

Net-zero community-wide GHG emissions by 2050

Transportation Technical Advisory Group

July 14, 2014

Agenda

- Resolution 20140410-024
- GHG Emission Sources
- Process
- Deliverables & Schedule

Council Resolution

- Council established goal: Net zero community wide greenhouse gas emissions by 2050
 - Prefers to achieve as soon as feasible
 - Emission reductions accomplished sooner are more important
- Review goals & objectives in 2007 Climate resolution
- Recommend:
 - Measurable interim targets starting with 2020, periodically to 2050
 - How and when annual progress reports will occur
 - How often to conduct comprehensive updates to the climate plan

Action Plans

- **Work with stakeholders to create action plans in the following sectors :**
 - Energy
 - Transportation
 - Waste
 - Industrial

- **Sector plans should include**
 - GHG emissions resulting from existing plans
 - Short & long term actions
 - Secondary goals & measures for sector specific factors (VMT, renewables, etc.)
 - Feasibility & how other sectors could make up for shortfalls

- **Take into account**
 - Population and business growth
 - Available and emerging technology
 - Potential costs and benefits
 - Climate preparedness and resilience
 - Barriers where the City does not exert direct control over community emissions

In 35 years, WHAT might be POSSIBLE?

- This is an opportunity to be:
 - Visionary about the long term while also
 - A pragmatic leader in the short term
- Transformation is enhanced or hindered by:
 - Technology Availability (evolutionary, transformational, new)
 - Cost (capital, operating, timing)
 - Human behavior (learning, accepting, modifying, changing)
- It's 2050, what does transportation in Austin look like with a 95% reduction in GHG emissions?

Council resolution and the big picture

1. Framework – May - September 2014

- a) Interim targets
- b) Framework for meeting targets (actions)
- c) Progress update to City Council

2. Final Plan – October 2014 - March 2015

- a) Focused actions and reduction calculations
- b) Combine emission reductions and climate resiliency into one comprehensive plan document
- c) Presented for Community review and council adoption

Resolution
20140410-024

3. Implementation Plan

- a) Specific actions
- b) Costs and schedules
- c) Data tracking

Agenda

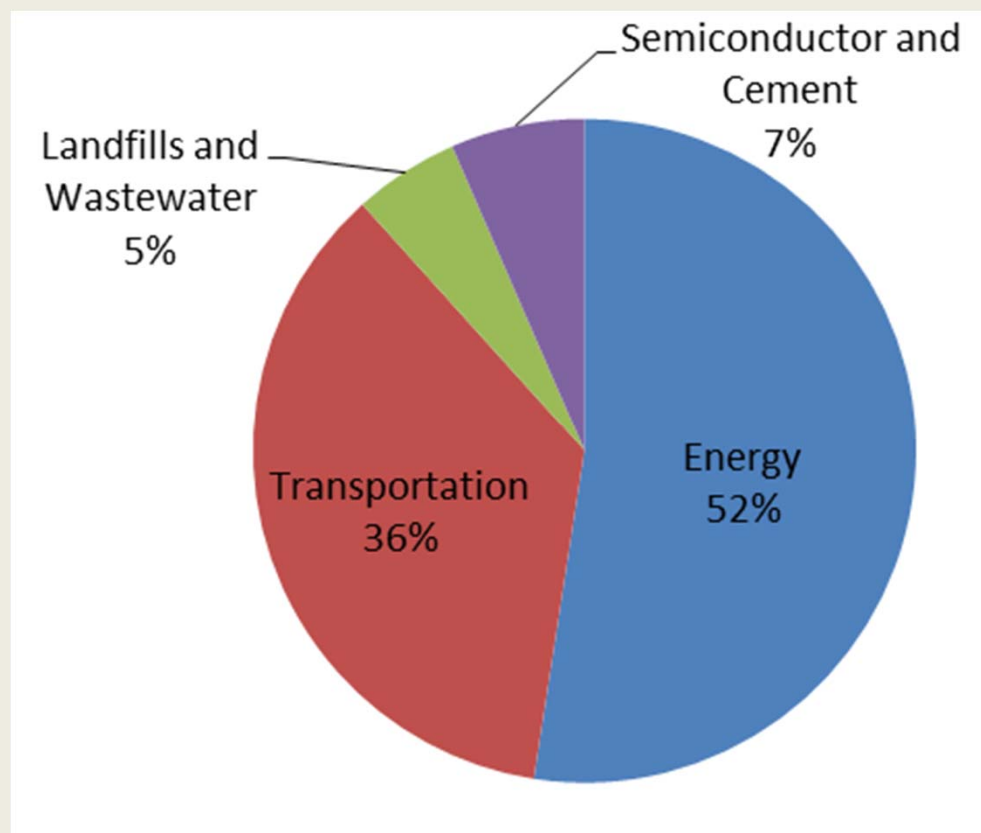
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Greenhouse gases

- **Carbon Dioxide**
 - Major Sources: Burning of vegetation and fossil fuels
 - 100 year global warming potential = 1
- **Methane**
 - Major Sources: Production of fossil fuels, agriculture, landfills
 - 100 year global warming potential = 25
- **Nitrous Oxide**
 - Major Sources: Agriculture, wastewater treatment, fossil fuel combustion
 - 100 year global warming potential = 298
- **Fluorinated Gases**
 - Major Sources: Semiconductors, electrical manufacturing, ozone depleting substance replacement
 - 100 year global warming potential = 1,000 – 15,000

2010 Travis County GHG Inventory

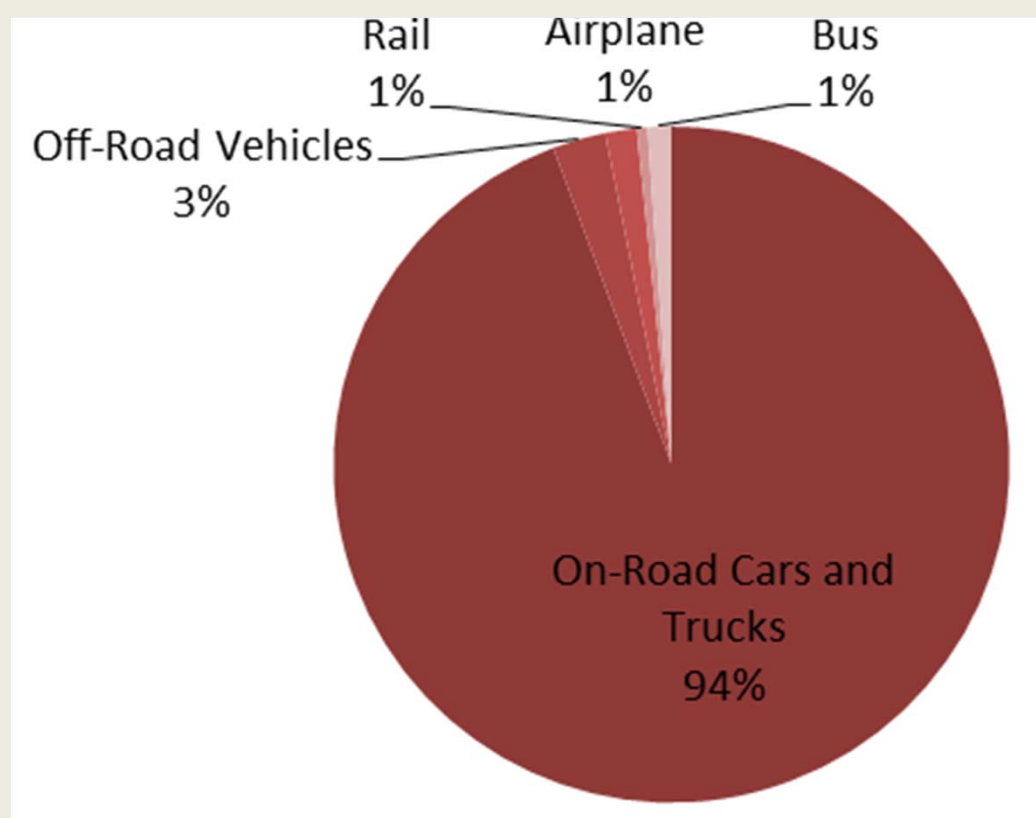
15.2 Million metric tons CO₂e



- **Energy**
 - Power plants in and outside of Travis county that meet our kWh used
 - Natural gas burned for heat
- **Transportation**
 - Trips that occur in Travis county
 - Data based on TTI VMT estimates and scaled to an annual basis
- **Landfills and Wastewater**
 - Wastewater treatment plants and 4 landfills
- **Semiconductor and Cement**
 - 1 cement plant and 4 semiconductor facilities

We follow the 2012 US Community GHG Protocol – ICLEI
This is a direct, source and data based methodology

Transportation – 5.4 million metric tons CO₂e



■ 9.8 Billion Vehicle Miles Traveled

- 26 million miles per day

**WE RECOGNIZE THIS DATA
IS NOT PERFECT**

**Boundaries
Accuracy**

Agenda

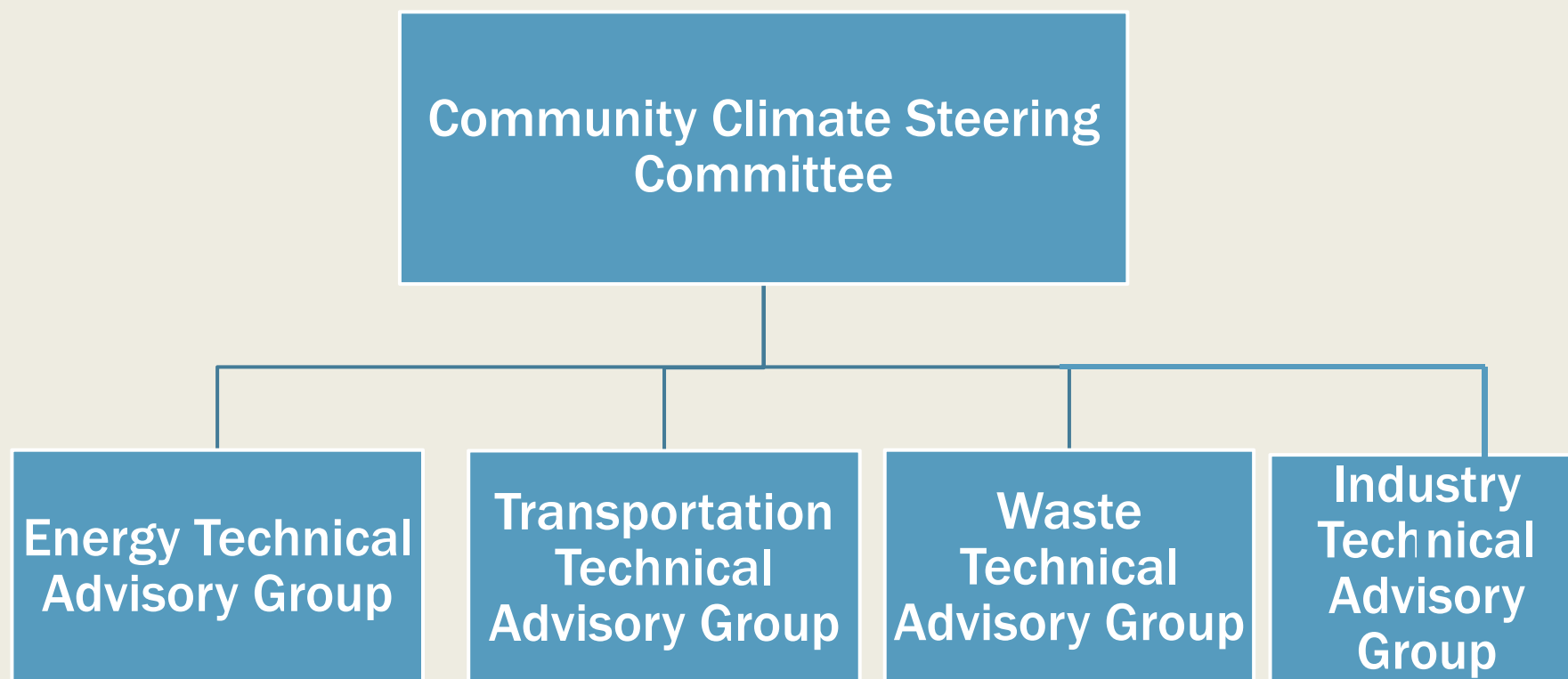
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Stakeholder Process

Resolution listed:

- Public Input Sessions
- Reviewed by Relevant Boards and Commissions
- Consideration of results of 2014 Generation Plan Task Force
- Formation of Technical Advisory Groups to work with city staff to develop action plans

Organization



TAG Purpose: Create and distill the strategies, actions, and sub-measures for each sector

Transportation Technical Advisory Group

Purpose: Distill the strategies, actions, and sub-measures for a plan

Output: Report section, ppt, screened actions

- **City Lead:** Karla Taylor, Zach Baumer, and Jenell Moffett
- **Other City Staff:** Pharr Andrews, Terri McManus, Cole Kitten
- **Planning and Development Review:** Surbhi Bakshi
- **AE Electric Vehicles:** Karl Popham
- **CAMPO:** Cathy Stephens
- **CapMetro:** Rob Borowski
- **TXDOT:** Bonny Lister
- **Texas A&M TTI:** Dennis Perkinson
- **Texas State University:** Billy Fields
- **Tom Wald**
- **Movability Austin:** Glen Gadbois

Transportation TAG

- **Overarching Strategies?**
 - Operational efficiency enhancements to the transportation system
 - VMT reduction through compact and connected development, public transport, bikes, and walking
 - Vehicle efficiency, hybrid and electric technology, and biofuels
- **Indicators and Goals?**
 - VMT Reduction Goal
 - Annual trips per capita Goal
 - Transit ridership Goal
 - Bike commuting & walking % of trips Goal
 - Vehicle CO₂ / mile Goal
- **Actions divided into 3 groups**
 - 2015-2018: Currently in plans and on the books
 - 2018-2025: New actions we could start in the near future
 - 2030 and Beyond: Visionary actions

Transportation TAG Action Screening

■ Actions screened:

- Quantified potential for GHG reduction
- How will it be affected now and in the future by:
 - Population and business growth
 - Available and emerging technology
 - Potential costs and benefits
 - Climate preparedness and resilience
 - Barriers where the City does not exert direct control over community emissions
- Who is the owner and who pays the cost?
 - City owned, managed, infrastructure
 - Partnership between the city and business or residents
 - Market based / business solution
 - Individual resident action
- Scale of Cost / challenge
 - Low / no cost / behavior change
 - Some increase in expenses / effort
 - Significant capital expenditure

TAG Final Deliverable

- **Report Section for the Austin Community Climate Plan**
 - Description of baseline emissions, growth trajectories, and reduction pathways to net zero
 - Strategies and actions, qualitatively assessed in terms of what will be done by whom, and how they could be achieved.
 - Actions quantitatively analyzed on how they will sum up to net zero emission in the sector by 2050
 - Write-ups and descriptions of costs, benefits, and why actions are included
- **Process**
 - Draft by October, presented to the Steering Committee for review
 - Feedback from all angles in October / November
 - Finalization in December

Schedule

- **July**
 - Kickoff meeting, group organization and direction
- **August**
 - Briefings to the group
 - 2050 Visioning and Strategy development
- **September**
 - Status report due to City Council
 - Strategy and Action refinement
- **October**
 - Qualitative and Quantitative analysis
 - Brief the Steering Committee
- **November and December**
 - Boards and Commissions
 - Feedback from the Public
- **January – March 2015**
 - Up the chain and to finalization

Next Steps

- **Set a recurring meeting date / time**
- **Briefing presentation ideas**
- **Envision the 2050 Scenario**
- **Outline Strategies and Actions between now and 2050**
- **Qualitatively screen actions**