

# Planning for Campus Greenhouse Gas Mitigation

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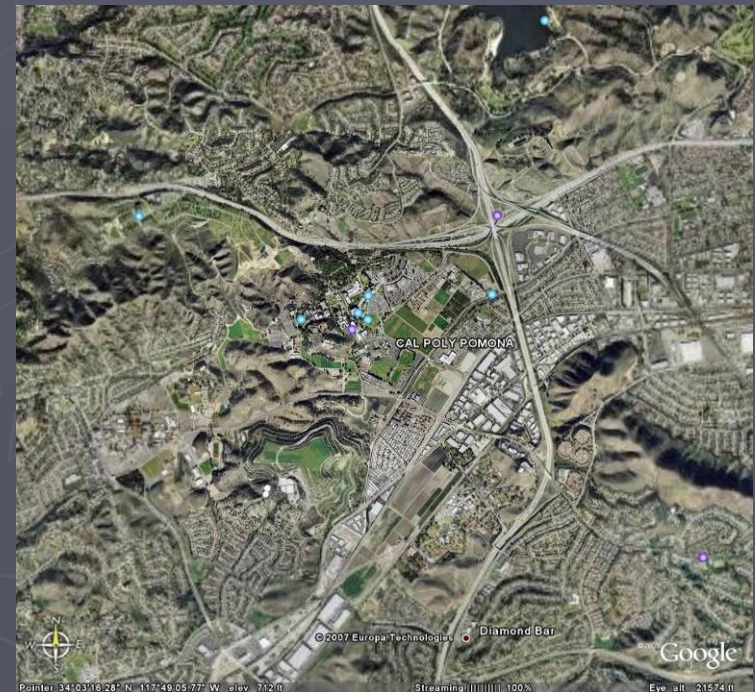


# Cal Poly Pomona (CPP)

- ▶ Plan is a collaboration with Dr. Kyle Brown ASLA, Co-Chair, CPP Climate Action Team and graduate students
- ▶ Presidents Climate Commitment
  - 665 signatories
  - Inventory, early actions, GHG reduction plan for carbon neutrality, monitoring, education

## ▶ CPP setting:

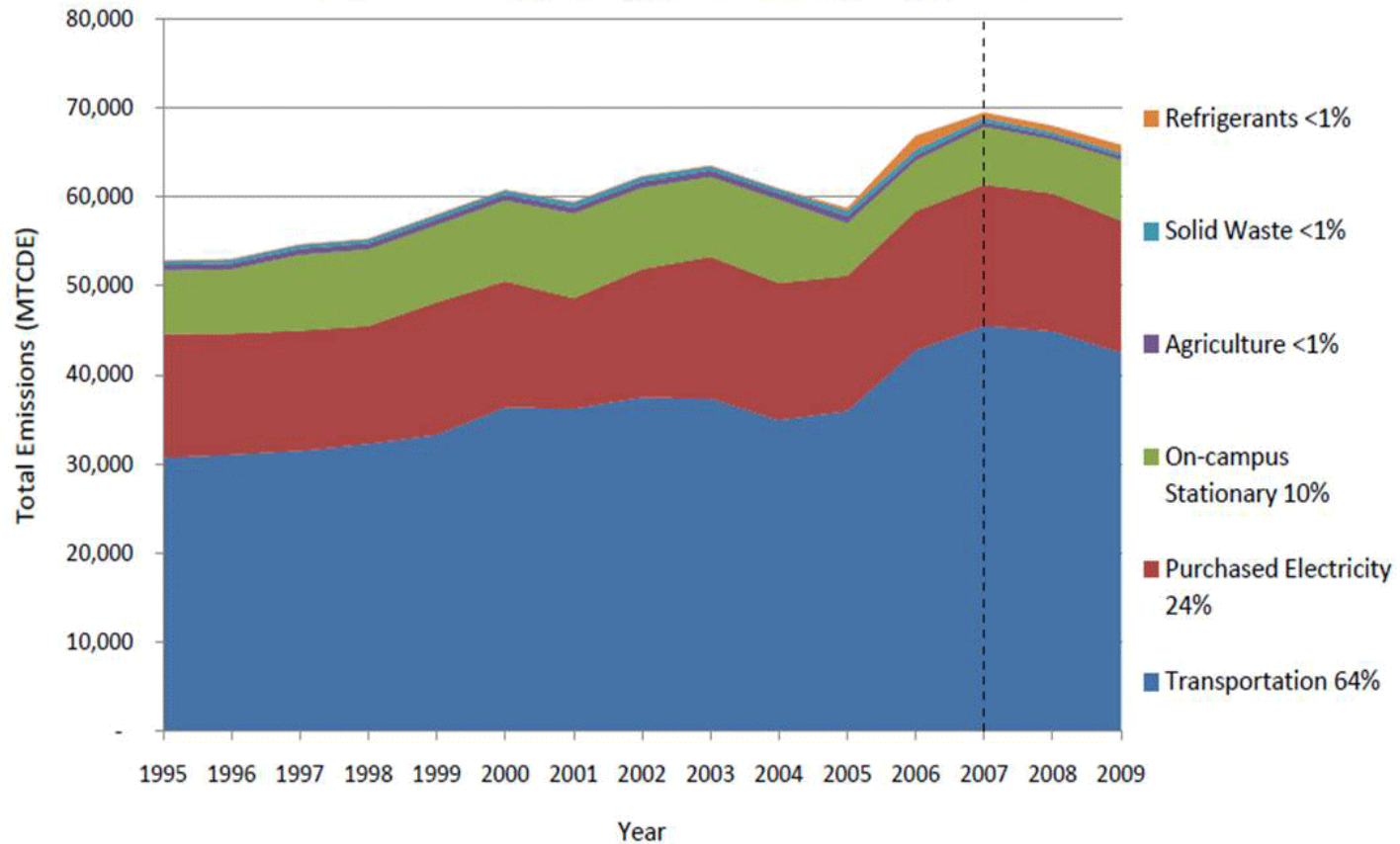
- 1,400 acres, 20,000 students
- 30 miles east of LA
- Separated land uses
- Complex trip chains
- Physical barriers (roads, topography)
- Favorable solar insolation zone



# Inventory Results

## Greenhouse Gas Emissions by Sector at Cal Poly Pomona (MTCDE)

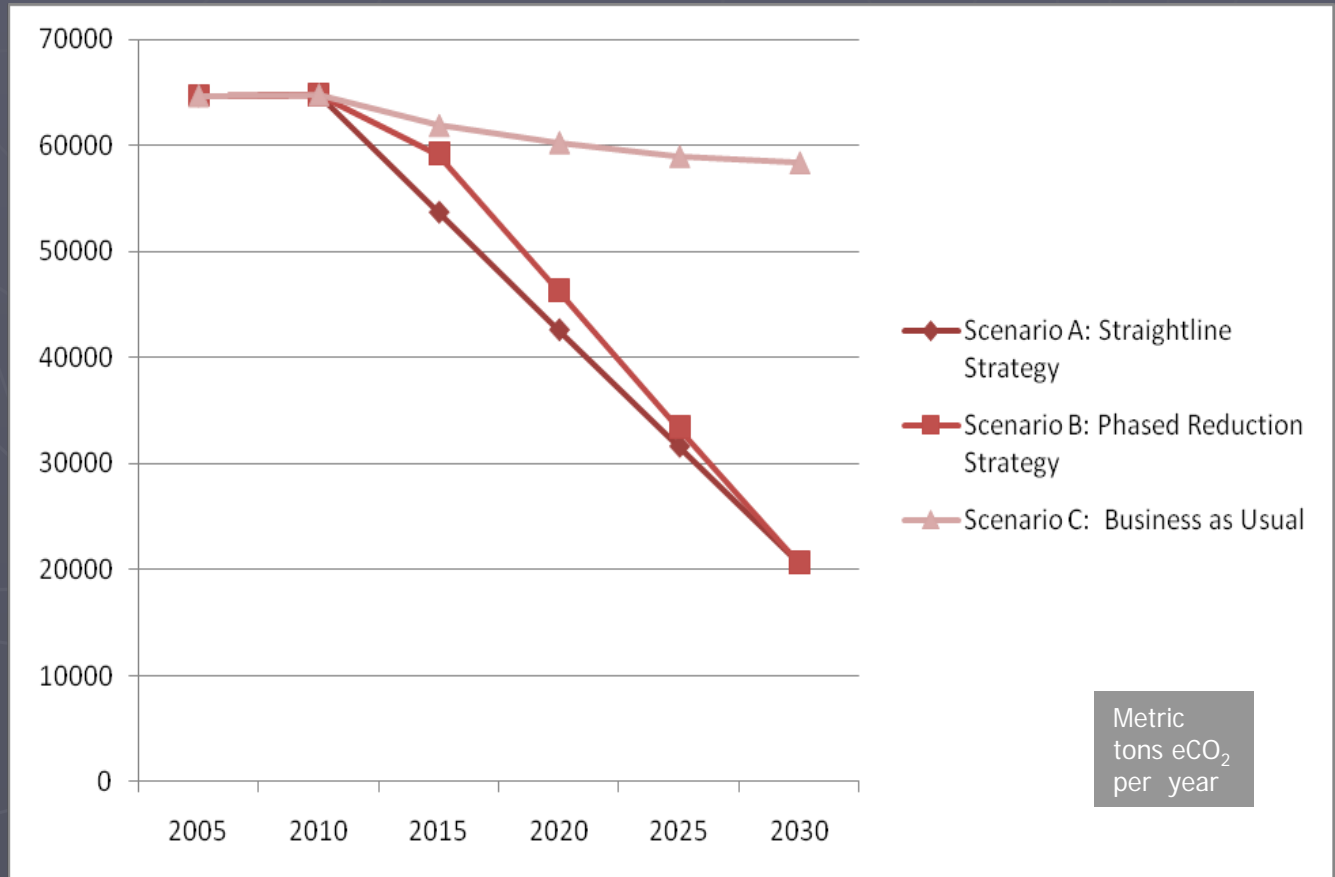
Source: CA-CP Campus Calculator, CPP Emissions Inventory 1995-2009



\*Presidents' Climate Commitment signed in 2007

# Theme 1: Reach and reality in setting targets

- Business as usual forecast
- Infeasibility of neutrality in suburban areas



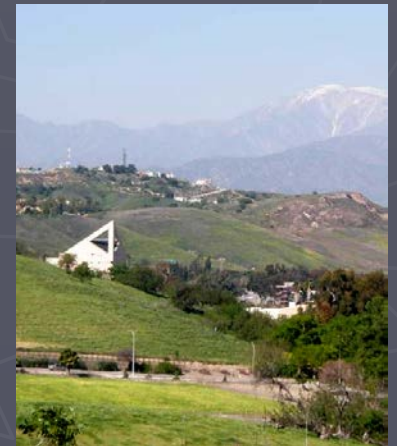
# Theme 1: Reach and reality in setting targets

- ▶ Plan sets 2015 benchmarks and calls for strategy design and selection
- ▶ Plan redone every five years
- ▶ Mitigation responsibility not yet assigned by unit
- ▶ Strategies for reaching zero emissions



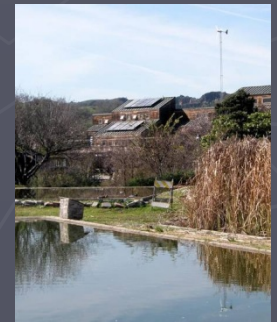
# Theme 2: Cost effectiveness, pet projects, and mission creep

- ▶ No shortage of ideas – capital bias
- ▶ \$/ton varies widely
- ▶ Other criterion: university goals, administrative feasibility, education/research/demonstration
- ▶ Scope 3 emissions



# Theme 3: Planning and the change process

- ▶ Plan is an element in a complex system rather than a mechanism for control (guidance versus blueprint)
- ▶ Understanding the policy environment
  - Decisions looking for issues
  - Collections of issues seeking enhanced credibility
  - Solutions looking for issues to address
  - Plans looking for other plans that support their ideas
- ▶ Big sustainability “tent” versus focused GHG reduction



# Navigating Tensions

- ▶ Top down support meets grassroots interest
- ▶ Technocratic process versus values focus
- ▶ In house preparation versus consultant
- ▶ Political support for the hard stuff over time





# CPP 2030 Plan Targets

Area of Change		Strategies
Education	Coursework on climate change, mitigation, adaptation	<ul style="list-style-type: none"> <li>• General education, specialized courses</li> </ul>
	Outreach to communities	<ul style="list-style-type: none"> <li>• Lyle Center for Regenerative Studies programs</li> <li>• Learn-by-doing projects in academic colleges</li> </ul>
Transportation	Reduce emissions associated with travel	<ul style="list-style-type: none"> <li>• 40% use transit/carpool alternatives to the single occupant vehicle (SOV)</li> <li>• Zero emissions university fleet</li> <li>• Offset air travel (100%)</li> </ul>
	Reduce trips and/or vehicle miles traveled (VMT)	<ul style="list-style-type: none"> <li>• Reduce the share of commuters to 73% of campus population (on/near campus housing)</li> <li>• Reduce the number of campus trips by 30-40% (online/hybrid courses, alternative work schedule)</li> </ul>
Buildings	Reduce energy demand in existing buildings by 10%	<ul style="list-style-type: none"> <li>• Renovate 50% of buildings, reduce consumption by 20% in renovated buildings</li> </ul>
	Achieve carbon neutrality in new construction	<ul style="list-style-type: none"> <li>• Energy efficiency, energy production</li> </ul>
	Operations - reduce plug load by 5%	<ul style="list-style-type: none"> <li>• Behavioral programs, Energy Star, plug load management</li> </ul>
Energy	Consume 100% green electricity	<ul style="list-style-type: none"> <li>• On-site solar production, purchase renewable energy, Renewable Energy Credits (RECs)</li> </ul>
	Reduce natural gas usage by 50%	<ul style="list-style-type: none"> <li>• Alternative technology, fuel substitution, conservation</li> </ul>

# Status Report

Area of Change		Progress
Education	Coursework on climate change, mitigation, adaptation	<ul style="list-style-type: none"> <li>• Survey of faculty on course coverage</li> <li>• College-specific initiatives (Collins School)</li> </ul>
	Outreach to communities	<ul style="list-style-type: none"> <li>• Regenerative Studies work with the Pomona school district (grant supported)</li> </ul>
Transportation	Reduce emissions associated with travel	<ul style="list-style-type: none"> <li>• Metrolink shuttle</li> <li>• Biodiesel</li> </ul>
	Reduce trips and/or vehicle miles traveled (VMT)	<ul style="list-style-type: none"> <li>• Residential Suites, Phase II</li> <li>• On line/hybrid course initiatives</li> </ul>
Buildings	Reduce energy demand in existing buildings by 10%	<ul style="list-style-type: none"> <li>• 25 retrofit installations</li> </ul>
	Achieve carbon neutrality in new construction	<ul style="list-style-type: none"> <li>• LEED Certification for student housing, Collins Center , College of Business</li> </ul>
	Operations - reduce plug load by 5%	<ul style="list-style-type: none"> <li>• Behavioral programs, Energy Star, plug load management</li> </ul>
Energy	Consume 100% green electricity	<ul style="list-style-type: none"> <li>• Solar power installation, campus and Lyle Center</li> </ul>
	Reduce natural gas usage by 50%	<ul style="list-style-type: none"> <li>• Retrofit programs</li> </ul>

# More information

- ▶ CPP Inventories:

[http://www.csupomona.edu/~sustainability/pdf/2007\\_GHG\\_Inventory\\_Report.pdf](http://www.csupomona.edu/~sustainability/pdf/2007_GHG_Inventory_Report.pdf)

[http://www.csupomona.edu/~sustainability/pdf/2010\\_GHG\\_Report.pdf](http://www.csupomona.edu/~sustainability/pdf/2010_GHG_Report.pdf)

- ▶ CPP Plan:

[http://www.csupomona.edu/~sustainability/pdf/CPP\\_CAP\\_091109.pdf](http://www.csupomona.edu/~sustainability/pdf/CPP_CAP_091109.pdf)

- ▶ Papers: Willson and Brown (2008) *Journal of the American Planning Association*, 74: 497-504. Willson (2010) *Planning for Higher Education*. 39, Volume 2: 49-55.