DOT Support of GHG Reduction Goals

TRB AMS10(1) Roundtable

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Context

- Massachusetts' emissions profile.

- Legally binding economy wide emissions limits.

- State level transportation goals
  - Transportation covered by economy wide limits
  - Surface transportation emissions limits
  - DOT agency emissions limits
  - Transportation emission reductions goal
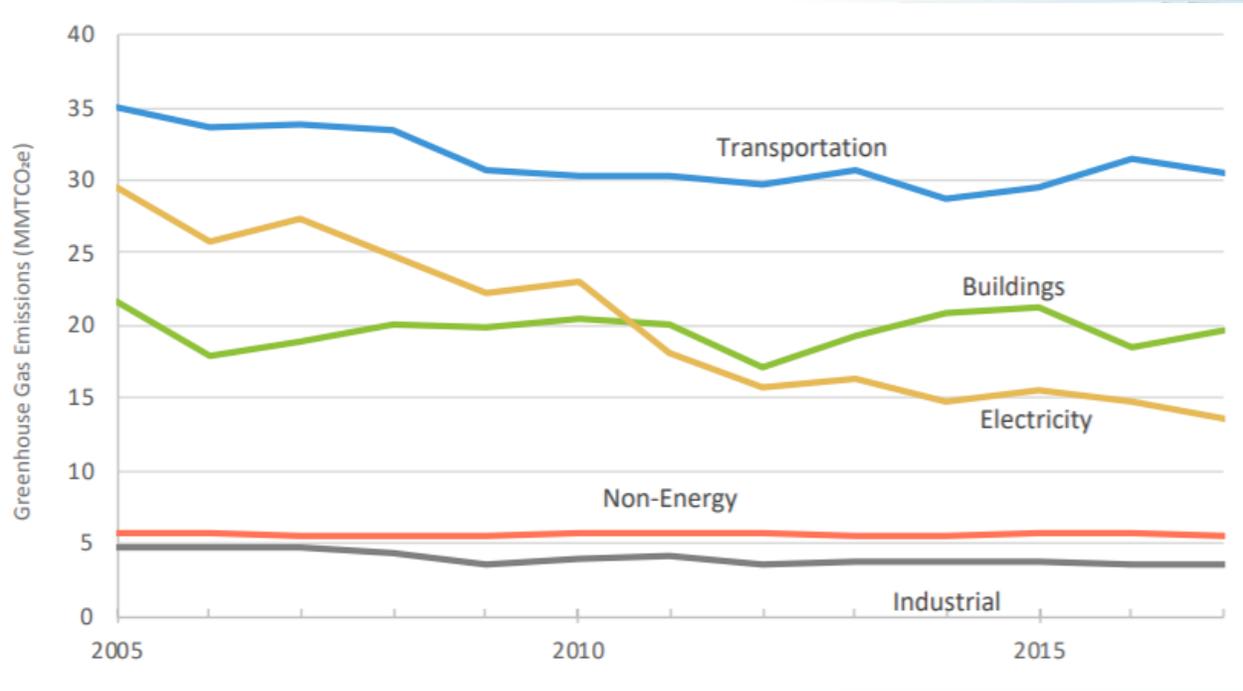
Source: Massachusetts 2050 Decarbonization roadmap (2020).
https://www.mass.gov/doc/ma-2050-decarbonization-roadmap

Reasons for GHG analysis

- Support GHG mitigation policy development.

  - Collaboration with other state agencies

- Informing capital planning/project selection.

  - Collaboration with MPOs

- Complying with regulatory obligations.

/ Reflections on existing analytical methods

- **Strategic** **models**
  - Strengths in analyzing mode-shift/VMT based interventions
  - Well suited to considering combinations of policies
  - Resources to maintain
  - Many user defined assumptions needed
  - Less suitable for project-specific analyses
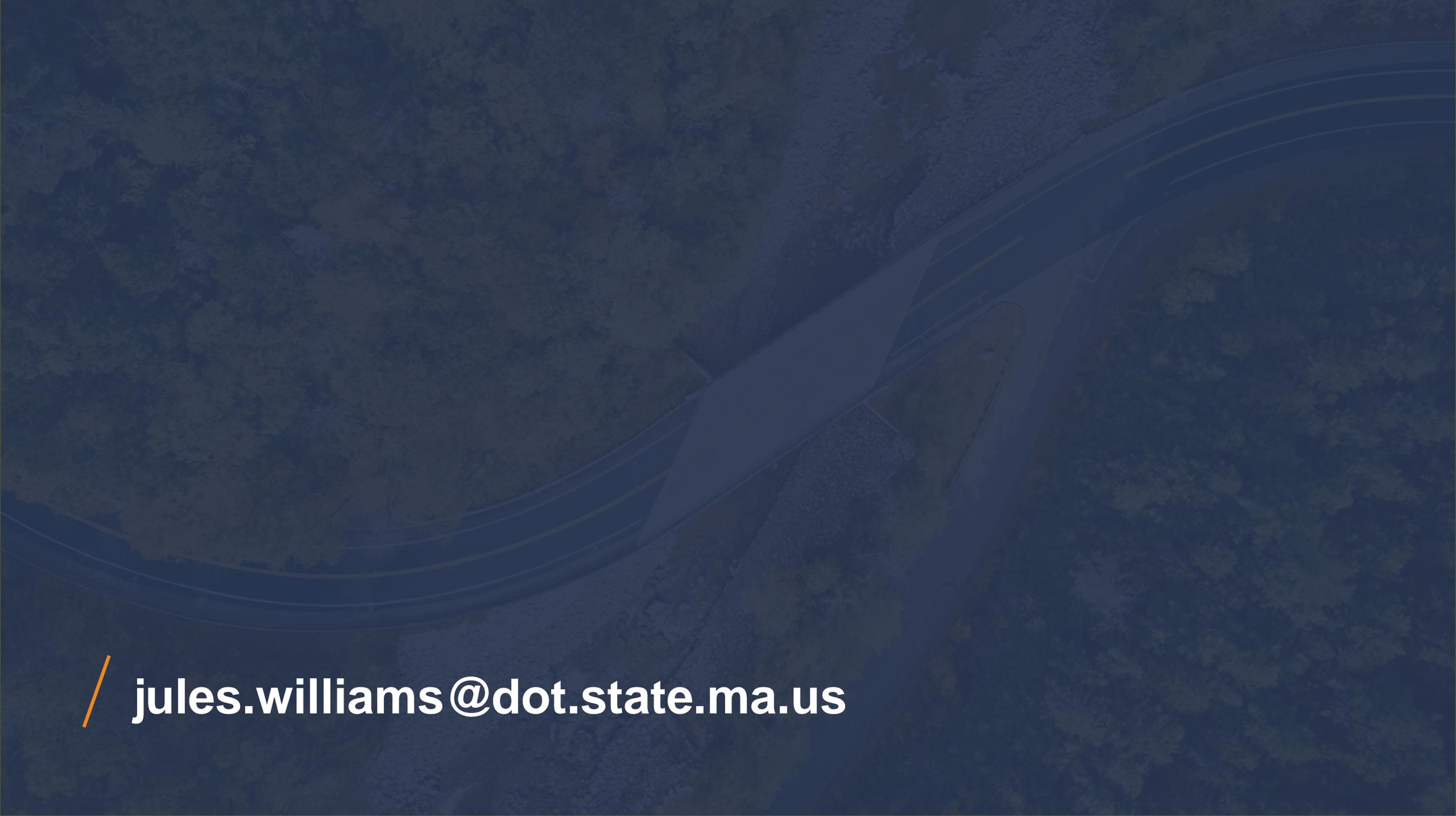 - E.g. EERPAT model developed with FHWA support

- **Sketch** **models**
  - Specific to project/program types
  - Simple enough to apply early in project lifecycle
  - Low cost to develop and maintain
  - Limited number of assumptions
  - Static, don't account for interactions
  - E.g. Suite of tools from SHRP2

- **Bespoke** **models**

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Potential research opportunities, tool development needs

- Primary research on behavioral response to projects/programs.

  - Scale and durability of GHG impacts

  - Attribution between complementary investments

  - Robust experimental designs

- Co-pollutant emissions from drop-in fuels.

- Fleet forecasting tools that accounts for policy interactions and integrate with strategic transportation models.

- Benchmarking direct GHG cost effectiveness based on evaluations.

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