TAKING ACTION TO KEEP THE PLANET COOL

WELCOME TO COOLCALIFORNIA.org

Our goal is to provide resources to all Californians in order to reduce their environmental impact and take action to stop climate change. Realizing local governments, businesses, schools and individuals have different needs, we have customized pages for each audience.

Click the tabs above to find:
- Money saving actions and best practices
- Financial incentives for actions and projects
- Carbon footprint and greenhouse gas emissions calculation tools
- Case studies and Success stories
- Educational resources

So, come on, be “cool” and check out the resources on coolcalifornia.org!
Carbon footprint of average California household
47 metric tons CO₂e per year

source: coolclimate.berkeley.edu
Carbon footprint of average St. Louis household
49 metric tons CO₂e per year

source: coolclimate.berkeley.edu
Average global household under climate stabilization 2 metric tons carbon dioxide equivalents (CO\textsubscript{2}e) per year

source: coolclimate.berkeley.edu
1-person CA household: $10k/yr
Carbon footprint: 16 tCO2e/yr

source: coolclimate.berkeley.edu
1-person CA household: $45k/yr
Carbon footprint: 31 tCO2e/yr

source: coolclimate.berkeley.edu
2-person CA household: $70k/yr
Carbon footprint: 51 tCO2e/yr

Source: coolclimate.berkeley.edu
3-person CA household: $70k/yr
Carbon footprint: 55 tCO2e/yr

source: coolclimate.berkeley.edu
4-person CA household: $70k/yr
Carbon footprint: 61 tCO2e/yr

source: coolclimate.berkeley.edu
4-person St. Louis household: $70k/yr
Carbon footprint: 64 tCO2e/yr

source: coolclimate.berkeley.edu
Start with a quick footprint estimate

Select State: California  Select City/Area: San Diego Area

How Many people live in your household?
- Adults: 3
- Children: 1

What is your gross annual household income?
- $60,000 to $79,999

Total
57 Tons

The footprint of the average CA household with 3 people and similar income
How do you get around?

**Vehicle 1**
- Miles per year: 15000
- Miles per gallon: 20
- (select vehicle) Gasoline

**Vehicle 2**
- Miles per year: 12000
- Miles per gallon: 20
- (select vehicle) Gasoline

**Add another Vehicle**

**Public Transit**
- Simple
- Advanced
- 671 miles per year

**Air Travel**
- Simple
- Advanced
- 6046 miles flown per year

Next: Housing

Travel

19.5 Tons

21.4% Better

than the average CA household with 3 people and similar income
Carbon Footprint Summary (tons CO₂e/year)

Footprint (tons CO₂ per year)

Before: 46
After: 37

Savings Summary

Current Footprint: 46 100%
Pledges: 9 20%
Offsets: 0 0%
New Footprint: 37 80%

Annual $ savings: $1963
10-yr net savings: $17626

Key:
- Trans.
- Housing
- Food
- Goods
- Services
- Offsets

Save Results to My Profile

Pledge all actions

☑ Change Diet
☐ Upgrade Vehicle Efficiency
☐ Telecommute To Work
☐ Carpool to Work
☑ Practice Eco-Driving
☐ Ride My Bike
☐ Take Public Transportation
☐ Maintain My Vehicles

Advanced

<table>
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<tr>
<th>Tons Saved</th>
<th>Dollars Saved (yr)</th>
<th>Dollars Saved (10-yr net)</th>
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<td>1.38</td>
<td>$838</td>
<td>$8380</td>
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<td>2.6</td>
<td>$698</td>
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<td>$1560</td>
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<tr>
<td>0.49</td>
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<td>$1320</td>
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upfront cost $2070
Carbon Footprint Summary (tons CO$_2$e / year)

**Footprint (tons CO$_2$ per year)**

<table>
<thead>
<tr>
<th></th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>11</td>
<td>13</td>
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<tr>
<td>Housing</td>
<td>16</td>
<td>16</td>
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<td>Food</td>
<td>5</td>
<td>4</td>
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<tr>
<td>Goods</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Services</td>
<td>11</td>
<td>11</td>
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</tbody>
</table>

Key: Trans. | Housing | Food | Goods | Services | Offsets

**Savings Summary**

CURRENT FOOTPRINT 46 100%

- Pledges 9 20%
- Offsets 0 0%

NEW FOOTPRINT 37 80%

- annual savings $1963
- 10-yr net savings $17626

Buy a More Efficient Vehicle

I will trade in **Vehicle 1**, which gets 20 miles per gallon and buy a more fuel efficient model that gets 30 miles per gallon. I will drive this vehicle 13951 miles per year. I can sell my current vehicle for $10000 and purchase a new one for $12000.

**Pledge**

Annual Savings: 2.6 tCO$_2$e/yr  Annual Savings: 698 $/yr  10-yr Savings: $4976

Look beyond the sticker:
Consider the lifetime cost of ownership for your next vehicle including fuel cost, insurance and rebates that are frequently available for more fuel efficient models. From this perspective, "green" cars that get better gas mileage also leave a lot more "green" in your wallet in the long run.

- Visit the [Department of Energy Web Site](http://www.energy.gov) for more information on the advantages of improving your fuel efficiency.
Chirs Jones

I put a lot of thought into managing my personal carbon footprint, but there is always room for improvement. I do quite a good job with household energy. We live in a really small place covered by a huge mulberry tree so no cooling in the summer.

I need to do a better job with diet and air travel. Traveling has always been so important to me, but that means I’ve been racking up quite a high air travel carbon debt. I hope developing these carbon footprint calculators somehow lowers my net contribution to climate change. Does that count?

Carbon Footprint

Total 35 Tons 39% better

- Transportation 7 Tons 69% better than average
- Housing 8 Tons 19% better than average
- Shopping 19 Tons 19% better than average

Pledged Actions

<table>
<thead>
<tr>
<th>Action</th>
<th>Tons/yr Saved (mtCO2e)</th>
<th>$/yr Saved</th>
<th>Upfront Cost</th>
<th>10-yr Net $ Saved</th>
<th>Payback (years)</th>
<th>Done?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecommute to Work for 4 day(s) per month instead of driving 20 miles to and from work in my vehicle which gets 35 miles per gallon.</td>
<td>0.61</td>
<td>$405</td>
<td>$0</td>
<td>$4,050</td>
<td>0</td>
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<tr>
<td>Purchase Green Electricity from a clean energy program to supply 1% of the electricity that my household uses per year.</td>
<td>1.6</td>
<td>$-32</td>
<td>$0</td>
<td>$-320</td>
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<td></td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>2.21</strong></td>
<td><strong>$373</strong></td>
<td><strong>$0</strong></td>
<td><strong>$3,730</strong></td>
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Completed Actions

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<tr>
<th>Action</th>
<th>Tons/yr Saved (mtCO2e)</th>
<th>$/yr Saved</th>
<th>Upfront Cost</th>
<th>10-yr Net $ Saved</th>
<th>Payback (years)</th>
<th>Done?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ride My Bike for 20 miles per week instead of driving my vehicle which gets 35 mpg.</td>
<td>0.33</td>
<td>$89</td>
<td>$0</td>
<td>$890</td>
<td>0</td>
<td>✔</td>
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<tr>
<td>Change My Diet by reducing the amount of processed and / or animal-based foods that I eat and / or increasing the amount of vegetables and plant-based foods in my diet.</td>
<td>1.38</td>
<td>$838</td>
<td>$0</td>
<td>$8,380</td>
<td>0</td>
<td>✔</td>
</tr>
</tbody>
</table>
Davis, Yolo County, CA

In 1995, Davis joined a small group of cities calling for local action and a national policy on climate change. In 2006, the City joined the US Conference of Mayors Climate Protection Agreement that called for local and national action to reduce greenhouse gas emissions (GHG). In a clear action in spring 2007, the Davis City Council unanimously adopted a strategy to reduce the City’s greenhouse gas emissions. Copies of the City Council resolutions related to these actions are found on the City Actions web page. Based on this Council strategy, the City has joined the Cities for Climate Protection (CCP) program along with hundreds of other communities across the globe to reduce greenhouse gas emissions at the local level. The program is designed to educate and empower local governments to take action on climate change. The CCP is a performance-oriented campaign that offers a framework for local governments to reduce greenhouse gas emissions and improve livability within their municipalities.

Source: City of Davis Climate Change Page

City of Davis Sustainability

This Community

Communities Scorecard

Average Annual Emissions Per Person
(Metric tons CO₂ equivalent)

Members of Davis, Yolo County, CA have pledged to reduce 15.1392 metric tons of CO2i

Lowest Footprint

Most New Members

Most Pledged

Most Progress

See all
How do we encourage behavior change?

1. Tailored information
2. Comparative feedback
3. Set reasonable targets
4. Public commitments
5. Use social networks
6. Rewards
7. Prompts
8. Targeted messaging

**Tailored information:**

Not what *people* can do but what *I* can do.
How do we encourage behavior change?

1. Tailored information
2. Comparative feedback
3. Set reasonable targets
4. Public commitments
5. Use social networks
6. Rewards
7. Prompts
8. Targeted messaging

**Comparative feedback:**

How do I compare to people like me?
How do we encourage behavior change?

1. Tailored information
2. Comparative feedback
3. **Set reasonable targets**
4. Public commitments
5. Use social networks
6. Rewards
7. Prompts
8. Targeted messaging

**Set reasonable targets:**

Set an ambitious yet realistic target.
How do we encourage behavior change?

1. Tailored information
2. Comparative feedback
3. Set reasonable targets
4. **Public commitments**
   - Public commitment:
   - Sign pledges and make public commitments.
5. Use social networks
6. Rewards
7. Prompts
8. Targeted messaging
How do we encourage behavior change?

1. Tailored information
2. Comparative feedback
3. Set reasonable targets
4. Public commitments
5. Use social networks
6. Rewards
7. Prompts
8. Targeted messaging

**Use social networks:**
Tap into existing communities, groups, schools, churches
How do we encourage behavior change?

1. Tailored information
2. Comparative feedback
3. Set reasonable targets
4. Public commitments
5. Use social networks
6. Rewards
7. Prompts
8. Targeted messaging

Rewards:
Reward individuals for successful behavior change.
How do we encourage behavior change?

1. Tailored information
2. Comparative feedback
3. Set reasonable targets
4. Public commitments
5. Use social networks
6. Rewards
7. Prompts
8. Targeted messaging

Prompts:
Motivate individuals with emails & visual reminders.
How do we encourage behavior change?

1. Tailored information
2. Comparative feedback
3. Set reasonable targets
4. Public commitments
5. Use social networks
6. Rewards
7. Prompts
8. Targeted messaging

**Targeted Messaging:**
Customize messaging strategies to impact target audience.
Stages of change

Precontemplation

Contemplation

Preparation

Action

Maintenance

Termination

Precontemplation

Contemplation

Preparation

Action

Maintenance

Termination

Stages of change
Applied to community

Target audience

Triandis’ Theory of Interpersonal Behavior

perceived behavioral control / self-efficacy
Can I achieve desired outcome?

Attitudes
What do I think about behavior?
(values, attitudes, beliefs => personal norm)

Subjective Norm
How do my peers expect me to behave?

Emotions
Make it compelling and fun!

Habits – don’t think, just act

Facilitating conditions

Intention

Behaviour
Community Challenge provides layers of meaning

Climate change is an issue I care about

I want to help my community become “A Cool California City” or “The Coolest California City”

- make & strengthen connections
- help others I care about
- It's good for me (financially, health, fun)
- recognition, prizes
What is the CoolCalifornia Community Challenge?

The CoolCalifornia Community Challenge is a pilot greenhouse gas reduction competition engaging thousands of households across California to reduce their carbon footprints through:

- Community engagement
- Fun and informational events
- Continual personalized and public feedback
- Social marketing campaign
- Rewards for winning households, groups and cities

The winning city will be named the Coolest California City.
Competition Structure

PHASE I- city application phase (starting early 2012)
   Duration: 6 weeks
   Prize: $1k startup cash or first 6 cities to join

PHASE II- primary competition to determine finalists
   Duration: 3 months
   Prize: $10k each month for city with most points

PHASE III- final 3 city competition
   Duration: 9 months
   Prize: Large prize for winner (donated by corporate sponsors)
   Smaller monthly prizes for cities, EcoTeams and individuals
Points

Phase One:

1. Sign up – 500 points

2. Household Energy & Motor Vehicles
   - One point per pound lower than similar households
   - Two points per pound better than previous month

Phase Two:

3. Food, Water, Waste, etc.

4. Events

5. Infrastructure (e.g., install bike rack, new program, etc.)
Sample point breakdown for household energy use
(simplified example, not adjusted by weather)

Month 1: 60 points
Month 2: 190 points

Benchmark

Points:
- Bonus points!
  For improvements beyond previous month (adjusting for weather)
- Cool points
  for being better than similar households (benchmark)
  1 point = 1 pound CO₂e

Energy bill:
- 120
- 110
- 100
- 90
- 80
- 70
- 60
- 50
- 40

Graph shows points awarded for energy savings compared to a benchmark.
Program Highlights

• Individuals join EcoTeams (schools, work, friends, neighbors…)

• Individuals, Ecoteams and Cities earn points & rewards/prizes

• Online software tracks progress and verification

• Top 3 cities after 3 months become “CoolCalifornia Cities”

• Winner after 1 year becomes “Coolest California City” 2012

• **Apply** online in early 2012 at coolcalifornia.org

• **Sign up** for email list at coolcalifornia.org
Thank you

http://coolcalifornia.org

Chris Jones
Renewable and Appropriate Energy Laboratory

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Paper cited:
Appendices
<table>
<thead>
<tr>
<th>Research Goals</th>
<th>Community Goals</th>
<th>ARB Goals</th>
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<tbody>
<tr>
<td>Large GHG reductions</td>
<td>Large GHG reductions</td>
<td>Large GHG reductions</td>
</tr>
<tr>
<td>Understand barriers &amp; motivations of different populations</td>
<td>Unify existing community efforts</td>
<td>Representative communities</td>
</tr>
<tr>
<td>Measurable results</td>
<td>Establish new initiatives to meet GHG targets</td>
<td>Maintain credibility and enhance visibility of CoolCalifornia.org</td>
</tr>
<tr>
<td>Scalable program model</td>
<td>Set an example for other cities</td>
<td>Scalable program model</td>
</tr>
</tbody>
</table>
Household carbon footprints of 28 US metropolitan regions

- Minneapolis (2.2)
- Kansas City (2.6)
- Houston (2.8)
- Los Angeles (2.9)
- Detroit (2.6)
- Phoenix (2.5)
- St. Louis (2.5)
- Denver (2.5)
- Dallas (2.8)
- Chicago (2.6)
- Cleveland (2.5)
- Anchorage (2.7)
- Seattle (2.3)
- San Diego (2.6)
- Milwaukee (2.5)
- San Francisco (2.5)
- Washington D.C. (2.5)
- Cincinnati (2.3)
- Pittsburgh (2.3)
- Portland (2.4)
- Atlanta (2.5)
- Baltimore (2.4)
- Honolulu (2.7)
- New York (2.5)
- Miami (2.4)
- Philadelphia (2.4)
- Boston (2.3)
- Tampa (2.4)

 metric tons CO2e/year

- Transportation
- Housing
- Food
- Goods
- Services
Carbon footprints by consumption category of emissions and income bracket for average household size of 2.5 persons

- Services
- Goods
- Air Travel
- Motor Vehicles
- Construction
- Water & Waste
- Home Energy
- Food

Data shows a clear increase in carbon footprints as income bracket increases.
$ per tCO2e

metric tons CO2e saved / year

A - Change diet
B - Telecommute
C - Take transit
D - Eco-driving
E - Maintain vehicles
F - Ride bike
G - Turn up thermostat
H - Turn down thermostat
I - Reduce flying
J - Trade in vehicles
K - Buy CFLs
L - Line-dry clothes
M - Energy Star fridge

Figure 5. Greenhouse Gas (GHG) Abatement Curve for Average U.S. Household
X-axis is annual GHG savings; y-axis is levelized annual cost of mitigation measures per metric ton of CO₂e conserved. Green bars are for changing diets; yellow bars with blue outline are transportation; grey bars are household energy.