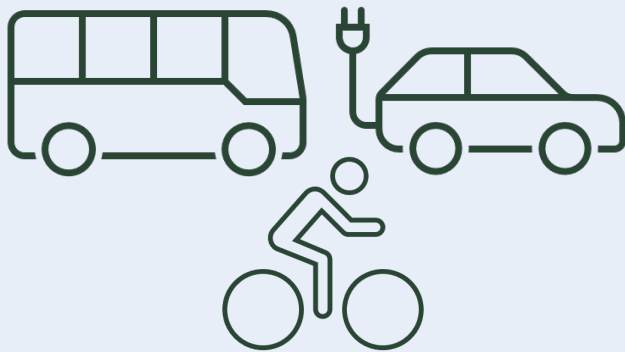
GWSA Emission Reduction Requirements



Source: Vermont Agency of Natural Resources, Vermont GHG Emissions Inventory and Forecast (1990-2017), 2021.

Transportation Sector Recommended Pathways

- Increase transportation electrification
- Improve vehicle efficiency
- Explore opportunities for low carbon fuels
- Increase transportation choices and improve transportation system efficiency
- Foster compact communities with land use and smart growth



Buildings/ Thermal Sector Recommended Pathways

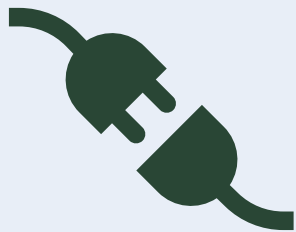


- Improve Buildings – *Weatherization at Scale*
- Improve Heating – *Clean Heat Standard*

Supporting Initiatives

- Rental property efficiency standards
- State/Regional appliance standards
- State Agency GHG planning
- Workforce development and education
- Better use of building codes
- Tariffed on-bill financing

Electricity Sector Recommended Pathways



- Achieve 100% renewable electricity supply statewide
- Promote flexible load management to maximize benefits of electrification
- Enable “Electrification for All” in support of resiliency for Vermonters and communities

Non-Energy Sector Recommended Pathways

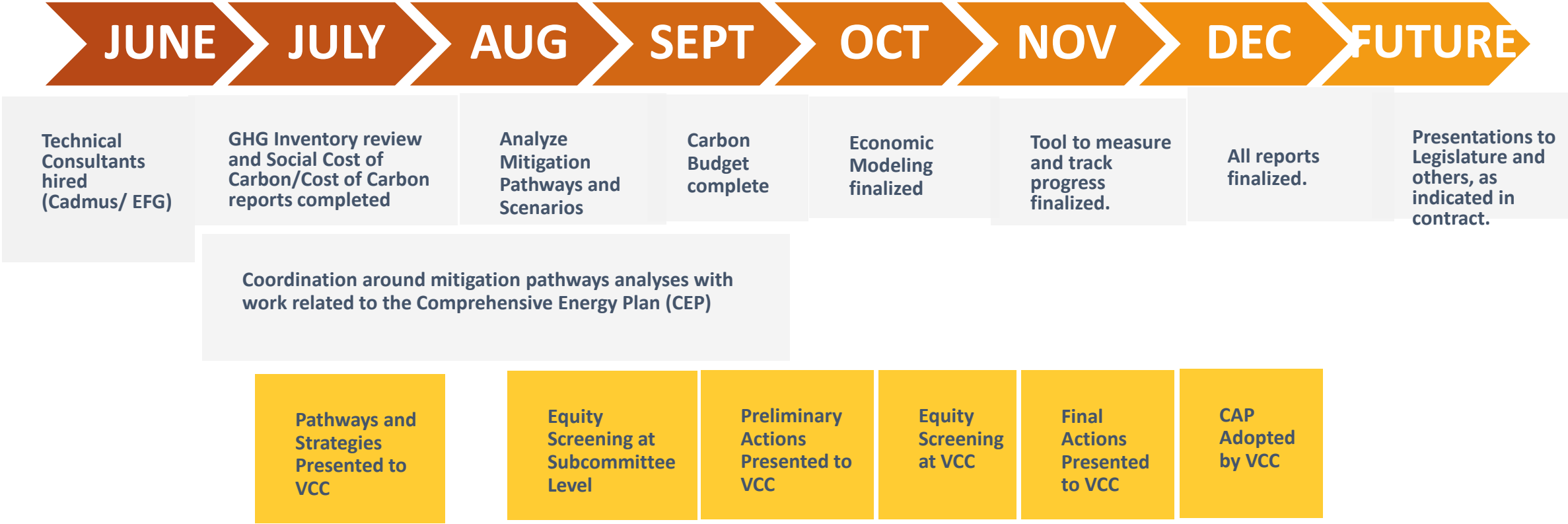


- Leverage, expand, and adapt existing State of Vermont programs that support agriculture GHG emission reduction and agricultural soil carbon sequestration (e.g., FAP, BMP, RAPs);
- Develop and implement a Payment for Ecosystem Services (PES) program for healthy soils and soil carbon sequestration;
- Invest in conservation that protects natural and working lands from development;
- Invest in Climate Smart Agriculture education, outreach, research, and technical assistance programs;
- Foster partnerships at all levels, which is essential to recognize, capacitate, and build strategies for farmers to address climate change;
- Reduce ozone depleting substance substitute emissions;
- Reduce semiconductor manufacturing process emissions;
- Reduce associated emissions from wastewater treatment facilities; and,
- Reduce wastewater treatment facilities energy use.

Next Steps

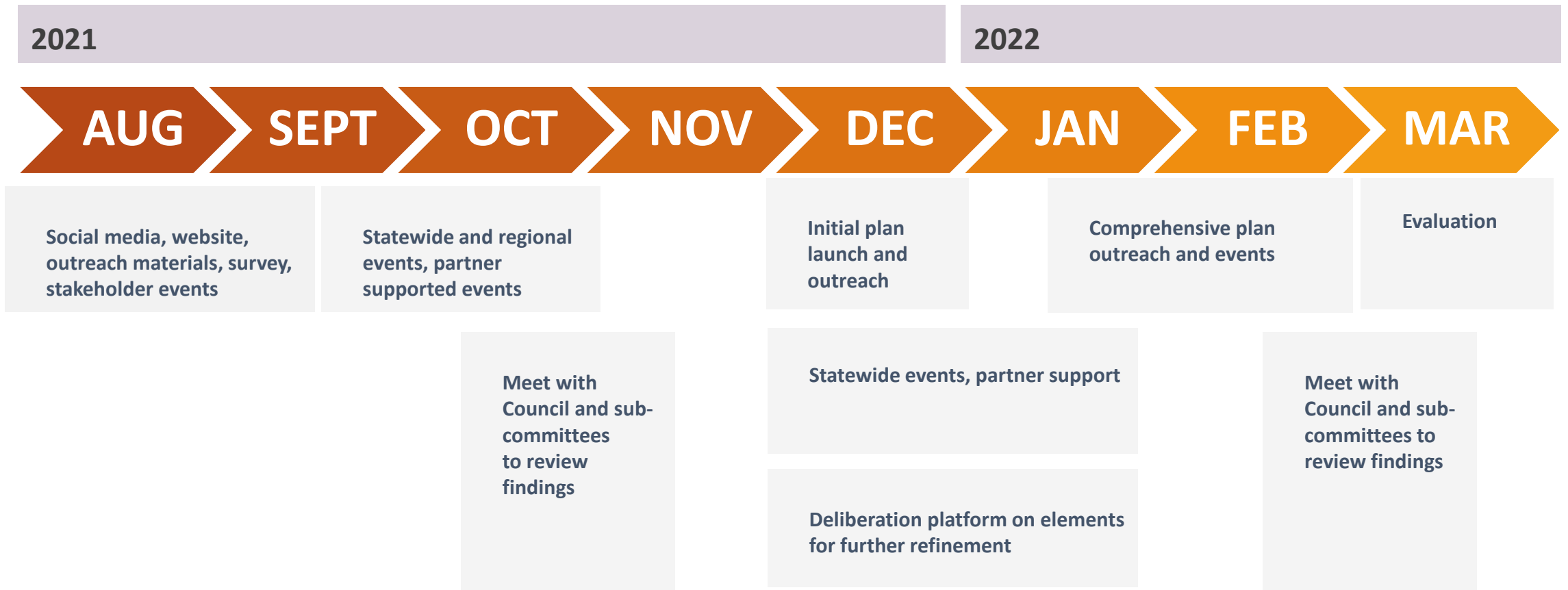
- Complete technical analyses
 - GHG emissions inventory review
 - Develop cost of carbon/carbon budget
 - GHG mitigation modeling/assessment
 - Coordinated with related efforts as part of the *Comprehensive Energy Plan*
 - Economic/cost modeling
- Public engagement
 - Launch updated website
 - Statewide and regional events to solicit input on pathways
- Draft CAP (including prioritization pathways, strategies and actions)
- Evaluate opportunities to deploy ARPA funds for climate action

Technical Analyses Timeline



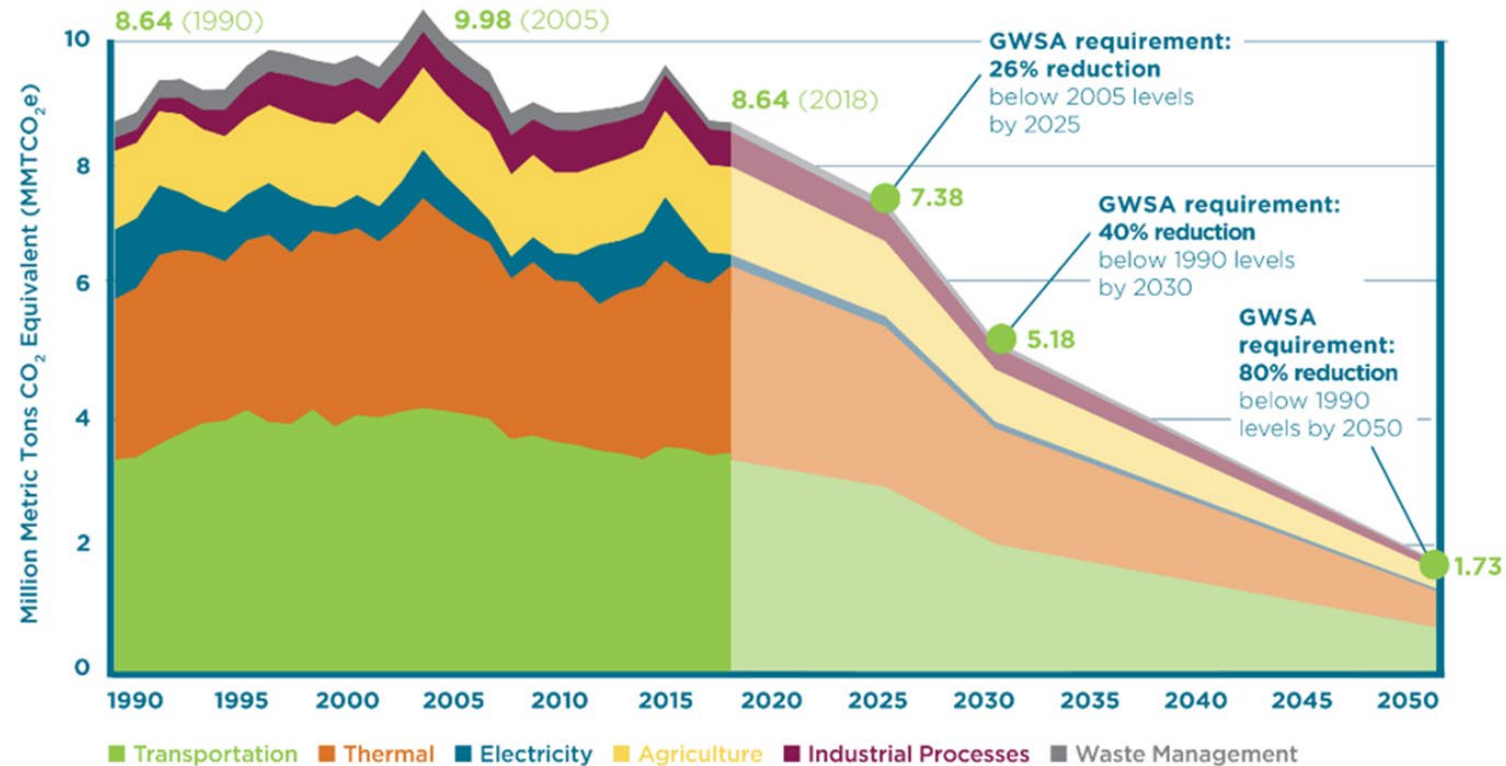
Key Milestones

PUBLIC ENGAGEMENT TIMELINE



Key Takeaways

- CAP will be adopted by Dec 1
- Many strategies and actions will require legislative action to implement
 - Significant reductions in GHG emissions will be needed from the transportation and thermal/building sectors
- Important to balance GHG mitigation, adaptation / resiliency and carbon sequestration efforts



Source: Vermont Agency of Natural Resources, Vermont GHG Emissions Inventory and Forecast (1990-2017), 2021.

Further Information

Meeting schedule (Council and Subcommittees) can be found here:

[Vermont Climate Council | Agency of Administration](#)

“Sectoral Pathways” presentations can be found here:

[Supporting Documents | Agency of Administration \(vermont.gov\)](#)

Public Comments can be made here:

[Vermont Climate Council Public Input Form \(vt.gov\)](#)