



CITY OF MERCED

PROGRAMMATIC CLIMATE ACTION PLAN FOCUS GROUP

SEPTEMBER 10, 2014
BILL KING, CITY OF MERCED PRINCIPAL PLANNER
JENNIFER VENEMA, PMC



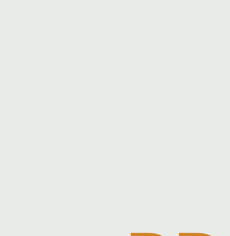


Agenda

- Welcome and introductions (5 minutes)
- Project update (10 minutes)
- Preliminary reduction measure results (20 minutes)
- Focus Group discussion (60 minutes)
- Next steps (5 minutes)
- Time for additional comments, questions, and discussion (15 minutes)



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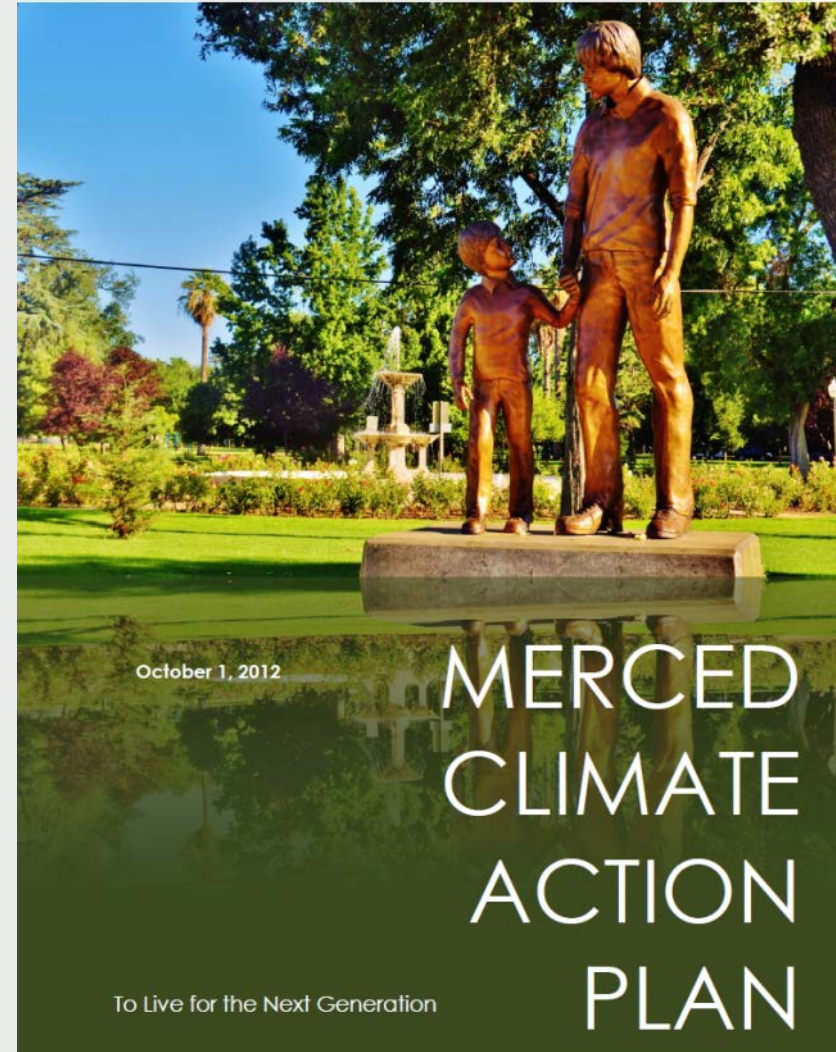


PROJECT OBJECTIVE



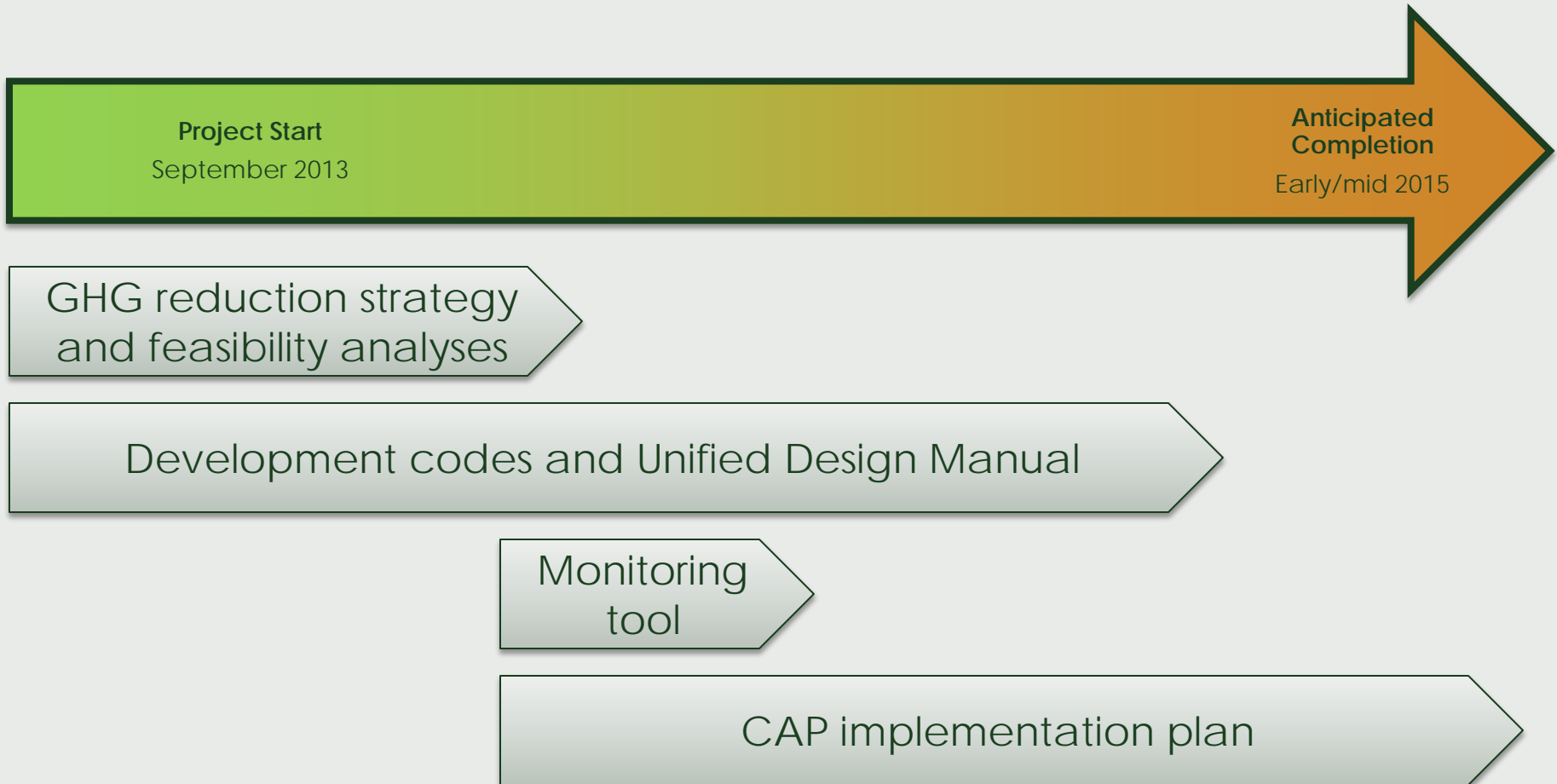
Adopted CAP

- City adopted a Climate Action Plan (CAP) in October 2012.
- Goal: Reduce greenhouse gas (GHG) emissions to 1990 levels by 2020.
 - Comparable to 15% below 2008 levels
- Implements and expands on General Plan.
- PCAP is a tool to implement the existing CAP.





Anticipated Timeline





Focus Group

- Last meeting.
 - Project overview
 - Live polling to identify priorities and preferred approaches
 - Summary of public engagement activities
 - Discussion of code concepts
- Homework:
Addressing barriers.
 - Need for financing opportunities
 - Look at the benefits of responding to climate change
 - Respond to issues at a community-wide, comprehensive level



Project updates

- 9/2 CAP Update to City Council.
- HERO Program for retrofit financing.
- Other outreach and educational activities.
- Meetings with internal City staff and agency partners.



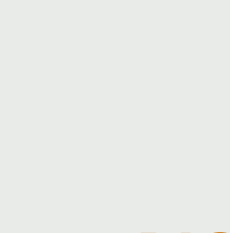
City staff involvement

- Ongoing collaboration with City staff and agency partners.
- Ideas will be incorporated into PCAP.
- PCAP provides opportunity to leverage existing work priorities and efforts.





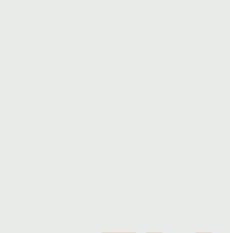
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**INSTITUTE FOR LOCAL
GOVERNMENT
STEVE SANDERS**



CITY OF MERCED PROGRAMMATIC CLIMATE ACTION PLAN



EMISSIONS FORECAST



2020 Emissions Forecast

Emissions Sector	Without State Actions (MTCO ₂ e)	With State Actions (MTCO ₂ e)	Indicator
Transportation	314,660	236,000	Service population (136,940)
Nonresidential energy	190,060	155,355	Jobs (29,940)
Residential energy	153,080	123,640	Households (35,870)
Solid waste	25,040	25,040	Service population (136,940)
Off-road equipment	8,060	8,060	Households (35,870)
Water and wastewater	5,870	4,660	Service population (136,940)
Total	696,770	552,750	-



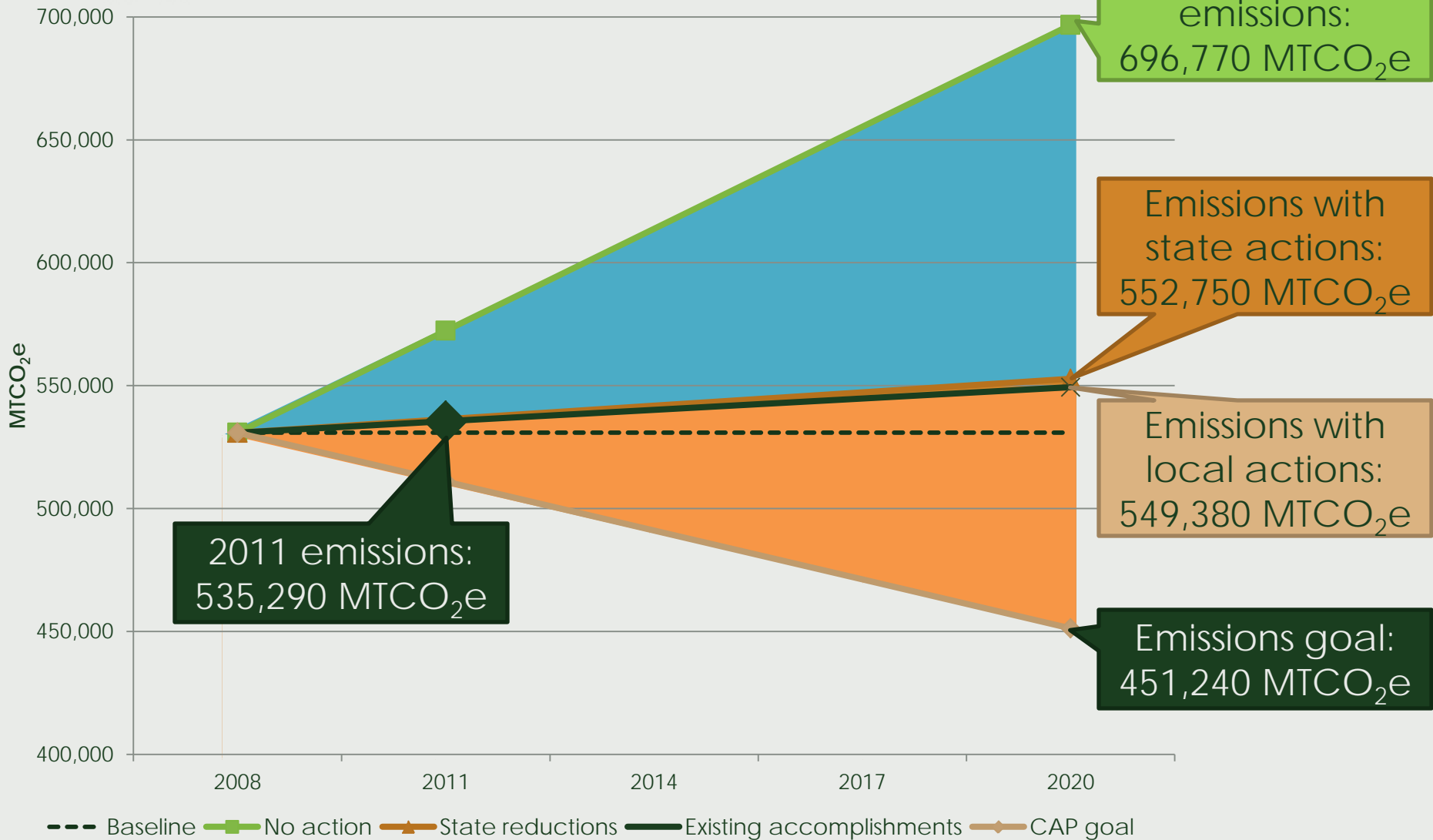
Local Accomplishments

- Local actions implemented after 2008 that reduce GHGs.
- Reductions can be credited toward 2020 target.
- Local actions currently estimated to reduce 2020 emissions by 3,370 MTCO₂e.



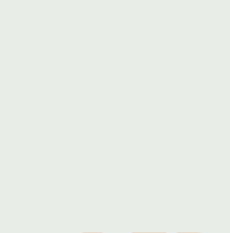


Forecast and goal





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REDUCTION MEASURES



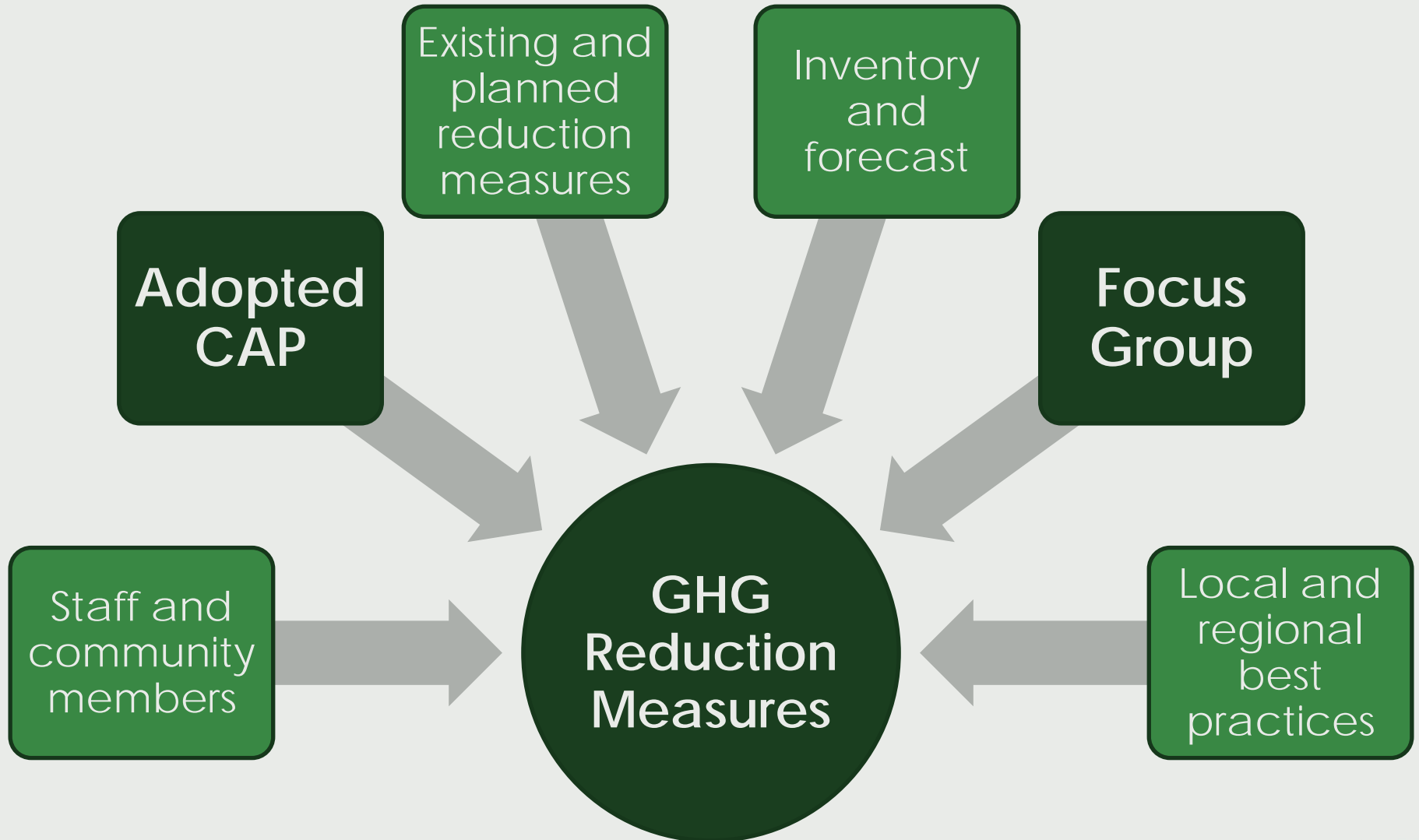
Measure Summary

- **Measure:** a strategy to reduce GHG emissions from a particular source or activity.
- Implemented through specific action items.
- Each measure has performance targets to track reductions.





Developing Measures





Identifying Reductions

Number of participants



Reduction per participant



Activity reductions

Based on case studies and observed performance in other communities.

Based on research in comparable communities, observed reductions, and case studies.

Activity reductions



Emissions factor



GHG reductions

Supplied by inventory and utility companies.



Reduction Example: Increase telecommuting in Merced

Step 1: Identify the number of participants.

Employees in Merced (2020)

29,340



Participation rate

3%



Number of participants

880 employees

Step 2: Calculate the activity reductions.

Number of participants

880 employees



Vehicle miles saved per employee

420 VMT



Vehicle mile savings

369,830 VMT

Step 3: Calculate the GHG reductions.

Vehicle mile savings

369,830 VMT



MTCO₂e per VMT (2020)

0.000505



GHG savings

190 MTCO₂e



Implementation Levels

	Encourage	Incentivize	Mandate
Why do people participate?	Outreach and education	Prizes and other rewards	Required to participate
What does it cost?	Lowest cost	Medium to high cost	High upfront cost, less to maintain
How many people participate?	Lowest participation rates	Medium participation rates	Highest participation rates
Volume of GHG reductions	Low	Medium	High
Example strategy	Provide a table with energy efficiency information at public events	Create rebates and financing mechanisms for energy-efficiency retrofits	Require energy-efficiency retrofits during major renovations



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MEASURE EVALUATION AND MONITORING



Cost-Benefit Analysis

- Cost to the City.
- Cost per participant (by action).
- Total costs and costs per MTCO₂e reduced.
- Total and average cost savings.
- Adjusted cost per MTCO₂e reduced.
- Payback period.



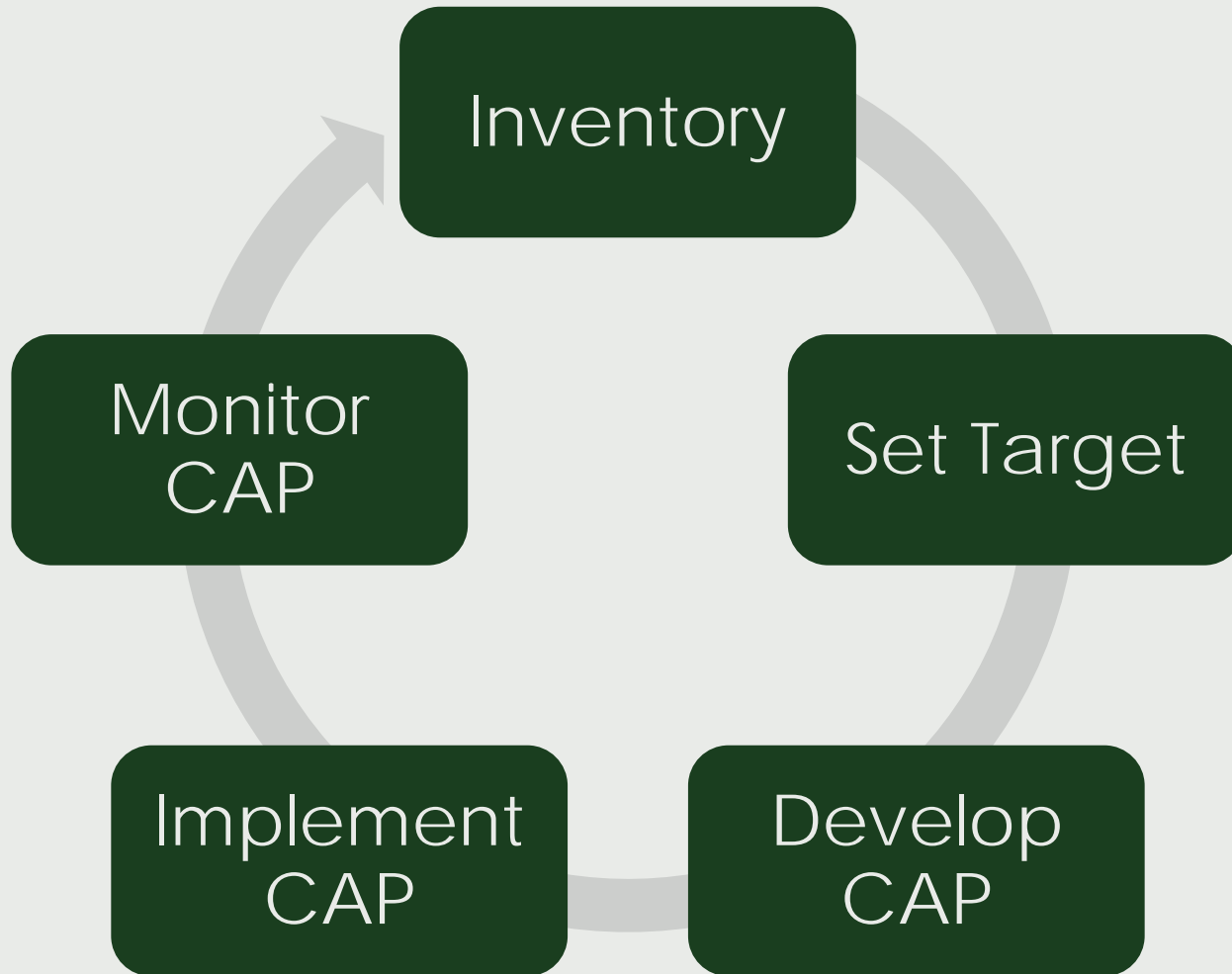
Cost-Benefit Analysis

Example: Energy-efficiency retrofits at time-of-sale.

Cost Type	Amount
Total estimated cost to local government	\$390,000
Total estimated cost to community members	\$14,220,000
Annual cost to local government	\$65,000
Annual cost to community members	\$2,370,000
GHG emission savings by 2020	5,560 MTCO ₂ e
Annual cost per metric ton of reductions	\$440
Total annual savings in energy bills	\$2,538,100
Average annual savings per participant	\$600
Average payback period	5.8 years
Adjusted cost per metric ton of reductions	-\$20



Measure Monitoring





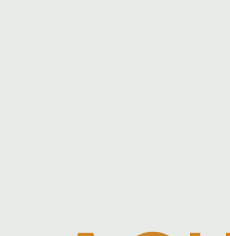
Performance Target Example: Transportation Demand Management for off-campus UC Merced students.

- Assumptions:
 - Half of students live off-campus (consistent with campus plans)
 - Trips for off-campus students are reduced 25%
- Performance target: 4,170 students living off-campus and complying with trip reductions.
- GHG reduction of **1,140 MTCO₂e** if target is met in 2020.
 - Higher reductions if target is surpassed





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ACHIEVING THE TARGET



Measure Categories



Land Use and Transportation



Energy Efficiency



Renewable Energy



Water and Wastewater



Solid Waste



Off-road Equipment



Land Use and Transportation: Increase the feasibility and use of bicycles through new infrastructure and education.

Key Metrics

Miles of new bike lanes	35
Total number of bike commuters	650
GHG Reduction (MTCO₂e)	280





Energy Efficiency: Support improved energy efficiency in existing multifamily units, rental units, and affordable households.

Key Metrics

Number of homes with basic retrofits	810
Number of homes with advanced retrofits	160
Number of retrofitted multifamily homes	400
Number of homes with appliance upgrades	3,240
GHG Reduction (MTCO₂e)	1,570





Renewable Energy: Facilitate renewable energy for on-site commercial and industrial uses.

Key Metrics

Number of new jobs in existing buildings with solar PV arrays	500
Number of jobs in new buildings with solar PV arrays	130
GHG Reduction (MTCO₂e)	2,530





Water and Wastewater: Promote indoor water conservation through retrofits to existing buildings.

Key Metrics

Number of existing houses conducting water efficiency retrofits

10,090

GHG Reduction (MTCO₂e)

60





Solid Waste: Increase recycling in Merced with a goal of improving diversion of recyclables by 25%.

Key Metrics	
Total tons of recyclable waste reduced	9,560
Pounds of waste per person per day (excluding organics and construction/demolition waste)	1.1
GHG Reduction (MTCO₂e)	8,040

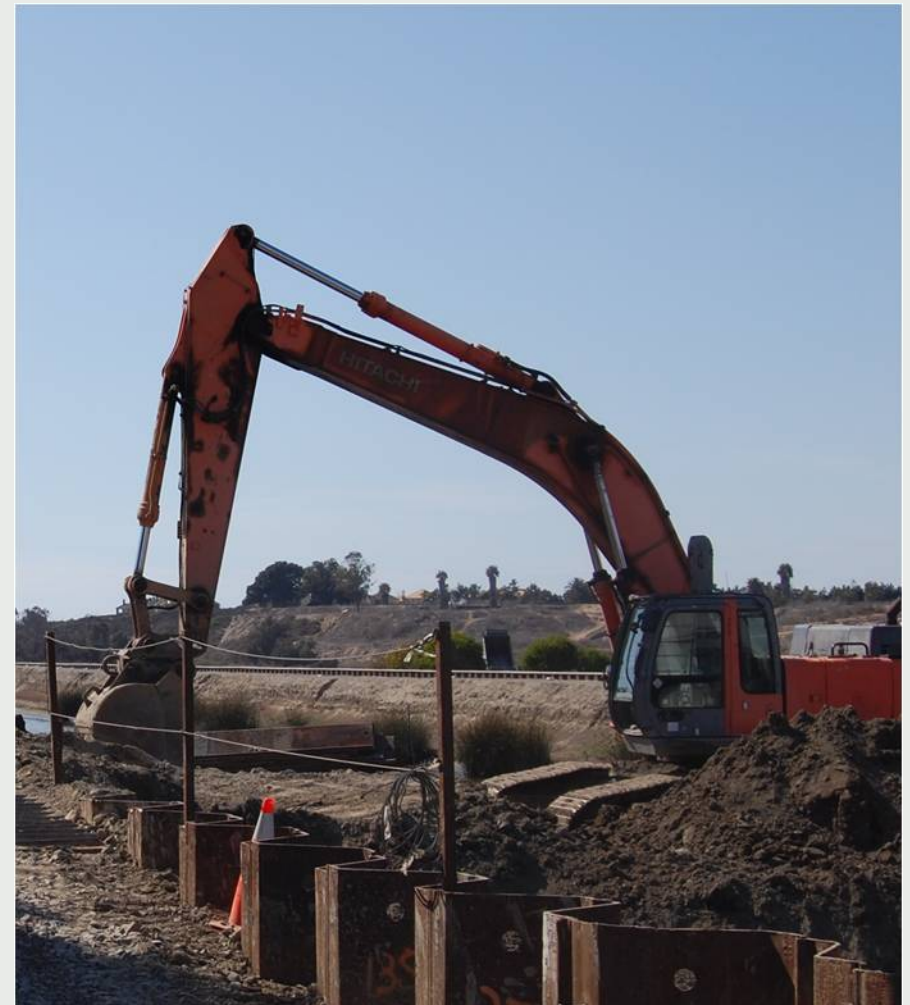




Off-road Equipment: Reduce emissions from construction equipment.

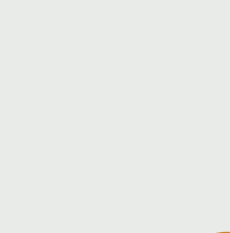
Key Metrics

Developments using 25% alternative-fuel construction equipment	25%
Maximum minutes of equipment idling time	4
GHG Reduction (MTCO₂e)	150





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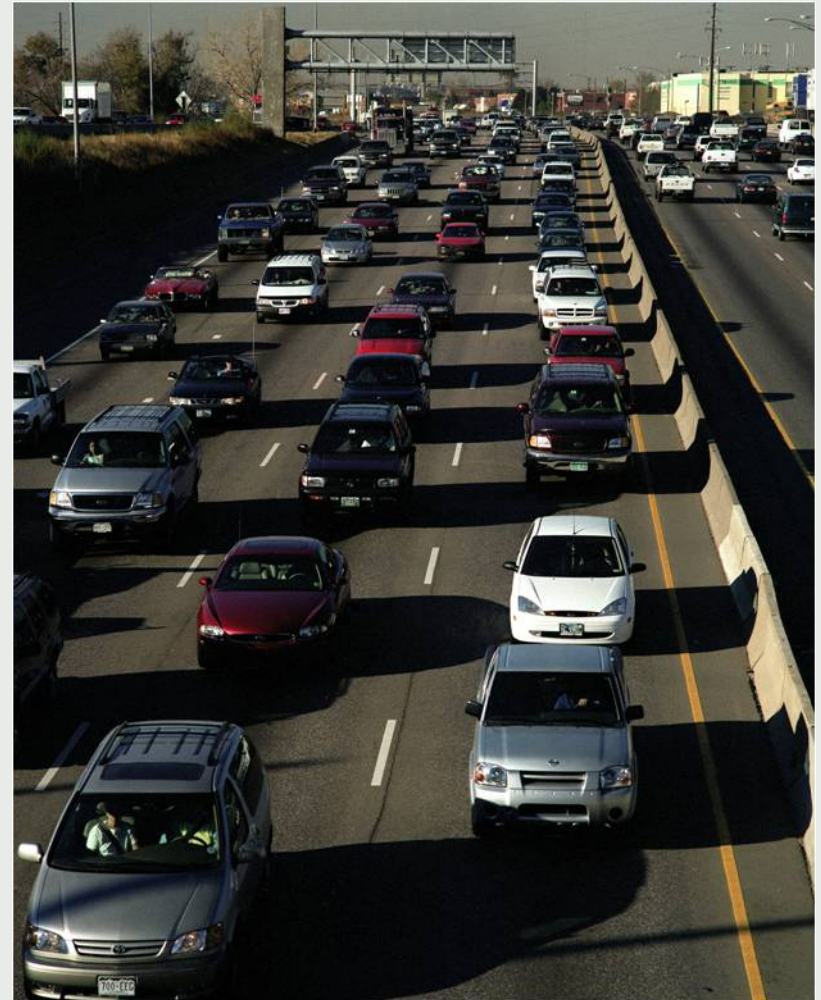


GOAL PROGRESS



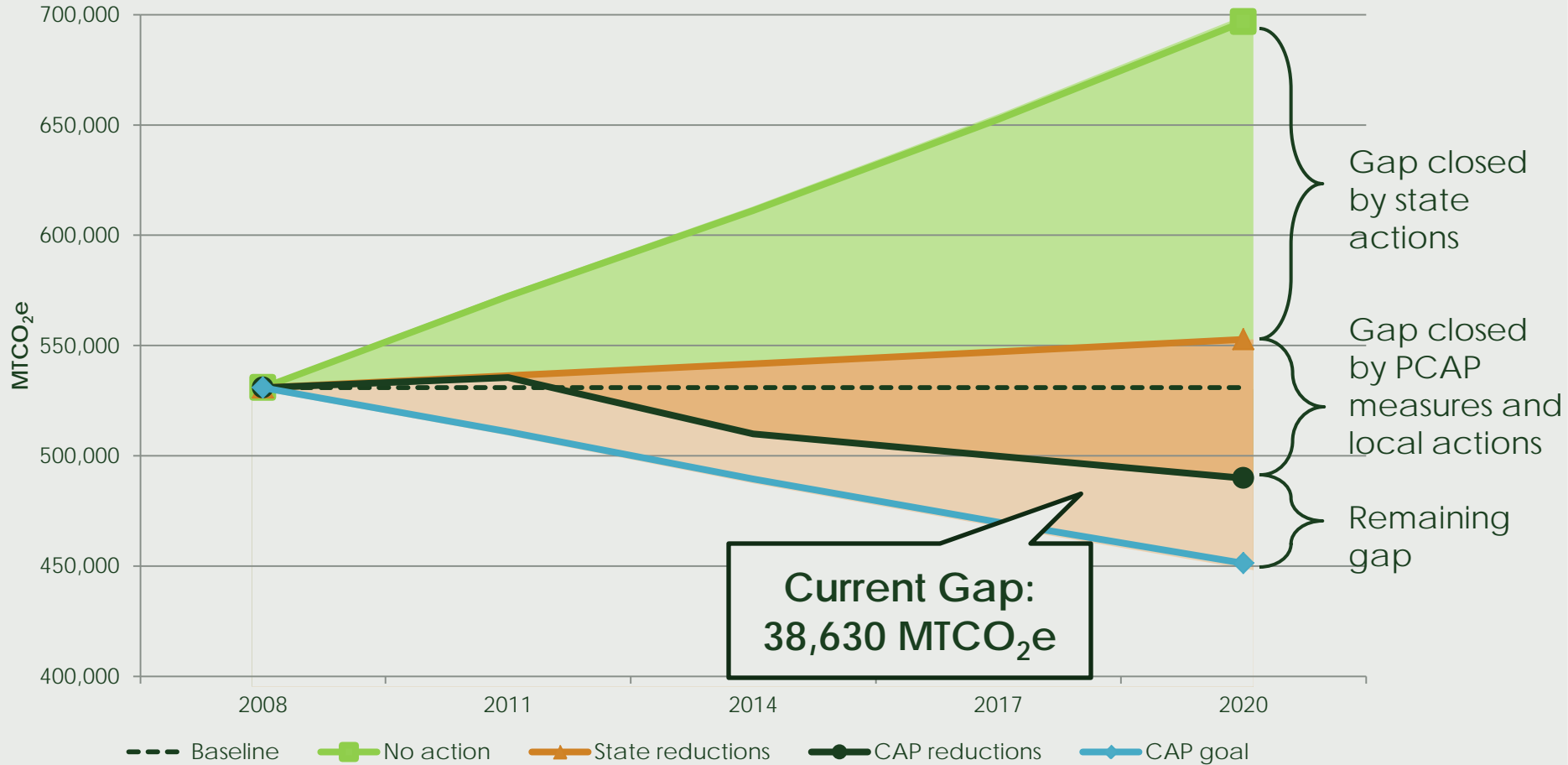
Current Measures

- Current measures reduce emissions to 8% below baseline levels by 2020.
 - Need 15%
- 38,630 MTCO₂e to reduce.
- Challenges
 - Growing community
 - Energy-intensive industries
 - Large “commute shed” (half of working residents commute outside Merced County)





Preliminary Measure Results



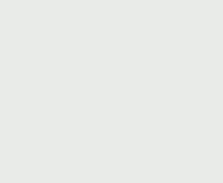


Additional Opportunities and Questions

- Increase participation rates.
- Biofuels.
- Increased renewable energy generation.
 - City facilities
- Industrial retrofit program.
- Community Choice Aggregation (CCA).
- Expand Transportation Demand Management (TDM).
- Expand Community Shared Solar.
- Confirm energy sources of Merced Irrigation District.
- Identify further opportunities at wastewater treatment plant.
 - Recycled water



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FOCUS GROUP DISCUSSION



Discussion

- Prioritize discussion of specific measures.
 - Chosen by group member votes
 - Consider how to improve measure effectiveness and reductions
- Input will be used to refine measures and identify an approach to achieve the target.
- After we discuss as a group, you will have additional time to ask questions and provide written comments.



Discussion

- Please vote with your sticky dots!
- We will discuss the highest ranked measures.



Discussion



Land Use and Transportation



Energy Efficiency



Renewable Energy



Water and Wastewater



Solid Waste



Off-road Equipment

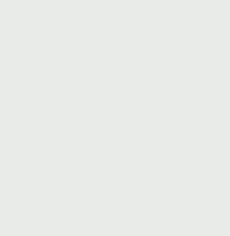


Discussion Conclusion

- If you have any additional comments or suggestions, we are reserving 15 minutes at the close of the meeting for you to ask additional questions or provide written comments using Comment Cards.



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NEXT STEPS



Next Steps

- Complete CAP implementation technical analysis.
- Develop monitoring framework.
- December ILG workshop: Economic Prosperity and Climate Action.





Homework Questions for the Focus Group

- Considering the preliminary reduction measure results, what do you perceive now as the primary political, financial, or technical obstacles to achieving the reduction target?
- How can we (the committee, City staff, the community, etc.) effectively address these obstacles? Are there additional opportunities or partners for GHG emissions reductions are we missing?
- What additional information will be most useful to prioritize the phasing or implementation of PCAP measures?



Next Meeting

- Please send Bill responses to Focus Group questions **by October 23**.
- Next Focus Group Meeting: November 13, 2014.
- Thank you for your input today!



Thank you

Please use comment cards for any additional thoughts you'd like to share. You can also provide any additional thoughts later by email directly to Bill King.

For additional questions, please contact Bill King

KingB@cityofmerced.org

(209) 385-4768