

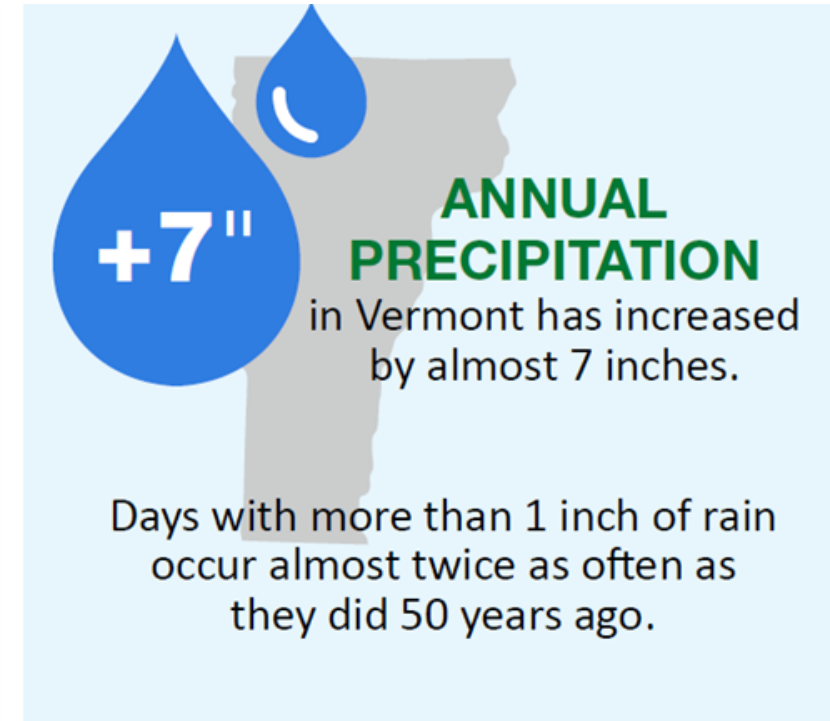
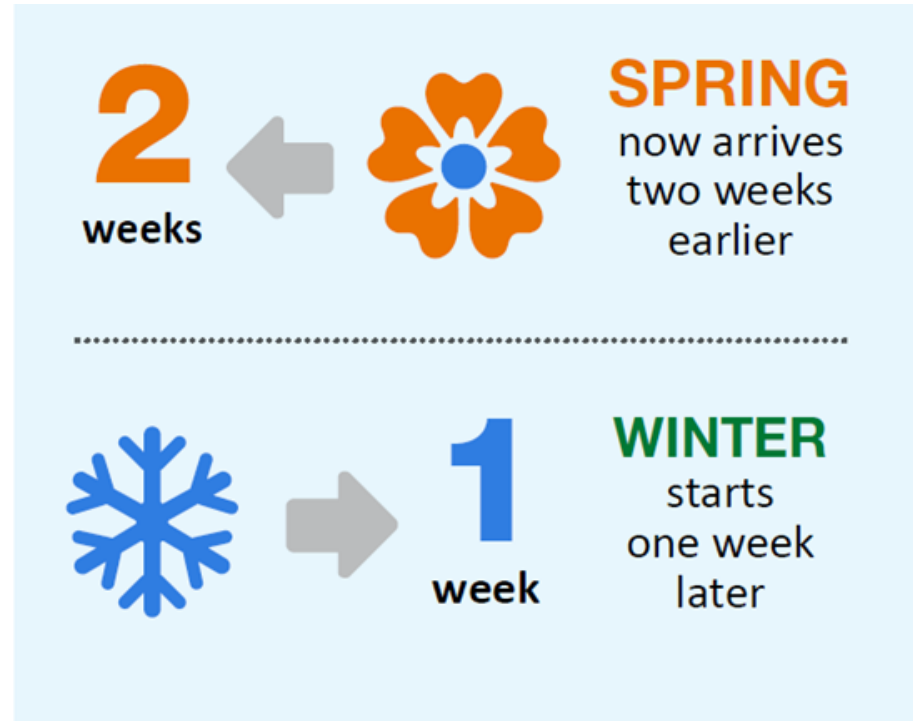
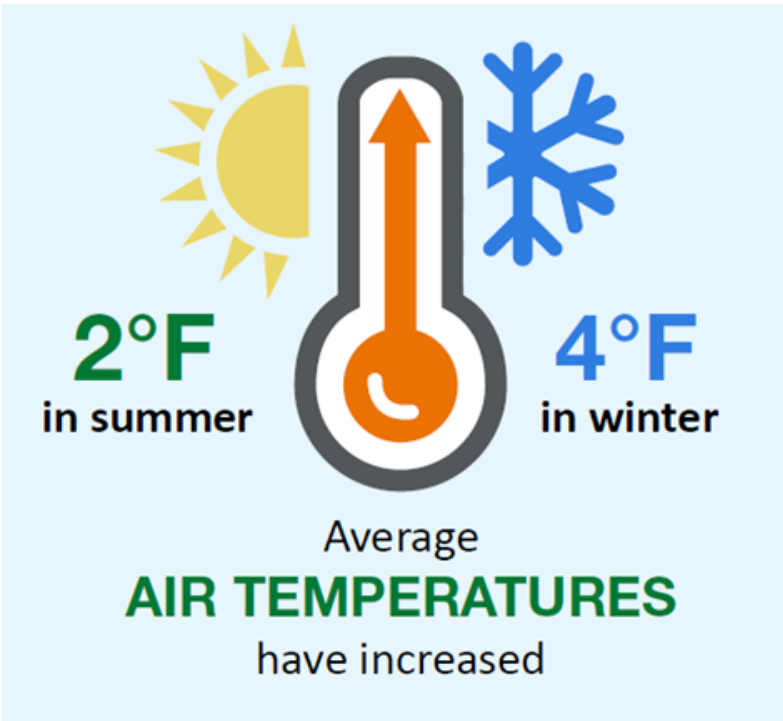
# **The Global Warming Solutions Act and The Climate Action Plan**



**Jane Lazorchak, Director GWSA  
Vermont Agency of Natural Resources**

# Why is Action Needed?

## Since the 1970s:



# **Global Warming Solutions Act (GWSA), Act 153 of 2020:**

- Enacted: September 23, 2020
- First meeting of the Vermont Climate Council: November 20, 2020
- Subcommittees Began Meeting in February, 2021
  - Cross-Sector Mitigation, Rural Resilience and Adaptation, Agriculture and Ecosystems, Just Transitions and Science and Data
- Initial Climate Action Plan adopted: December 1, 2021

# GWSA Charge to the Climate Council

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 [and] 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.



# The Climate Action Plan

“test” established in GWSA for required elements of CAP

CAP Strategies and Actions

GHG mitigation  
(Section 592(b))

*“...the specific initiatives, programs, and strategies, including regulatory and legislative changes, necessary to achieve the State’s greenhouse gas emissions reduction requirements...”*

Suite of actions  
**necessary** to achieve...

Legislature

ANR  
(rulemaking)

Additional actions

VCC

Adaptation, resilience  
and sequestration  
(Sec. 592(c))

*“...build and encourage climate adaptation and resilience of Vermont communities and natural systems...”*

Suite of actions  
**consistent** with...

Legislature

ANR  
(rulemaking)

VCC

# Equity Lens Guiding Principles for a Just Transition

Inclusive, Transparent & Innovative Engagement

Accountable & Restorative

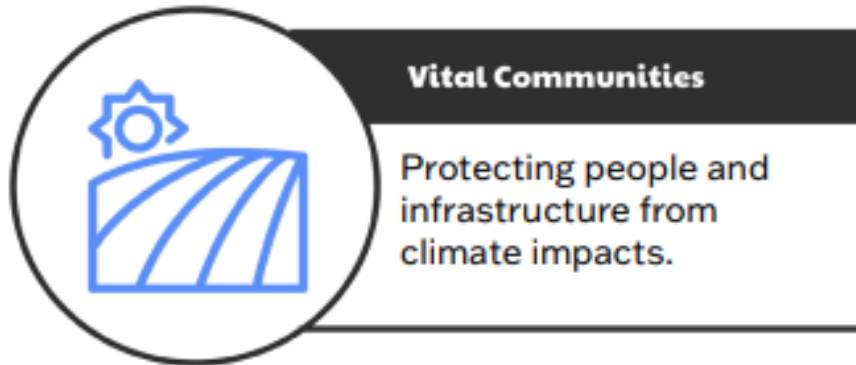
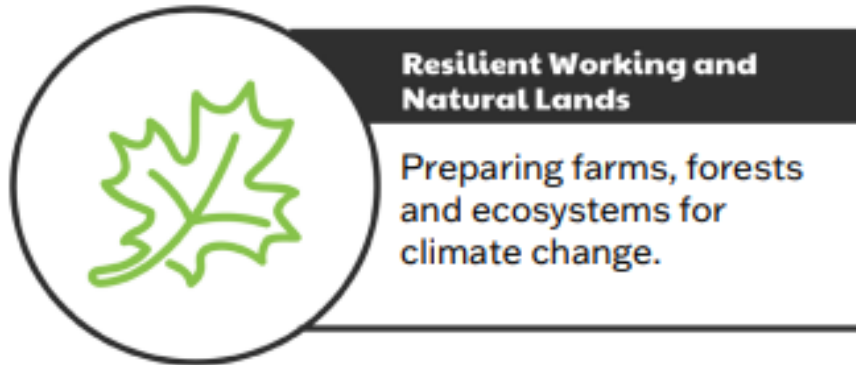
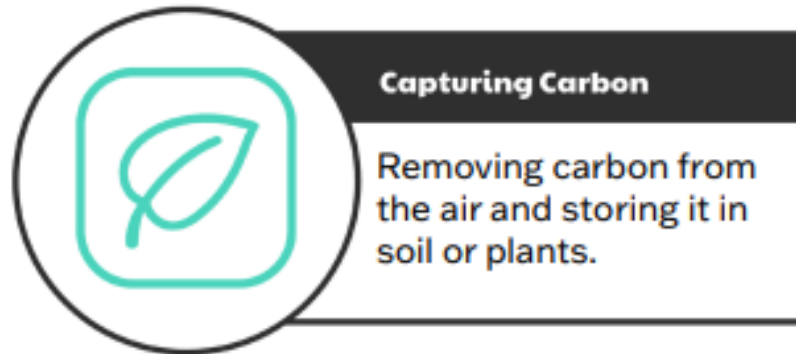
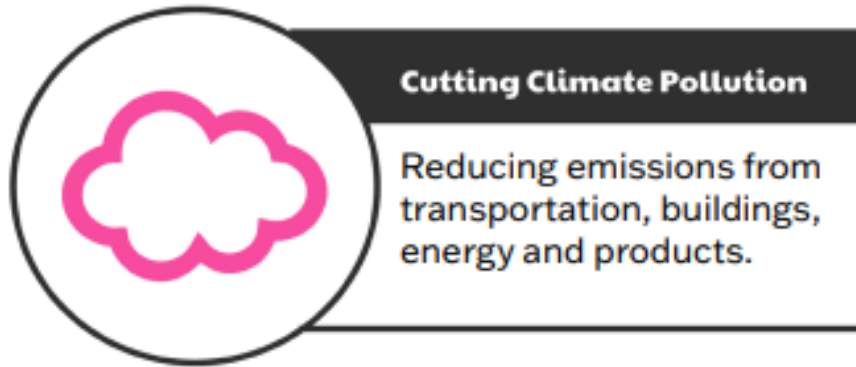
Moving at the Speed of Trust

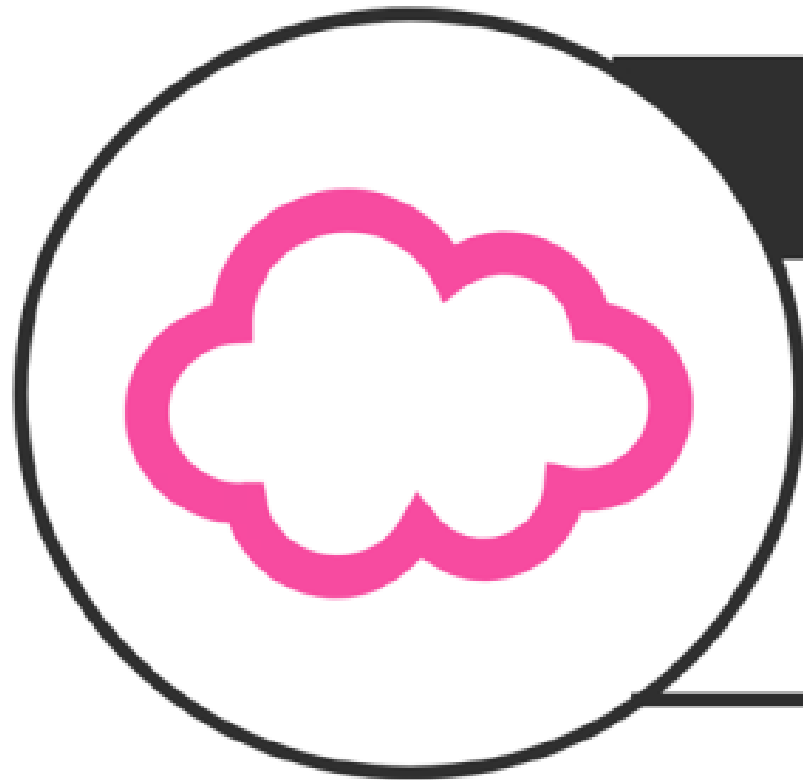
Solidarity

The Most Impacted First

Supports Workers, Families & Communities

# CAP Organized into Five Impact Areas



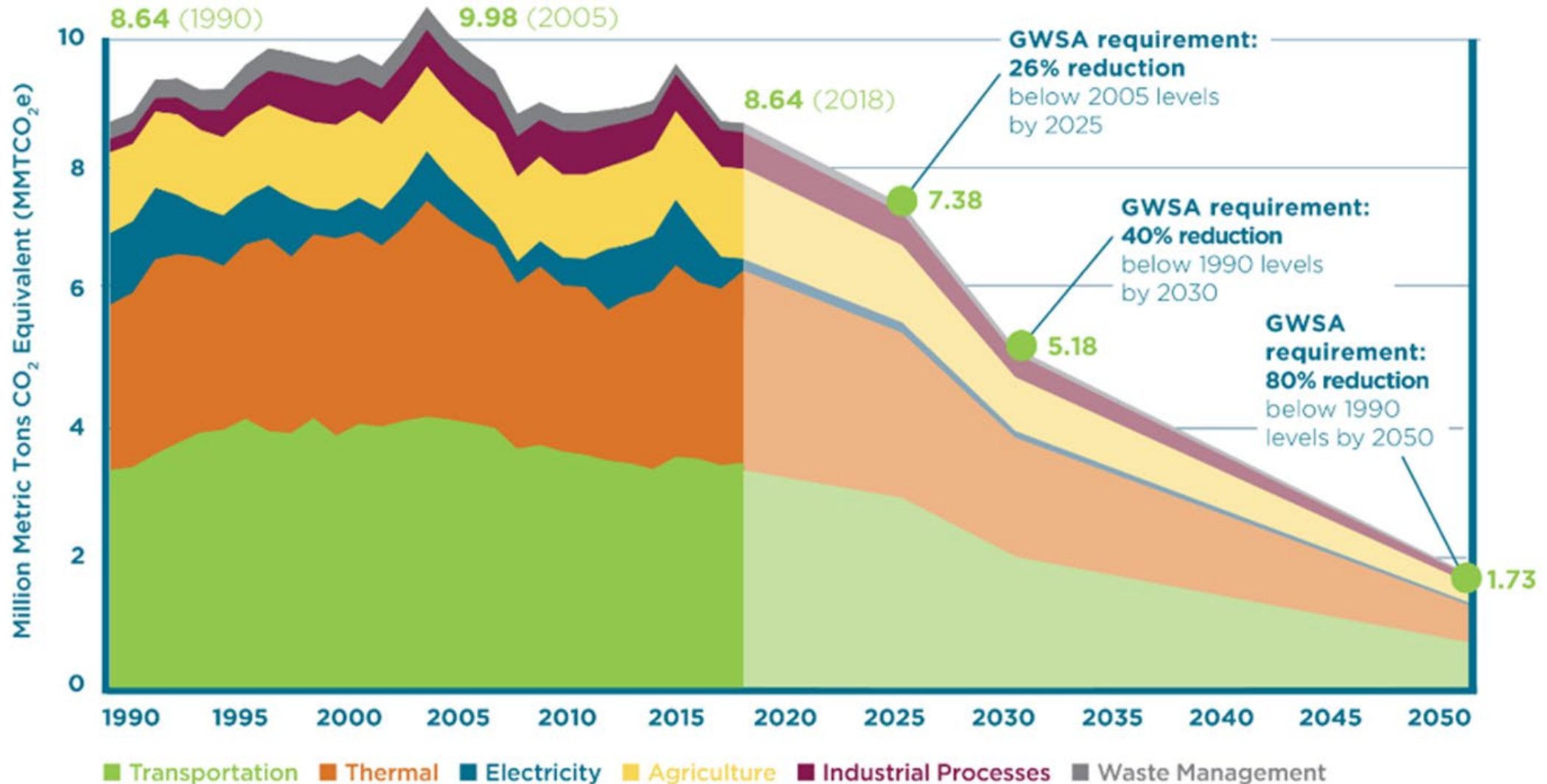


## **Cutting Climate Pollution**

Reducing emissions from transportation, buildings, energy and products.



# GWSA Emission Reduction Requirements



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

# Efficient Transit and Electric Vehicles

- Electrify medium and heavy-duty vehicle auxiliary systems (i.e., bucket trucks and electric transport refrigeration units)
- Create infrastructure that supports more walking, biking, public transit options
- Educate drivers on benefits of electrification and other transportation options to reduce vehicle miles traveled (VMT)



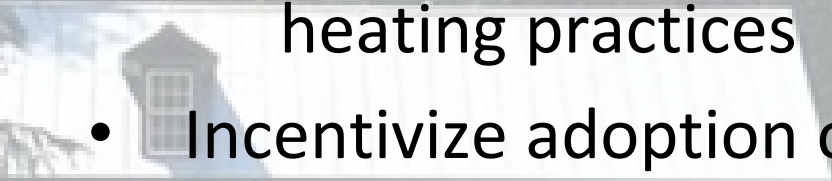
# Efficient Transit and Low- and Zero-Emission Vehicles (ZEVs)

Transportation	2025	2030
Number of EVs ★	43,000	166,000
EV Share of Sales	40%	>80%
VMT Reduction from Baseline	1.9%	3.5%
EV share of VMTs	8%	29%
EV Managed Charging	27%	50%

★ Currently ZEVs comprise about X% (<5,000) of the nearly 300,000 vehicles registered in Vermont

# Better Buildings and Homes

- Expand weatherization (“weatherization at scale”)
- Develop and implement a Clean Heat Standard
  - Performance standard driving transition to less carbon-intensive heating practices
- Incentivize adoption of clean, energy-efficient heating options, such as heat pumps and modern wood heat
- Institute a rental property efficiency standard (RPES)
- Regularly update and ensure compliance with the statewide residential building energy code



# Better Buildings and Homes

Residential	2025	2030
Homes Weatherized	48,000	120,000
Heat Pumps Installed	78,041	142,851
Heat Pump Water Heaters Installed	63,247	136,558
Homes with Biofuels	19,324	29,823

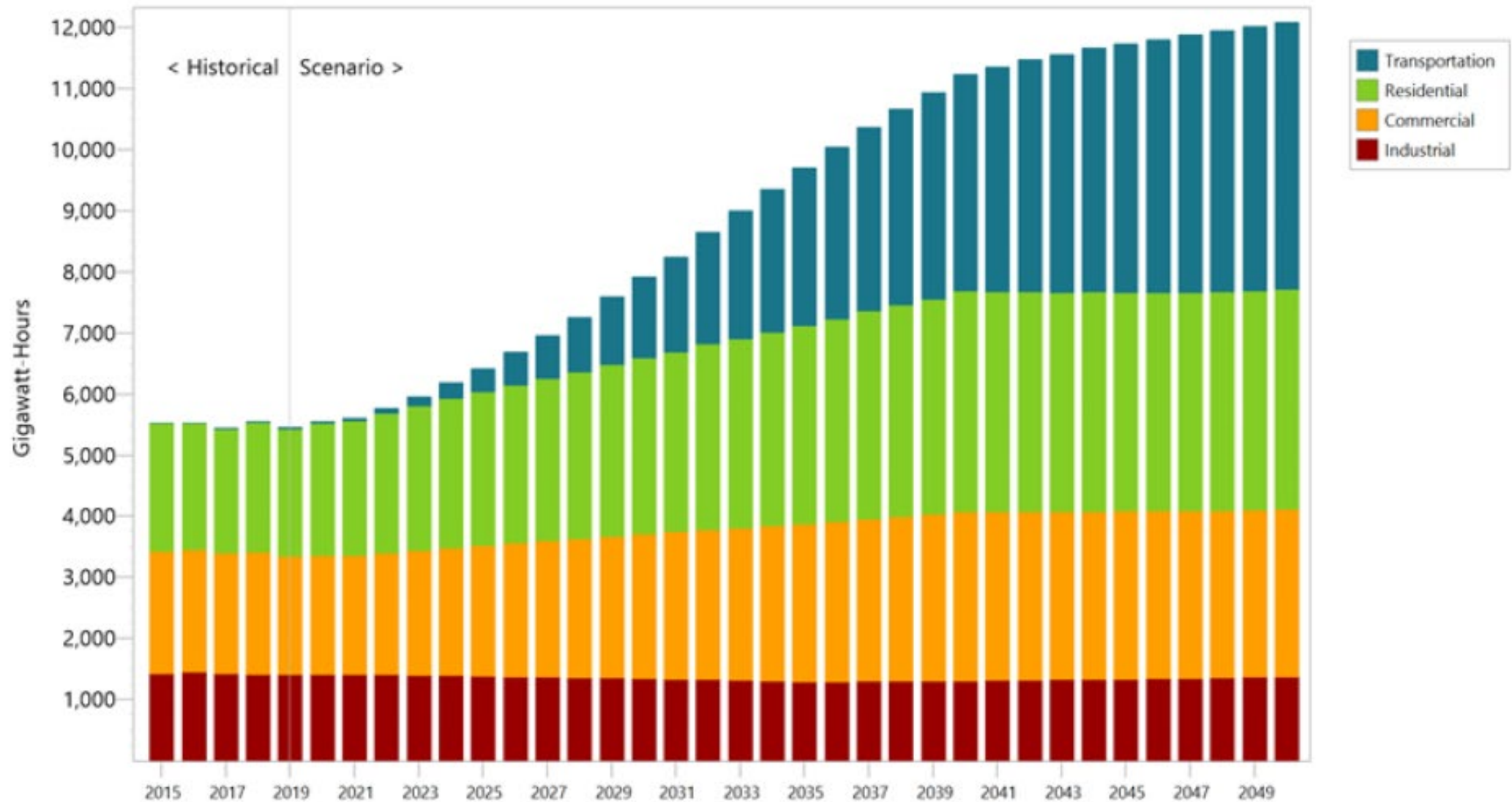
In the last 20 years, we have weatherized about 30,000 homes; some thru OEO and some thrprivate marketu

# Clean, Reliable Energy

- Shift away from fossil fuels and fossil fuel-dependent equipment
- Pursue 100% Carbon-free or renewable electricity by 2030
  - Up from current goal of 75% by 2032
  - Total demand for electricity is expected to double from roughly 5.5 TWh in 2020 to more than 12 TWh by 2050
- Enable all Vermonters to choose electrification
  - Upgrade electrical service in homes/businesses
- Invest in load management and grid optimization



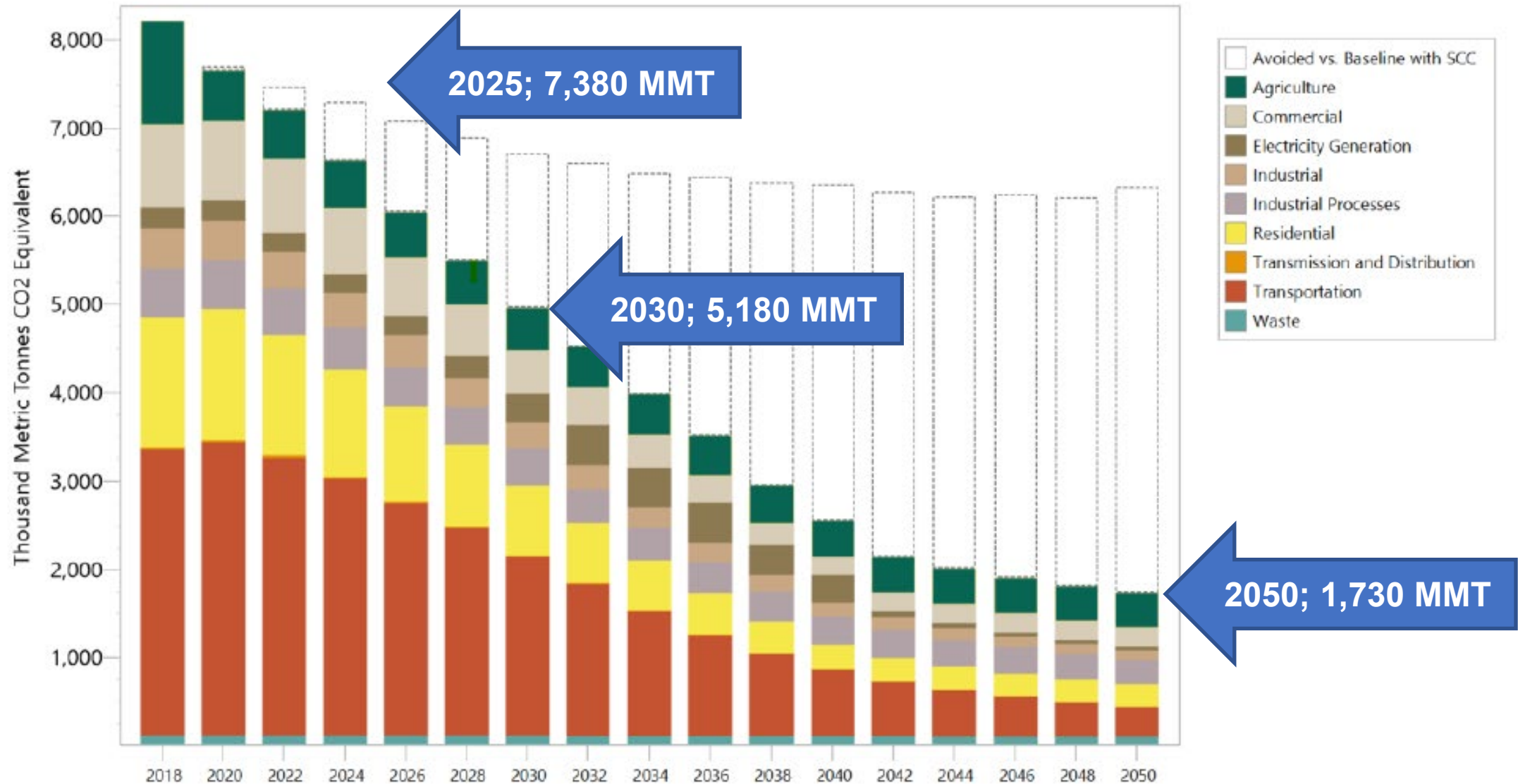
# Modeled Electricity Demand in Vermont, thru 2050

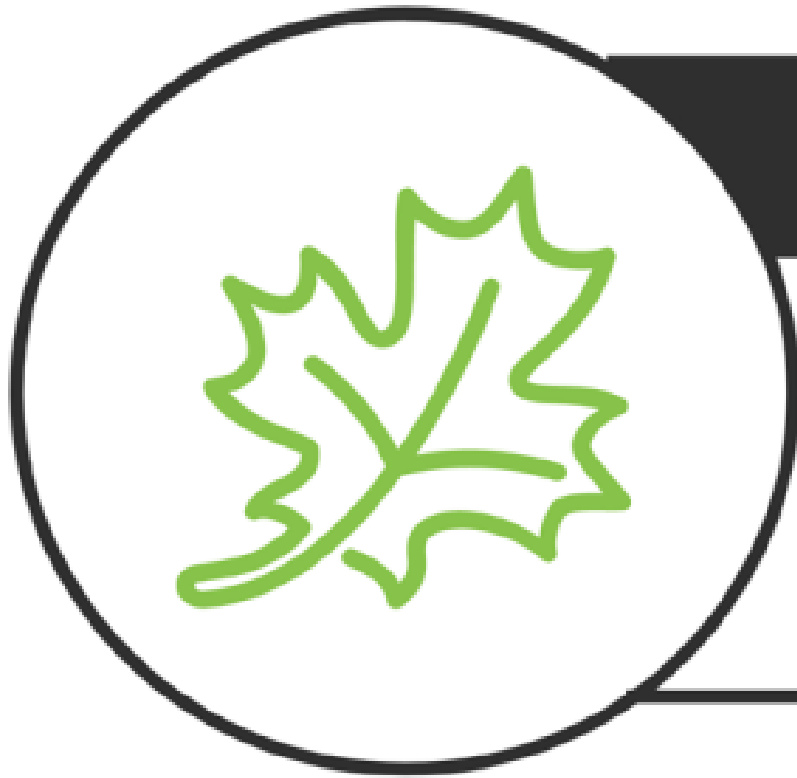


# Other Greenhouse Gas Reduction Opportunities

- Improve manure management and implement methane capture on farms
- Reduce emissions of refrigerants with high global-warming potential
- Reduce emissions of fluorinated gases from semiconductor manufacturing
- Ensure flares are operational at all existing municipal wastewater digesters

# GWSA Requires Aggressive Scale and Pace





## **Resilient Working and Natural Lands**

Preparing farms, forests  
and ecosystems for  
climate change.

# Resilient working and natural lands

- Invest in agricultural and working lands management practices that mitigate emissions and improve resilience
  - Many of the same practices that are important for clean water are also beneficial for climate (i.e., cover crops, reduced tillage, expanded buffers, managing for resilient forests)
- Expand nature-based solutions and understanding of traditional ecological knowledge (TEK)
  - Invest in strategic conservation
  - Promote healthy, connected river corridors, floodplains, and wetlands
- Support and empower Vermont's natural and working lands owners, managers, and caretakers, and expand local markets



## **Vital Communities**

Protecting people and infrastructure from climate impacts.



# Vital Communities

- Prioritize planning practices and investments that help Vermont communities prepare for climate impacts
  - Develop a climate toolkit
  - Update land-use policies to better support adaptive, resilient, compact settlement
- Increase resilience of key infrastructure (transportation, energy, communications, water/wastewater)
- Support the reduction of municipal, school district, residential, university, and hospital fossil fuel use
- Ensure all have access to safe, accessible, energy efficient, and affordable housing



## **Capturing Carbon**

Removing carbon from the air and storing it in soil or plants.

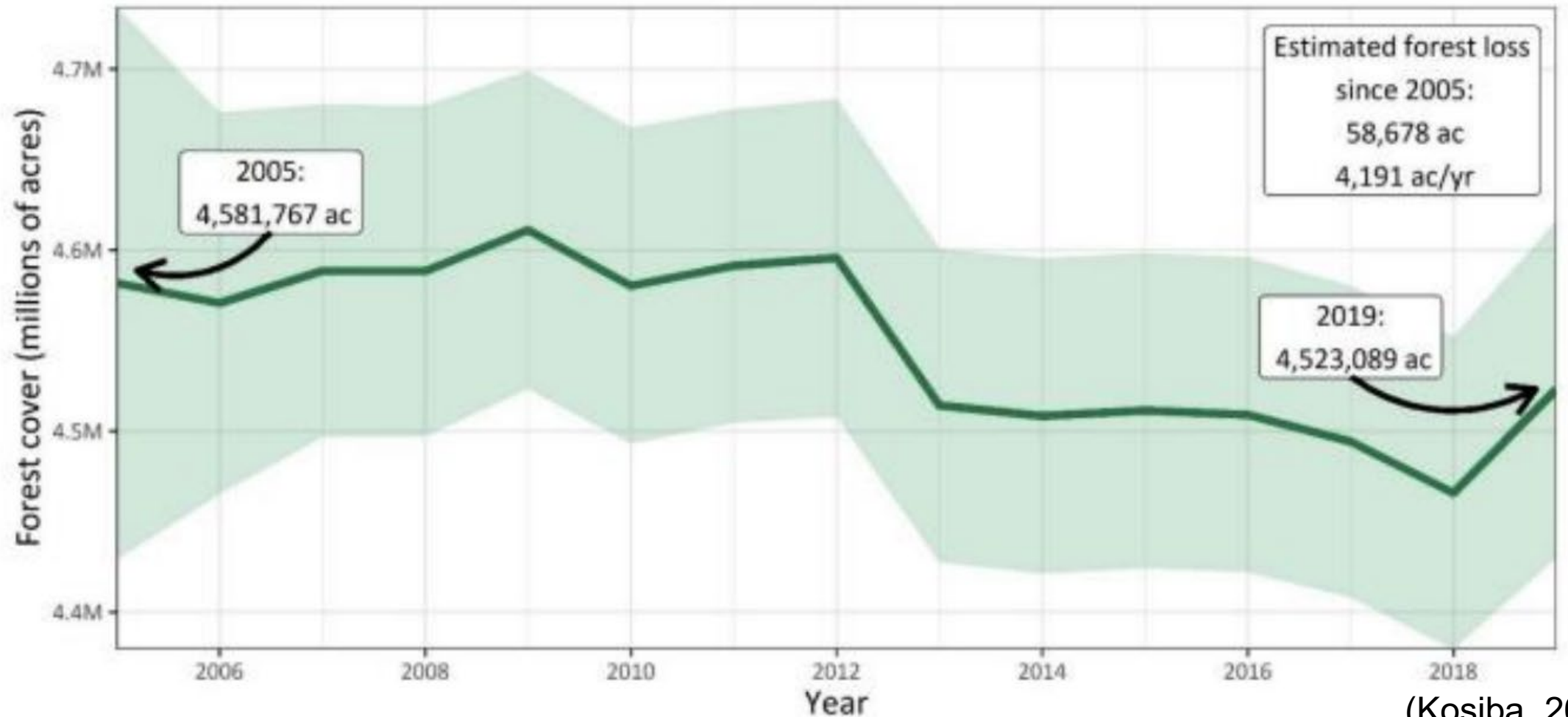
# Capturing Carbon

- Develop and implement programs which incentivize management practices which maintain or increase carbon storage
  - Changes to Use Value Appraisal (UVA) program \*\*
  - Carbon markets
  - Payment for ecosystem services

*\*\* non-consensus item*

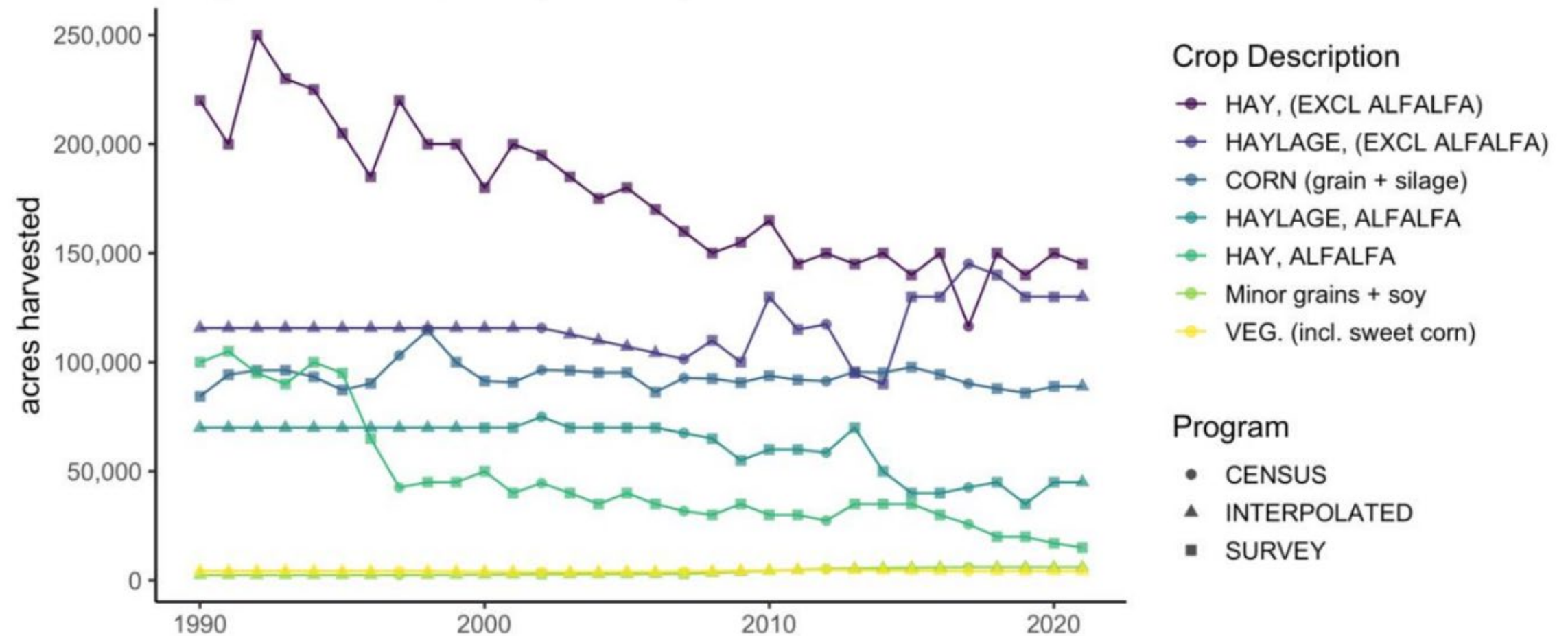


# Estimated Forest Acreage in Vermont



(Kosiba, 2021)

# Estimated Cropland Acreage in Vermont





## **Cross-Cutting Solutions**

Investing in  
communities and  
workforce development.



# Cross-Cutting Solutions

- Support compact settlement patterns
  - Infrastructure investments, tax incentives
  - Regulatory changes (Act 250, designated centers, local zoning)
  - No net loss of natural or working lands \*\*
  - State land-use policy/plan \*\*
- Ensure state government, community and partner capacity needed to support implementation
- Establish statewide environmental justice policy
- Expand training and resources for workforce development
- Launch comprehensive climate education programs
- Encourage personal actions

**\*\* non-consensus items**

# With the CAP Adopted, What Happens Now?

- GWSA established a suite of ambitious goals and requirements
- VCC developed a broad and far-reaching set of recommendations
- Initial Climate Action Plan identifies:
  - 26 pathways
    - Written broadly; high-level
  - 64 strategies
    - Statement of measurable activity
  - 234 specific action steps
    - Operational tasks

The image shows the front cover of a report titled "INITIAL VERMONT CLIMATE ACTION PLAN". The cover has a white background with a blue border. At the top, there is a solid blue horizontal bar. Below this bar, the title "INITIAL VERMONT CLIMATE ACTION PLAN" is printed in blue, all-caps, sans-serif font. The bottom half of the cover is a large solid blue rectangle. In the bottom right corner of this blue rectangle, the text "Vermont Climate Council" and "DECEMBER 2021" is printed in a small, white, sans-serif font.

## INITIAL VERMONT CLIMATE ACTION PLAN

Vermont Climate Council  
DECEMBER 2021

# Next Steps

## VCC

- Develop strategies for transportation sector GHG emissions reductions
- Make recommendations for utilization of ARPA funds to Legislature and the Governor
- Request budget to support further technical analyses/study
- Continue to prioritize work needed to build equity into climate action and ensure a just transition
- Public engagement

## ANR

- Complete Pathways Analysis
- Initiate rulemaking re: CA Clean Car & Truck standards

## JFO

- Prepare “...an analysis of the economic, budgetary, and fiscal costs and benefits of the Plan...”

## Legislature

*see next slide*

# Next Steps

- Actions Legislature might consider this session
  - Identify a suite of high-impact policy priorities that will support durable environmental outcomes
    - Weigh investments in GHG emissions reductions against the tangible steps to lessen the effects of climate change on Vermonters
  - Fully appropriate ARPA funds for climate action
    - Identify opportunities to utilize one-time monies to buttress and/or augment federal funds to achieve the speed and scale of implementation actions required by the GWSA
- Understand additional analyses and contractor support needed to fully achieve the requirements of the GWSA, including:
  - Advancing improvements to the emissions inventory and carbon budget
  - Establishing an approach for data collection and management to track progress
  - Creating a municipal climate toolkit, including vulnerability index
  - Continuing and expanded public outreach and engagement
- Ensure diverse appointments to the Council as vacancies arise