



Polling Questions for Tonight

1. Recommendation on airline miles
2. Recommendation on inclusion of cost of carbon

1. Does the modeling analysis provide enough information to understand the general path to achieving the 2020, 2030 and 2050 reduction objectives?
2. At this time, would you support updated community GHG goals?
3. At this time, would you support an updated Climate Action Plan framework?

Air Line Travel

Keep in inventory and develop strategies to reduce?	7%
Remove and list as informational?	93%
Don't know?	0%

Platte River GHG reduction?

80% by 2030	64%
60% by 2030	27%
Not sure?	9%

Focus more on:

New buildings/vehicles?	43%
Existing buildings?	14%
Not sure?	43%

Focus more on:

Mostly voluntary approaches? 14%

A mix of both? 86%

Not Sure? 0%

Population growth?

Include recommendation for lower than projected pop. growth? 21%

Provide the info but don't include as a strategy 64%

Don't address population growth? 7%

Not Sure? 7%

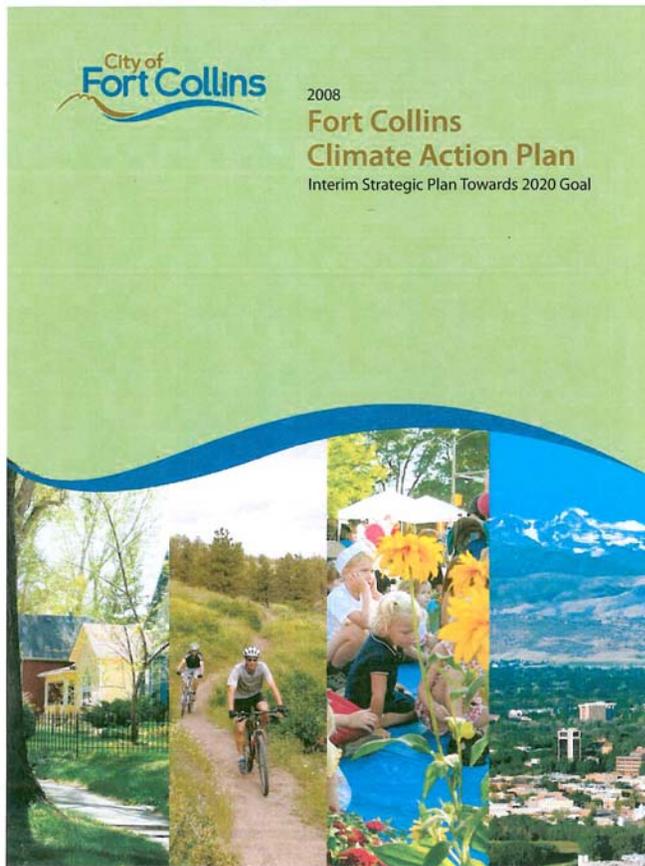
Cost of Carbon:

All (Electricity, natural gas and transportation)?	64%
Just electricity?	0%
None?	0%
Cost information both WITH and WITHOUT cost of carbon?	29%
Not sure?	7%

Please prioritize

(1= top priority, = lowest priority)

Identify near term next steps?	29%
Improve the CAP model accuracy?	18%
Develop community engage strategies?	24%
Develop financing approaches?	29%



December 2008

Goal

- Community leadership
- Attract outside capital
- Enhance innovation
- Spur community engagement

Climate Action Plan (CAP)

- Demonstrates feasibility
- High level strategic plan
- Roadmap for 15+ years
- Requires periodic updates
- Each action requires further analysis and vetting

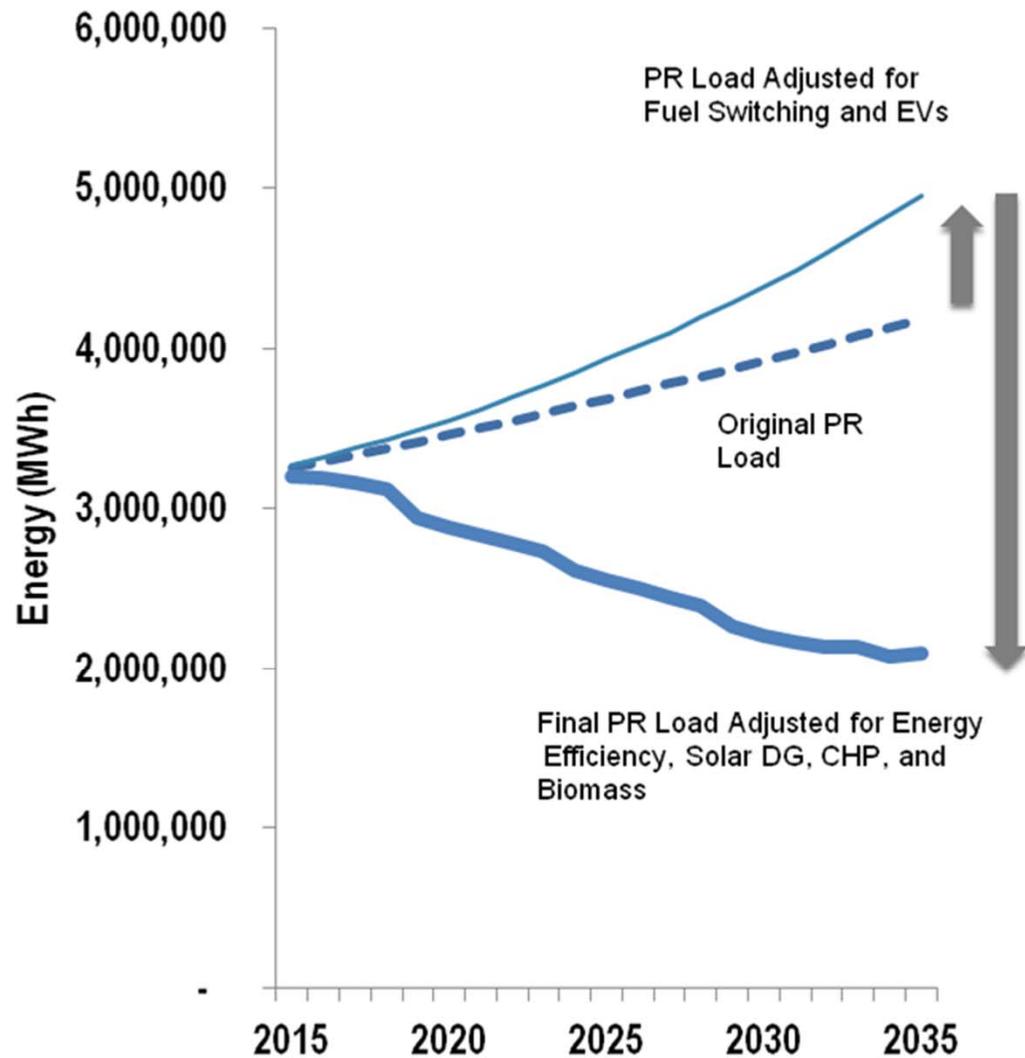
Analysis:

- Incorporated Platte River modeling results
- Removed airline travel from quantification
- Cost of carbon for all fuels

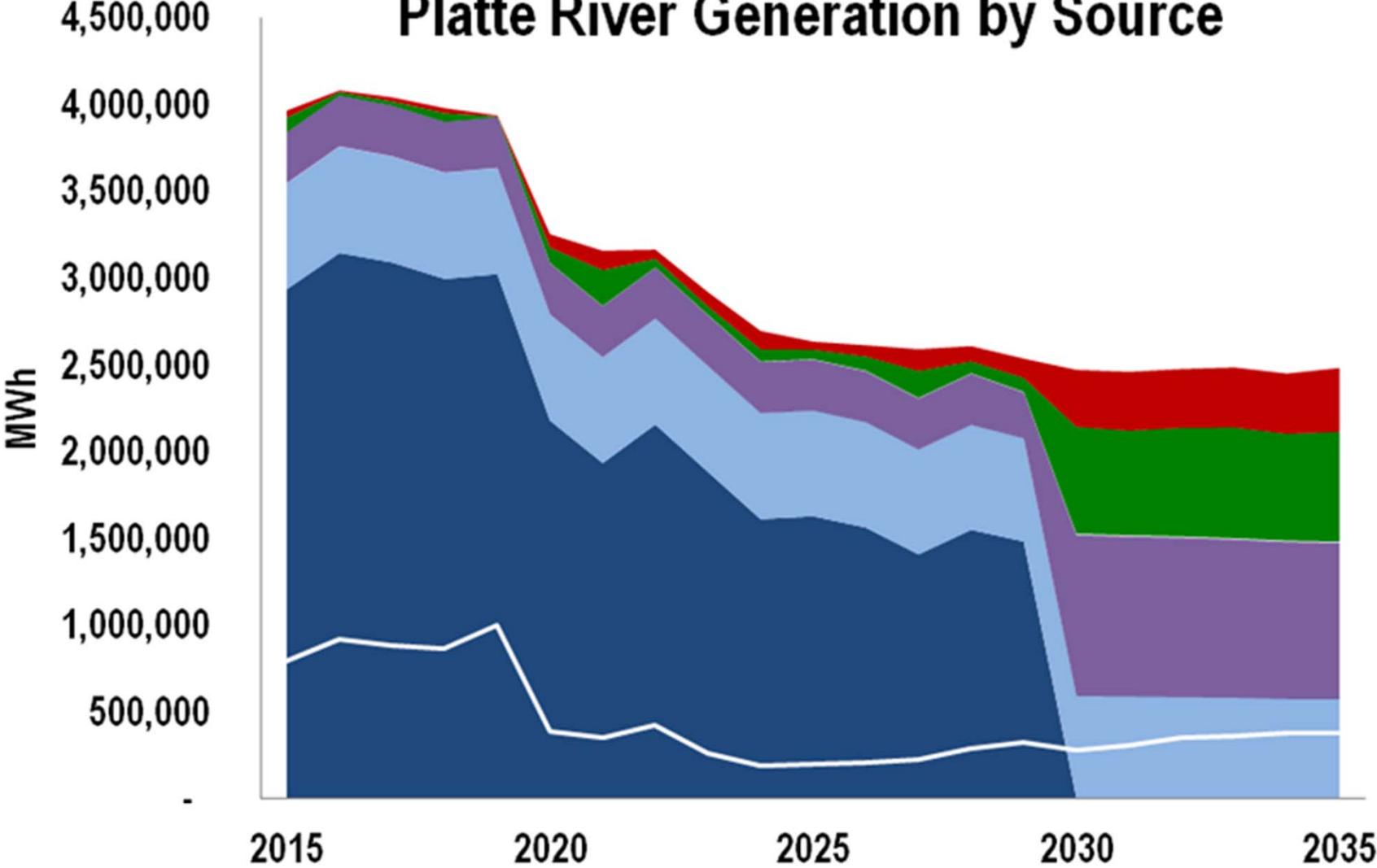
Strategies (Already Adjusted by Dec. 15):

- Reduced number of existing buildings that are net zero
- Increased number of new buildings that are net zero
- Reduced number of new vehicles that need to be electric vehicles

Energy Served by Platte River



Platte River Generation by Source

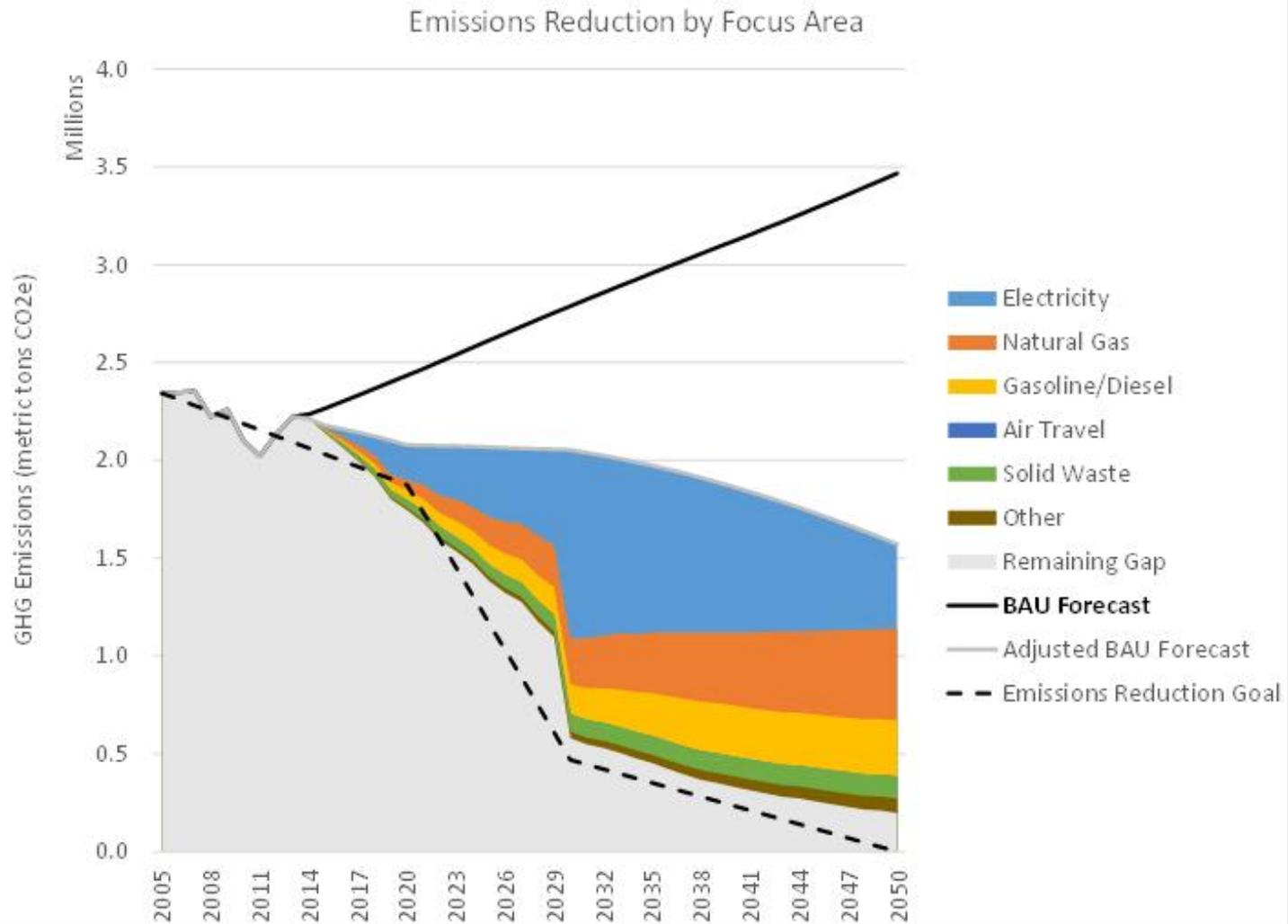


- Total Coal
 - Total Hydro
 - Total Wind
 - Total Solar
 - Total Gas
 - Total Purchases
- Total Sales

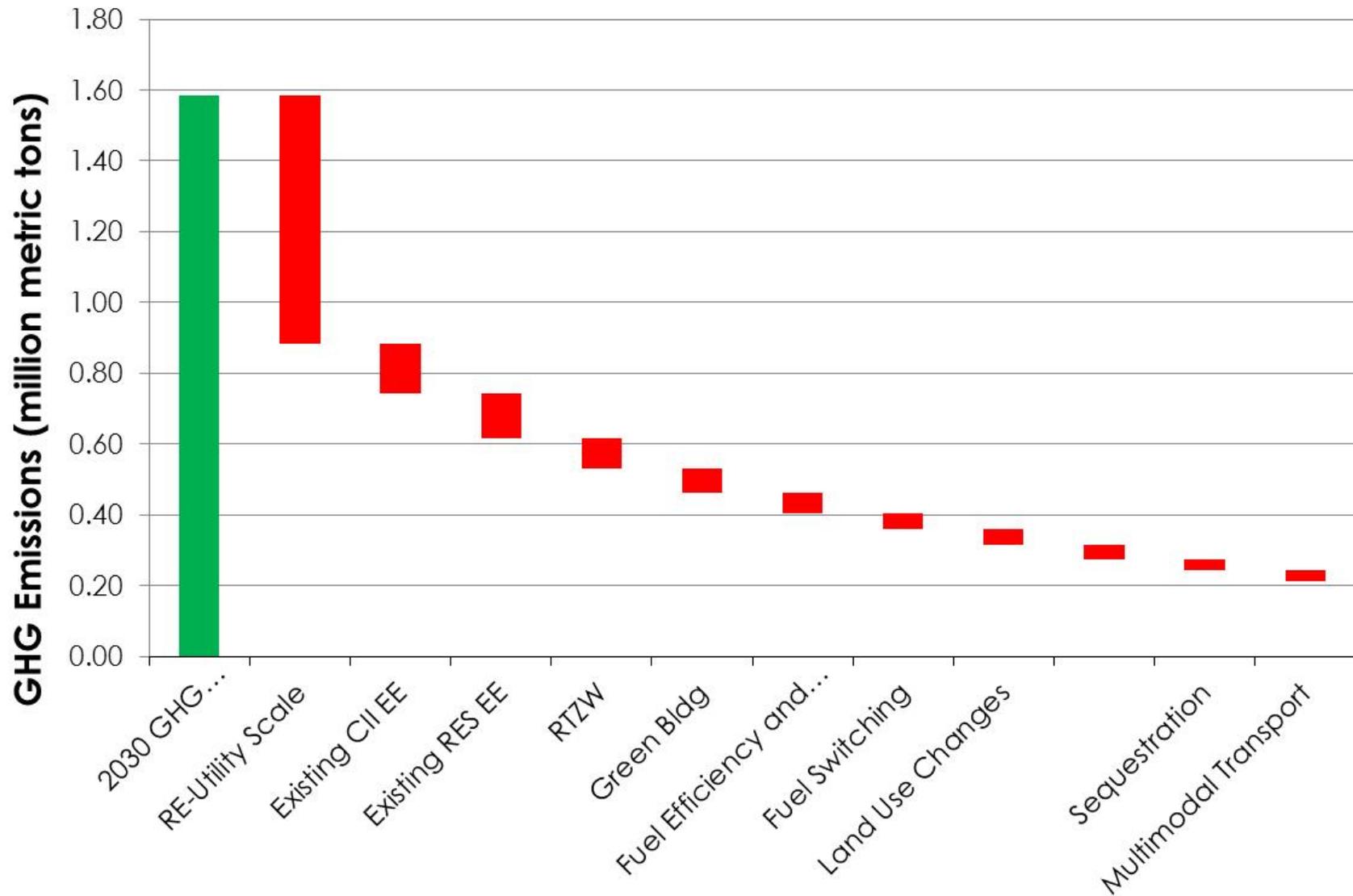
- System Engineering
- Business Operations
- Construction times & installation
- Emissions Permitting

Scenario 1 – Quantified Strategies

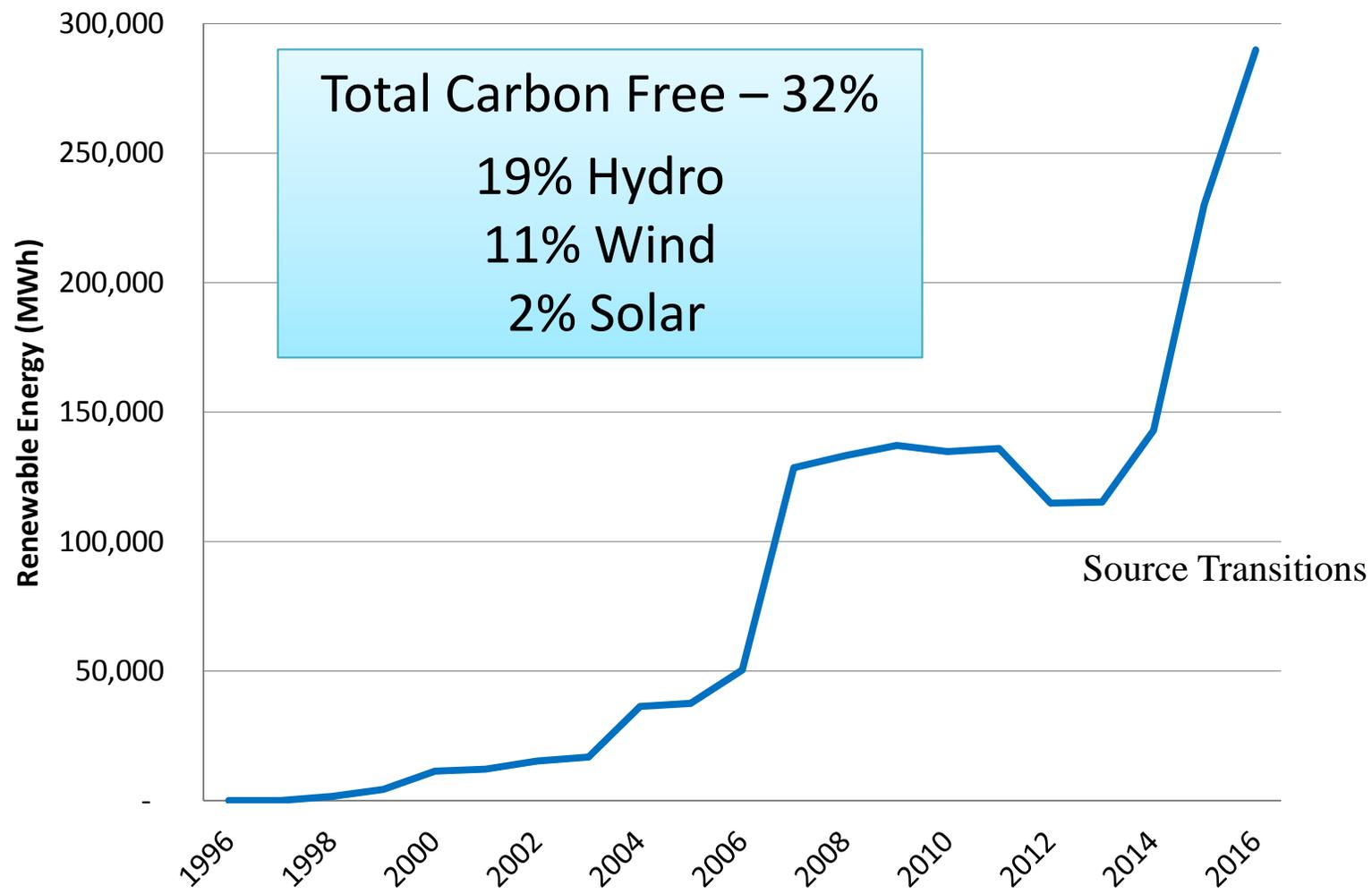
- Green Building for New Construction and Redevelopment
- Shift Land Use Patterns to Shorten/Reduce Number of Trips
- Increase Energy Efficiency – Residential
- Increase Energy Efficiency – Commercial and Industrial
- Drive Adoption of Multi-Modal Transportation
- Fuel Efficient & Electric Personal Vehicles
- Advance Cleaner Energy at the Utility Scale
- Advance Residential and Commercial Solar Adoption
- Shift Heating Loads Away from Natural Gas
- Road to Zero Waste
- Carbon Sequestration



2030 Baseline GHG Emissions Effects



Platte River Renewables Trend



KEY METRICS by STRATEGY	2020	2030	2040	2050
Cumulative Energy Saved in New Construction (GBtu)	479	3,853	8,619	14,948
Cumulative VMT Reduced (millions)	264	1,822	4,185	6,779
Cumulative Energy Saved in Existing Residential Buildings (GBtu)	2,219	17,245	49,135	93,071
Cumulative Energy Saved in Existing CII Buildings (GBtu)	2,535	19,698	56,124	106,309
Cumulative VMT Reduced (millions)	90	1,294	2,962	4,793
Total FE and EV Sales	8,958	59,418	124,250	195,441
Installed Solar PV Capacity (MW)	32	135	221	256

	2020	2030	2040	2050
% below 2005 baseline	25%	75%	86%	92%
Net Cumulative Costs/Savings	\$292M cost	\$388 savings	\$2.8B Savings	\$7B Savings
* Avg. monthly cost/savings per resident	\$28 cost	\$13 savings	\$56 savings	\$98 savings

*Does not indicate the cash flow impact to households or businesses

- Includes Cost of Carbon for all fuels
- Includes 2.5% discount rate

Elements Not Included in Cost/Savings Calc.

- Improved public health from more active modes of transportation (walking and bicycling)
- Improved public health from reduced air pollution
- Indirect economic and social benefit from increased resiliency to predicted climate change impacts
- Indirect economic benefit to the community through increased jobs supported by CAP
- Indirect cost savings from VMT reduction

Planning

Develop a CAP Implementation Plan that provides more detail on which tactics and programs must be implemented by 2020, and in what order, and identifies anticipated budget needs.

Buildings

Pilot Integrated Utility Services Model

2015 building code update and compliance

Provide incentives for above code buildings

Energy Supply

- Expand partnership with Platte River on efficiency programs
- Partner with others on electric system distribution systems integration research
- Increased incentives and new mechanisms for increased solar PV
- Develop programs that benefit low/fixed income such as Low Income Solar Pilot
- Consider Time-of-Use and low income electric rate structures

Transportation:

- Provide open transportation data and encourage development of transportation data apps
- Car/Bike/Ride share programs
- Employer engagement on VMT reduction
- Drive Electric Northern Colorado – Work Place Challenge

Road to Zero Waste:

- Advanced waste stream
- Universal Recycling Ordinance

Public Engagement

- Evolve ClimateWise (ClimateWise 2.0)
- Georgetown University Energy Prize
- Develop and implement a pilot neighborhood campaign
- Develop and implement strategic community engagement strategies

Financing Mechanism Development

- Pilot public private partnership to leverage outside finance via on-bill financing or Integrated Utilities Services program
- Research one or a limited number of additional financing mechanisms to enable quicker actions.

- Financing Guiding Principles
- City Council Review and Vetting of Individual Strategies
- City Budget Process
- Periodic CAP Update Process



- Final scenario adjustments (January)
- CAC develops recommendation (January)
- Draft CAP framework document (January)
- Coordination with Energy Policy Updates (Jan/Feb)
- Public engagement (Jan/Feb)

- **February 17, 2015 Council action**

- Primary Challenge:
 - Analysis shows savings from the proposed scenario between 2030 and 2040; continuing to 2050
 - Financing can be used to access those savings to spread out the initial incremental costs; reducing the impact
- Three Broad Financing Mechanism Categories:
 - Individual/Business
 - Government
 - Other
- All approaches (excluding philanthropy and grants) require an entity to take on debt and use anticipated savings to repay

- **Individuals/Businesses**

- Energy Efficiency Measures (existing buildings)
- New Energy Efficiency Standards (new buildings)
- Cost of Electricity
- Distributed Solar
- Individual Electric Vehicles
and Charging Infrastructure



- **Government**

- Efficiency Programs – to encourage adoption of new measures
- Solar Rebates
- Upgrades/improvements to the local distribution system to handle distributed/renewable energy loads
- Public Transit Infrastructure
- Community Charging Infrastructure – especially on the local electric distribution system
- Involvement in Lending Programs for Individuals/Businesses (Public Private Partnership)

- **Private Third Parties**

- Lending Program Costs (e.g., underwriting, defaults, marketing, etc.)