



# Agenda

CITY CLERK'S OFFICE

DATE 3/12/15 TIME 2:14pm

SERVED BY Katherine Mortimer

RECEIVED BY Alicia Hartig

## SUSTAINABLE SANTA FE COMMISSION

Tuesday, March 17, 2015  
City Councilors Conference Room  
Santa Fe, NM  
2:30 to 4:30 p.m.

- A. CALL TO ORDER
- B. ROLL CALL
- C. APPROVAL OF AGENDA
- D. APPROVAL OF MINUTES – February 17, 2015
- E. COMMUNICATIONS FROM THE FLOOR (5 min)
- F. REPORT FROM, AND ASSIGNMENT OF ACTIONEER (5 min)
- G. PRESENTATION – Greenhouse Gas Impacts of Animal-Based Diets (P. Gibson)
- H. STAFF COMMUNICATIONS (10 min)
  - 1. 2015 Sustainability Awards and Gala Update (K. Mortimer)
  - 2. Urban Agriculture Policy Update (K. Mortimer)
  - 3. Healthy Food Policies for the Southside Update (K. Mortimer)
  - 4. SFSWMA (A. Schlachter)
  - 5. Mayor's Climate Action Task Force Update (J. Alejandro)
  - 6. Sustainability Scorecard Update (J. Alejandro)
- I. DISCUSSION/ACTION ITEMS
  - 1. SUBCOMMITTEE REPORTS:
    - i. Climate Action Task Force Subcommittee Updates
    - ii. Community Engagement (A. Romero) (10 min)
  - 2. Formation of a task-force to review the SF Green Code (A. Hatherly)
- J. ITEMS FROM THE CHAIR (5 min)
- K. ITEMS FROM THE COMMISSION (5 min)
- L. ITEMS FOR NEXT AGENDA (5 min)
- M. ADJOURNMENT

**Next Meeting: April 21, 2015**

**NOTE: Persons with disabilities in need of accommodations, contact the City Clerk's office at 955-6520, five (5) working days prior to meeting date.**

**INDEX OF MINUTES  
SUSTAINABLE SANTA FE COMMISSION  
March 17, 2015**

<b>ITEM</b>	<b>ACTION TAKEN</b>	<b>PAGE(S)</b>
<b>A. CALL TO ORDER</b>	<b>Convened</b>	<b>1</b>
<b>B. ROLL CALL</b>	<b>Quorum</b>	<b>1</b>
<b>C. APPROVAL OF AGENDA</b>	<b>Approved [as amended]</b>	<b>1-2</b>
<b>D. APPROVAL OF MINUTES: February 17, 2015</b>	<b>Approved [as submitted]</b>	<b>2</b>
<b>E. COMMUNICATIONS FROM THE FLOOR</b>		<b>2-3</b>
<b>F. REPORT FROM, AND ASSIGNMENT OF ACTIONEER</b>		<b>3</b>
<b>G. PRESENTATION – Greenhouse Gas Impacts of Animal-Based Diets</b>		<b>3-5</b>
<b>H. STAFF COMMUNICATIONS</b>		
1. 2015 Sustainability Awards and Gala Update		<b>6</b>
2. Urban Agriculture Policy Update		<b>6</b>
3. Healthy Food Policies for the Southside Update		<b>6</b>
4. SFSWMA		<b>7</b>
5. Mayor’s Climate Action Task Force Update		
	<b>Deleted from agenda</b>	<b>7</b>
6. Sustainability Scorecard Update		
	<b>Deleted from agenda</b>	<b>7</b>
<b>H. DISCUSSION/ACTION ITEMS</b>		
1. SUBCOMMITTEE REPORTS		
i. Climate Action Task Force Subcommittee Updates		<b>7</b>
ii. Community Engagement		<b>7</b>
2. Formation of a task force to review the SF Green Code		<b>8</b>
<b>I. ITEMS FOR THE CHAIR</b>		<b>9</b>
<b>J. ITEMS FROM THE COMMISSION</b>		<b>9</b>
<b>K. ITEMS FOR NEXT AGENDA</b>	<b>None</b>	<b>9</b>
<b>L. ADJOURNMENT</b>	<b>Adjourned at 4:40 p.m.</b>	<b>9</b>

**MINUTES OF THE**  
**CITY OF SANTA FE**  
**SUSTAINABLE SANTA FE COMMISSION**

**March 17, 2015**

**A. CALL TO ORDER**

A meeting of the City of Santa Fe Sustainable Santa Fe Commission was called to order by Bianca Sopoci-Belknap, Chair at 2:40 p.m. at the City Hall Councilor's Conference Room, Santa Fe, New Mexico.

**B. ROLL CALL**

Roll call indicated the presence of a quorum for conducting official business as follows:

**MEMBERS PRESENT:**

Bianca Sopoci-Belknap, Chair  
Esha Chiocchio, Vice Chair  
Amanda Hatherly  
Louise Pape  
Glenn Schiffbauer

**MEMBERS ABSENT:**

Kim Kelly, excused  
Andrea Romero, excused  
2 vacancies

**STAFF PRESENT:**

Katherine Mortimer, Environmental Services Division

**OTHERS PRESENT:**

Roxanne Berber, visitor  
James Corcoran, Santa Fe Veg  
Paul Gibson, presenter  
Kenneth Harley, visitor  
Leslie LaKind, visitor  
Andy Otto, Santa Fe Watershed Association  
Seth Roffman, Green Fire Times  
Katrina Rosa, Ecological Studio  
Jo Ann G. Valdez, Stenographer

### **C. APPROVAL OF THE AGENDA**

The agenda was amended: Item H5 (*Mayor's Climate Action Task Force Update*) and Item H6 (*Sustainability Scorecard Update*) were deleted.

**Commissioner Hatherly moved to approve the agenda as amended. Commissioner Chiocchio seconded the motion. The motion passed unanimously by voice vote.**

### **D. APPROVAL OF THE MINUTES: February 17, 2015**

**Commissioner Pape moved to approve the Minutes of the February 17, 2015 meeting as submitted. Commissioner Chiocchio seconded the motion. The motion passed unanimously by voice vote.**

### **E. COMMUNICATIONS FROM THE FLOOR**

Introductions were made.

Seth Roffman with the *Green Fire Times* was present. He shared the March 2015 edition of the publication. He noted that there is an article by Bianca-Sopoci-Belknap in the current issue. He mentioned that he is looking for miscellaneous content for the upcoming issues. He wants to do an article on the winners of the Sustainable SF Awards for the May issue.

Andy Otto is the Executive Director of the Santa Fe Watershed Association. He said he has a great idea for an article. They are starting a crowdfunding campaign today on the "Adopt an Arroyo" program that is called "Arroyo Rescue de Santa Fe". Starting March 17<sup>th</sup>, the Santa Fe Watershed Association will be launching a crowdfunding campaign to rescue Santa Fe's arroyos from accumulated waste and lead the way to arroyo restoration. Mr. Otto said he also likes to hear what the Commission is working on.

James Corcoran of Santa Fe Veg said he is part of the presentation today about sustainable foods.

Leslie LaKind said she was in attendance today to learn and to support the presenters.

Roxanne Berber said she is a master gardener compost educator and is interested in making life more sustainable. She was in attendance today to listen to the presentation.

Paul Gibson is the presenter on Greenhouse Gas Impacts of Animal-Based Diets. He gave a brief history of his background noting that he has been here a few years and he has been involved with New Energy Economy, with the Community College and with Sustainable Education at Santa Fe High School.

Katrina Rosa said she has a company named “Ecological Studio”. She is an architect that has specialized in sustainability for the last 20 years. She noted that she is new in town and is very interested in seeing what Santa Fe is doing and to see how she can best serve the City.

**F. REPORT FROM, AND ASSIGNMENT OF ACTIONEER**

Commissioner Chiocchio was the Actioneer for this meeting.

Commissioner Chiocchio reviewed the previous Actioneer report. Copies of the previous Actioneer report were included in the Commissioners’ packet.

**G. PRESENTATION – Greenhouse Gas Impacts of Animal-Based Diets**

Mr. Gibson distributed material on food choices and a move from animal-based diets to vegetable-based diets.

Mr. Gibson explained that the 2010 Annual Report from the Sustainable Santa Fe Commission has some very admirable goals related to its commitment to a sustainable future. Many, if not most of the goals relate to greenhouse gas emissions, land use, waste reduction and water conservation. However, there is an absence of any acknowledgement of a very simple strategy through which Santa Fe residents and institutions can have a significant impact upon all of these goals: *Food choice and a move from animal-based diets to vegetable-based diets*. He said, unfortunately, the Commission materials are largely silent about the considerable impact of animal-based agribusiness and animal-based diets upon climate change.

This presentation outlined the impact of animal-based agribusiness upon our planet and the potential impact that individuals can have upon global warming by changing their diet.

Please see Exhibit “G” for the specifics of this presentation.

Mr. Gibson referred to the United Nation Food and Agricultural Organization’s report “Livestock’s Long Shadow, 2006”. It states: *“the livestock sector emerges as one of the top contributors to the most serious environmental problems at every scale from local to global. The findings of this report suggest that it should be a major policy focus when dealing with problems of land degradation, climate change and air pollution, water shortage and water pollution, and loss of biodiversity...the impact is so significant that it needs to be addressed with urgency; and “A 1% reduction in world-wide meat intake has the same benefit as a three trillion-dollar investment in solar energy.”* Chris Mentzel, CEO of Clean Energy.

Mr. Gibson reported on the global warming, greenhouse gas emissions and climate change related to livestock/animal-based agribusinesses. He said by any estimate, animal-based agribusiness is now known to have an even more devastating impact upon global warming and climate change than all transportation and energy costs combined. He said given that the Commission’s 2010 Report identifies reduced greenhouse emissions as a key goal, supporting the reduction of consumption of animal-based foods is entirely consistent with that goal.

Mr. Gibson said reducing municipal water use is another key goal to the Commission. He said in terms of water use, there is no comparison between personal water use, municipal water use or even major fracking operations and that of the animal agribusiness. For every gallon of water consumed in fracking, 250 gallons are consumed in animal agriculture.

Mr. Gibson noted that the Green Chili Cheeseburger we have for lunch requires 660 gallons of water. He said animal agriculture is responsible for 91% of Amazon destruction; nearly half of the contiguous US is devoted to animal agriculture and 30% of the Earth's entire land surface is used by livestock sector. One-third of the planet is desertified (i.e. turned into desert), with livestock as the leading driver.

Mr. Gibson spoke about waste and land use from animal agriculture.

Mr. Gibson mentioned that he, his wife and two adult kids viewed the film "Cowspiracy" and have now changed to being vegetarians. He recommended that the Commissioners view the film.

He said it was time for us to lead and possibly lay the groundwork for a community-wide effort. He said the Sustainability Commission can:

- Post information about animal-based diets and climate change with links to resources that would support individuals and institutions to reduce consumption of animal-based foods;

Mr. Gibson said he and his wife are willing to work with the Sustainability Commission and its staff to add to this.

- Sponsor a screening of Cowspiracy;
- Incorporate goals related to community reduction of animal-based food consumption;
- Encourage Santa Fe institutions to adopt practices that encourage reduced consumption of animal-based food for example, encouraging restaurants, schools and hospitals to develop "Meatless" or Vegan Monday menus;
- Establish a subcommittee to focus on developing more strategies that foster reduced consumption of animal-based foods;
- Advance a community wide initiative to pledge to a range of options for reducing animal-based food consumption and develop an e-list of those committing to being meatless on Mondays (for example).
- Taking the 21-Day Vegan Diet Kickstart that is sponsored by the Physicians Committee for Responsible Medicine.  
(This information is included with Exhibit "G").

James Corcoran said he wanted to add that commercial fishing is nearly as bad and the oceans are expected to be fished out by 2040. They contribute significantly to climate change. He said this was not addressed in this presentation.

Mr. Corcoran noted that he has been a vegan for 27 years now and he feels that this was the best decision of his life.

Chair Sopoci-Belknap asked if there were any comments, questions or suggestions.

Commissioner Hathaway said she would like to start a subcommittee and she offered to chair the subcommittee.

Commissioner Pape said she is in total agreement that industrial ag is a problem but she thinks there are other sides to this story. She said there is someone in our community who has been studying this for many years, Courtney White and he has written two books: *Grass, Soil Hope* and *Major Consequences*. She said if the Commission is going to start this as a topic, she thinks it would be good to get additional viewpoints.

Chair Sopoci-Belknap said she had a couple of thoughts around furthering this discussion. She said she appreciated the list of fantastic resources. However, she feels the resources are heavy on the beef side of things and the impact of cattle and ranching have but maybe the working group/subcommittee could add some resources specifically around white meat. She thinks people may have the similar question or inquiry on the impact of poultry.

She said another thing missing from this is the part of this picture that has to do with social justice. She said there is a tradition here of working with animal husbandry on the land that there could be a lot of resistance from this, especially coming from people who are not from this community. She thinks bridging this gap in a proactive way is the way to go, making sure that there is information out there. She said this is what is making this “politically infeasible”- not having that piece as clearly defined. She feels there is a huge piece of cultural and social justice goals that need to be crossed in order to make this applicable to the whole community. She said the resources could be shared with the community on the Sustainable Santa Fe’s website. She said this topic could be a good thing to do for the *Green Fire Times*. Mr. Roffman agreed.

Chair Sopoci-Belknap said it would be interesting to host a public forum about this and open it up to panelists who may have a different perspective. This is something that the subcommittee could potentially look into.

Commissioner Hathaway thinks there is a social justice issue around what we call “sustainable animal agriculture”.

Chair Sopoci-Belknap said it seems like the next step would be to invite the subcommittee to view the film “Cowspiracy”.

Commissioner Hathaway mentioned that the Santa Fe Community College is having two free showings of the movie on April 1<sup>st</sup>.

## **H. STAFF COMMUNICATIONS**

### **1. 2015 Sustainability Awards and Gala Update**

Ms. Mortimer noted that she did not receive Chair Sopoci-Belknap and Commissioner Chioocchio's nominations but she will double check. If not, they will resend them to her.

Ms. Mortimer said all of the categories have been covered. She will set up a meeting date and location to judge the Sustainable SF Award nominations and will send the date/time to the Commission. Ms. Mortimer, Chair Sopoci-Belknap, Commissioner Schiffbauer and Mr. Roffman will judge the nominations.

Commissioner Schiffbauer noted that the event is scheduled for April 8, 2015 at 5:30 p.m. at La Fonda Hotel.

### **2. Urban Agriculture Policy Update**

Ms. Mortimer reported that the subcommittee of the Water, Land Management and Food Security of the Climate Action Task Force made the recommendation to forward the Urban Agriculture Policy to the Task Force but this has not yet been scheduled. In the meantime, Councilor Bushee wants to weigh in on this and Ms. Mortimer has given her the information to review.

Commissioner Pape said she presented the four different options or models for indoor urban agriculture to the Water, Land Management and Food Security subcommittee. She said she was told that there is no money to do this and she does not know how they can obtain the funding to support this.

### **3. Healthy Food Policies for the Southside Update**

Ms. Mortimer mentioned that the Southside Quality of Life Initiative group for the south side has changed their name to: 1Santa Fe. She noted that the work of the youth group that is pushing for a teen center on the southside is moving along. The Healthy Food Policy is also moving along with the initial partnership with the Farmer's Market Institute. The Farmer's Market got a grant to promote the Southside Farmer's Market and part of the grant is to work with community member to find out what they need to make the Southside Farmer's Market a success.

Ms. Mortimer noted that there has been discussion to move the Farmer's Market after the summer season to Zona because the farmers have produce after the Farmer's Market season ends. She said there is a lot to do before this June, so they are hoping to get this in place for next year.

Commissioner Hathaway will contact Ms. Mortimer about talking to Sue Perry about making a presentation about animal-based diets to the Food Policy Council.



#### **4. SFSWMA**

Mr. Schlachter was unable to attend today's meeting because he had another meeting with a contractor. However, he sent a written report and Ms. Mortimer read his report as follows:

- The Agency released the bid for Recycling and Processing services as recommended by the Solid Waste Assessment. The bids are due on April 10, 2015.
- The contract with the compost site operator is on this month's agenda for the Joint Powers Board. The next step is to get approval from NMED on the contractor's plan prior to operating.
- The Agency will be assessing the possibility of both food waste and food oil (for biodiesel) collection containers at BuRRT on a pilot basis. Mr. Schlachter hopes to have an update on this at the next Commission meeting.
- The City, County and Agency will be pushing forth a backyard composting initiative in the near future.
- The Agency has filed a grant application with the EPA to work with the Public Schools to have the students create videos to teach the community about environmental issues. An update should be available for the June meeting.

#### **5. Mayor's Climate Action Task Force Update**

This agenda item was deleted from the agenda.

#### **6. Sustainability Scorecard Update**

This agenda item was deleted from the agenda.

### **I. DISCUSSION/ACTION ITEMS**

#### **1. SUBCOMMITTEE REPORTS:**

##### **a. Climate Action Task Force Subcommittee Updates**

Commissioner Chiocchio said the Water, Land Management and Food Security subcommittee has been working on a proposal about stormwater and the proposal should be done by the end of the week. The proposal will then go to the Climate Action Task Force.

Commissioner Hathaway said the Energy Efficiency and Renewal Energy working group has been meeting diligently every two weeks for several months because the Mayor has prioritized that this would be the first working group to present to the City Council. The working group came up with six recommendations that would help to scale-up the development and implementation of energy efficiency and renewable energy programs and projects in Santa Fe.

In summary, the working group recommends that the City of Santa Fe:

- 1) Establish goals and benchmarks to reduce citywide energy consumption and greenhouse gas emissions.
- 2) Pursue energy savings performance contracting for city facilities with an Energy Service Company (ESCO).
- 3) Scale-up solar distributed generation projects on city facilities.
- 4) Strengthen and expand energy efficiency programs and solar energy projects in the commercial and residential sectors of our community.
- 5) Educate and inform the public about available programs.
- 6) Utilize creative financing options to pay for programs and projects.

Please see "Exhibit I-a" for the specifics of this presentation.

Commissioner Hathaway noted that the Mayor presented the recommendations to City Council and there were a lot of questions. John Alejandro is drafting up 3-4 resolutions based on the ones that are most straight-forward to get through.

Commissioner Hathaway will send the energy report to the Commissioners.

Commissioner Schiffbauer said the Transportation subcommittee is still working on the fleet analysis, which will probably lead to a pilot project about putting GPS in the city fleet.

Chair Sopoci-Belknap asked if they are looking at different sizes for vehicles.

Commissioner Schiffbauer said yes, this is being folded in.

Chair Sopoci-Belknap encouraged them to look at how the City's fleet can be more efficient.

#### **b. Community Engagement**

This agenda item was not discussed.

### **2. Formation of task force to review the SF Green Code**

Commissioner Hathaway said the Green Building Code committee has requested to start a new task force to review the Santa Fe Green Code to incorporate WERS into the green building code and to review the SF Green Code. Then it will be brought to the next approval process.

Ms. Mortimer said she would be happy to be involved with this. She noted that there is a resolution going through to incorporate or adopt WERS into the green building code. The resolution directs staff to work with the Homebuilders Association on this. This is coming from the Water Conservation group. She suggested that Commissioner Hathaway include staff from the Water Division.

Commissioner Hathaway will talk with Councilor Ives about collaborating on this task force.

**I. ITEMS FROM THE CHAIR**

Chair Sopoci-Belknap said Earth Day is coming up and if anyone would like to volunteer and hang out with the youth at Earth Care on Youth Service Day, they are welcome.

**J. ITEMS FROM THE COMMISSION**

Commissioner Pape mentioned that she sent an email to the Commissioners about the fact that Europe has indicated that 31% of their emissions come from their food systems but later Cornell did a study that said it was 19%. She thinks that some of the numbers that were given on animals were off and some of their research is in question.

Commissioner Chiocchio noted that Homewise has started a loan program/fund called "Sol Fund" for low interest rate loans for families to get solar on their homes.

Commissioner Schiffbauer announced that the second Annual Green Festival that the Green Chamber puts on is scheduled for May 16<sup>th</sup> at El Museo. They are also sponsoring an interview on Cinco de Mayo where the Mayor will interview Robert Redford.

**K. ITEMS FOR THE NEXT AGENDA**

There were no items for the next agenda.

**L. ADJOURNMENT**

The next meeting is scheduled for April 21, 2015 at 2:30 p.m.

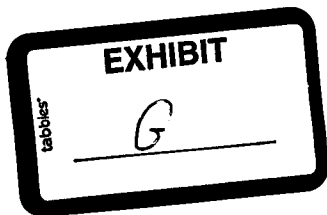
Having no further business to discuss, the meeting adjourned at 4:40 p.m.

Approved by:

  
Bianca Sopoci-Belknap, Chair

Respectively submitted by:

  
Jo Ann G. Valdez, Stenographer



## ***Another Inconvenient Truth***

***That Green Chile Cheeseburger You Had for Lunch Required 660 gallons of water!***

---

### **Sustainable Santa Fe Commission Objectives**

The 2010 Annual Report from the Sustainable Santa Fe Commission has some very admirable goals related to its commitment to a sustainable future. Many, if not most of the goals relate to greenhouse gas emissions, land use, waste reduction and water conservation. But there is an absence of any acknowledgment of a very simple strategy through which Santa Fe residents and institutions can have a very significant impact upon all of these goals: ***Food choice and a move from animal-based diets to ✓ vegetable-based diets.*** Unfortunately, Commission materials are largely silent about the considerable impact of animal-based agribusiness and animal-based diets upon climate change.

This presentation outlines the impact of animal-based agribusiness upon our planet and the potential impact that individuals can have upon global warming by changing their diet.

"The livestock sector emerges as one of the top contributors to the most serious environmental problems, at every scale from local to global. The findings of this report suggest that it should be a major policy focus when dealing with problems of land degradation, climate change and air pollution, water shortage and water pollution, and loss of biodiversity... The impact is so significant that it needs to be addressed with urgency." ~ United Nation Food and Agricultural Organization's report "Livestock's Long Shadow, 2006;"

and

"A 1% reduction in world-wide meat intake has the same benefit as a three trillion-dollar investment in solar energy." Chris Mentzel, CEO of Clean Energy----

### **Global Warming and Green House Gas Emissions**

***In 2006, the UN calculated that the combined contribution to climate change emissions of animals bred for their meat were about 18% of total global emissions – more than the 13% of total emissions caused by cars, planes and all other forms of transport put together.*** (The U.N.'s Livestock's Long Shadow report, 2006)

***The 18% figure developed by UN scientists in 2006 was revised upward in 2009 to more than 51% by two World Bank scientists.*** (Goodland, R Anhang, J. "Livestock and Climate Change: What if the key actors in climate change were pigs, chickens and cows?")

***It isn't just methane--livestock is responsible for 65% of all emissions of nitrous oxide – a greenhouse gas 296x more destructive than carbon dioxide and which stays in the atmosphere for 150 years.***

"Livestock's Long Shadow: Environmental Issues and Options." Food and Agriculture Organization of the United Nations. 2006.

By any estimate, animal-based agribusiness is now known to have an even more devastating impact upon global warming and climate change than all transportation and energy costs combined. Given that

the Commission's 2010 Report identifies reduced greenhouse emissions as a key goal, supporting reduction of consumption of animal-based foods is entirely consistent with that goal.

## WATER USE

Many Santa Fe residents go to great lengths to reduce their water use and to capture rainwater. Reducing municipal water use is a key goal of the Commission. But in terms of water use, there is no comparison between personal water use, municipal water use or even major fracking operations and that of the animal agribusiness.

**Personal water use.** The average American consumes only 80 gallons of water per day in their home, this translates into roughly 29,000 gallons per year, per Santa Fe resident.

**Fracking (hydraulic fracturing)** water use ranges from 70-140 billion gallons annually.

("Draft Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources." EPA Office of Research and Development. United States Environmental Protection Agency, 2011.)

**Animal agriculture** use ranges from 34-76 trillion gallons of water annually. (Pimentel, David, et al. "Water Resources: Agricultural And Environmental Issues." BioScience 54, no. 10 (2004): 909-18.)

A chart can't even capture the difference between the amount of water consumed through fracking and animal agriculture, but imagine this. **For every gallon of water consumed in fracking, 250 gallons are consumed in animal agriculture.** Put another way, **just the process of growing feed crops for livestock consumes 56% of water in the US.** ("USDA ERS – Irrigation & Water Use." United States Department of Agriculture Economic Research Service. 2013.)

According to the EPA:

**One hamburger requires 660 gallons of water to produce – the equivalent of 2 months' worth of showers.** (Catanese, Christina. "Virtual Water, Real Impacts." Greenversations: Official Blog of the U.S. EPA. 2012); And

**2,500 gallons of water are needed to produce 1 pound of beef.** (Robbins, John. "2,500 Gallons, All Wet?" EarthSave.)

**Put another way, the average garden hose emits 6 gallons of water per minute. So a Santa Fe resident would have to stand outside running his hose on high for almost two hours to equal the amount of water used to produce just one of those green chile cheeseburgers. And it isn't just meat. All Animal-Based Diets rely upon shocking levels of water consumption.**

- **477 gallons of water are required to produce 1 pound of eggs; 900 gallons of water are needed for one pound of cheese.** (Environmental Working Group).
- **1,000 gallons of water are required to produce 1 gallon of milk.** ("Water trivia facts." United States Environmental Protection Agency.)

**When the average consumer of meat, dairy, and fish changes to a vegan diet, he or she will save 1.2 million gallons of water per year.... You could run your shower 24 hours a day, 365 days a year and not use that much water. And then there is the methane and degradation of open land. Think about it.**

## LAND USE

Land use is a major concern in New Mexico and New Mexican's are inordinately protective of their open land. And the first page of this report quotes the Commission as being fully committed to a sustainable local food system and healthy open land. But most of us do not appreciate the degree to which land degradation is the result of animal-based agribusiness, especially beef production. And there are hidden costs that go well beyond degradation of land.

***Animal agriculture is the leading cause of species extinction, ocean dead zones, water pollution, and habitat destruction.*** (Oppenlander, Richard A. Food Choice and Sustainability: Why Buying Local, Eating Less Meat, and Taking Baby Steps Won't Work. Minneapolis, MN: Langdon Street, 2013, as published by the EPA in "What's the Problem?" United States Environmental Protection Agency.

To provide a glimpse of the real cost of those Big Macs, Whoppers and even our beloved Green Chile Cheese Burger, consider that:

- ***Animal agriculture is responsible for 91% of Amazon destruction.*** (Oppenlander, Richard A. Food Choice and Sustainability: Why Buying Local, Eating Less Meat, and Taking Baby Steps Won't Work. Minneapolis, MN : Langdon Street, 2013. And Margulis, Sergio. Causes of Deforestation of the Brazilian Rainforest. Washington: World Bank Publications, 2003)
- ***Nearly half of the contiguous US is devoted to animal agriculture and 30% of the Earth's entire land surface is used by the livestock sector.*** (Versterby, Marlow; Krupa, Kenneth. "Major uses of land in the United States." Updated 2012. USDA Economic Research Service.)
- ***Land required to feed 1 person for 1 year:***
  - Vegan: 1/6th acre
  - Vegetarian: 3x as much as a vegan
  - Meat Eater: 18x as much as a vegan ("Our food our future." Earthsave. <http://www.earthsave.org/pdf/ofof2006.pdf>)
- ***1/3 of the planet is desertified (i.e. turned into desert), with livestock as the leading driver.*** (UN News Centre, 2006. "UN launches international year of deserts and desertification.")
- ***In New Mexico, just one ranch, Bell Ranch, is over 290,000 acres with over 100,000 head of cattle.*** While there is certainly a large number of small, 'sustainably' grazed ranches, the vast majority of NM ranching is agribusiness, pure and simple. And sustainably raised, local meat still is shipped hundreds of miles to be butchered and packaged. What's more, locally raised and grass fed beef takes longer to reach market weight and so actually consume mores water and emits even more methane than beef produced by large agribusiness. Another inconvenient truth about our animal-based diets.

## WASTE

Here in Santa Fe, we have many residents who work hard to reduce their waste. The school district has an initiative to reduce food waste from their cafeterias. The City is always seeking ways to reduce residential waste. But:

- ***A farm with 2,500 dairy cows produces the same amount of waste as a city of 411,000 people.***

("Risk Assessment Evaluation for Concentrated Animal Feeding Operations." U.S. Environmental Protection Agency – Office of Research and Development. 2004.) ***NM's single largest ranch grazes over 100,000 cows who produce more waste than all the residents of the State of NM combined. One ranch.***

- ***Cows produce 150 billion gallons of methane per day.*** (Ross, Philip. "Cow farts have 'larger greenhouse gas impact' than previously thought; methane pushes climate change." International Business Times. 2013).
- ***130 times more animal waste than human waste is produced in the US – 1.4 billion tons from the meat industry annually. 5 tons of animal waste is produced for every American.*** (Animal agriculture: waste management practices. United States General Accounting Office.)

And as bad as the above picture is, the population of the earth in 1912 was 1.5 Billion, and 7 Billion in 2012. But by 2050 it is projected to reach 9.6 Billion. There simply is not enough land, water, or grain to feed livestock to produce the meat, poultry, milk, and cheese that this growing population will want to consume. And even if there were, the waste from that level of livestock would choke the earth. The math just doesn't work. Neither does the science. Something has to change. Thankfully, there is a relatively easy, if inconvenient, solution.

## **SO WHAT CAN WE DO?**

My wife and I, with two of our three adult kids, watched Cowsspiracy just before New Years. While the research cited above draws from that film and its sources, this report has gone beyond Cowsspiracy to use research from the UN, World Bank, FDA, and other highly credible sources. Nonetheless, I highly recommend all Commissioners begin by viewing that film.

Our family is very progressive and very involved in the climate change advocacy. We are very well informed when it comes to climate change.

But this film floored all of us. The evidence was incontrovertible. If you cared about the planet, eating cheeseburgers made no sense. The meat grinder needed to go. All four of us have changed to being vegetarians and Roxanne and I are very close to 100% vegan since January 1. Collectively the change the four of us have made has had far more impact on climate change than if we had all given up our cars and forgone any form of coal-based transportation.

But let's face it. Making this kind of change is not easy. Most folks love their comfort foods and can't imagine a week, much less a lifetime without meat, fish or dairy products. But the evidence is pretty incontrovertible: continuing to choose to eat meat is like going out and purchasing a car that gets 5 mpg. It makes no sense no matter how inconvenient the truth. So, after the initial shock, our reaction was-- We can do this. And when we do this, we actually will be having a significant impact.

### ***So what can we do as a City to foster change among our residents?***

Yet last year, Rajendra Pachauri, chairman of the U.N. Intergovernmental Panel on Climate Change, suggested that the most useful step ordinary citizens could take to help combat climate change would be to stop eating meat. You would think that after this recommendation, a flood of cities would have taken leadership roles in encouraging residents to change their diet. And indeed we are beginning to see signs of communities working on this issue:

Delaware's governor has just declared March 20th a Meatout day for the state.

So have the mayors of:

Tacoma (WA), San Antonio (TX), Pompano Beach (FL), Pembroke Pines (FL), Titusville (FL), Gainesville (FL) and Farmington Hills (MI)

But the list is not long and there is a critical need for leadership from some city that wants to develop a sustained and comprehensive initiative. Enter the City Different. While it is likely too late for a formal declaration by the Mayor or City Council by the 20<sup>th</sup> and certainly too late to mount anything like a community initiative related to it, we can plant the seeds for future advocacy, policy and action.

It is time for us to lead and possibly lay the groundwork for a community-wide effort. But what can you do? The Commission and the City has already identified water and land preservation and reduced greenhouse gas emissions as critical goals to achieve a sustainable future. You have just heard how catastrophically animal-based agriculture undermines those goals. You have also heard how incredibly powerful we all are and how impactful any change we make in our diet can have on our climate and our sustainability. And the Sustainability Commission has its own goals and objectives that are 100% consistent with supporting and even leading a community effort to reduce consumption of animal-based food. So what can the Commission and its Commissioners do?

***The Sustainability Commission can:***

- Post information about animal-based diets and climate change with links to resources that would support individuals and institutions to reduce consumption of animal-based foods;
- Sponsor a screening of Cowspiracy; (see below for a sampling)
- Incorporate goals related to community reduction of animal-based food consumption;
- Encourage Santa Fe institutions to adopt practices that encourage reduced consumption of animal-based food, for example, encouraging restaurants, schools and hospitals to develop 'Meatless (or Vegan) Monday Menus;
- Establish a subcommittee to focus on developing more strategies that foster reduced consumption of animal-based foods;
- Advance a community wide initiative to pledge to a range of options for reducing animal-based food consumption and develop a e-list of those committing to:
  - Being meatless on Mondays;
  - Being Vegan on Mondays;
  - Taking the 21 Vegan Kick-Start;
  - Becoming vegetarian for dinner
  - Becoming vegan for dinner; and
  - Any number of other variations on the theme. The key being to provide an array of options and structures and supports that help people make a change, at first, most any change, and then provide sustained support to increase their commitment.

The website <http://www.meatlessmonday.com/meatless-monday-k-12/> has recipes, weekly menus, articles about the benefits of vegetable-based diets, and models for implementation in schools, restaurants, hotels, food institutions, and hospitals..



***Sustainability Commissioners can show leadership and personally commit to:***

- Viewing the film Cowspiracy (available for download at [cowspiracy.org](http://cowspiracy.org));
- Pledging to a year of 'meatless' or 'vegan' Mondays;
- Taking the 21-Day Vegan Kickstart sponsored by the Physicians Committee for Responsible Medicine---Starting every 1<sup>st</sup> of the month, the PCRM provides menus, shopping lists and daily inspirational messages of support from celebrities;

The 21-Day Vegan Kickstart is not for everyone ....at least not as a first step, but it is a great place to begin for many people who may have been vegetarian or had been considering trying a vegan diet. It is also very possible that people who are only in the 'contemplative' phase could use the 21-Day Kickstart flexibly, adhering to the framework for 1 or 2 meals a day or 3-4 days a week. And, of course, it can be used to launch exploring a vegan diet completely.

Becoming a vegan or a vegetarian is not something one needs to do 100% or immediately. Whatever approach the Commission and its Commissioners advance, should have options for community members to start where they are comfortable. Getting a significant proportion of the City to reduce their meat intake by 10-25% would be a great start and using that success to encourage greater change would have still more impact.

And this isn't just about Santa Fe. Anything that we can do to encourage this shift throughout our community can be used as a model by others. That is what makes The City Different so unique. Places like Santa Fe, Berkeley, Burlington, Boulder and other 'different' cities advance policies and practices while others are not even considering them. Once these different cities demonstrate success and the community understanding of the issues at stake and the research supporting the need for change, gain traction, these models are in place. Hence California took a leading role in advancing tobacco prevention, Boulder is taking a lead in energy municipalization, Santa Fe and the Community College on a range of sustainability efforts related to green building codes, biofuels, and other sustainability issues. This is our opportunity to lead again. But to jumpstart this effort requires City leadership. And given the unique role of the

There are many resources out there that can help people make a gradual shift, starting with one or two days a week and building competence and capacity. As you start to experience the joy of a delicious vegetarian or vegan meal and you begin to develop replacements for beef, chicken milk and cheese, you will gain more confidence. You will also know you are having a huge impact....and a couple of bonuses: Our food bill has been cut by 25% and I've lost 12 pounds since January 1. So while the vegan or vegetarian diet is good for the planet, it is also good for your health and your wallet.

My wife and I are willing to work with the Sustainability Commission and its staff to develop content for web presence related to the relationship between dietary choices and climate change. A very preliminary list of resources and websites with research, recipes and other resources follows.

Thank you.

---

## Resources and Research

---

The list of resources below is only a fraction of what is available and I am prepared to devote more time to organizing that information and helping the Commission make it available to the public.

A great 12-minute video on the impact of animal-based diet on climate. Appropriate for children as there are no graphic images of animal slaughter.

<http://veganvideo.org>

Worldwatch.org presents a very good summary of research on the impact of animal-based food production with multiple scientific citations. "Is Meat Sustainable: Now its not personal but Like it or Not, Meat Eating is Becoming a Problem for Every Person on the Planet."

<http://www.worldwatch.org/node/549>

The website <http://www.meatlessmonday.com/meatless-monday-k-12/> has recipes, weekly menus, articles about the benefits of vegetable-based diets, and models for implementation in schools, restaurants, hotels, food institutions (hospitals), etc.

This site has both information about animal cruelty, climate issues, and a huge array of vegan recipes and resources that make it easier to go vegan. Also has a daily blog: Green Monster Mail.

<http://Onegreenplanet.org>

Within Onegreenplanet.org is a step-by-step guide to transitioning to a vegan diet. This is a great resource if you only want to try to eat vegan one or two days a week. The short article recommends who to think about eating more vegan and has links to tons of recipes.

<http://www.onegreenplanet.org/vegan-food/step-by-step-guide-how-to-transition-to-vegan-diet/>

This website projects the potential cost savings resulting from moving from being a meat eater, to pescaterian, to vegetarian to vegan. It projects annual savings of over \$1280 per person by moving to a vegan diet.

[http://www.learnvest.com/knowledge-center/do-vegetarians-save-money/#pid-2775\\_aint-0](http://www.learnvest.com/knowledge-center/do-vegetarians-save-money/#pid-2775_aint-0)

Vegan Meet-up Santa Fe is a great source of support for folks who are just starting to try a vegan diet. With vegan pot lucks at 6pm the first Friday of every month at the Whole Foods Community Room at 1090 St. Francis, the Vegan Meet-Up is a great way to meet other vegans, share food and recipes and learn more from others.

<http://www.meetup.com/Santa-Fe-Veg/>

### Websites for Recipes and Vegetarian – Vegan Resources and Supplies

**Green Kitchen Stories.** A web site and blog with amazing recipes. Ever had a beet-burger? Don't cringe. No one on earth enjoyed a charbroiled hamburger more than me. I even got a meat grinder for my birthday one year so we could grind our own burgers. GKS has a recipe for a beet burger that is standard fare at our home now. We ate them even before going vegan.

<http://www.greenkitchenstories.com>

**My New Roots.** More recipes and a weekly blog.

<http://www.mynewroots.org/site/>

***Oh She Glows.*** More yummy recipes.  
<http://ohsheglows.com>



# Vegetarian starter kit

\* Original, in its entirety, is available  
in the clerk's office \*

the whys and hows  
of a healthier diet

the **new**  
four food groups  
guidelines

useful tips  
for beginning a  
vegetarian diet

delicious low-fat,  
no-cholesterol  
recipes

Instructions



**21-DAY**  
**VEGAN**  
**KICKSTART**  
REVOLUTIONIZE  
YOUR DIET

[DayKickstart.org](http://DayKickstart.org)



ORIGINAL,  
ENGLISH



INDIA,  
ENGLISH

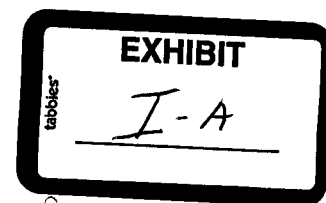


中文  
CHINESE



ESPAÑOL  
SPANISH

FREE  
ONLINE PROGRAM



# City of Santa Fe, New Mexico

## memo

**DATE:** February 25, 2015

**TO:** Mayor Javier M. Gonzales  
Councilor Patti Bushee  
Councilor Signe Lindell  
Councilor Joseph Maestas  
Councilor Peter Ives  
Councilor Carmichael Dominguez  
Councilor Chris Rivera  
Councilor Ron Trujillo  
Councilor Bill Dimas

**FROM:** Santa Fe Climate Action Task Force

**SUBJECT:** Energy Efficiency and Renewable Energy Programs and Projects Recommendations

---

### SUMMARY

On December 29, 2014, Mayor Javier Gonzales requested that the Climate Action Task Force submit a report with a list of recommendations that would help to scale-up the development and implementation of energy efficiency and renewable energy programs and projects in Santa Fe.

The City of Santa Fe is committed to protecting the long-term health and viability of the community through strategies designed to reduce greenhouse gas emissions and mitigate the effects of climate change, and as such, has passed resolutions calling for Santa Fe to attain carbon neutrality by 2040; reduce greenhouse gas emissions by 2030; and reduce the carbon footprint of City government on the environment by a total of 20 percent by 2013, which has been achieved.

Over 20 members of the Energy Efficiency & Renewable Energy (EERE) and Finance working groups of the task force, comprised of environment, energy and finance professionals have been meeting over the last several months and have developed the following recommendations to help assist in achieving those goals. Many of them can be undertaken within the next six months and fully implemented by the end of the year.

In summary, the task force recommends that the City of Santa Fe:

1. Establish goals and benchmarks to reduce citywide energy consumption and greenhouse gas emissions.
2. Pursue energy savings performance contracting for city facilities with an Energy Service Company (ESCO).
3. Scale-up solar distributed generation projects on city facilities.
4. Strengthen and expand energy efficiency programs and solar energy projects in the commercial and residential sectors of our community.
5. Educate and inform the public about available programs.
6. Utilize creative financing options to pay for programs and projects.

It is the goal of the task force to identify the types of strategies and programs the City should consider undertaking to create a healthier, more resilient, adaptable, and vital community, in order to protect the environment and accelerate the advancement of its economy.

The Climate Action Task Force appreciates the opportunity to present the recommendations in this report.

## **RECOMMENDATIONS**

### **I. ESTABLISH GOALS AND BENCHMARKS TO REDUCE ENERGY CONSUMPTION & GREENHOUSE GAS EMISSIONS**

For the last several years, the energy use of all City facilities have been tracked, so baseline data from which to improve upon has been established. Additionally, the Sustainable Santa Fe Commission has been evaluating and quantifying a host of energy and environmental metrics, helping to establish baseline data for the entire city of Santa Fe which can also be used to track annual progress the city makes in those areas. Important next steps will be for City staff to develop a baseline of Greenhouse Gas (GHG) emissions from all sources (buildings, transportation, waste, land use, etc.) to gain greater insight into Santa Fe's sustainability indicators, work with the Climate Action Task Force and its working groups to establish energy and greenhouse gas reduction targets, and then identify the best opportunities to achieve them.

Two immediate opportunities for furthering the reductions of energy use, and by extension GHG emissions, are to:

- **Continue tracking and making energy improvements to city-owned buildings and facilities.** A goal of having at least 10 city buildings achieving Energy Star Certification by the end of 2015 should be established, continuing to demonstrate that the city is leading the community by example.
- **Institute a program of Building Energy Performance Reporting.** Portland, Oregon, Washington DC, New York State, and many cities in California have instituted local ordinances that require all owners of commercial buildings over a minimum size to track and report their building's energy use. Establishing this type of a program emphasizes the importance of energy efficiency in buildings, and demonstrates to owners proof that inefficient buildings waste energy and money,

reinforcing the notion that “energy hogs” may not retain their value and be undesirable for potential tenants to lease, thus encouraging them to invest in energy efficiency and renewable energy technologies.

#### Actionable Items and Timeline:

1. Evaluate all City Buildings through the use of the Energy Star Portfolio Manager and evaluate buildings against Energy Star Benchmarks: Current
2. Conduct a GHG emissions inventory for Santa Fe and develop metrics to assist in prioritizing reduction opportunities: March
3. Establish a goal of at least 10 City Buildings to achieve Energy Star Certification and get Energy Star Plaques for 2015: March
4. Develop a Building Energy and Water Performance Reporting pilot project, starting with the hospitality industry (this sector is already familiar with green buildings through the Green Lodging Initiative), to track energy and water use. If this pilot is successful, then City Council can consider an ordinance requiring commercial buildings over a minimum size to report energy performance: April

## II. PURSUE ENERGY PERFORMANCE CONTRACTING

Energy performance contracting is a tried and proven approach in identifying cost savings associated with energy use and building performance. It has been widely used in federal, state and local government projects across the nation for the past three decades. By entering into an energy performance contract with an Energy Service Company (ESCO), the City would be able to identify and evaluate potential energy savings throughout its facilities, and then install a variety of highly efficient energy and water saving equipment, and other energy-saving measures such as renewable energy and geothermal technologies, smart energy controls and alternative fuels to achieve such savings. The resulting cost savings from the reduction of energy used by the facilities pays for the entire cost of the project over time. Projects are financed through alternative funding vehicles by a financing company over a period up to 25 years. The ESCO guarantees that annual cost savings will meet or exceed annual financing payments. If savings are not realized, the ESCO pays the difference, as prescribed in a measurement and verification protocol detailed in the contract.

The City of Santa Fe has been invited by the New Mexico Department of Energy, Minerals and Natural Resources (EMNRD) to participate in its Local Energy Efficiency Performance (LEEP) process, using energy performance contracting to greatly increase City investments in energy efficiency and renewable energy measures at City-owned buildings, facilities and processes. The program 1) guides the City through the process, including initial energy audits with state-qualified ESCOs and subsequent contract negotiation; 2) benchmarks building energy use; and 3) provides a State certified third-party reviewer for energy audits and measurement and verification for any implemented clean energy measures.

A memorandum of agreement (MOU) outlining the program and the assistance provided by the State has been drafted by EMNRD for the City’s review. The State is also in the process of pre-qualifying up to seven ESCOs that would be able to provide services. Should the City decide to pursue performance contracting with assistance from the State, the MOU must be entered into, and an ESCO would then be selected by the City, based on a variety of criteria.



The ESCO is responsible for performing an investment grade energy and water audit to identify potential energy savings from facility and mechanical improvements, in addition to identifying any renewable energy technologies that could also be implemented to help improve energy cost savings. Based on the results of the energy audit, the ESCO then develops the project and guarantees both the energy and cost savings of the project. If acceptable, the City would then enter into a fixed price contract with the ESCO, who would finance the energy improvements, typically over a 20 to 25-year period; the cost savings of the project pay for the energy improvements. Qualified Energy Conservation Bonds (QECBs, discussed in more detail under Section VI) can be utilized by the City to buy down the interest rate on the financing.

Successful implementation of this project could save Santa Fe taxpayers over \$600,000 in natural gas and electricity bills from the energy efficient and/or renewable energy investments used to power its buildings, facilities and processes. Such investments will also help to reduce carbon emissions through the reduced consumption of fossil fuel-based electricity, create local jobs, and improve the indoor environments of public buildings utilized by the public and City employees.

#### **Actionable Items and Timeline:**

1. City Council request staff to pursue performance contract project, execute State MOU for assistance from EMNRD: February
2. City staff to identify city facilities as potential candidates for program participation, including, but not limited to, the Genoveva Chavez Community Center and the Santa Fe Wastewater Treatment Facility: March
3. City staff to engage ESCO and start performance contracting process: April
4. Consider adding energy control smart devices to City buildings and provide incentives for their use in the private sector to provide real time feedback on energy use (long-term): TBD
5. Require city building operators and facility managers take the Building Operator Certification; through its existing BOC program, PNM pays a majority of the costs involved for qualifying participants: TBD

### **III. SCALE-UP SOLAR DISTRIBUTED GENERATION PROJECTS ON CITY FACILITIES**

The City has made great strides in installing solar energy systems on its facilities. It should continue to pursue the installation of solar systems, particularly if the City chooses to pursue performance contracting, as solar arrays can be designed and implemented as part of the performance contract itself.

The City should pursue the goal of adding 2 megawatts (MW) of solar energy to its inventory by 2016, delivered through the installation of systems:

- That are 100 kilowatts (kW) in size, when possible and feasible.
- On leased facilities, such as the Santa Fe University of Art and Design, which are master-metered and have great potential to be solarized;
- For moderate to low-income multi-family residential units and on affordable housing, through a community solar program; and,
- In collaboration with other entities such as the Santa Fe Public Schools.

#### Actionable Items and Timeline:

1. Identify potential locations/facilities for new solar systems: **Currently**
2. Develop community solar program: **February**
3. Create a database of potential land sites for solar systems of 100 kW, including potential locations in City, County and State, and community colleges and on private land: **March**
4. Identify financing mechanisms, such as Clean Energy Revenue Bonds (CERBs) or QECBs, to fund solar at schools for school consumption: **April**

#### IV. STRENGTHEN AND EXPAND ENERGY EFFICIENCY PROGRAMS AND SOLAR ENERGY PROJECTS IN THE COMMUNITY

Although the City of Santa Fe has been successful at implementing solar energy systems on its facilities and should continue to do so, and although it may stand to benefit from garnering additional energy savings from its facilities by entering into a performance contract with an ESCO, it should also focus on identifying ways to create an appetite in the commercial and residential sectors for energy efficiency and renewable energy programs and projects. Keys to making this a success are:

1. The establishment of public-private partnerships to either strengthen and expand existing programs, projects and financing mechanisms, or develop new ones that all Santa Feans may equally benefit from;
2. The development of an aggressive public education, outreach and marketing campaign (as discussed in Section V); and,
3. Continuing to advocate for and/or against local and state policies, programs, and regulations that have a positive and/or negative impact on the growth of the energy efficiency and renewable energy industries.

The current rate case that PNM has filed with the Public Regulation Commission (PRC) includes a distributed generation access fee and elimination of the solar banking option. Based upon that filing, the market size for the solar market has been projected by PNM to be 21 megawatts (MW) installed in the system for 2014, 2015, and 2016, or 7 MW per year. Further, PNM projects for years 2017-2021, only 1 MW per year of new solar would be installed (ref: 14-00332-UT rate case schedule P-11, pages 1 and 2, PRC rate case hearing). According to the U.S. DOE Lawrence Berkeley Labs document titled, "Tracking the Sun Report," published in September 2014, the average cost for a solar installation of less than 10 kilowatts (kW) is \$4.70 per kW. If the market size were to drop from 7 MW per year to 1 MW per year, the economic impact will be a \$28.2 million reduction in the size of the solar industry within PNM's service territory. The EERE and Finance Working Groups of the CATF believe that the City should oppose any policy that would have such a negative impact on the local economy, the renewable energy industry, and the environment.

Additionally, the CATF recommends the city oppose the PNM rate increase.

Energy efficiency programs can help all citizens, particularly moderate to low-income individuals and families, lower their energy use, save money on their electricity bills, and become more environmentally

responsible. Access to existing and new programs is critical to achieving Santa Fe's energy and sustainability goals.

Specific to solar energy, Table 1 located in the appendix reflects figures that support the notion that solar electricity can create significant economic development opportunities in Santa Fe, as it has achieved grid parity with fossil fuel-based electricity. As such, bold goals for solar on residential rooftops should be established by the City, in addition to the types of incentives and/or programs that can help increase the number of systems installed in the community.

#### Actionable Items and Timeline:

1. Develop a program to provide increased funding to Homewise and other qualified entities (via tapping \$6M of the City's Water Utility Reserve Fund, bonds, QECBs, or other mechanisms) to increase energy efficiency programs and the installation of solar systems in the community: February
2. Explore ways to support cost effective options for solar energy purchasing and leasing, and making residential solar more affordable: March
3. Explore solar leasing programs with no money down for low-income families, and ways to mitigate risk for extreme low income populations: March
4. Identify opportunities to streamline solar installation permitting within the city: March
5. Create incentives for the use of smart energy control devices to provide real time energy information: March
6. Research the existing studies about how effective energy efficiency programs, such as the Federal Low Income Weatherization Program and the Low-income Home Energy Assistance Program (LIHEAP), have been in meeting the needs of low-income families, and determine how to augment such resources for fixed income Santa Feans: March
7. Provide energy efficiency assistance to low-income families through partnerships with New Mexico Gas Company, PNM and nonprofit providers such as International Center for Sustainable and Appropriate Technology: March
8. Identify programs administered by the Mortgage Finance Authority to assist low-income families with energy efficiency measures: April
9. Hold a Summit for banks and solar companies to look for cost effective leasing/financing option for solar DG: April
10. Work with solar companies to find out how to increase installations: April
11. Research existing rebate programs, such as the City water rebate program, to emulate when creating ways to incentivize and encourage the purchase of energy efficiency appliances (Energy Star): May
12. Initiate discussion with Historic Review Panel to take advantage of energy efficiency and renewable energy opportunities: June
13. Consider measures to discourage large households' excessive use of water and energy: June
14. Marketing: City of Santa Fe to support solar and energy efficiency marketing efforts (also included in Section V Education, below): July
15. Advocate for the extension of state tax and federal solar income tax credits, set to expire at the end of 2016: Ongoing

## **V. EDUCATE AND INFORM THE PUBLIC ABOUT AVAILABLE PROGRAMS AND THE COST-EFFECTIVENESS OF SOLAR AND ENERGY EFFICIENCY MEASURES**

To help ensure the success of the programs and projects recommended in this document, it will be important to inform and educate the public and commercial building owners about the benefits of embracing and implementing energy efficiency measures and installing solar energy systems on their homes or buildings. Moderate to low-income populations should be a specific focus of any education campaign undertaken, as the benefits of such energy programs have a tremendous impact on their household's bottom line.

An aggressive, well-funded advertising, marketing and technical assistance campaign would help make homeowners and business owners aware of the types of energy efficiency programs available to them, in addition to better understanding the cost-effectiveness and benefits of installing a solar energy system.

Educating and informing the public about the cost-effectiveness and benefits of solar power is especially important over the next fiscal year, as the 30% federal income tax credit and the 10% state tax credit for solar system installations expire at the end of 2016. Those tax credits, when combined with favorable financing, can make a solar system cash neutral, or even cash positive, from the first month of system ownership.

In 2014, the City Council adopted Resolution No. 2014-48 and the County Commission adopted Resolution 2014-49, establishing a cooperative "Solarize Santa Fe!" public outreach, marketing and technical assistance initiative (Attachment A in the appendix), however, funds were not allocated by the City to the effort in FY14-15.

Much like the City's Water Conservation Program which received \$60,000 in FY14-15 to implement its marketing campaign, consideration should be given to allocate \$30,000 in FY15-16 towards establishing a joint City-County public information campaign focused on "Solarize Santa Fe!" and energy efficiency programs. With an equal amount of funding contributed by Santa Fe County, a sufficient amount of resources will be achieved, providing for a visible, persistent campaign over the course of a year.

Lastly, developing a partnership with Santa Fe Public Schools to explore how to best integrate energy and environment education into the schools should be taken into special consideration. Such a program can be a resource and channel for not only educating children, but also their parents about the advantages of energy efficiency and renewable energy programs.

### **Actionable Items and Timeline:**

1. In partnership with the County, allocate \$30,000 in FY15-16 to create a public information campaign focused on energy efficiency programs, "Solarize Santa Fe!," the benefits and affordability of solar energy, and the financing mechanisms that can increase number of solar installations: May-June
2. Work with solar companies to identify what they need from the City beyond an ad/marketing campaign to increase installations dramatically: April
3. Partner with Santa Fe Public Schools to explore educational programs in schools: May

## VI. UTILIZE CREATIVE FINANCING OPTIONS

Funding any and/or all of the programs and projects recommended is critical to making them a reality. In particular, identifying unique sources of funding can help broaden the pool of resources the city can leverage when developing any of its programs. From crowd-sourcing to federal grants to unique bond offerings, all financing mechanisms should be explored. A matrix of such solutions is located at the end of this section; however, two specific sources of funding are highlighted and summarized here.

### Qualified Energy Conservation Bonds (QECB)

QECBs: Local governments can seek approval of the State Board of Finance for interest-rate buy downs on bonds floated through the bond market to provide low cost financing to pay for either 1) reducing energy consumption in publicly owned buildings by at least 20 percent; 2) implementing green community programs; or, 3) backing rural renewable electricity projects.

Traditional bonds may be used by state, local and tribal governments to finance certain types of energy projects. CHP systems that use municipal solid waste or biomass as feedstock appear to be eligible, in addition to fuel cells and micro-turbines. However, QECBs can be used for a variety of purposes, including community energy conservation programs. A maximum of 30% of QECB allocations may be used for private activity purposes. There is no expiration date for QECBs and they can be issued as long as there is an available allocation.

Currently, there is \$20M allocated to the State from Federal subsidies for use with QECBs; the State Board of Finance approves applications for QECBs.

### Property Assisted Clean Energy (PACE)

PACE programs help business owners pay for the upfront costs of energy efficiency retrofits or the use of renewable energy technologies, which the property owner then pays back by agreeing to increase their property taxes by a set rate over about 20 years. This allows property owners to begin saving on energy costs while they are paying for their energy improvements. This usually means that property owners have net gains even with increased property tax. A challenge with PACE funding is lien priority; PACE loans are subordinate to the primary mortgage, however, the loans can be taken over at the time of sale. It is recommended that the use of PACE funds be focused on commercial owner-occupied projects.

Santa Fe County has already created a Special Assessment District for PACE. By State statute, only renewable energy projects are covered under this financing mechanism; energy efficiency measures cannot.

### **Actionable Items and Timeline:**

1. **Identify approximately \$4-5M in energy efficiency and renewable energy projects that can utilize QECBs, such as performance contracting with an ESCO: February/March**
2. **Create a pilot project with Homewise or other qualified financing institutions to design and implement an energy efficiency and/or renewable energy program for homeowners, leveraging QECBs: March**

3. Partner with Santa Fe Public Schools to identify potential use of QECBs to fund solar and efficiency projects at schools: April
4. Once a project has been identified and developed, work with the City Council to pursue the use of QECBs via resolution: April
5. Investigate the development of commercial PACE program with the County, which would include the possibility of using QECBs as a source of funding: May
6. Meet with solar companies to help identify additional finance mechanisms that would be attractive to commercial entities: May
7. Educate commercial property owners as to the benefits of adding energy efficiency and renewable energy to their properties: TBD
8. Initiate a joint resolution with the County to support the use of PACE funding for energy efficiency and renewable energy projects: TBD

### FINANCING MATRIX

ACTIONABLE ITEMS	POTENTIAL FUNDING SOURCES									
	ESCO	BONDS (G.O., CERB, QECCB, etc.)	PACE	ON-BILL FINANCING	PPA	PRIVATE SECTOR	NONPROFIT SECTOR	FEDERAL FUNDS	IMPACT INVESTING	CROWD SOURCING
<b>Section I</b>										
Develop a Building Energy and Water Performance Reporting Pilot Project	X	X	X			X	X	X		X
<b>Section II</b>										
Pursue Energy Performance Contracting	X	X			X					
<b>Section III</b>										
Scale-up Solar on City Facilities	X	X			X			X		
Develop Community Solar Program				X	X	X	X			X
Partner with Schools to Fund Solar Projects		X			X	X	X	X	X	X
<b>Section IV</b>										
Increase Energy Efficiency Programs with Third Party		X	X	X		X	X	X	X	X
Incentivize Use of Smart Energy Controls			X	X		X	X	X		
Provide EE Assistance to Low-income Population				X		X	X	X		X
<b>Section V</b>										
Create Public Information/Education Campaign on EE and Solarize Santa Fe!						X	X (City & County Govt.)			X

## APPENDIX

Table 1: Potential Economic Stimulus Impact of Achieving a Goal of 10,000 Residential Solar Energy Systems in Santa Fe

Number of current customers	762
Total kW installed	3,250
Avg. size per customer current	4.265091864
Households	50,000
Penetration	2%
Goal	20%
<b>Goal households</b>	<b>10,000</b>
Avg. system size (kW)	4.265091864
Avg. cost per system (kW)	\$5,000
Total cost	\$21,325.46
Tax credits	40%
Net cost	\$12,795.28
Local value to community	50%
Per system local value	\$10,662.73
Local value total	\$106,627,297
Multiplier	4
<b>Total value to Santa Fe</b>	<b>426,509,186</b>
Total installations (goal)	10,000
Persons per installation	3
Installations per year, per team	36
No. of years	3
No. of installations needed per year	3,333
<b>No. of teams</b>	<b>93</b>
<b>No. of new jobs per year (93x3)</b>	<b>278</b>
Multiplier	4
<b>Total new jobs</b>	<b>1,111.11</b>
Tax	1.31%
<b>Tax benefit to Santa Fe</b>	<b>5,595,801</b>