



**Climate Action Plan
Citizen Advisory Committee Minutes
November 20, 2014**

215 N. Mason Street, Community Room
5:30 p.m. – 9:00 p.m.

CAC Members: (X = present)

Bill DeMarco	X	Harry Edwards	X	Rich Fisher	X
Bryan Watkins	X	Holly Wright	X	Sara Frazier	
Chadrick Martinez	X	John Holcombe		Chris O'Dell	
Dana Villeneuve	X	Kellie Falbo		Stacey Clark	X
Dianne Ewing	X	Marge Moore		Suraj Renganathan	X
Eric Levine		Kelly Giddens		Tom Ghidossi	X
Glen Colton	X	Mike Freeman		Yvonne Myers	X
Greg Rittner	X	Olivia Stowell		Hunter Buffington	X
Stacey Baumgarn	X	Mark Easter	X		

In attendance:

Staff: Lucinda Smith, Bruce Hendee, Steve Catanach, Kathy Collier, Cassi Nichols, Melissa Hovey, Michelle Finchum, Travis Paige, John Phelan, Paul Sizemore

Consultants: Becky Fedak – Brendle Group, Judy Dorsey – Brendle Group, Coreina Chan – RMI

Facilitator: Art Bavoso

Guests: Peter O'Neill, Greg Behm, Mark Hoadashelt, Martin Carcasson, Jackson Brockney, Shawn Tian, Colin Day,

Public Comment and Announcements

No public comment or announcements

Approval of October Minutes

Tom Ghidossi moved and Rich Fisher seconded a motion to approve the October 9, 2014 minutes. Motion passed unanimously.

Energy Policy

Greg Behm and Peter O'Neill Chair and Vice Chair of the Fort Collins Energy Board present on the Fort Collins energy policy. Peter explains the overlaps with the CAP, but the energy policy covers a lot more than just climate. The purpose of the policy is to reduce pollutants and reduce environmental damage. Triple bottom line analysis is an important part of this energy policy. We also are concerned with reliability and economic impacts. Greg cautions that this policy recommendation is still very much in draft form.

- What is the decision making process for energy policy and how does the energy board interact with other entities?
 - Lucinda: The energy board is one of 24 or 26 council appointed citizen advisory board. It used to be the electric board. In 2012, council directed the creation of the energy board as it found that the area was broader than just electricity. Energy pertains to all usable forms of energy, including the transportation arena. The board has a role in commenting on and updating policies.
 - Pete: The energy board is strictly advisory. We recommend to council and council is free to use any or none of our recommendation.
- Scope relates to road to zero waste but I do not see how this policy translates to waste.
 - Greg: Until now the conversation has not focused much on the energy aspect of waste. This is the type of feedback we are looking for.

Review First Iteration Model Output and Nov. 20 Packet

- Lucinda: goes over the guiding principles.
- Judy: Here is an 80 by 30 plan and we're starting to understand the sensitivity of some of the assumptions, and specifically, the economic assumptions. Platte River Power Authority (PRPA) model still needs to be added into the model. There is still a small gap in emission reductions before we get to our target, but this gap can go away as we reexamine some of the assumptions.
- Becky outlines the strategies and tactics that were used in the model to achieve approximately 80% reductions by 2030.
 - Is the 40% over the amount of homes that are already electric?
 - Yes
 - Do we know how many homes are currently electric?
 - John: Single family homes are around 1000.
 - Is there a visual of what the sources of energy would be?
 - Becky: We can create this type of chart, we do not have it tonight.
 - John: That will also be related to the PRPA modeling.
 - A big piece of this seems to be the 80% reduction from PRPA, how can we know this in the model if it is not available yet?
 - Becky: We have some preliminary results from PRPA that we used to make these estimates.
 - There will be more of a demand for electricity from the fuel switching and electric vehicle strategies. That is a big change at PRPA and we don't have an exact cost for that. Does that 80% reduction while increasing electricity usage actually mean that coal is not being burned or does it mean that we're not buying the electricity from the coal that is being burned?

- Becky: As far as I understand, they're running both what it would look like to get Fort Collins to 80%, as well as what it would look like to get the entire system to an 80% reduction. We will then have to run those models through the Fort Collins Utilities model in order to understand what that would mean for rates.
 - Steve: Yes that does mean we will have to get rid of coal in our resource base.
 - There is still a concern that Rawhide is still using coal and the electricity is sold to other buyers.
 - Steve: That is not how we are modeling it.
 - John: they are modeling the types of resources, such as coal, that would be coming offline at certain stages, and other resources, such as renewables that would be coming online at certain stages.
 - Coreina: there is a reduction in electricity from efficiency, so it probably won't be much more usage.
 - Does this mean that there may be a reduction in demand even with the high conversion to electric?
 - Coreina: Possibly, yes. We still need to look at this a bit more.
 - The BMT reduction by 29%, is that a total reduction or per capita?
 - Becky: That is a total reduction
 - So that is significantly more than what we were looking at in the Stepping Up Report. How does this reduction work out when you take population growth into account?
 - Becky: I'm going to have to take a closer look at that. It may be per capita.
 - Given that most houses have gas/forced air what will it take to convert to electric?
 - Becky: The objective of this scenario is to show what it would take to get to 80 x 30 the intent of today is to start to have this conversation and test some of the assumptions against reality.
 - Art: This is a presentation and you as the committee has to say "that's going to work" or "that's going to be really hard." It is the committee's role to give perspective and decide what we can take to the public. This impact costs everyone \$100?
 - Becky: There is actually a net cost savings, but we still need to revise some of that when we get the model from PRPA. This is all going to continue to change. Currently there is a net savings of \$20 per person.
 - The graphs seem to be radically different in terms of cost strategy. Should we be very cautious that there are still a lot of dials that are uncertain? Where do you feel the model is?
 - Judy: The results are being sent out as we are studying, and it is clear from those results that something was not making sense in the energy efficiency. That's the only change to any strategy that has occurred. It will be recognized that there was a change in the economics but it doesn't change where we are with the carbon estimates. We're feeling pretty good at this time, but we are still doing some more work on this model.
 - Becky: We have the cost, but not who is paying and who is saving. That still needs to be developed. We have started to identify these gaps.
- Becky: The idea is to go through each strategy and discuss what the implications are of each one. Becky then gives an overview of the model.

- Would written comments that are more detailed be more productive than bringing up the details tonight?
 - Becky: Details may be better in writing.
- Becky: In the model we have the ability to change assumptions and even remove entire strategies in order to see how that changes the outcomes.
- **Advance Renewable Energy at the Utility Scale**
 - How are the costs and savings represented?
 - Becky: The costs are represented in red and the savings are represented in black.
 - Does this include a cost for carbon?
 - Becky: Yes, everything we have assumes a carbon tax.
 - Is there a way to see the total cost rather than the cost effectiveness? Can we also see this without the carbon tax first, since the carbon tax is uncertain?
 - Steve: It is a cost of carbon rather than a carbon tax.... This is not necessarily a model of.....
 - This may be confusing to the public if we cannot present the costs and savings clearly.
 - Becky: There are so many numbers, and we are trying to figure out which ones to show.
 - The cost per person per month is really helpful in illustrating the impact.
 - When looking at the strategies, how many pertain directly to the utility scale?
 - Becky: That is a strategy that impacts all of the other strategies in terms of emissions.
- **Increase Energy Efficiency – Residential and Commercial**
 - Is that \$110k in today's dollars or 2030 dollars?
 - Becky: That is today's, but we have applied a discount rate to that.
 - What does this efficiency increase mean practically?
 - Becky: The strategies have tactics attached to them that are made to give some ideas about what this could look like. A lot still needs to be crafted in terms of what information needs to be presented. This is another area where feedback would be helpful.
 - Do we know that the cost savings is the net of the initial investment?
 - Becky: We're looking at a net payback of around 7-10 years. There was a lot of work that went into figuring out the overall strategies, but there was also the RMI tactics that help fill in what some of the details may look like for these strategies.
 - Art: At the end of the day, this committee has to decide which conditions, tactics and scenarios, are going to work for the public. This model just helps to illustrate the outcomes of some of these ideas.
 - Judy: there is a net cost to have your electric provider add more renewables, whereas the efficiency adds some savings to the end uses, so we need take into account how all of these costs and savings balance out.
 - We can't only take the cheap options, we have to pair options in such a way that the savings pay for the costs.
 - Becky: This is one of the reasons that we are presenting this in terms of cost effectiveness.

- Does this take into account the increased cost of construction that fosters efficiency?
 - Becky: That is something that we are going to be meeting about soon.
- **Road to Zero Waste**
 - Becky: This is a small contribution on the whole, but it's not something that we can forget. This will become a larger piece as we begin to reduce emission in other areas.
 - Is the cost of recycling imbedded in here?
 - Corina: The city is already committed to the road to zero waste, so this is an important strategy to consider in terms of cost and benefit.
 - When there is a 100% diversion rate, does this mean that there is not further improvement possible?
 - Becky: The only other consideration would be population growth.
 - Who saves and who pays?
 - Becky: This is something that we are working on currently. So far, it's working out that most of the savings are being realized by the community and a big portion of the cost is being realized by the city, but still split by the city and the end user. Some of the financing options and the possibility of bringing in external investments are still being examined.
 - A lot of the strategy involves investment. Is there a way to see how much of the savings are seen through upfront investment, and how much is seen through avoided costs?
 - Becky: This is not something that we currently have.
 - It seems that there actually is some of this in the model. If you look at the costs, there are patterns that show the cumulative costs. I think that one of the most difficult things is the fact that there is a lot of money being spent and the payoff timeframe may be too long for some of the population to see the benefits.
 - Becky: We stated talking about this in terms of some of the external player benefits, they can decrease the upfront costs.
 - The budget decisions have just been made by Council we do have some money going into some of these areas. How are we taking advantage of these opportunities? How does this fit into the larger picture of City programs?
 - Coreina: different players have a role in this and the IUS model is an example of how we can possibly foster this type of investment and coordination.
 - Will the efficiency upgrades be paid for by whoever lives in the home? Will this go with the house?
 - John: in some cases, yes. Even if it gets paid off, when the home is sold, that investment has been made and will ultimately be reflected in the price of the home.
 - I like the idea of showing the cash flow by year.
 - The "waste tipping fee" may not mean much to the average resident.
- **Shift Heating Loads – Electrification, combined heat,**
 - How were the proportions of these different strategies determined?
 - Becky: A lot of it was based on case study research done by RMI.
 - Steve: We have the ability to scale that up and down.
- Becky: This strategy will likely never be cost effective because you are getting to an electric supply, but the individual homeowner may see some benefits.

- Corina: this is one that we are still working on. There is a cost incurred, so we thought about when is the best time to do this. For instance, the age of homes and buildings will dictate when upgrades need to be made anyway.
- John: Electric heat with heaters running along the baseboards is not necessarily what we are talking about here. There can still be a forced air type of set up.
- What's wrong with natural gas?
 - We lose a lot of methane at the well.
 - When we say "clean burning" we mean the toxic air pollution coming out of the stack is very low. The way to achieve that is to turn every atom of fuel into carbon dioxide. We actually intend "clean burning" fuel to produce carbon dioxide. Methane is not as bad as coal, but there are still emissions.
- **Green Building for New Construction and Redevelopment**
 - I am struggling with 85% more efficient. What does that mean?
 - Becky: We are taking the energy intensity of existing buildings, and in terms of new construction, we will aim to reduce this intensity by 85%.
 - Perhaps a better way to present that would be to say new construction will use 15% the energy of existing buildings.
 - Is that net zero meaning the total energy used by a house in a 24 hour period?
 - No, in a year.
 - Is this taking into account that we are generating electricity during the day and we need some of the energy at night? Has this also included production of solar panels in the carbon count?
 - Becky: That is not included right now, but that will come up the triple bottom line conversation.
 - How many homes is that taking into account to be built by 2030?
 - Corina: that estimate came from the city, so about 22,000.
 - We also need to consider that these parcels of land that we may build on need to be updated in terms of infrastructure.
 - The model shows linear assumption on housing construction. We may need to be cautious with this projection.
 - Building new homes takes a lot of material and energy so we may need to take that into account. Also, why do we want 40% of existing homes to convert to electric and only 30% of new builds?
 - Becky: That is a very good point and we will look at that in more detail. Any of the analysis we're doing is looking at the impact of the pieces that are a result of this strategy.
 - Judy: We're not suggesting building 20,000 green homes in order to reduce emissions. We're saying given the growth due to new homes, here are some mitigation strategies.
 - Would it be reasonable to say that with solar it be a 100% reduction?
 - Becky: This is something we could put into the model.
 - The slides have been sorted from largest impact to smallest impact.
 - Judy: There are 13 strategies, so on average each one is 8%.

- Becky: Another assumption we can change is what Platte River is going to do. If they will not meet an 80% reduction then that means each of these other strategies will have to pull additional weight.
 - There is a built in prioritization in this scenario. The original pie chart showed that half of the City's emissions come from residential electricity usage, so that is why this is coming up this way. The bottom line is that we can get there and there is a possibility of realizing a net savings.
- **Advance Residential and Commercial Solar Adoption**
 - It may be a good idea to indicate within the name that this is for existing buildings/homes. This 2030 cost of \$400 per MTCO_{2e} compared to the savings of new construction, is the difference because of efficiency?
 - Becky: yes
 - If this is such an expensive strategy is the benefit of it taking into account other noncarbon benefits?
 - Becky: It is not included in the main analysis, but there's a cobenefit section containing other reasons why you would do that strategy.
 - Coreina: We need to know what the big picture is first and keep in mind that costs can go down in the future.
 - This contribution may not be worth 5% because of the high adoption rates necessary and the costs involved.
 - Becky: that is a good point, and we can see what options are available on this.
 - Coreina: we could talk about that further
 - Does the model take into account changes in ambient temperature?
 - Judy: that's a great idea for the adaptation component, but the model does not currently include this.
 - The PV installation costs are these conservative projections?
 - Coreina: We have not looked at the costs together yet
 - Is that an acceptable figure for the discount rate?
 - Becky: we did some research specific to discount rates for something like a climate action plan. This rate is reasonable for long term impacts.
 - Art: You could change this rate to see the effects.
- **Accelerate Adoption of Fuel Efficient and Electric Vehicles**
 - The fleet is turning over a lot more slowly than it used to. That may make 90% difficult. Is this 90% of purchases?
 - Becky: Yes, this is total annual vehicle sales
 - Becky: This is only 4% because you are reducing fuel emissions, but you are also increasing electricity usage.
 - With intercity travel is there a parallel projection if these are primary vehicles?
 - Becky: we do have a strategy around multi modal transportation which would include some of this.
 - Are there going to be any incentives given to consumers to encourage this switch?
 - Becky: Yes, there are assumptions about rebates and other tax incentives.

- Have we thought about the effects of producing these vehicles, such as the use of rare minerals? Can we continue to give tax incentives?
- **Shift Land Use Patterns to Shorten Trips and Reduce Demand for Travel**
 - Is that a 17% reduction from 2005 or today?
 - Becky: It is a reduction in that year.
 - How does infrastructure play into this?
 - Becky: Some of it has to do with how the new development is happening and how redevelopment is happening. We are thinking about multi use areas, parking, etc. All of these things are connected.
 - John: The planners in our community would say that they are expecting that development will be much denser and have multiple uses.
 - There may be transportation/mobility issues associated with an aging population.
 - For the infill development, are there more homes being built closer to business and more services near homes, or is it both?
 - There're two main courses that development can take. One is the infill development with businesses on the ground floor, housing up top and close public transportation. The other example would be greenfield development where there is access to transit and employment centers, etc. for shorter trips.
 - Often there is a big disconnect between what kind of development can occur and the type of development we hope will occur.
- **Drive Adoption of Multimodal Transport**
 - I think this has more to do with our choices and behaviors.
 - The bus in town takes a really long time. I agree that this looks like behavior change, but we need to facilitate the ability to use public transportation. There are some ideas that receive a lot of push back, and this may be one of those ideas. Is there a way to rethink how we increase the ability to use public transportation?
 - Becky: Yes, this is what we need to discuss
 - The tactic that makes up the biggest part of this is public transportation. We have to implement TransFort's plan to increase this access.
 - Is some of the cost of this associated with the built environment? We should not be thinking about this in a vacuum. There are also the savings in health costs, and other associated savings.
 - Becky: These strategies are a little more accessible for people. This is an opportunity for engagement here leading to the rest of the plan.
- **What if...**
 - We remove airline travel. We don't have any strategies to address this. Within the model itself, we set up a dial to give an example of this.
 - The discount rate was higher? The discount rate is only applied now to the savings and not the costs.
 - Is this because the costs are upfront and the savings are long term?
 - Becky: Yes

- That's a pretty major change from 2.5 to 5, but qualitatively it is still the same story.
 - There is no carbon tax in the future?
 - When we are describing this cost of carbon, where is that money going to?
 - John: It's what the cost of the fuel is going to be. It's going to be more expensive for any fossil fuels that would be used.
 - Is this the social cost of carbon?
 - No. It is a policy measure, but this policy does not exist.
 - Is this a federally imposed carbon tax?
 - Becky: Yes
 - This doesn't exist yet, so we cannot say for sure where the money would go
 - John: It's not a carbon tax it's a regulatory approach on carbon that results in an increase in costs and a decrease in carbon.
 - Are we going to asking the city council to pass a carbon tax?
 - No
 - It may be better to show it without the carbon tax first.
 - Lucinda: That is the approach that Platte River will take.
 - The growth rate slows?
 - Is the population growth rate something we can dial up or down?
 - Becky: Yes
 - Where does this growth rate come from?
 - Lucinda: It came from the State as well as assumptions from the utility
 - Becky: We can also build in how a change to one assumption affects all the other strategies.
- Lucinda: There are some big choices. I am curious, are there any reactions to the airline travel portion? Airline travel is included because there is recognition that airline travel does really have a considerable impact on greenhouse gas emissions. This is an educational opportunity.
 - One choice not to fly will not ground a plane, and the person not flying on a plan may be replaced with freight. There could eventually be a ripple effect though.
 - All of these changes in the model are fairly marginal. The big picture is that this is actually possible. We really can come up with a set of strategies to get to 80% reductions by 2030.
 - This is a good reminder that this is a big plan that is very dynamic, these changes can be made, but we can still get there.
 - We now see the kinds of things that can be done. Are you starting to get a sense that these dial changes are too much? Do we need to come up with a more targeted plan?
 - Becky: There are a lot more assumptions than what were presented on the slides today. We still need to learn what those costs from PRPA are going to be.

Preliminary Discussion on Financing Principles

- Lucinda gives a quick overview of the financing presentation and input will received be via email.

Public Engagement and CAC Role and Opportunities

- Travis gives a quick overview of public engagement that has been happening and where public engagement could go next (including public forums). There is also an overview of CAC role in public engagement.
 - Would it be helpful for CAC members to attend outreach meetings?