

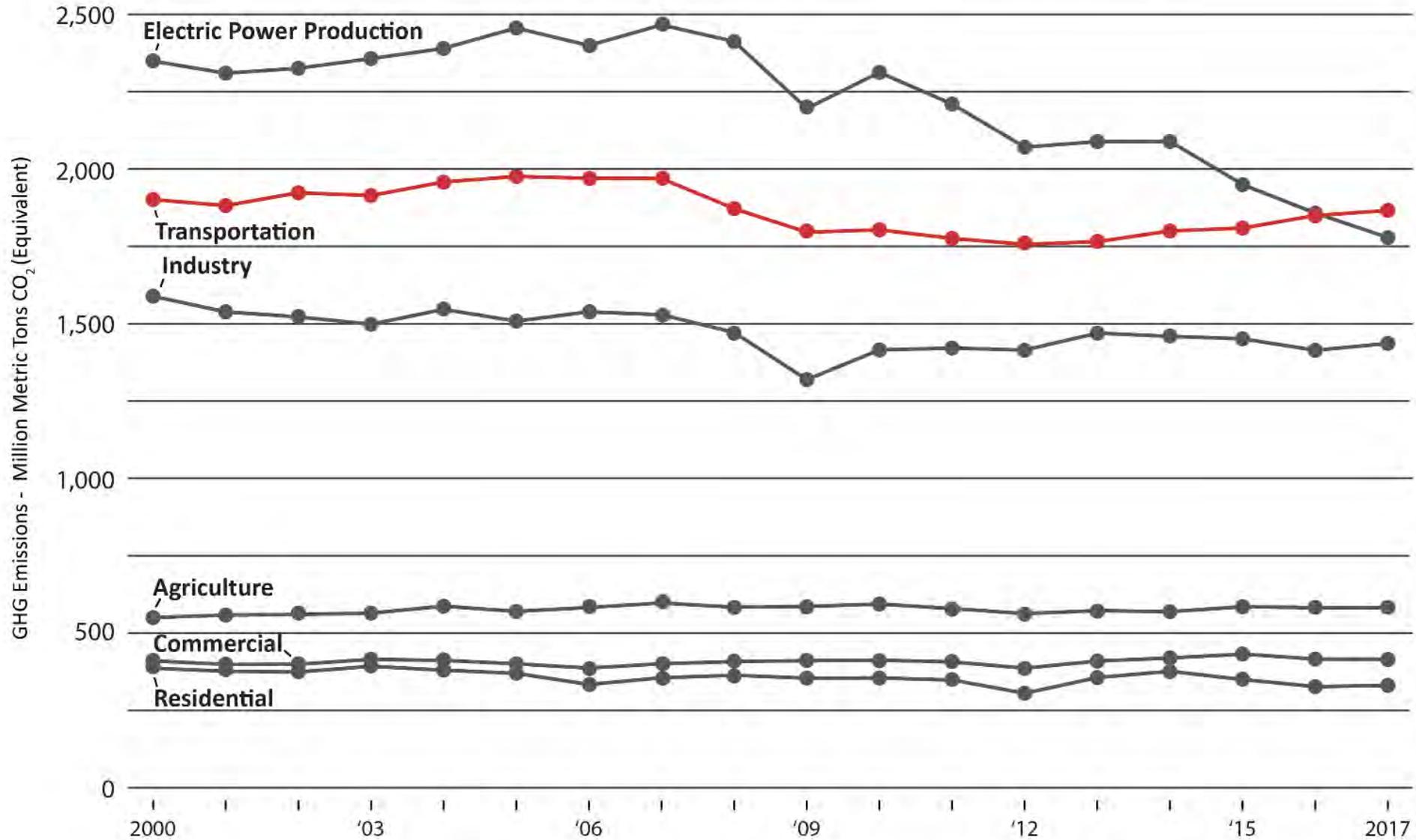
Transportation Solutions to Climate Change

Walking, biking, and public transportation and the fight against climate change



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U.S. Greenhouse Gas Emissions by Sector (2000-2017)



Source: U.S. Environmental Protection Agency: U.S. Inventory of Greenhouse Gas Emissions and Sinks, 2019 - Table ES-6

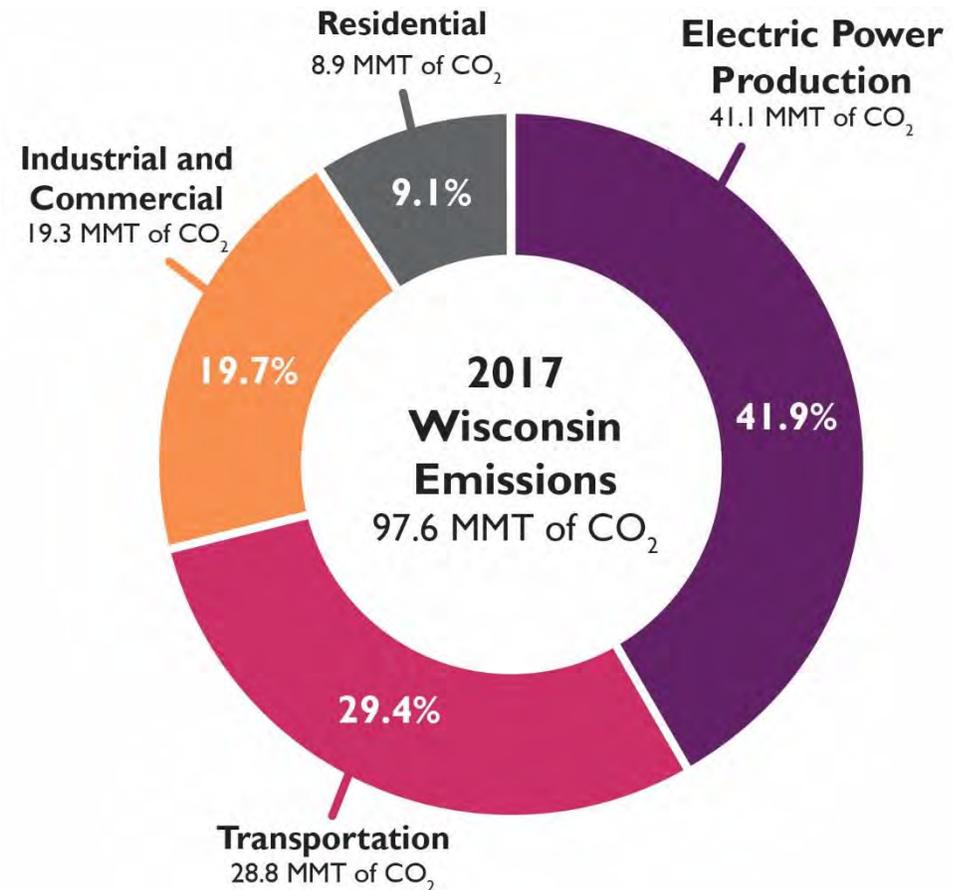
Wisconsin Transportation Solutions

Transportation emissions have remained stubbornly stable in Wisconsin for decades:

- 2000 – 29.5 million metric tons of CO₂
- 2010 – 29.2 million metric tons of CO₂
- 2017 – 28.8 million metric tons of CO₂

Solution will require:

- Electric Vehicles (EVs)
- Active Transportation (Walking & Biking, etc.)
- Public Transportation (Transit & Passenger Rail)

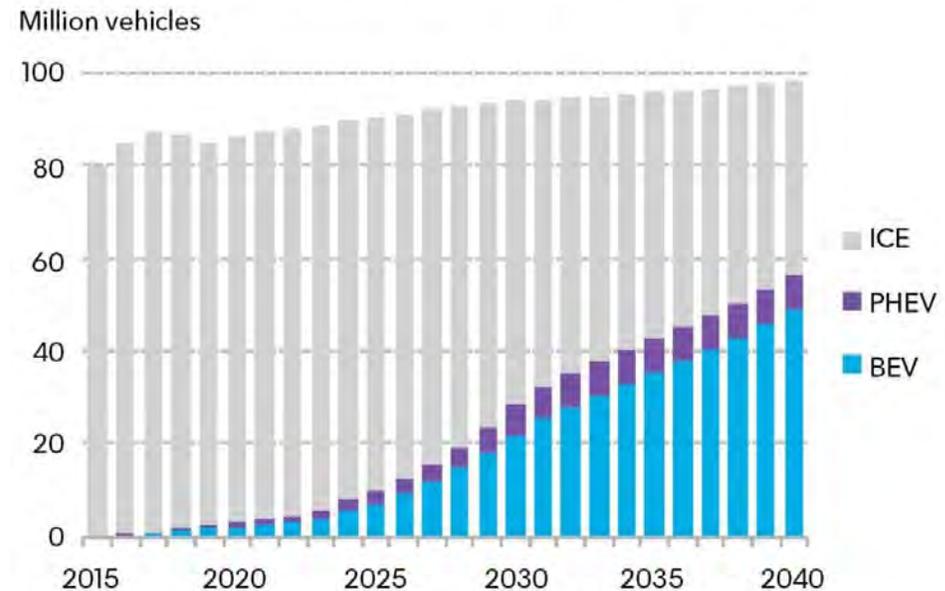


Need for Walking, Biking, and Transit

EVs are an important solution for reducing transportation-related carbon emissions, but:

- A lack of public charging infrastructure will slow the advancement of EVs
- It will take decades to phase out “Internal Combustion Engines” (ICE) with EVs
- EVs still rely on a carbon-intensive power grid
- EVs will not solve other intrinsic problems with our transportation system including equity issues for those who do not, or cannot, own a personal vehicle

Global long-term passenger vehicle sales by drivetrain



By 2040, expect 57% of all U.S. passenger vehicle sales to be electric.

Source: [Bloomberg, New Energy Finance](#)



Amount of roadway space required to move 69 people (1 bus, 69 bikes, 60 cars)

Source: [We Ride Australia](http://www.werideaustralia.com)

Active Transportation (Walking & Biking)

One study on active transportation found that:

- 21% of vehicle trips travel less than one mile
- 24% of vehicle trips travel between one and three miles

Potential for reductions:

- A one mile trip could be accomplished by walking twenty minutes or less
- A three mile trip could be accomplished by bicycle in twenty minutes or less



Sources:

1. <https://nhts.ornl.gov/vehicle-trips>
2. <https://www.sciencedirect.com/science/article/pii/S0965856417316117#f0015>

Public Transportation (Transit & Passenger Rail)

Residents of transit-rich neighborhoods drive 10 to 30% fewer miles

- To make a transit-rich neighborhood, there needs to be a commitment to expanding and improving service

Electric buses have the potential to make public transit another form of zero-emission transportation

Intercity passenger rail emits an estimated 40% fewer CO₂ emissions per mile than automobile travel



Sources:

1. <https://www.vtpi.org/landtravel.pdf>
2. <https://wisconsin.gov/Documents/projects/multimodal/rail/plan-chap11.pdf>

Policy Solutions



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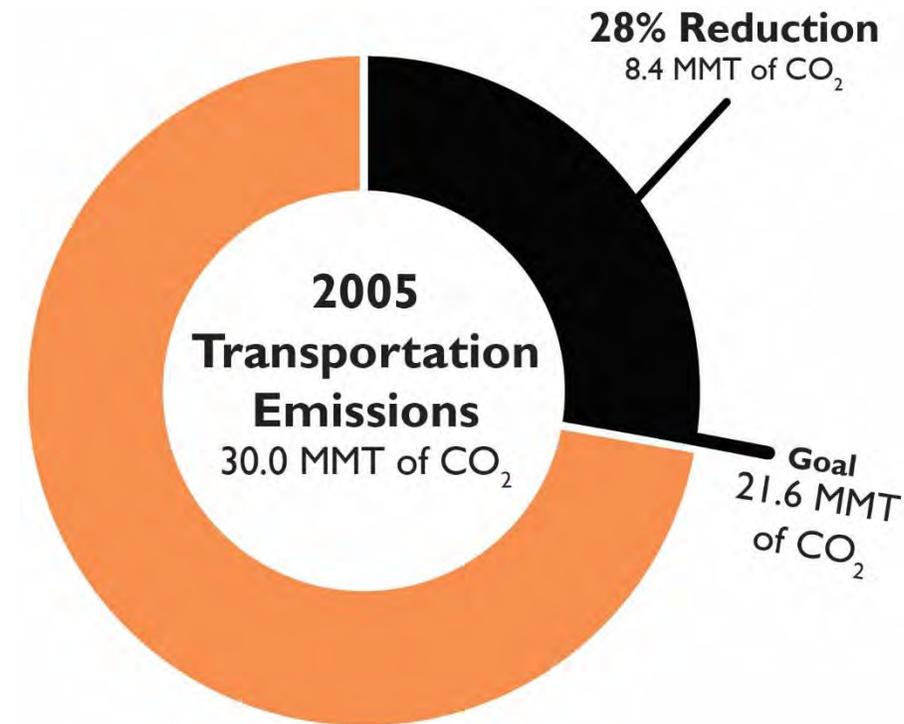
Emission Reductions

The Paris climate agreement requires participants to **reduce overall emissions 28% from their 2005 level by 2025.**

In Wisconsin the goal is to reduce transportation emissions to **21.6 MMT of CO₂.**

To achieve this reduction, we must:

- Promote transportation alternatives
- Enhance transit support
- Use a carbon-audit system

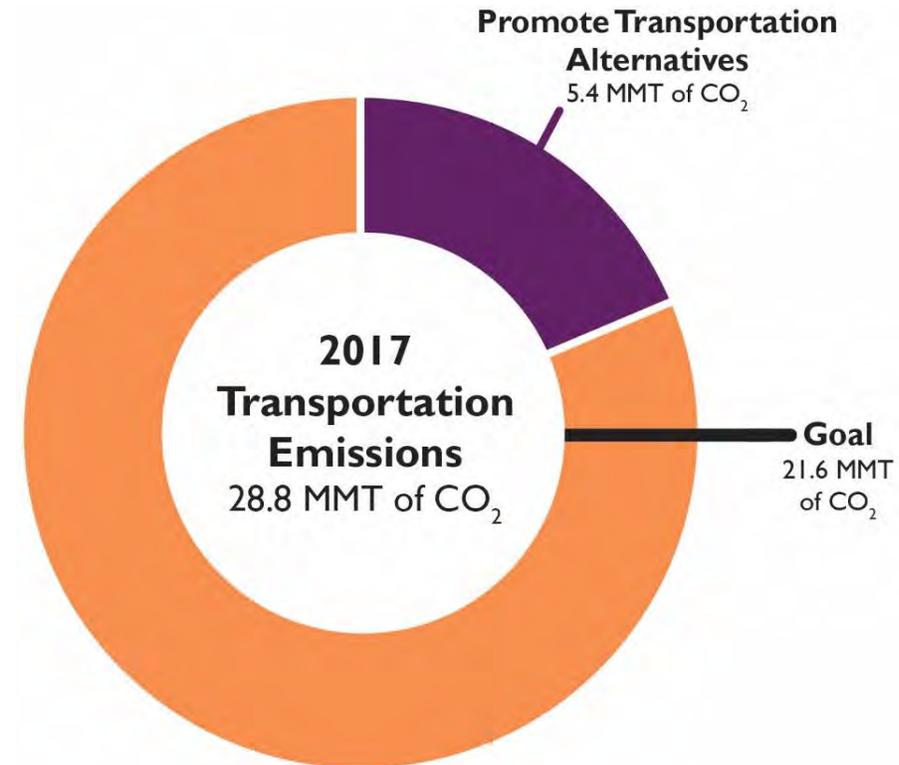


Source:

1. [Wisconsin Strategy for Reducing Global Warming – Final Report, July 2008](#)

Promote Transportation Alternatives

- Implement “Complete Streets” policy
- Implement “Fix-it-first” policy
- Promote smart growth development



Source:

1. [Wisconsin Strategy for Reducing Global Warming – Final Report, July 2008](#)

Complete Streets Program

Re-implement a complete streets program

- This policy promoted safety features for pedestrians, bicyclists, and transit on roadway projects that receive state funding
- In 2009, the Wisconsin State Legislature passed a complete streets program, but it was repealed in 2015

Restore eminent domain acquisition for pedestrian and bike trails

- Repealed in 2017

Dedicate money to walking and biking infrastructure

- There is no state-level funding for walking and biking infrastructure. State funding for the Transportation Alternatives Program would remedy this issue

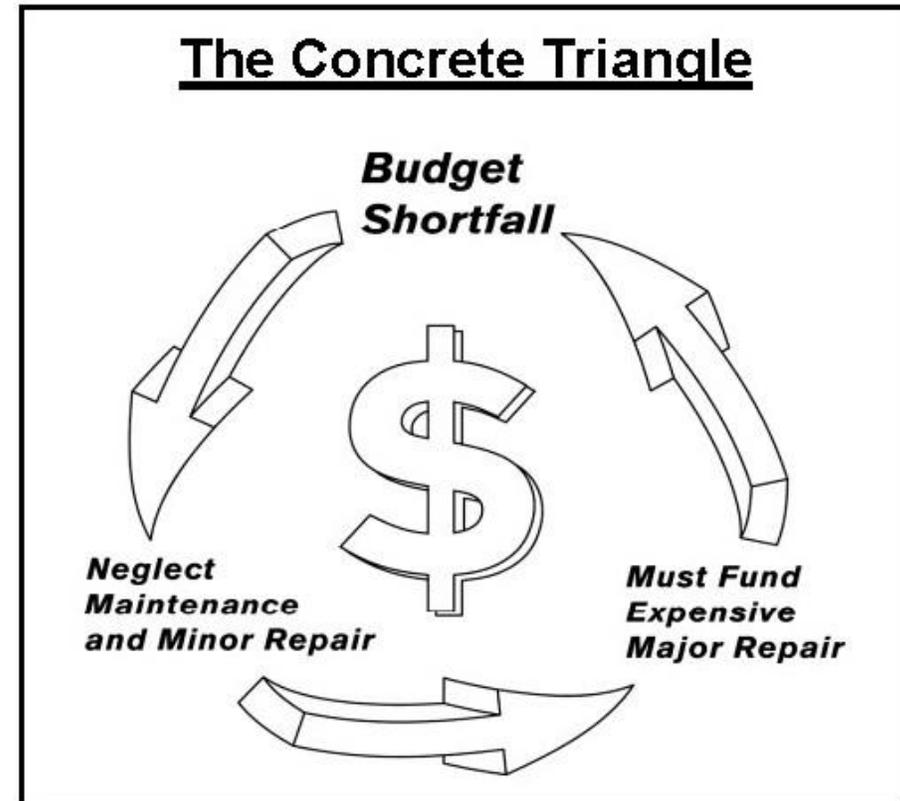


Photo: [Elements of Protected Intersections \(MassDOT\)](#)

Fix-it-First Policy

Implement a strong “Fix-it-First” policy

- This policy gives funding priority to rehabilitation of existing infrastructure
- New lane-miles are considered only after existing infrastructure is in good repair
- Fix-it-first attempts to lower statewide infrastructure costs
 - The cost to repair local roads increases substantially as a road ages.
 - If maintenance measures are not taken, water reaches the roadway foundation, shortening the time before more expensive repair or full reconstruction is needed.
- Policy would free up funding for walking, biking, and transit programs



Source: [1000 Friends of Wisconsin – Fix-it-First Report.](#)

Smart Growth Development

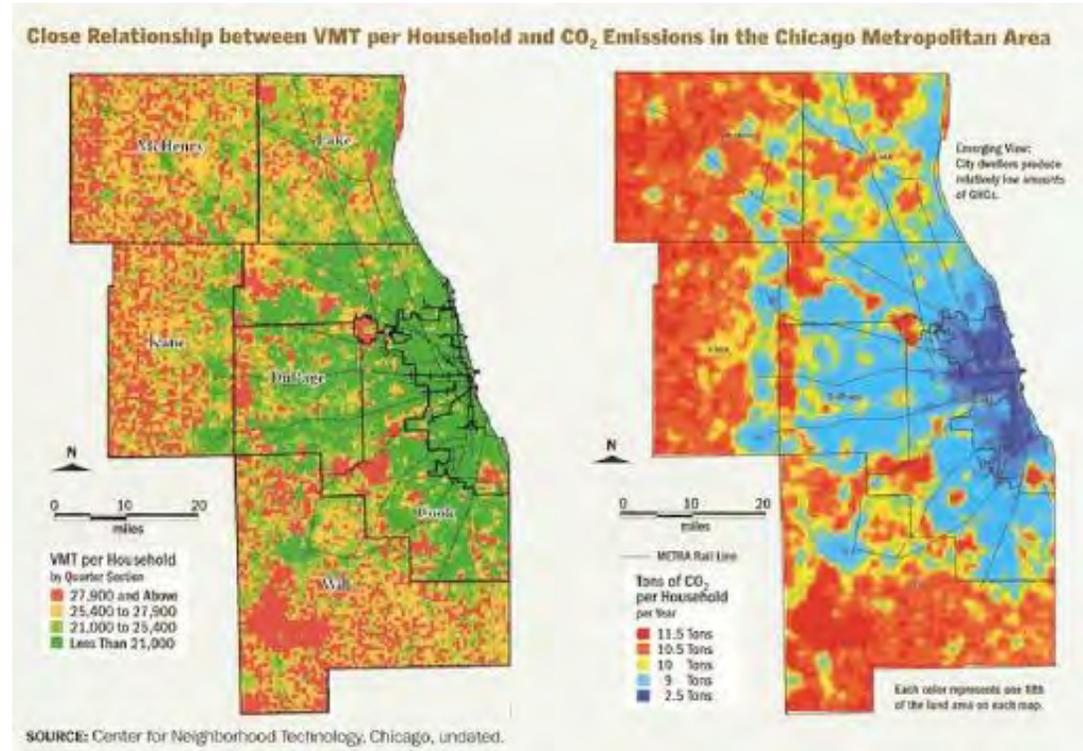
Encourage development patterns that are compatible with walking, biking, and transit

- Where people live has a huge impact on their carbon emissions
- Policies should not make driving more expensive or less convenient

WisDOT policies should include:

- Reinstating funds for comprehensive planning and promoting neighborhood design that encourages walking, biking, and transit
- Working with Metropolitan Planning Organizations and local governments to promote walking, biking, and transit

Give economic development priority to infill and redevelopment projects

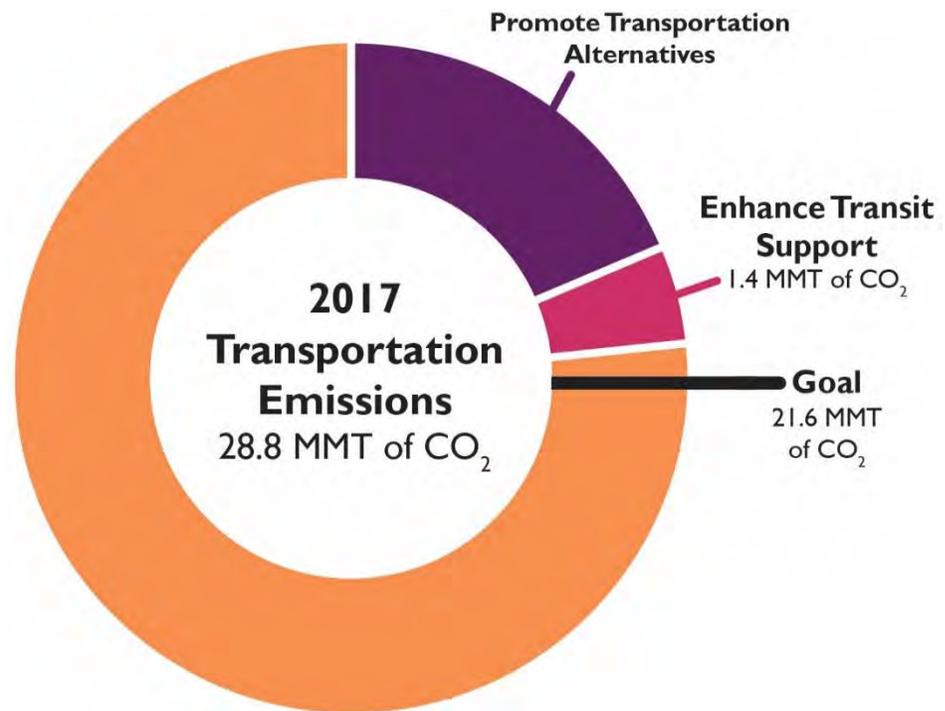


This map of Chicagoland shows the connection between driving, suburban development, and increased carbon emissions. Those with transportation options (walking, biking, and transit) produce significantly less carbon emissions.

Source: [Center for Neighborhood Technology, Chicago](#)

Enhance Transit Support

- Pass Regional Transit Authority (RTA) enabling legislation
- Increase State mass transit aids
- Promote intercity passenger rail
- Create a transit trust fund
- Work with major employers to reduce vehicle use for commuter travel



Source:

1. [Wisconsin Strategy for Reducing Global Warming – Final Report, July 2008](#)

Public Transit

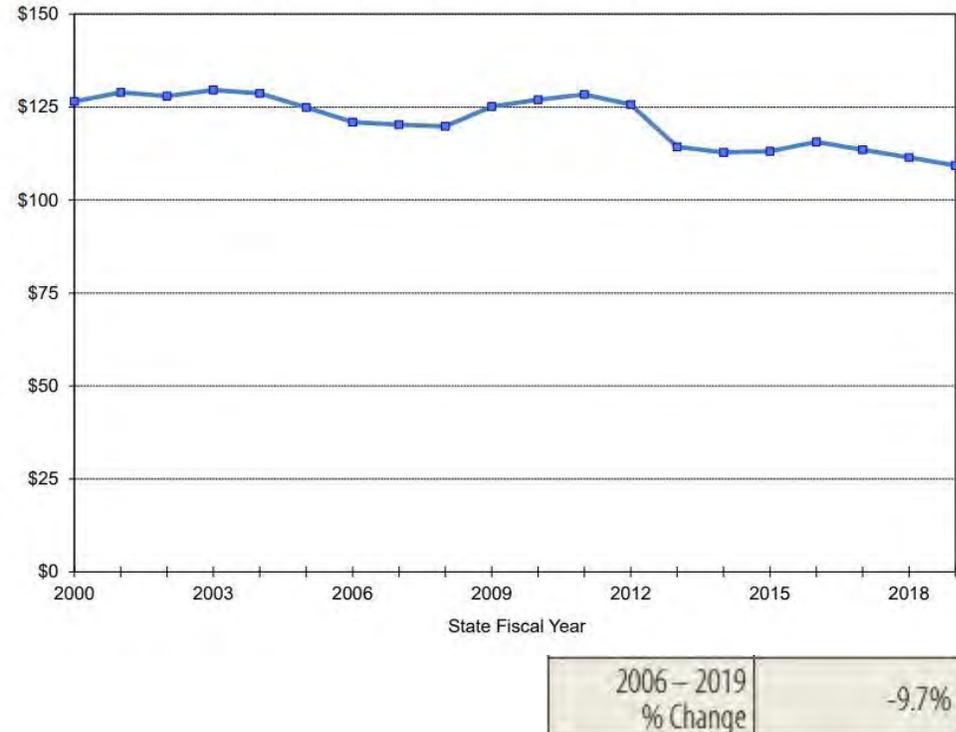
Pass RTA-enabling legislation

- This policy allows local governments to pass a ½ cent sales tax to fund regional transit

Increase State transit aids

- Transit is currently funded by federal, state, local funding, and farebox recovery
- State aid is currently 9.7% lower than it was in 2006 when adjusted for inflation
- This has led to major route cuts and decreased frequency, which in turn has led to lower ridership as the system becomes less efficient

F-33: Transit Aids, State Funds (constant 2017 dollars, millions)



Source: [WisDOT, 2018-2019 Budget Trends](#)

Passenger Rail

Promote intercity passenger rail

- Establish higher speed rail links
- Connect Chicago, Milwaukee, Madison, and Minneapolis through frequent passenger rail service
- Consider other corridors including the Fox Valley, Rock County, and Eau Claire

Create a transit trust fund

- Limited State funding makes commuter rail options almost impossible
- \$250M over 20 years in revolving GO bonds would make commuter rail projects in Madison, and between Milwaukee-Racine-Kenosha competitive for federal funds

Map 6-5: Wisconsin 2030 Potential Intercity Passenger Rail System



Source: [WisDOT, Wisconsin Rail Plan 2030](#)

Commuter Trip Reduction

Work with major employers to reduce vehicle use for commuter travel to:

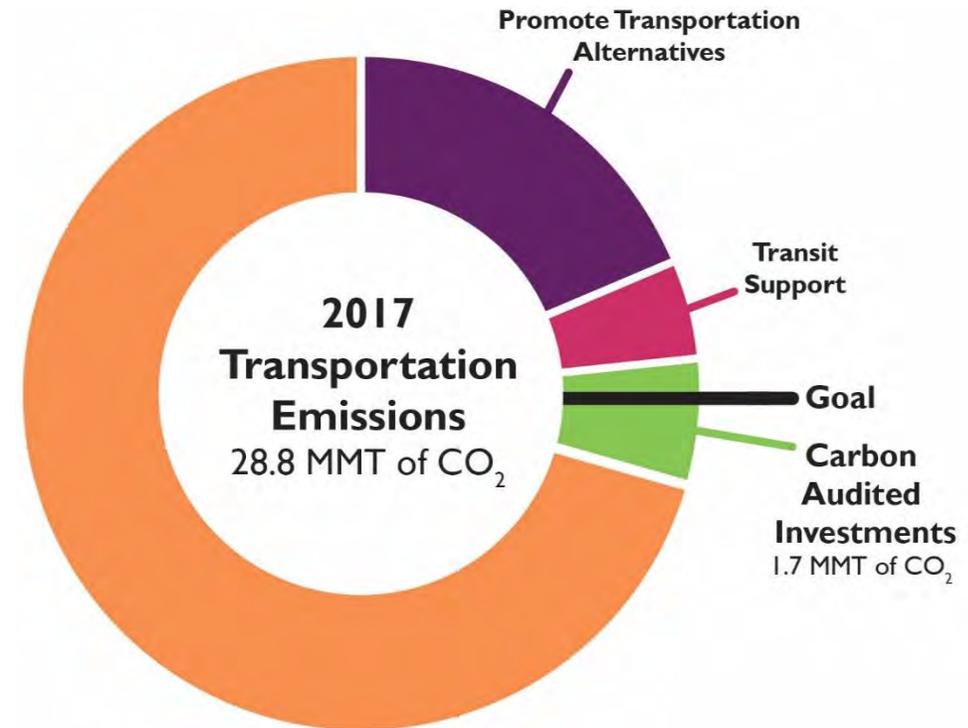
- Provide incentives for alternative modes
 - Subsidized bus passes
 - Bicycle parking areas
 - Priority parking for carpooling or car share
- Make a wide range of commuting options available
- Create programs that inform employees of commuting options, services, and incentives



Carbon Audited Investment

Require carbon audit for all state funded transportation projects

- This policy reviews the carbon footprint for all WisDOT Environmental Impact Statements (EIS)
- Information should include the lifecycle GHG emissions for infrastructure
- The audit is intended to inform and promote energy-efficient transportation infrastructure choices



Source:

1. [Wisconsin Strategy for Reducing Global Warming – Final Report, July 2008](#)

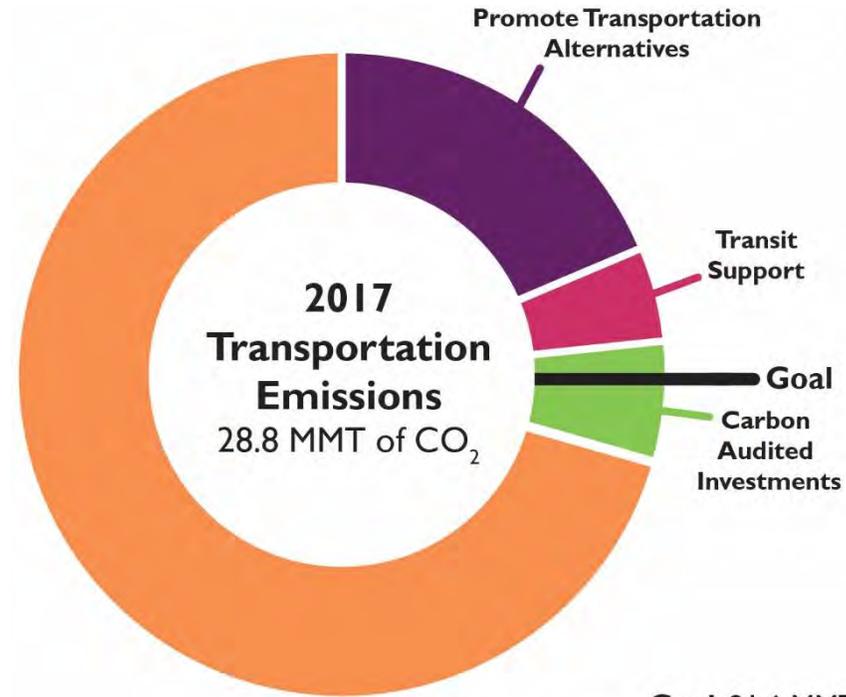
Questions?

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Goal: 21.6 MMT of CO₂
Emissions if implemented: 20.3 MMT of CO₂