

Fort Collins Climate Action Plan Update



**Citizen Advisory Committee meeting
December 15, 2014**

Goals for Tonight

Review tactics

Get input from group to formulate at least 2 scenarios

Straw Poll on options

Feedback from all on:

- What 1-2 things most excited about?
- What 1-2 things most concerned about?
- What 1-2 things do you want to know before considering a recommendation in January?

CAC Poll

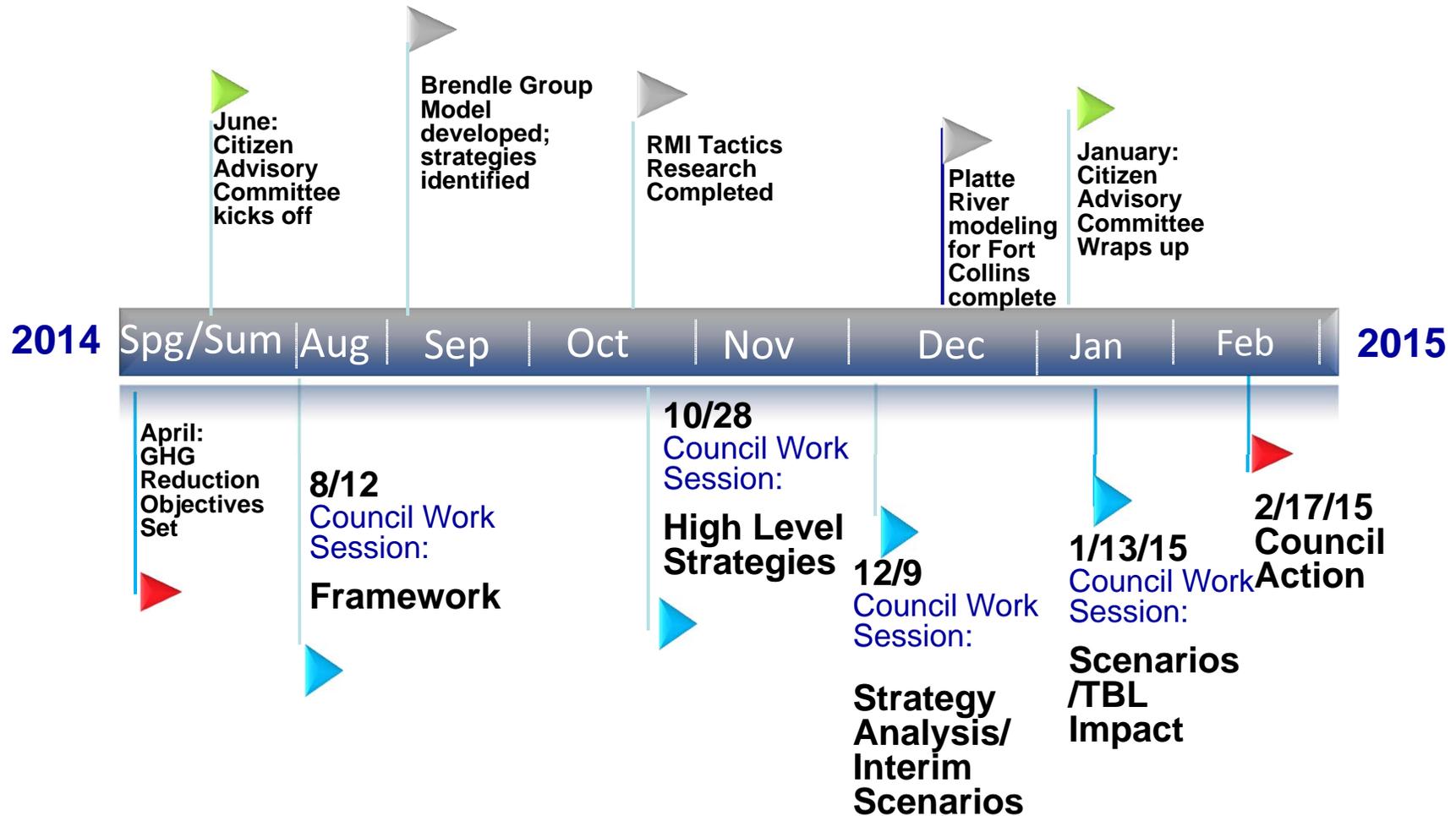
	Very likely	Somewhat likely	Somewhat unlikely	Very unlikely	Don't know
Electric supply: 80% reduction in PRPA emissions by 2030	1	4	3	1	1
Existing homes and businesses are 36% more efficient	1	4	3	1	
Existing homes and businesses 40% of homes; 10% of existing commercial buildings are converted to all electric		3	2	6	
Existing homes and businesses - 22% of homes and 50% of businesses installed solar	1	4	4	1	
New construction 85% < energy intensive than current code	1	5	3	2	
New construction 45% will have enough solar PV to achieve net zero energy	1	6	4	1	1
New construction 30% of new homes and 10% of new businesses will be all electric	2	2	3	2	



CAC Poll

	Very likely	Somewhat likely	Somewhat unlikely	Very unlikely	Don't know
Vehicles and Mileage 90 percent of new vehicles purchased in 2030 are EV's		1	3	5	
Vehicles and Mileage Remaining 10 percent are ~40% more efficient than avg. new stock	1	4	3		
Vehicles and Mileage On the whole, people are driving 29% less miles per year		7	1		

CAP Update Process



- Thanks to everyone who completed the survey!
- Key takeaways
 - Dial back fuel switching in existing homes and EVs
 - Emphasize utility scale solutions
 - No resolution on airline travel
 - Provide more detail/context
 - Annual cash flow
 - More detail on tactics

- Electric supply: 80% reduction in PRPA emissions factor (**received preliminary results, incorporated into model**)
- Existing homes and businesses:
 - Are 36% more efficient (**changes in costs and Electricity/NG breakout**)
 - **25%** of homes and **5%** of existing commercial buildings are converted to all electric (heating, cooking, etc.) (**were 40% and 10%, respectively**)
 - 22% of homes and 50% of businesses have installed solar
- New construction:
 - Will be 85% more efficient than current code
 - **100%** will have enough solar PV to achieve net zero energy (**was 45%**)
 - **50%** of new homes and **25%** of new businesses will be all electric (**were 30% and 10%, respectively**)
- Vehicles and Mileage
 - **50%** are electric vehicles (**was 90%**)
 - Remaining **50%** are ~40% more efficient than avg. new stock
 - On the whole, people are driving 29% less miles per year

Model Update and Review

Draft – Dec 15 model iteration

	2020	2030	2040	2050
% Below 2005 Baseline	23%	68%	80%	86%
Net Cumulative Cost/Savings	\$300M Cost	\$200M Cost	\$2B Savings	\$5B Savings
\$ per Person per Month	\$30 Cost	\$10 Cost	\$30 Savings	\$70 Savings

% Below Baseline:

Does not include: reduction from CHP, DR, water conservation, carbon sequestration

Net Cum. Cost/Savings:

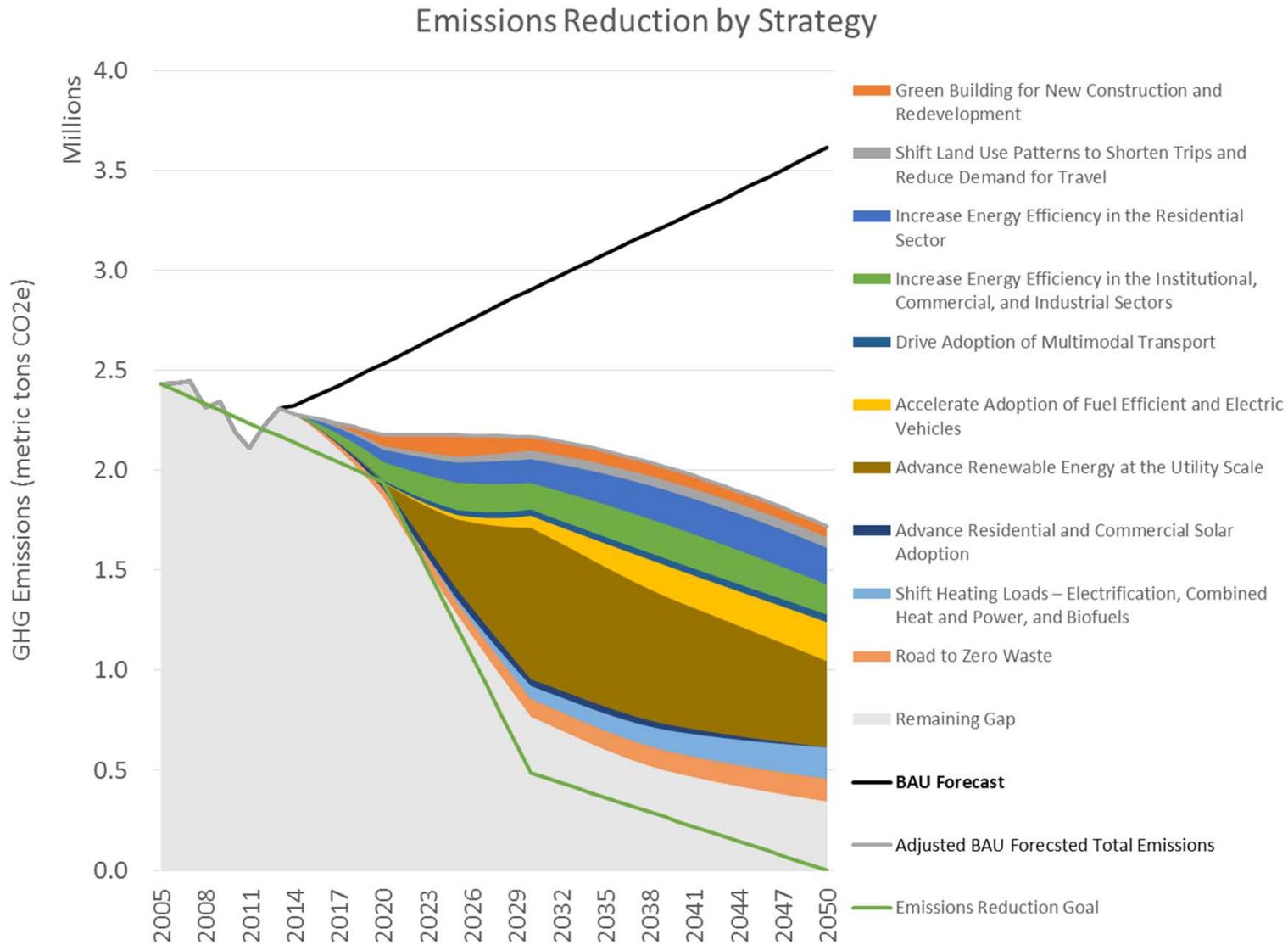
Includes:

Cost of carbon for all fuels

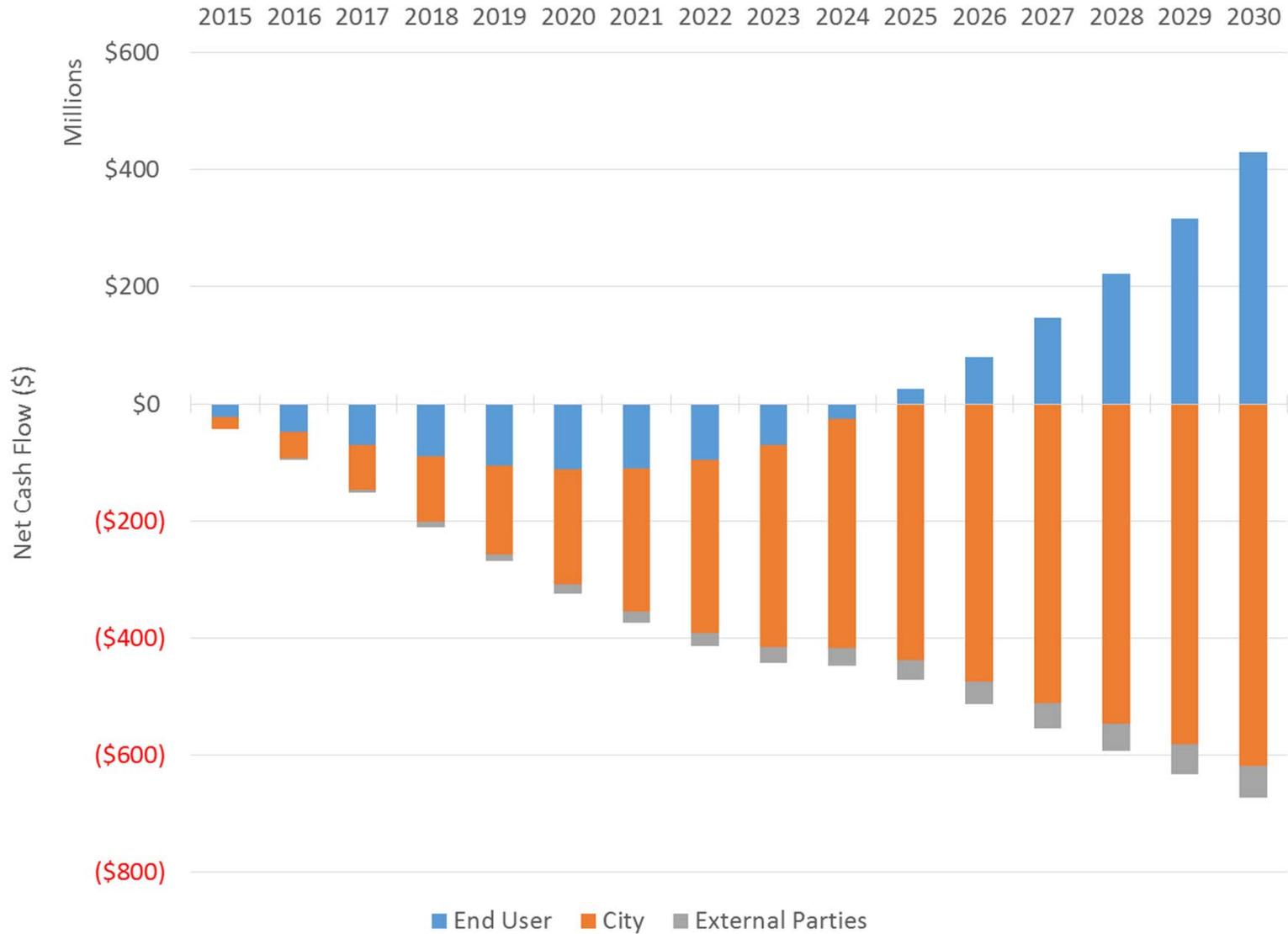
2.5% discount rate for savings

Note: Electric retail rate rough estimate; will be refined by FCU)

Model Update and Review (12/15/14 draft)



Model Update and Review (12/15/14 draft)



Advance Renewable Energy at the Utility Scale

Draft – Dec 15 model iteration

% of Total Reductions: **39 percent**

Target: **80% reduction in PRPA emissions factor**

Increase Energy Efficiency – Residential and Commercial

Draft – Dec 15 model iteration

% of Total Reductions: **28 percent**

Target: **Existing homes and businesses are 36% more efficient**

	Core Tactics	Enabling Tactics
RESIDENTIAL	<p>Leverage FCU’s unparalleled access</p> <ul style="list-style-type: none"> OBR with opt out feature: Residential Integrated Utility Services model <p>Policy</p> <ul style="list-style-type: none"> Piggyback on rental license renewal to require efficiency upgrades 	<p>Drive IUS offering by:</p> <p>Partnering with the few who influence many:</p> <ul style="list-style-type: none"> Employers: through employee benefits program Realtors and appraisers: through green MLS/ leasing Portfolio owners/building managers Fort Collins Housing Authority for low income housing <p>Grassroots/community outreach</p> <ul style="list-style-type: none"> Field marketing Behavioral tactics: gaming, challenges / competitions
COMMERCIAL	<p>Policy</p> <ul style="list-style-type: none"> Disclosure Require municipal upgrades Require building upgrades for all <p>Aggregate small and mid-sized commercial</p> <ul style="list-style-type: none"> Through the utility, via OBR with opt out feature: Commercial Integrated Utility Services model Contractor aggregation, i.e. through ESCOs, MEETs <p>Target the biggest users</p> <ul style="list-style-type: none"> Cultivate deep relationships/engagement with top 15-50 users 	<p>Drive to programs by:</p> <p>Partnering with the few who influence many:</p> <ul style="list-style-type: none"> Climate Wise Realtors and appraisers: through green MLS/ leasing Portfolio owners/building managers <p>Grassroots/community outreach</p> <ul style="list-style-type: none"> Climate Wise Climate “currency” Behavioral tactics: gaming, challenges / competitions

2015/2016 Budget:

- Community Recycling Center
- New 0.5 FTE Solid Waste Staff
- Waste Stream Optimization (\$58K 2015, \$350K 2016)

% of Total Reductions: **8 percent**

Target: **100% waste diversion**

- Open the Community Recycling Center
- Universal recycling ordinance
- Regional materials management roundtable
- By-Products re-use with regional business clusters

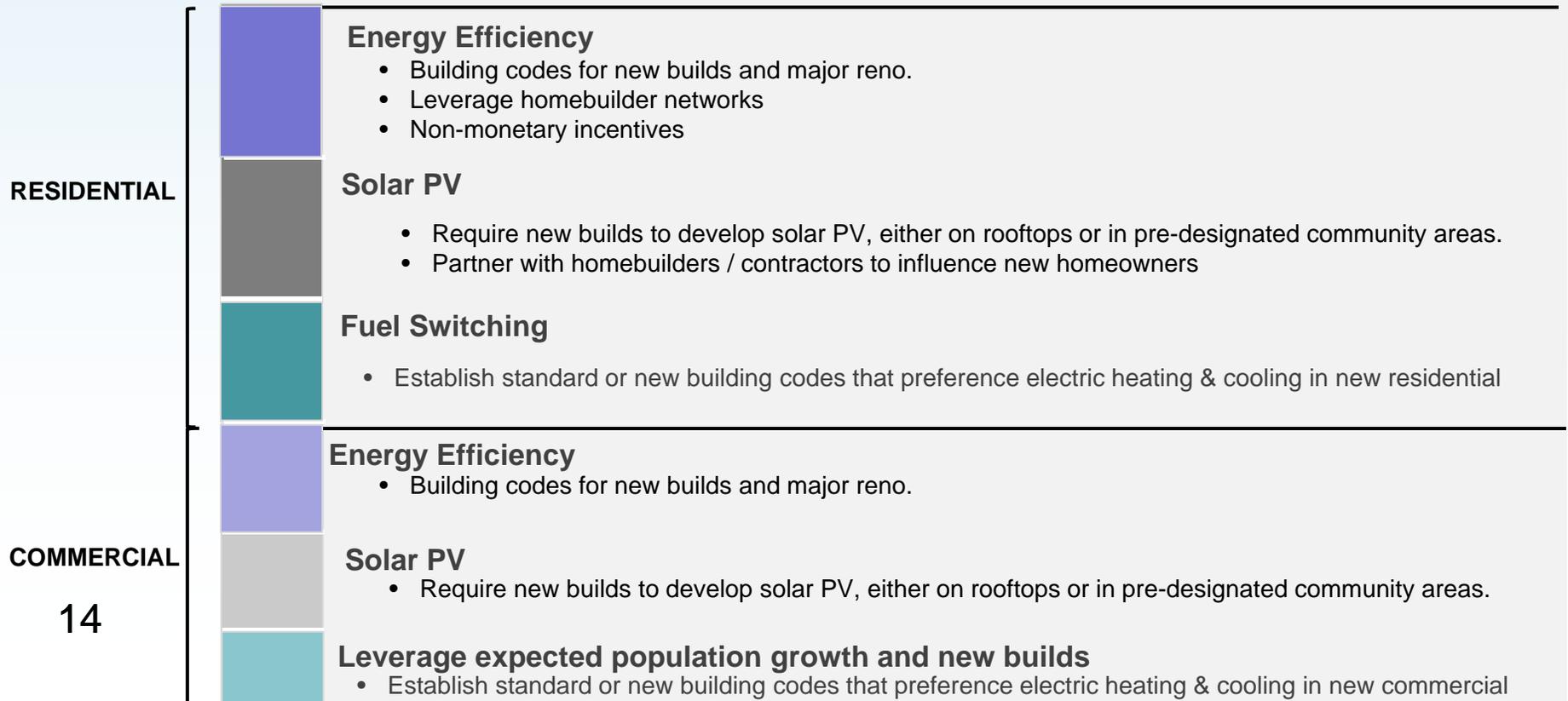
Green Building for New Construction and Redevelopment

Draft – Dec 15 model iteration

% of Total Reductions: **8 percent**

Target: **New construction will be 85% more efficient than current code; 100% will have enough solar PV to achieve net zero energy; and 50% of new homes and 25% of new businesses will be all electric**

Core Tactics

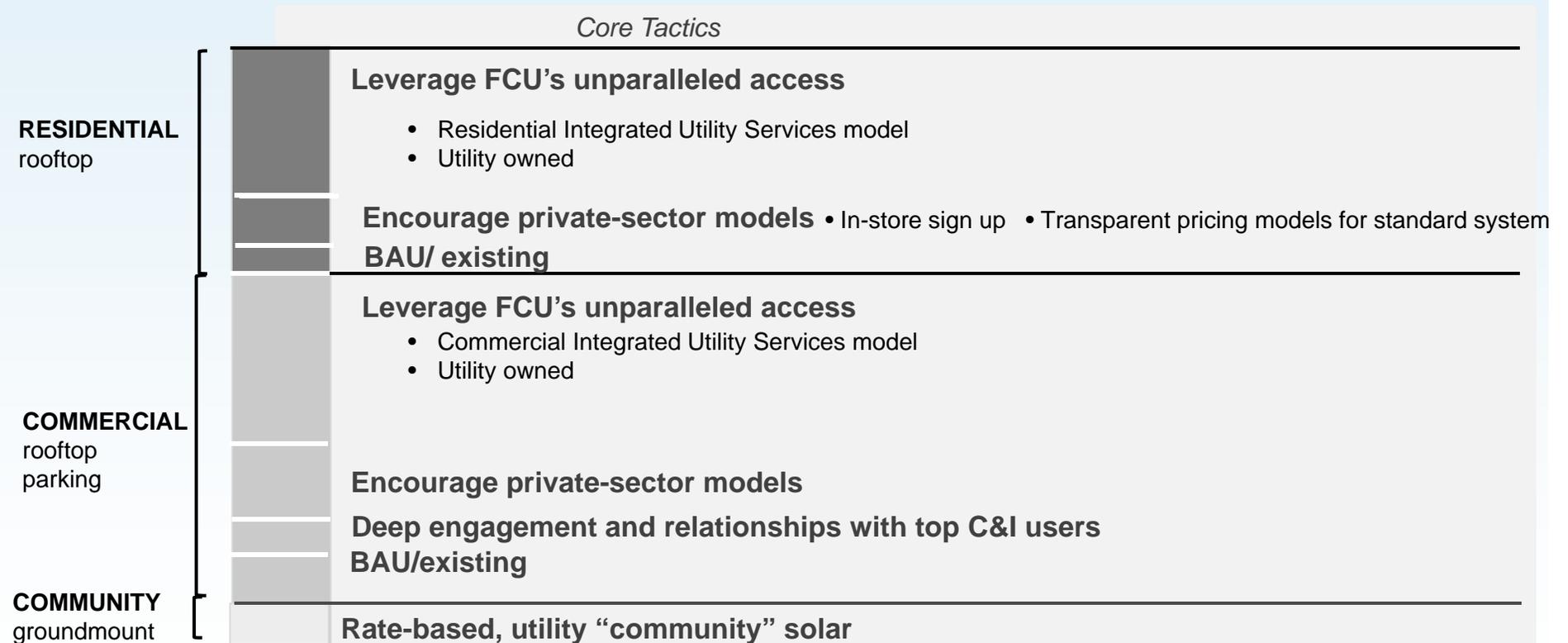


Advance Residential and Commercial Solar Adoption

Draft – Dec 15 model iteration

% of Total Reductions: **5 percent**

Target: **22% of homes and 50% of businesses have installed solar**



Enabling Tactics for all building types:

- Integrate offering with ee, EV, DR
- Targeted awareness campaigns / neighborhood challenges

Shift Land Use Patterns to Shorten Trips and Reduce Demand for Travel

Draft – Dec 15 model iteration

% of Total Reductions: **4 percent**

Target: **Reduce vehicle miles travelled by 17 percent**

Core Tactics

Enabling Tactics

Leverage population growth and high rates of infill development to create lasting urban design conducive to walkability, bikeability, and access to mass transit.

- Revised off street parking requirements
- On street parking pricing and permitting
- Open transportation data
- Expanded mass transit
- Smart growth for new build
- Smart redevelopment

- Urban growth boundary
- Multimodal transportation apps
- True cost of transportation tool
- Revenue sharing between Fort Collins and surrounding municipalities to align incentives for smart growth

Drive Adoption of Multimodal Transport

Draft – Dec 15 model iteration

% of Total Reductions: **3 percent**

Target: **Reduce vehicle miles travelled by 12 percent**

Core Tactics

Enabling Tactics

Move to a multimodal transportation system

- Open transportation data
- Transport apps
- Expand modes & services
 - Bike share
 - Car & Ride share
 - Mass transit
 - Smart parking

- New mobility business model incubation
- Transparent pricing
- True cost of transportation tool

Employer engagement to address #1 source of VMT: commuting

- Employer as service provider
 - Shuttles/Carpools

- Multimodal commuting incentives
 - Employee car & ride share
 - Bike commuting
 - Mass transit passes
- Employee awareness campaign
 - around availability, cost of multimodal options

Accelerate Adoption of Fuel Efficient and Electric Vehicles

Draft – Dec 15 model iteration

% of Total Reductions: **3 percent**

Target: **50% of new vehicle purchase in 2030 are electric vehicles and the remaining 50% are ~40% more efficient than avg. new stock**

	<i>Core Tactics</i>	<i>Enabling Tactics</i>
	<p>Engage employers to provide eCommuting and electrify commercial fleets</p> <ul style="list-style-type: none"> • EV Exposure Campaign • EV Infrastructure 	<ul style="list-style-type: none"> • Utility Programs, TOU pricing & V2G battery exchange • Aggregate EV Purchases • Workplace charging
	<p>Engage community and individuals to accelerate personal EV adoption</p> <ul style="list-style-type: none"> • EV Exposure Campaign • EV Infrastructure 	<ul style="list-style-type: none"> • True cost of transportation tool • Utility programs, TOU pricing • Rebates, Incentives • Tax Policy Awareness • Dealer Engagement • EV Readiness in new build and redevelopment

Shift Heating Loads – Combined Heat and Power, and Biofuels, Electrification

Draft – Dec 15 model iteration

% of Total Reductions: **2 percent**

Target: **25% of homes and 5% of existing commercial buildings are converted to all electric (heating, cooking, etc.)**

Core Tactics

RESIDENTIAL		Leverage FCU's unparalleled access to existing residential <ul style="list-style-type: none">• Bundle fuel switching with energy efficiency and DR offerings, e.g. through an Integrated Utility Service model. Piggyback on window ac unit replacements, rental lease turnover, boiler replacements...
COMMERCIAL		Leverage FCU's unparalleled access to existing commercial <ul style="list-style-type: none">• Incent fuel switching at time of lease commercial lease handovers and large appliance purchase / replacement, bundling with ee and DR offerings.
INDUSTRIAL/ CAMPUS		District-wide alternatives to gas heating <ul style="list-style-type: none">• Deep customer engagement for gasless campuses

Enabling Tactics for all building types:

- Electric utility monetary incentives
- Education campaign

Inspire, Accelerate, Mobilize, Prepare

2015/2016 Budget:

- FortZED
- Nature in The City
- Georgetown University Energy Prize

Other:

CSU Carbon Neutral goal by 2050

Poudre School District goals

Scenario Discussion: “What If...”

Draft – Dec 15 model iteration

Baseline



PRPA 80x30



PRPA 60x30



PRPA 35x30



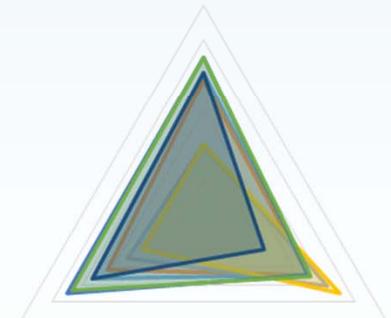
No Airline Travel



Population Growth Halved



No Cost of Carbon



Scenario Discussion: “What If...” (12/15/14 draft)

	2030 Emissions Reduction (Below Baseline)	2030 Net Cost/Savings	Year Achieve 80% Reduction Goal
Baseline	68%	\$200M Cost	2040
PRPA 80x30	66%	\$200M Cost	2043
PRPA 60x30	49%	\$30M Cost	2047
PRPA 35x30	49%	\$100M Savings	Post 2050
No Airline Travel	72%	\$200M Cost	2035
Population Growth Halved	72%	\$200M Cost	2036
No Cost of Carbon	68%	\$700M Cost	2040

Informal CAC Poll

Airline Travel?

- Keep in inventory and develop strategies to reduce?
- Remove and list as informational?
- Don't know?

Platte River GHG reduction?

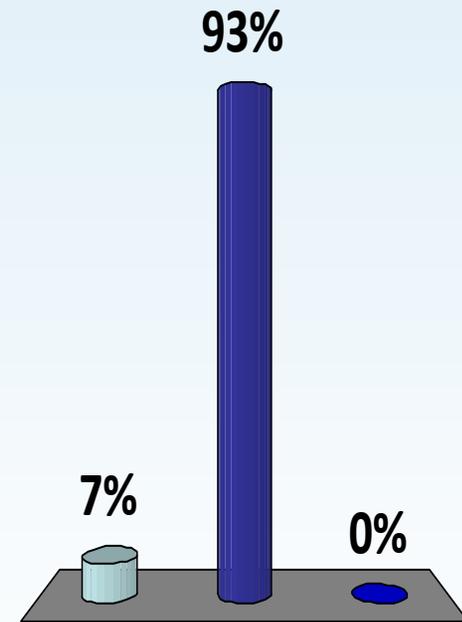
- 80% by 2030
- 60% by 2030
- Not sure?

Focus more on:

- New buildings/vehicles?
- Existing buildings?
- Not sure?

Airline Travel?

- A. Keep in inventory and develop strategies to reduce?
- B. Remove and list as informational?
- C. Don't know?



Keep in inventory and develop strategies

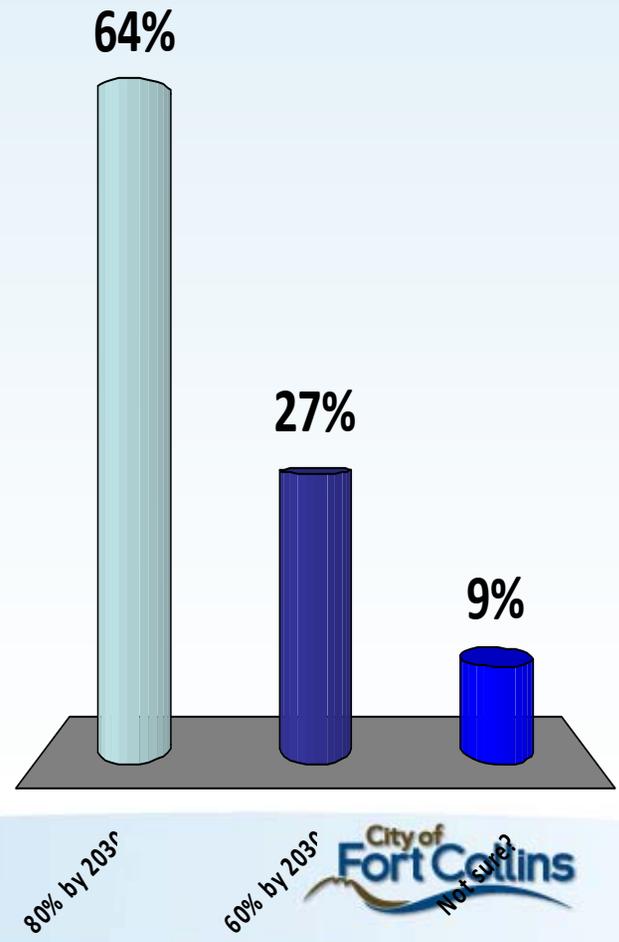
Remove and list as informational

Don't know?



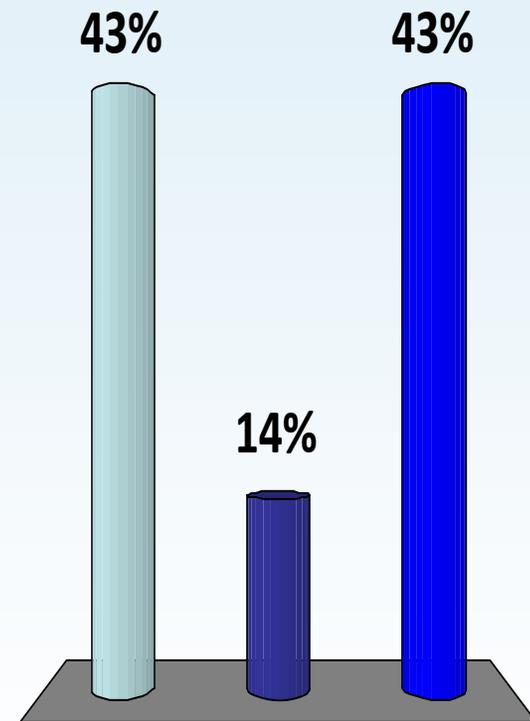
Platte River GHG reduction?

- A. 80% by 2030
- B. 60% by 2030
- C. Not sure?



Focus more on:

- A. New buildings/vehicles?
- B. Existing buildings?
- C. Not sure?



New buildings/vehicles

Existing buildings?

Not sure?



Informal CAC Poll

Focus on:

- Mostly voluntary approaches?
- A mix of both?
- Not Sure?

Population growth?

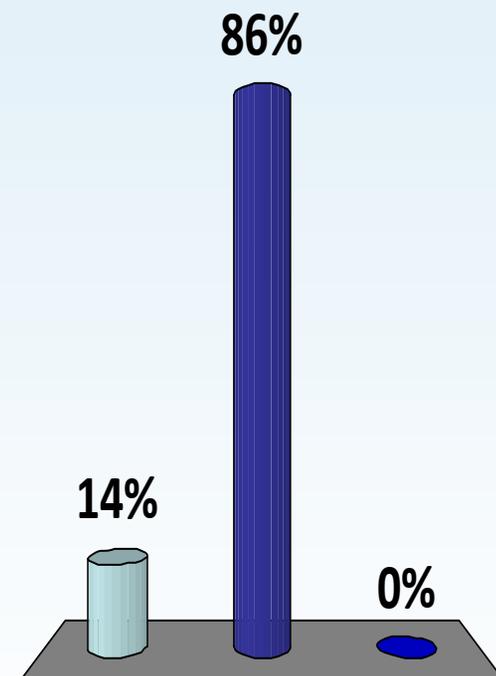
- Include a recommendation for lower than projected population growth?
- Provide the info but don't include as a strategy
- Don't address population growth?
- Not Sure?

Cost of Carbon:

- All (Electricity, natural gas and transportation)?
- Just electricity?
- None?
- Provide cost information both WITH and WITHOUT cost of carbon?
- Not sure?

Focus more on:

- A. Mostly voluntary approaches?
- B. A mix of both?
- C. Not Sure?



Mostly voluntary approaches

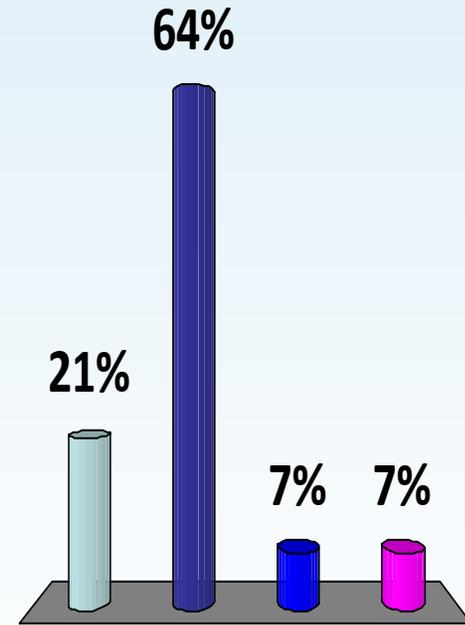
A mix of both?

Not Sure?



Population growth?

- A. Include a recommendation for lower than projected population growth?
- B. Provide the info but don't include as a strategy
- C. Don't address population growth?
- D. Not Sure?

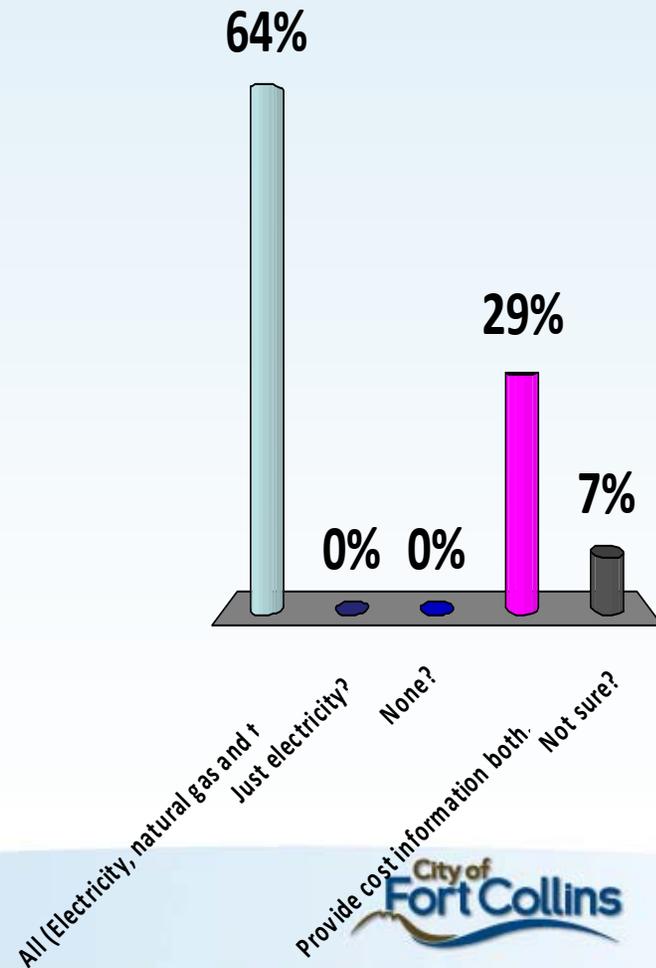


Include a recommendation for .
Provide the info but don't inclu
Don't address population grow*
Not Sure?



Cost of Carbon:

- A. All (Electricity, natural gas and transportation)?
- B. Just electricity?
- C. None?
- D. Provide cost information both WITH and WITHOUT cost of carbon?
- E. Not sure?



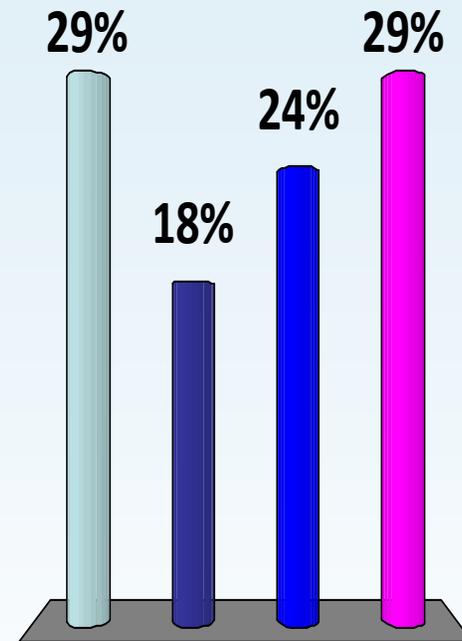
Informal CAC Poll

Please prioritize (1= top priority, 4 = lowest priority)

- A) Identify near term next steps?
- B) Improve the CAP model accuracy?
- C) Develop community engage strategies?
- D) Develop financing approaches?

Please prioritize
(1= top priority, = 4lowest priority)
n=~14

- A. Identify near term next steps?
- B. Improve the CAP model accuracy?
- C. Develop community engage strategies?
- D. Develop financing approaches?



Identify near term next step
Improve the CAP model accuracy
Develop community engage str
Develop financing approach