



Local Sustainability Initiatives

Boulder, Colorado, USA



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Why cities?

- **Local decisions - building codes, zoning rules, transportation plans - have enormous impact on land and energy use**

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Urban footprint varies dramatically

- **Example: 1990 per capita transportation energy use**
70,000 Megajoules in Houston;
51,000 in New York;
20,000 in Amsterdam
- **Transportation accounts for 1/3 of greenhouse gas emissions**

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Key issues

- **Land use - protecting natural areas, maintaining compact urban form**
- **Transportation - reducing auto dependency, increasing vehicle efficiency**
- **Energy and buildings- green building, efficiency and renewable energy**

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City of Boulder environmental goal

- **"To enact and pursue city policies that cause the Boulder community to become a nationwide environmental leader among communities. The city will be a role model of exemplary environmental practices."**

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City sustainability goals

- **Land preservation: remain a compact city, and keep rural areas rural**
- **Transportation: no net increase in Vehicle Miles Traveled**
- **Energy: Council adopted Kyoto greenhouse gas emission goals**
- **Recycling/waste reduction: 75% diversion of waste from the landfill**

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Land preservation



Photo courtesy of City of Boulder

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Open space program

- **Funded by permanent 0.4% sales tax; temporary 0.33% tax (expires 2018); temporary 0.1% tax**
- **Have acquired over 40,000 acres - compared to city of ~16,000 acres**
- **Charter protects these lands for habitat, urban shaping, passive recreation**

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Impact on infrastructure

- **Reduced demand for roads, water, parks, etc**
- **Modeling - one purchase reduced traffic on the Boulder-Longmont road by 12%**
- **Boulder purchased 1500 acres to help prevent Jefferson Center in 1999 - prevented tens of 1,000s daily trips**

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Densifying the urbanized area

- **Emphasis on increasing housing supply**
- **Redevelopment of downtown - parking lots into buildings**
- **New zoning to encourage housing in commercial, industrial areas**
- **TOD near rail and bus rapid transit station**

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Political controversy!

- **Environmental community is split on infill and density; substantial “no-growth” opposition**
- **Opponents have drafted ballot issue to limit new development**
- **Business community is also split- substantial suspicion of mixed use, TOD**
- **Neighborhood activists often appropriate language of environmental protection for “suburban protectionism”**

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Boulder County land use vision

- **County comprehensive plan directs growth to urban areas**
- **County open space program acquires rural lands**
- **“Super-IGA” between county and all cities sets urban growth boundaries**

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Transit Oriented Development

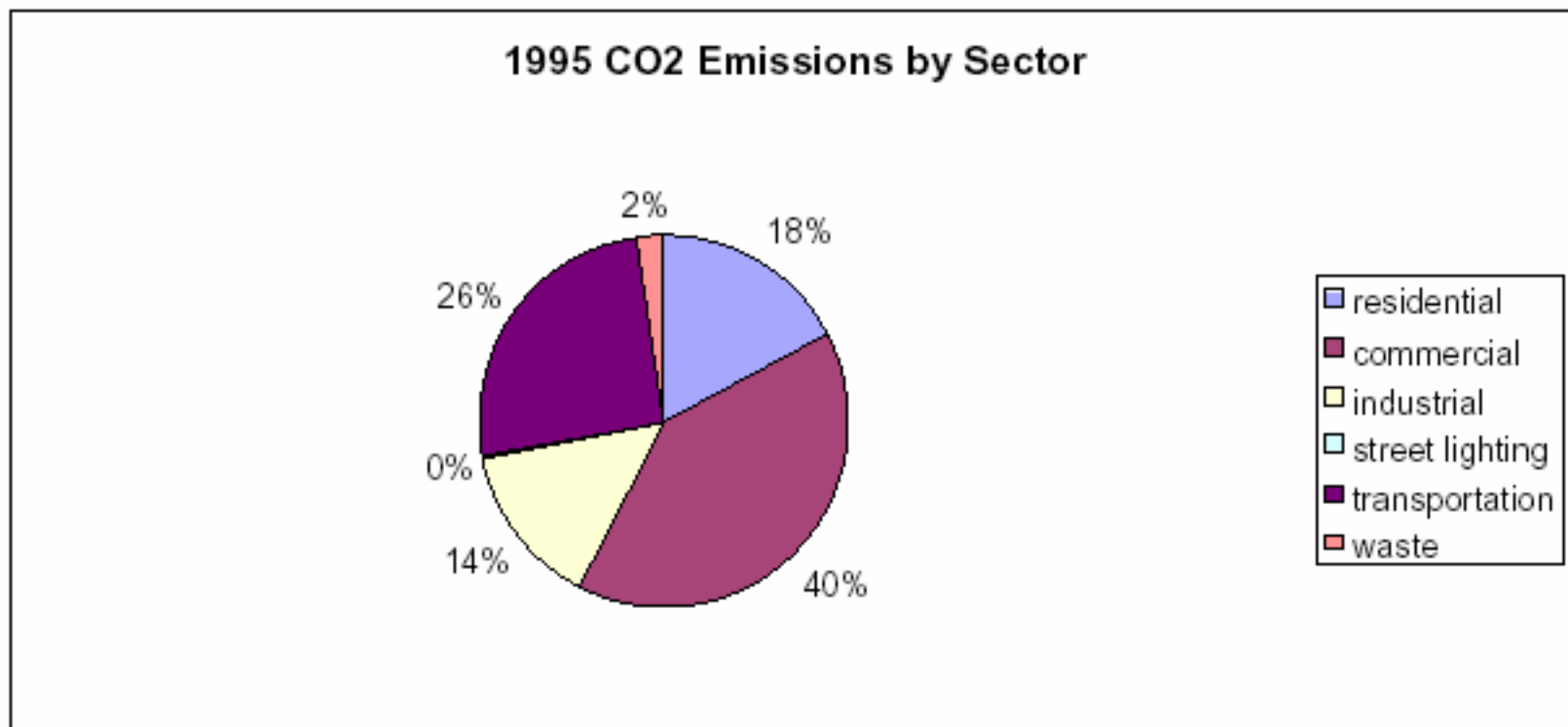
- **2004 ballot issue funded light rail, commuter rail, bus rapid transit**
- **Significant municipal planning efforts to define TOD around stations**
- **Hard issues- too low density, too much parking, too much retail, not enough housing, conflicts over TIF**

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Boulder's transportation approach

- **1996 Transportation Master Plan**
- **Goal: Hold traffic to 1994 levels; reduce SOV mode share to 25%**
- **Provide mobility**
- **Preserve quality of life**
- **Improve air quality; reduce GHG's**
- **Sound financially v. building roads**

Transportation GHG emissions in Boulder



Courtesy Boulder Renewable and Energy Efficiency Working Group

Why not just build more roads?

- **If Boulder pursued a “road-capacity” building policy:**
 - Spend over \$200 Million on road capacity projects
 - Improve system from 60% congested in 20 years to 51% congested in no-build and 20% congested in TDM scenario
 - Significant increase to VMT and neighborhood traffic
 - Benefit not worth cost

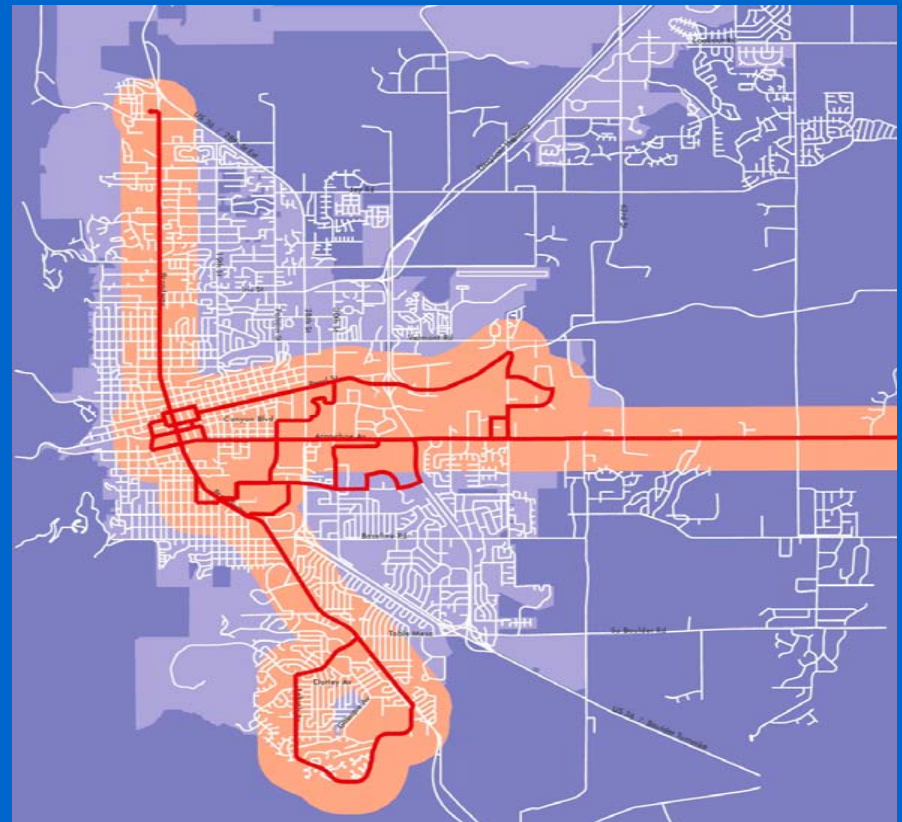
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Focus on travel choices

- **Transit service**
- **Create demand for transit**
- **Bike system**
- **Pedestrian system**
- **Marketing and Information**
- **Land Use/Urban Design**
- **Parking pricing**
- **TDM requirements -new development**

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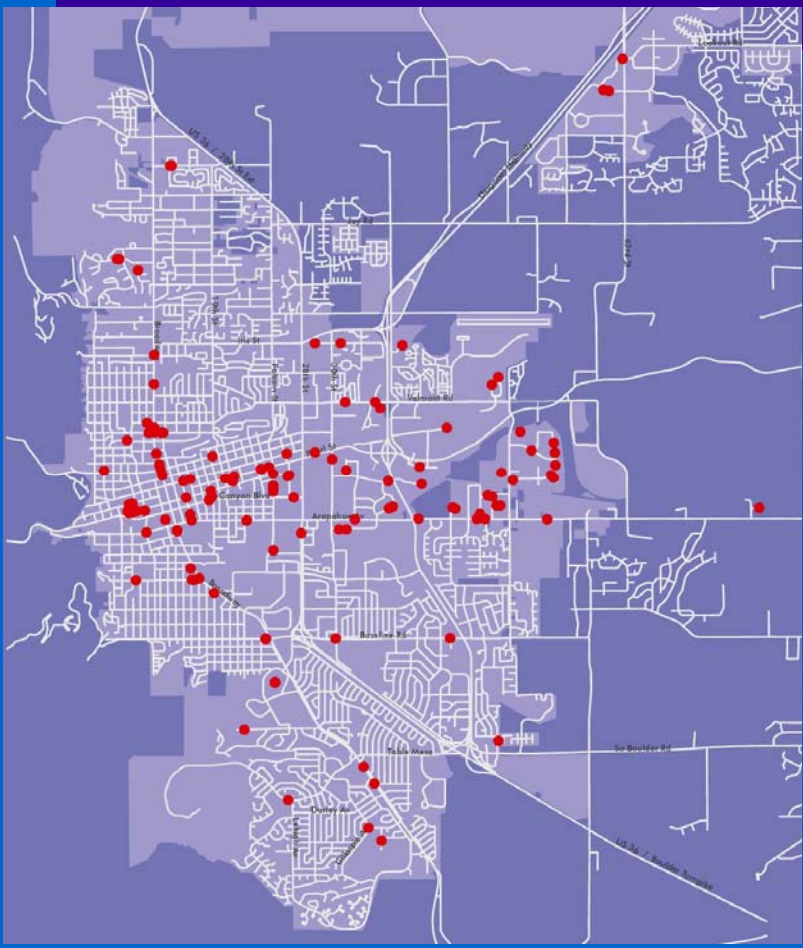
High frequency transit routes



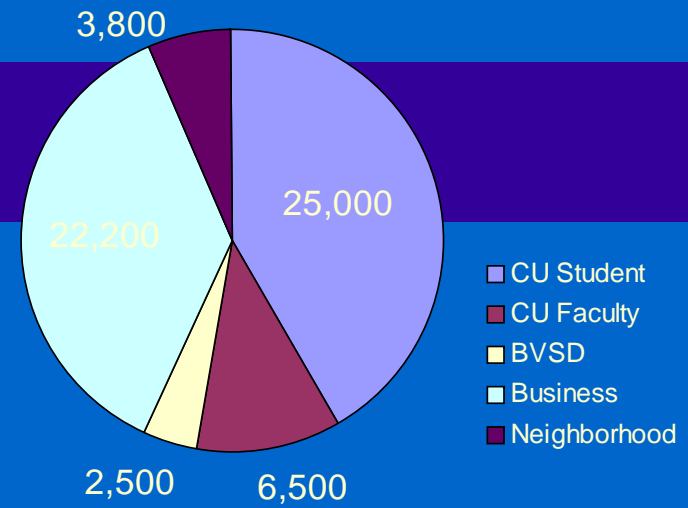
Courtesy City of Boulder Transportation

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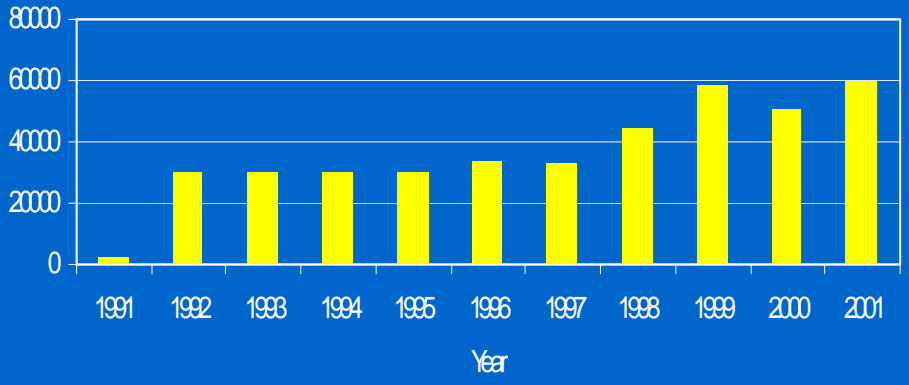
Eco Pass



Business Eco Pass Programs



RTD Eco Passes and Discount Passes Issued as of Fall 2001



Courtesy City of Boulder Transportation

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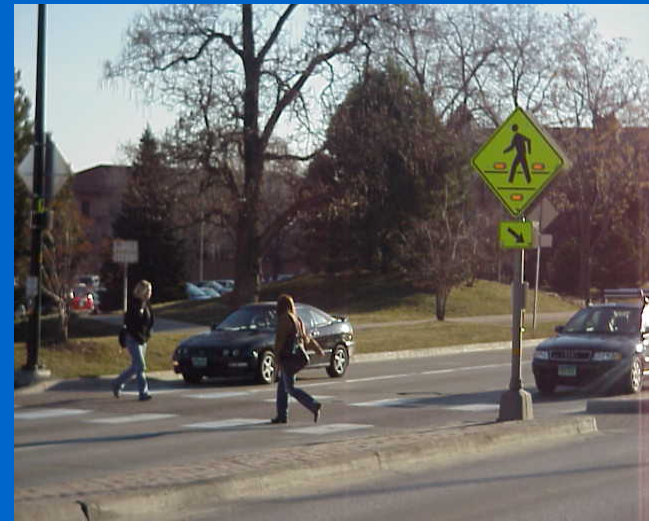
Pedestrian infrastructure



College Avenue Underpass -
city is adding 1.5 /year

Pearl St Pedestrian Mall

Flashing pedestrian crossing
on Broadway



Courtesy City of Boulder Transportation

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Bikeways

- **42.5 miles of off street paths; 27 miles of on street lanes**
- **Bike routes, bike paths, bike lanes**
- **Bike-actuated crossings at intersections**
- **Grade-separated crossings**
- **Bike-racks on all buses**
- **Local \$ + federal enhancements \$**

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Bikes in Boulder



• Courtesy City of Boulder Transportation •

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Results: transit

- **Average daily ridership on local transit has tripled from 5173 in 1990 to over 30,000 in 2005!**
- **% of trips made on transit by Boulder residents doubled form 1990-2000**
- **% of trips made on transit by employees commuting in to Boulder went up by factor of 5!**

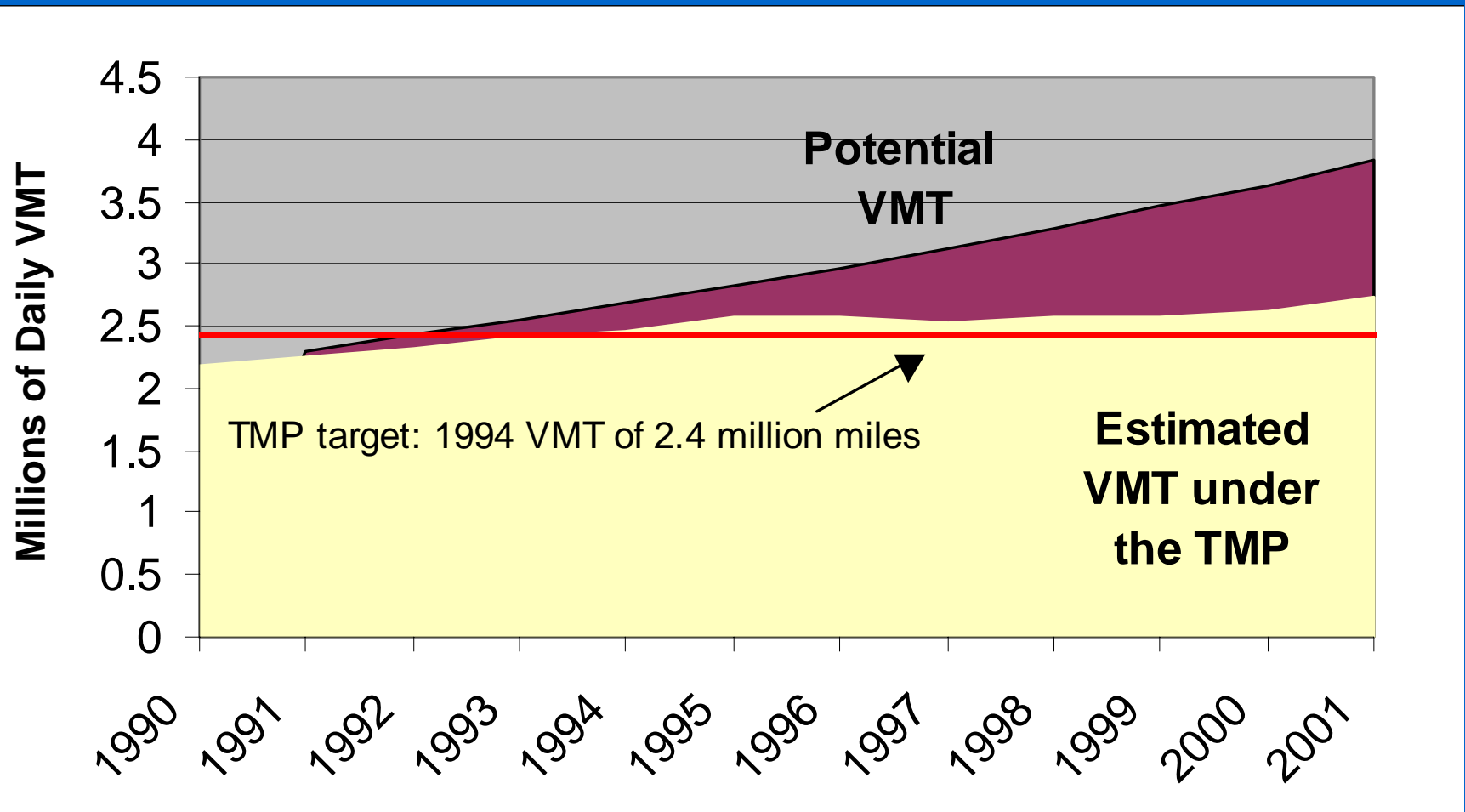
Results: 1990-2000 trends



% growth from 1990 to 2000

Courtesy City of Boulder Transportation

Growth in Vehicle Miles Traveled



Courtesy City of Boulder Transportation

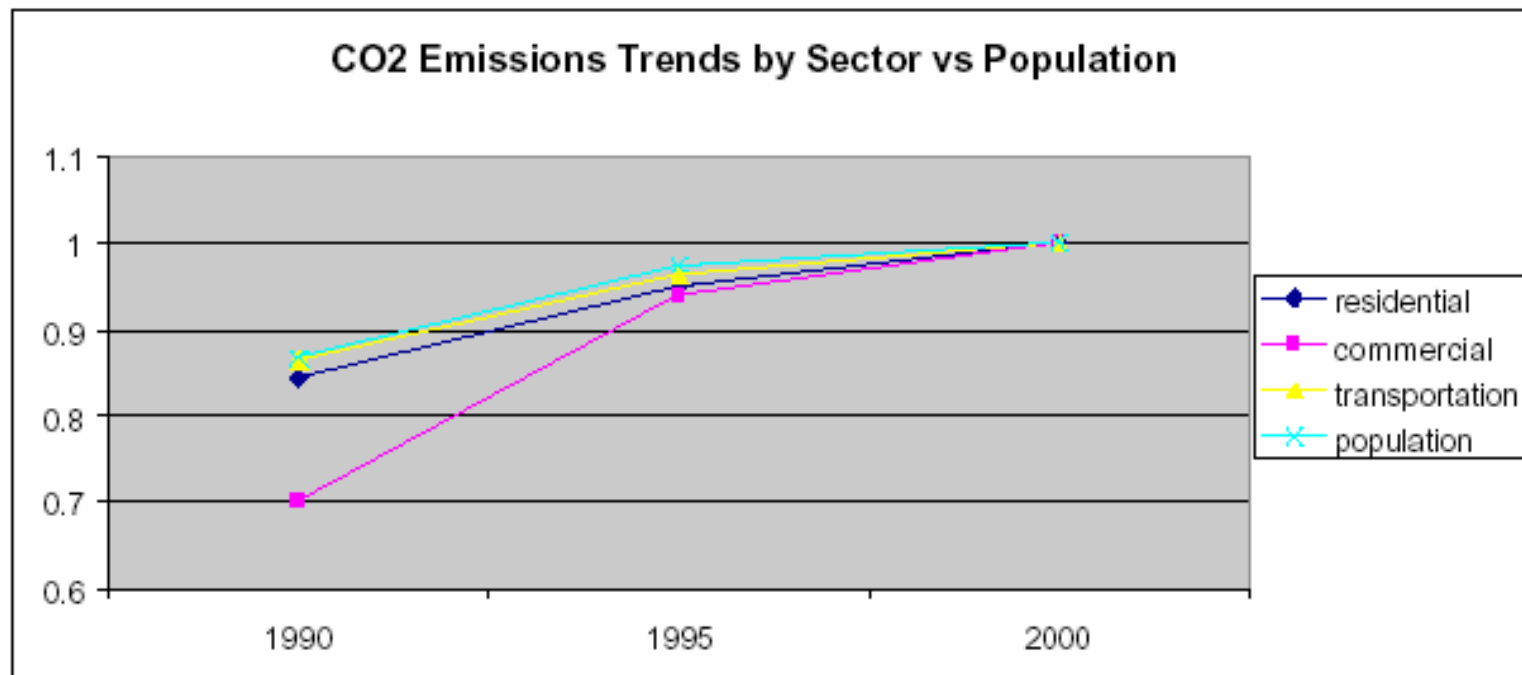
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Energy and greenhouse gases

- **In 2002 Council adopted Kyoto goal of 7% below 1990 levels by 2010**
- **In place: residential green building requirements, new energy conservation code, hydroelectric generation from municipal water supply, methane cogeneration from wastewater plant, LED traffic signals, retrofits of city facilities; Windsorce**
- **In 2005 Boulder County adopted climate targets**

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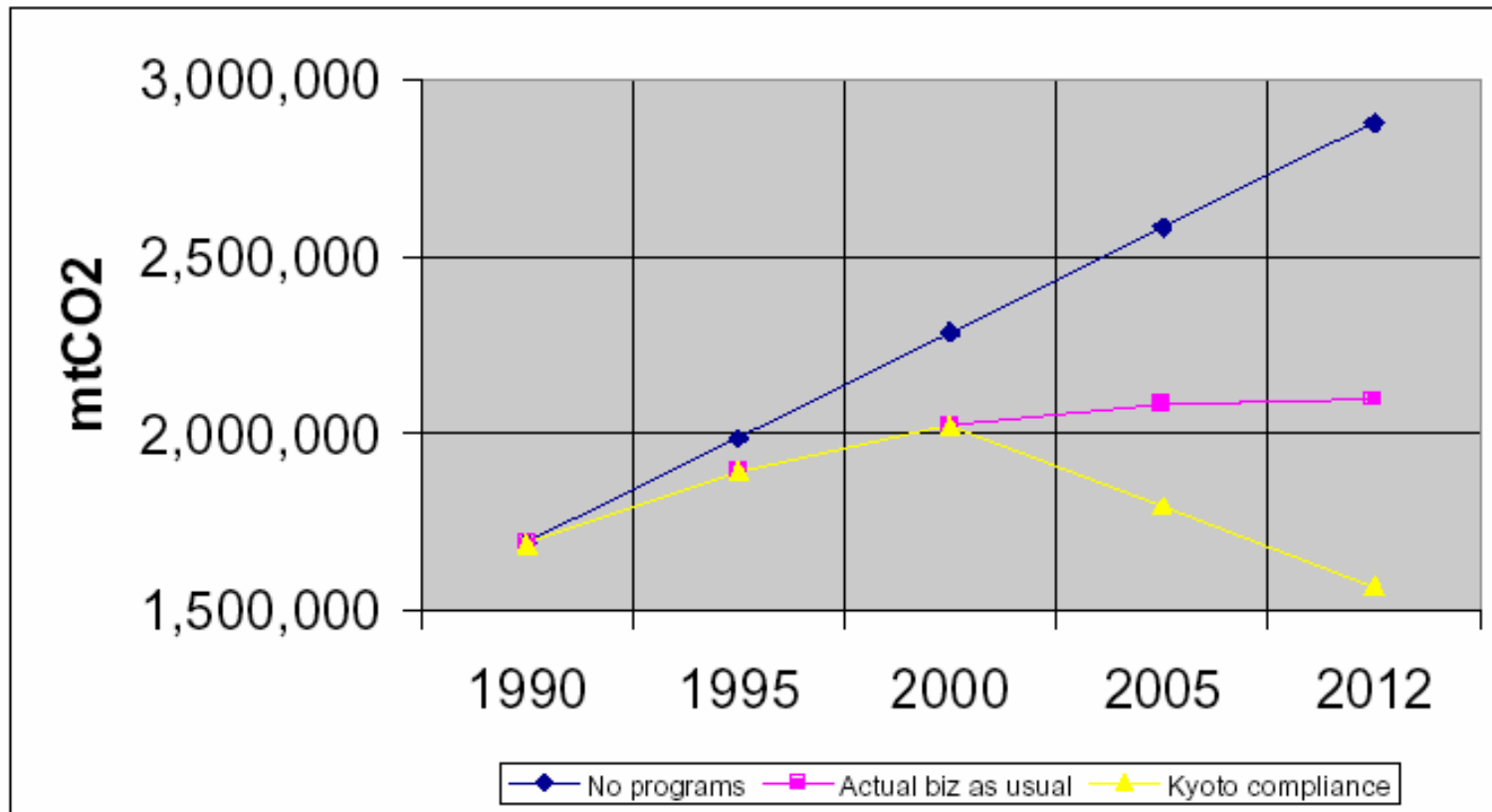
Despite efforts, emissions rising



Courtesy Boulder Renewable and Energy Efficiency Working Group

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The challenge of Kyoto compliance



Courtesy Boulder Renewable and Energy Efficiency Working Group

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Current energy issues

- **Green building requirements for commercial/industrial sector**
- **Energy budgets/ renewable energy mitigation program**
- **Updating residential green points code**
- **November 2006 ballot issue to fund climate action plan**
- **Countywide sustainable energy taskforce**

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Key challenge: control of utilities

- **Municipal utility gives much more control of energy mix**
- **Colorado PUC traditionally not very supportive of efficiency, renewables**
- **Boulder is beginning examination of municipalizing electric utility**

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CU students lead the way

- Student fee of \$1 raises \$55,000 annually for green power
- University contracts to purchase 8.8 million kwh of windpower - 100% of the electricity for the student buildings
- Students invest additional \$100k/year for solar/efficiency mix+ \$250,000 sustainability pool
- New academic buildings 100% renewable electricity standard+ LEED Gold

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Public building standards

- CU standard requires buildings to meet LEED Silver, and strive for LEED Gold - for academic buildings; meet LEED Gold and strive for LEED Platinum - student buildings
- City - LEED Silver; County - LEED Gold
- School district - incorporating in bond issue

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Closing thoughts

- **Strong public support for many sustainability initiatives**
- **Land use issues more controversial**
- **Public has been willing to back support with public \$ and personal choices**
- **Much more exciting issue at the local level than at federal government level**
- **Significant impact is possible**