

# Carbon Sequestration as a Climate Mitigation Strategy

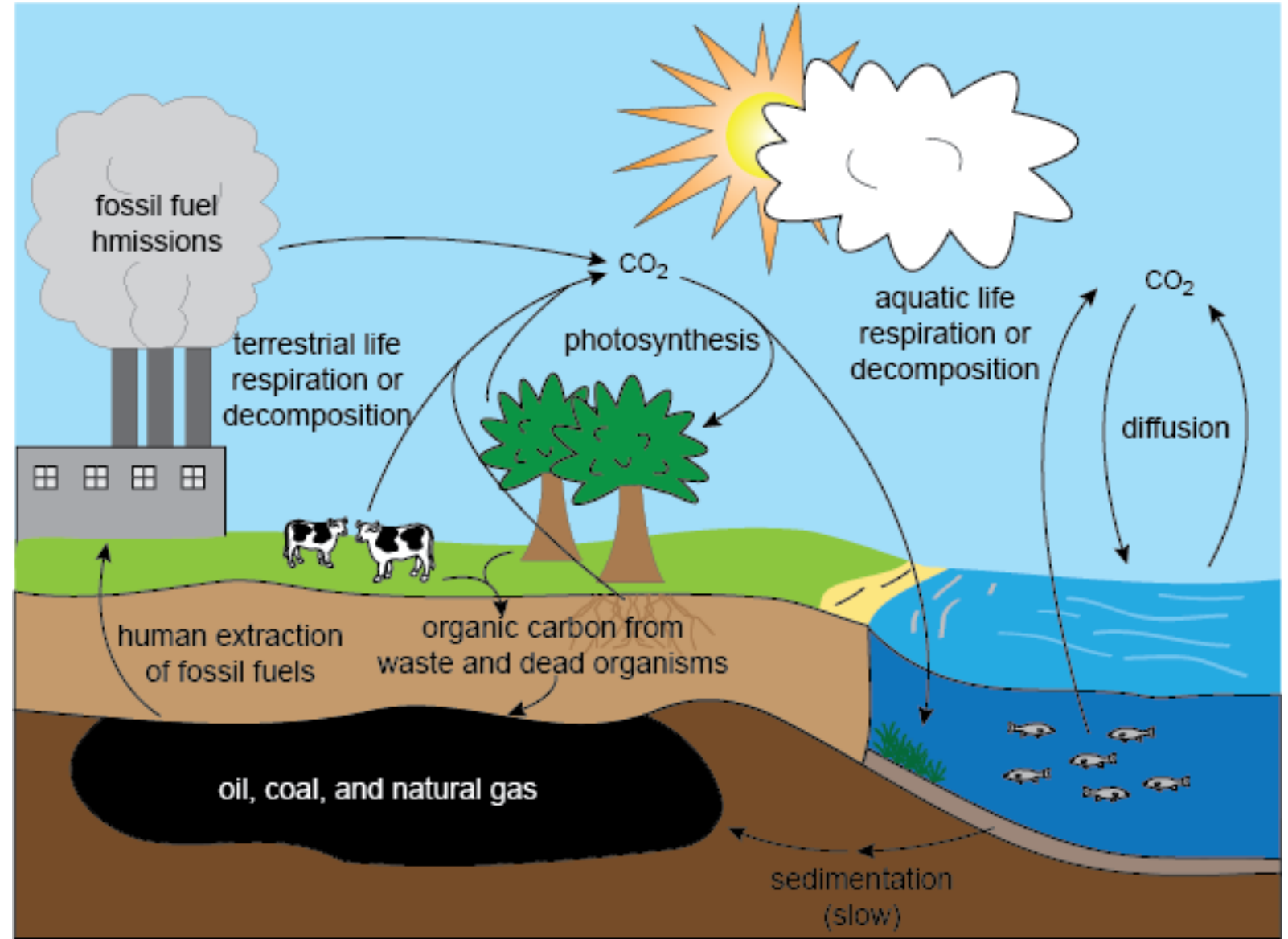
February 27, 2023

Climate Action Steering Committee

# What is carbon sequestration?

- Carbon sequestration is a process that removes carbon dioxide from the atmosphere and stores it in natural or artificial sinks, such as soil, vegetation, and the ocean.
- Other terms: carbon dioxide removal (CDR), negative emissions technologies (NETs), carbon or emissions offsets
- **IPCC:** carbon sequestration will be necessary to meet all modeled pathways to international climate targets

# What is carbon sequestration?

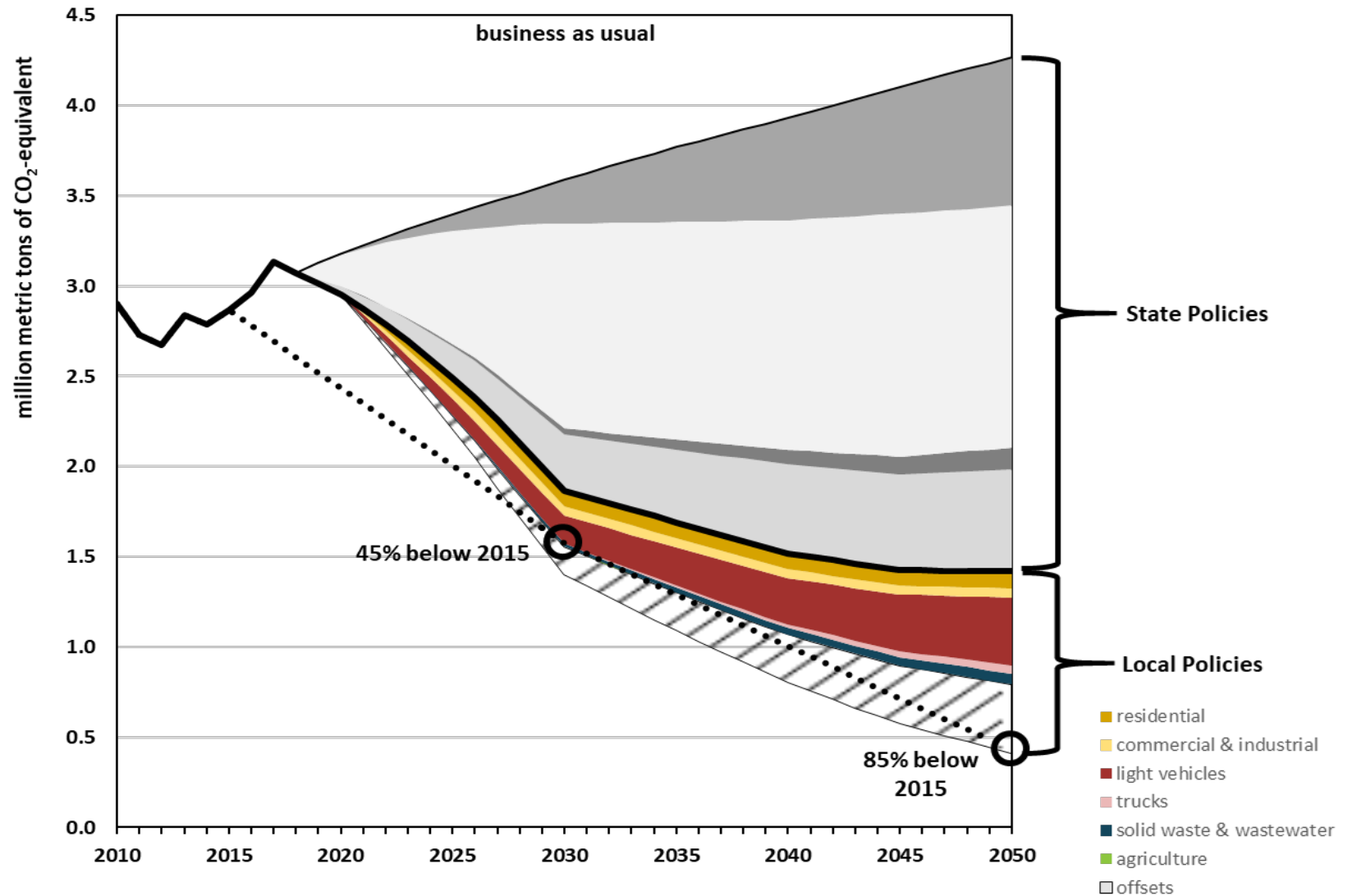


# What is the role of carbon sequestration in the TCMP?

- **Strategies**
  - **Strategy A2:** Support agricultural practices that sequester carbon.
  - **Strategy A5-A7:** Preserve tree canopy and manage forests and prairies to sequester carbon.
- **Sequestration Types**
  - Regenerative Agriculture
  - Afforestation/Reforestation
  - Prairie Preservation and Restoration
- **Assumptions**
  - Sequestration will be used to offset countywide emissions
  - NOT traded for emissions occurring outside Thurston County

What is the role of carbon sequestration in the TCMP?

Reduction in Thurston County Greenhouse Gas Emissions:  
Impact of State and Local Policies



# What is the role of carbon sequestration in the TCMP?

- **Target:**
  - Sequester 380,000 MTCO<sub>2</sub>e/year by 2050
- **Modeled**
  - Agricultural soil carbon: **3,300 MTCO<sub>2</sub>e/year**
  - Afforestation/Reforestation: **376,300 MTCO<sub>2</sub>e/year**
- **Not Modeled**
  - Existing trees or other land covers
  - Restored prairies
  - Urban trees
  - Changes in land use

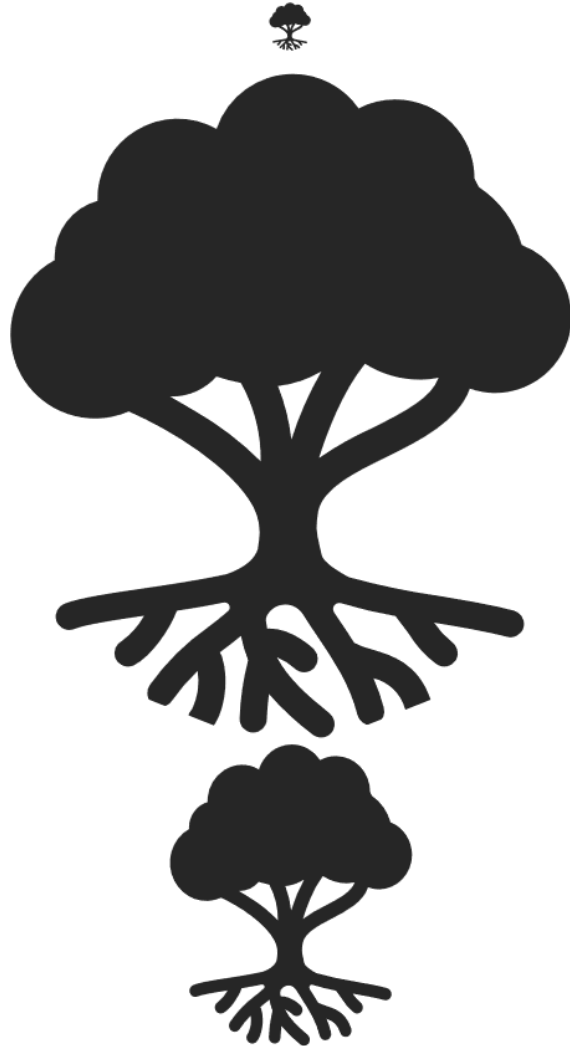
# Baseline Sequestration

## How much carbon does land in Thurston County already sequester?

- Forests/trees: **926,800 MTCO<sub>2</sub>e/year**
  - Source: ICLEI LEARN tool
- Agriculture: ???
- Prairies: ???
- Other land uses: ???



# Baseline Sequestration: Forests and Trees



**Urban Sequestration Baseline**  
65,500 MTCO<sub>2</sub>e/year

**Rural Sequestration Baseline**  
861,300 MTCO<sub>2</sub>e/year

**Additional Sequestration Needed  
to Meet TCMP Target**  
375,000 MTCO<sub>2</sub>e/year

**Total Sequestration  
Baseline**  
926,800 MTCO<sub>2</sub>e/year

**40%  
Increase**

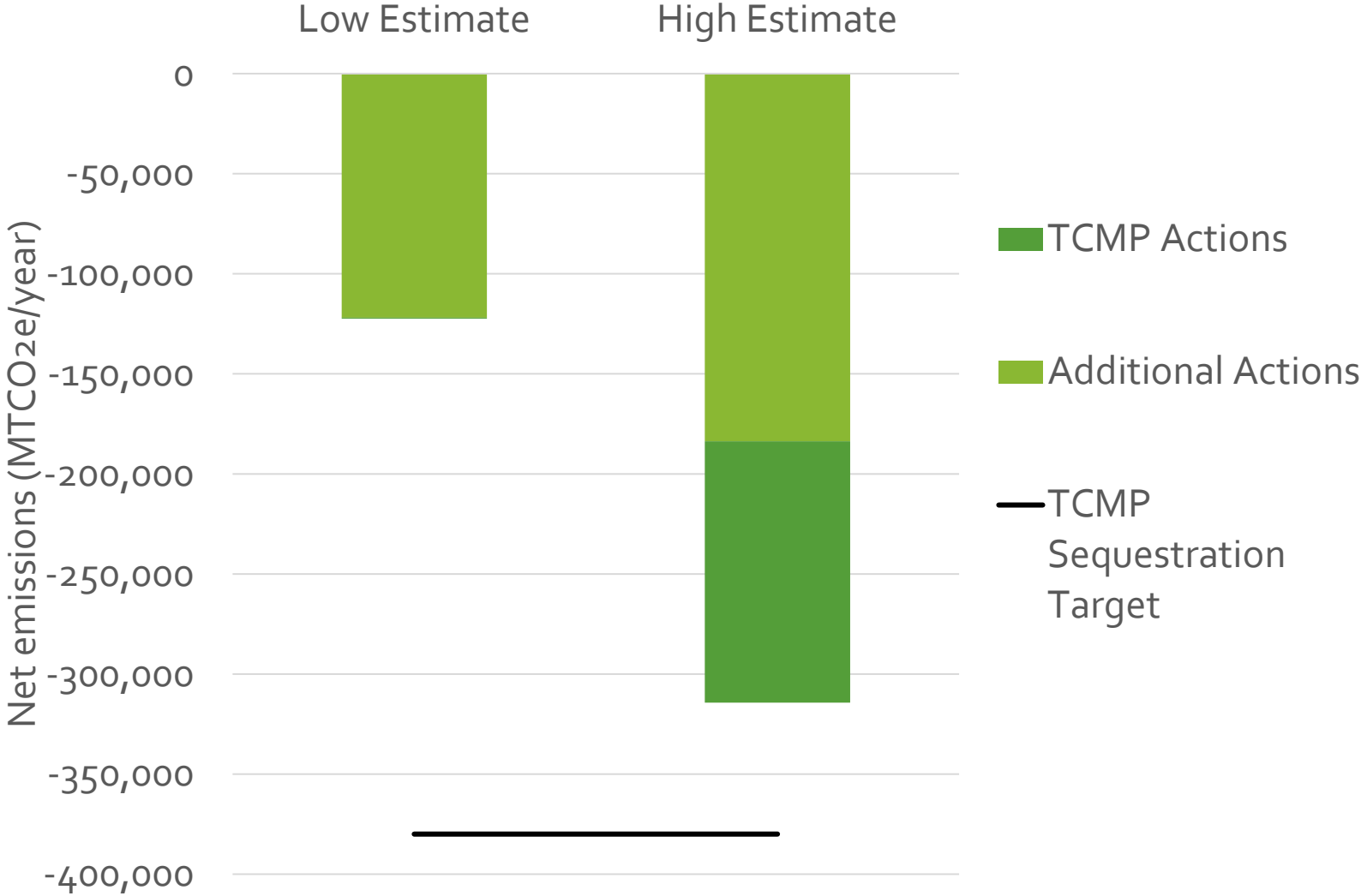


# Sequestration Potential

## What strategies could increase carbon sequestration?

- TCMP Actions
  - Regenerative agriculture (A2.1)
  - Reforestation/afforestation (A5.1)
  - Prairie preservation (A7.3)
- Other Actions
  - Extended timber harvest
  - Avoided conversion of forests
  - Tidal wetland restoration

# Sequestration Potential



# Policy Options

## What actions could regional partners take?

- Report outlines 30 potential actions
  - Cost – initial and ongoing
  - Staff requirements
  - Carbon sequestration potential
- Options
  - Technical assistance/outreach
  - Regulatory
  - Financial incentives
  - Data/Enabling

# Policy Options

## Potential Areas of Focus

- Rural forest conservation and incentive programs
- Align existing programs with sequestration goals
- Fill priority data gaps
- Build relationships with community partners and track state/federal programs

# Rural Forests

- **Half** of Thurston County is forested
- **93%** of forested land is in the rural county
- **60%** of rural forested land is managed for timber harvest
  - Largely in private timber companies
  - Some state managed lands
- **37%** is private, non forestry
- 3% in a designated park or preserve



# Sequestration Questions

- What actions should be taken to achieve carbon sequestration targets?
- What role should carbon sequestration play in achieving our emissions targets?
  - Should we adjust our assumptions/targets?
  - Focus on offsets? Focus on co-benefits?
  - Keep within county boundary? Consider expanded markets?
- What should be the relative role of different sequestration strategies?
- What are the costs relative to the benefits of different strategies?

Who else is  
working on  
this?

State

- **Department of Natural Resources**
  - Climate Resilience Plan (2020) and Forest Action Plan (2020)
  - Small Forest Landowner and Stewardship Program
  - Urban and Community Forest Program
- **Washington State Conservation Commission**
  - Voluntary Stewardship Program
  - Sustainable Farms and Fields Program
- **Climate Commitment Act (Ecology)**
  - Will include carbon offsets

# Conclusions

- Existing forests and trees sequester ~927,000 MTCO<sub>2</sub>e/year
  - Additional info needed to get a complete baseline
- TCMP sequestration target highly ambitious, likely infeasible
- Partners have a menu of options for next steps



Thank You!

**Staff Contact**

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