



**pennsylvania**

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Energy Programs Office



# Pennsylvania Climate Action Plan

Presentation to AQTAC

August 13, 2020

Tom Wolf, Governor

Patrick McDonnell, Secretary

# DEP Climate Program

## **Pennsylvania Climate Change Act (Act 70 of 2008)**

### **Requires DEP to:**

- Develop a climate impacts assessment (3 yrs.)
- Prepare and update a climate action plan (3 yrs.)
- Develop an inventory of greenhouse gases (GHGs) (update annually)
- Set up a voluntary registry of GHG emissions
- Administer a climate change advisory committee(bimonthly)

# Why a Climate Action Plan?

## According to 2015 Pennsylvania Climate Impacts Assessment:

- Over past 110 years, temperatures in PA increased by more than 1.8°F and are expected to increase by an additional 5.4°F by 2050
- Cities are expected to see increased frequency of 100+ degree days
- Annual precipitation in PA has increased by 10% since early 20th century and is expected to increase by another 8% by 2050, with a winter increase of 14%

# Why a Climate Action Plan?

## 2019 Pennsylvania Climate Impacts Assessment:

- Detailed analysis of impacts to:
  - Livestock
  - Chesapeake Bay
  - Infrastructure

# Why a Climate Action Plan?

## Livestock: Main Findings

- Pennsylvania's poultry inventory could more than double in size
- Much smaller increases in inventory could occur for beef cattle and hogs and pigs
- There could be a spatial rearranging of the dairy industry, with declines in southeast counties and increases in northwest counties
- Manure nitrogen and phosphorus could increase in almost all counties, and significantly in the south-central and southeast
- Could exacerbate water quality issues, especially in the Susquehanna and Delaware River Basins

# Why a Climate Action Plan?

## Chesapeake Bay: Main Findings

- Climate change will decrease the effectiveness of some BMPs and require adaptations to BMP design, placement, maintenance.
- Landscape responses to climate change will vary across the state and within watersheds, making the identification and strategic targeting of critical source areas a requirement for cost-effective and efficient BMP placement.
- Climate change will increase local benefits of BMPs that promote resilience in agriculture and keep soil and water resources in local watersheds

# Why a Climate Action Plan?

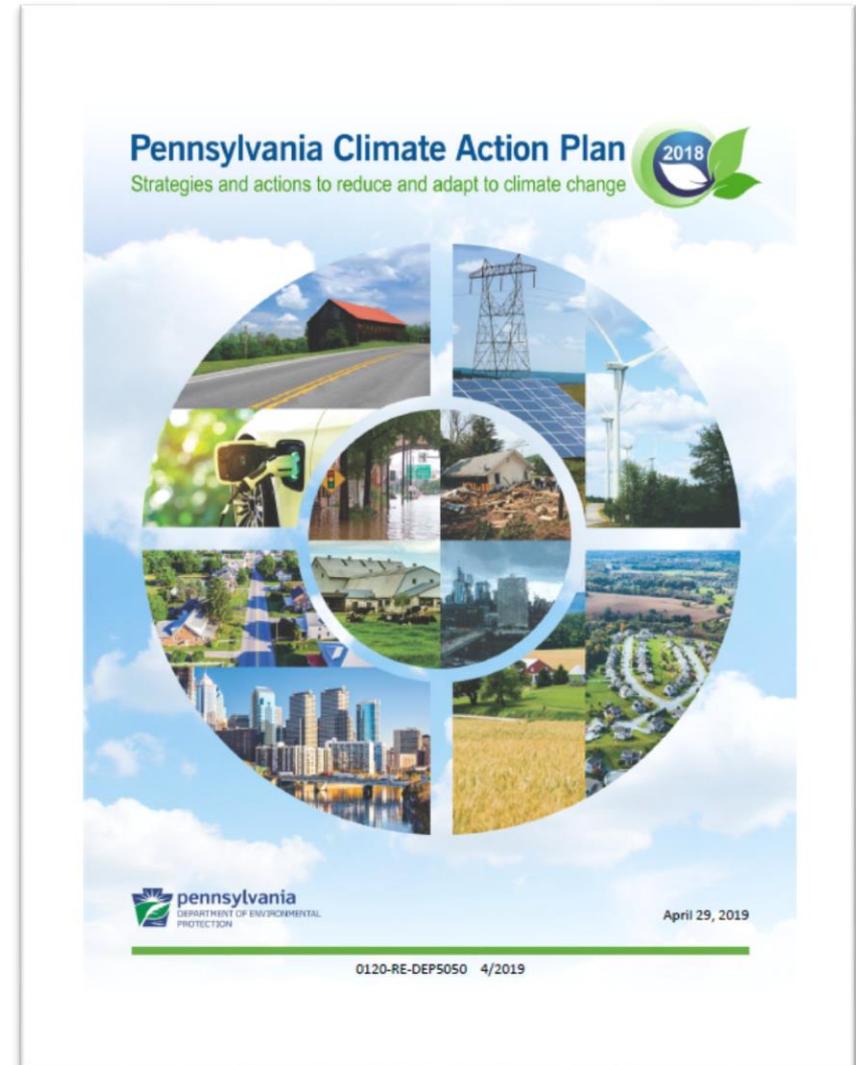
## Infrastructure: Main Findings

- Flooding (from extreme precipitation or coastal storms) likely poses the greatest climate-related risk to Pennsylvania's infrastructure, but drought and extreme heat are also relevant considerations for adaptation
- Flood-related damage is likely to be localized in nature, with variable potential for local events to cascade into larger disruptions
- Large portions of Pennsylvania's infrastructure are in areas susceptible to damage from flooding and landslides

# Climate Action Plan Goals

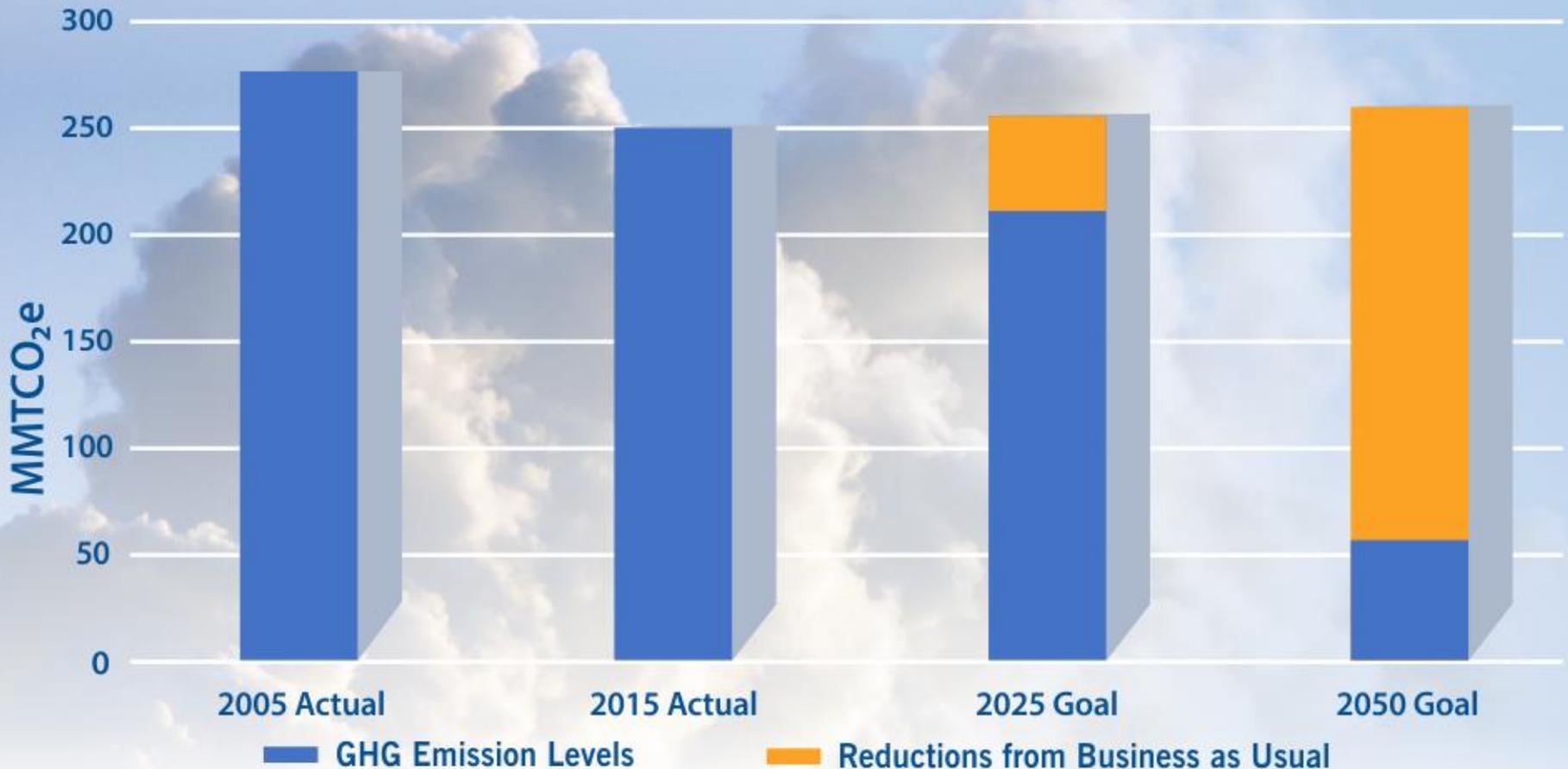
## Goals of the Action Plan:

- Minimize disruptions to Pennsylvania's citizens, economy, and environment from climate-related hazards.
- Increase Pennsylvania's ability to prepare for and adapt to changing conditions and respond to and recover from climate-related disruptions.
- Maintain cost-effectiveness.



# Plan Targets

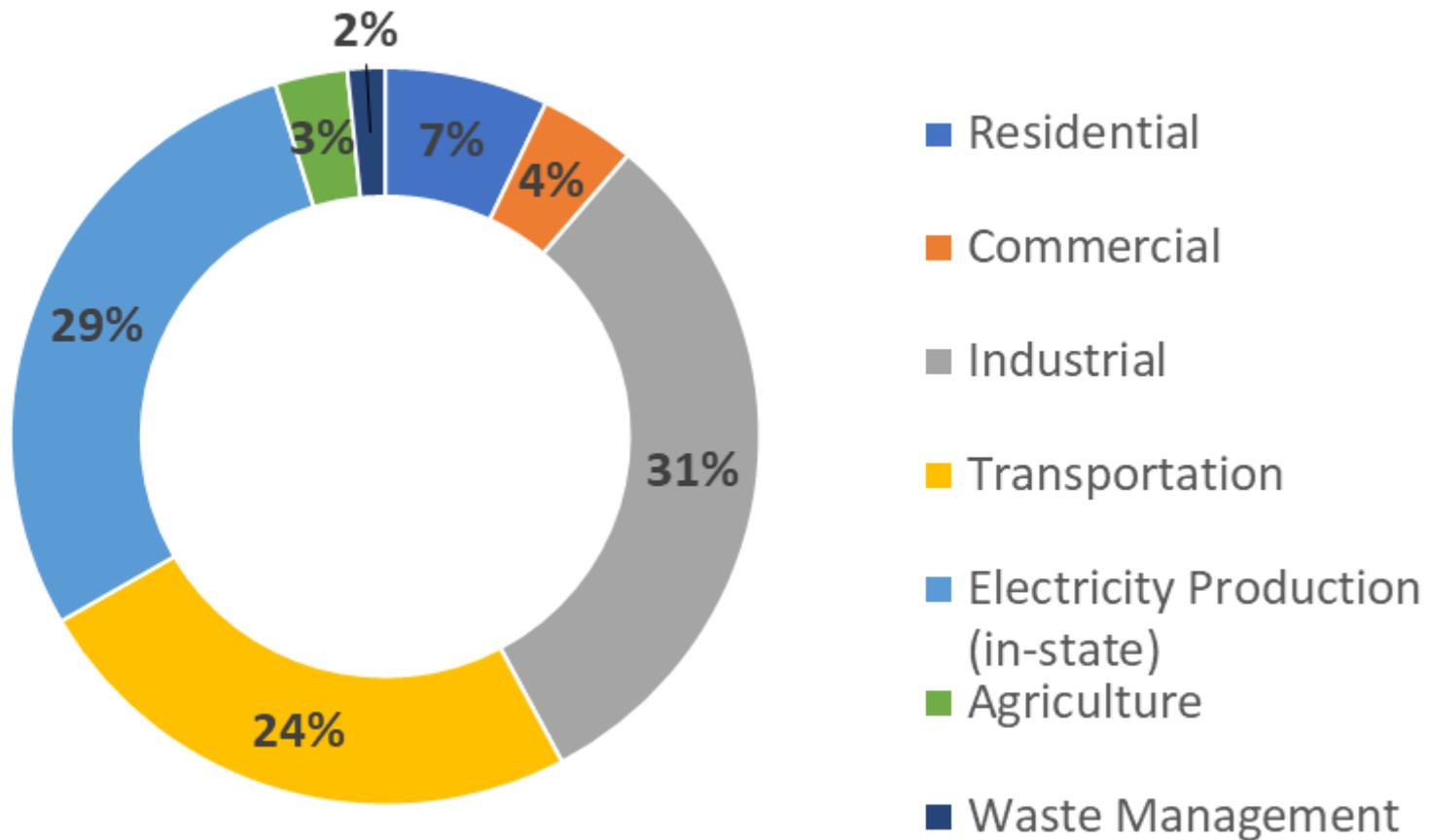
## Greenhouse Gas Reductions Needed to Meet 2025 and 2050 Goals



GHG = greenhouse gas; MMTCO<sub>2</sub>e = million metric tons of carbon dioxide equivalent

# GHG Emissions by Sector in 2017

Pennsylvania 2017 GHG Emissions



# 2018 Action Plan Key Takeaways

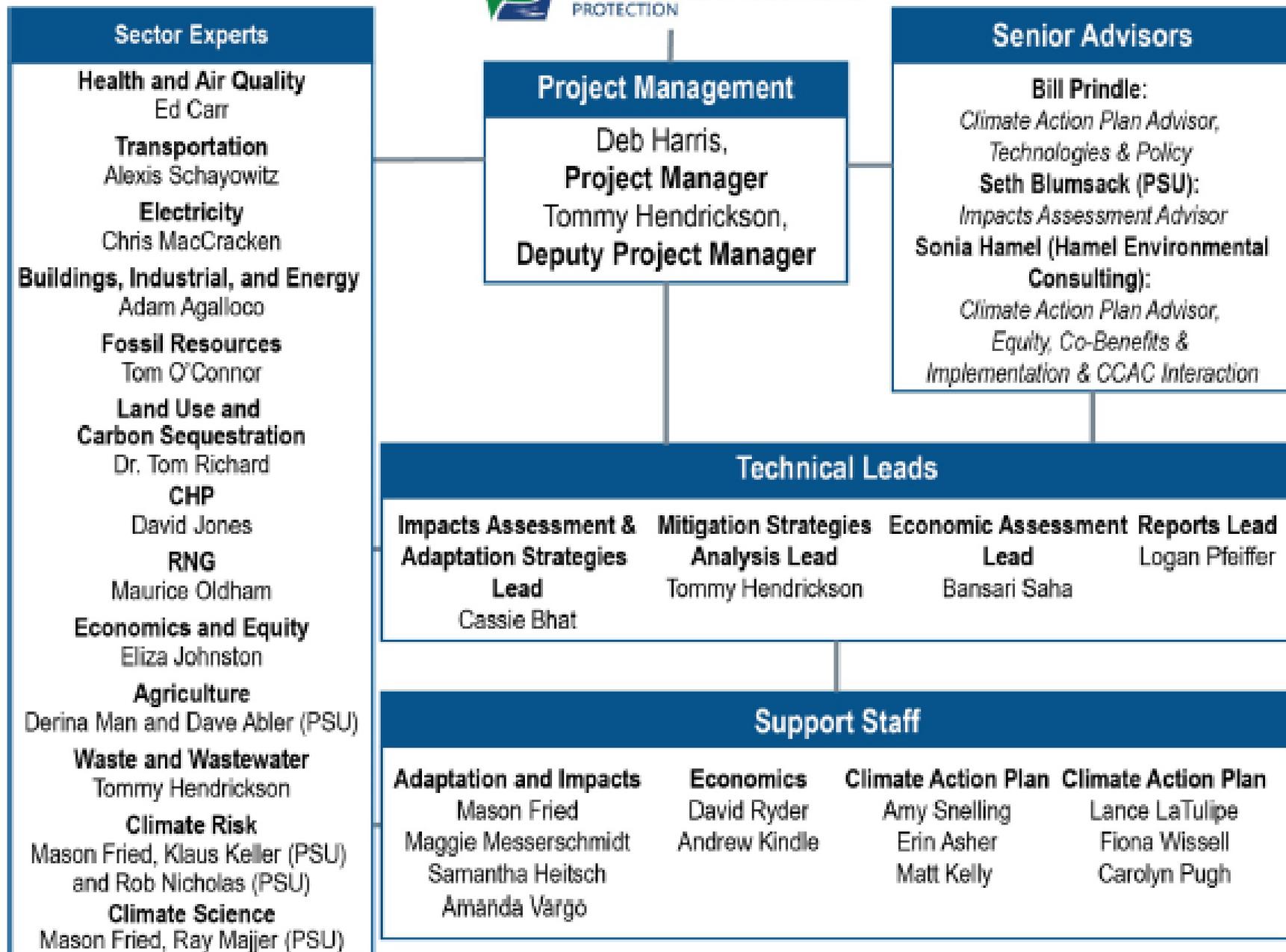
- Suite of strategies recommended in the Plan maximize GHG reductions and are cost-effective
- Commonwealth government will need to prioritize and phase implementation for quantified and non-quantified strategies in the Plan
- Actions which are low cost and have large GHG and economic benefits offer PA the best short-term solutions

# 2018 Action Plan Key Takeaways

- Actions that may take more time and resources to implement and have more tradeoffs to consider still need to be enacted, as they'll help PA maximize the impact of the Plan
- Ambitious and quick action is needed by all actors, including leadership, businesses, and citizens

# 2021 Climate Impacts Assessment and Action Plan

- Contracted with ICF and their team to start July 1:
  - Sub: Hamel Environmental Consulting
  - Sub: PSU
- ICF team to attend Aug. 25th 2020 CCAC meeting:
  - Work plan and approach
  - Preliminary outlines for IA and CAP
  - Initial list of mitigation actions to consider for CAP



## 2021 Climate Impacts Assessment and Action Plan

- Scope of work includes IA and CAP under one contract, but as separate deliverables
- Includes 6 engagements with CCAC
- 2021 IA Final Draft expected: Dec. 2020
  - Will include risk assessment, increased focus on human health and equity
- 2021 CAP Final Draft expected: May 2021
  - Will include implementation plan, adaptation included as separate discrete section
  - Will include electricity consumption and generation-based modeling
  - Co-benefits to include health benefits



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# Thank you!

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DEP Climate Website: [www.dep.pa.gov/climate](http://www.dep.pa.gov/climate)

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