

# Climate Showcase Communities: Lessons Learned and New Approaches

Presented by U.S. EPA's Local Climate & Energy Webcast Series

Webcast Transcript

April 27, 2011

## Contents

Webcast Agenda and Meeting Logistics.....	2
EPA State and Local Climate and Energy Program Overview.....	3
Building a Municipal Energy Conservation Corps: Springfield, MA .....	5
Sustainable Transportation for a Sustainable Future: Salt Lake City, UT.....	9
Project HELP (Healthy Energy Living Project): Choctaw Nation, OK .....	14
Maximizing GHG Reductions through Food Waste Diversion: Humboldt Waste Management Authority, Eureka, CA .....	17
Regional Circuit Rider for Energy Efficiency: Delaware Valley Regional Planning Commission (DVRPC).....	22
Question & Answer Session .....	27

## **Webcast Agenda and Meeting Logistics**

Slide 1: Introduction Slide

Slide 2: Title Slide

Andrea Denny: Thank you. This is Andrea Denny with U.S. EPA's Local Climate and Energy Program. I want to thank everybody for joining us today to hear updates about the Climate Showcase Communities program.

Slide 3: Webcast Agenda

Just a quick overview of the Webcast today. We will start with an overview of some of the GoToMeeting Webinar logistics, and then I will tell you a little bit about EPA's Local Climate and Energy Program and the Climate Showcase program before we transition into the main part of the Webcast, which is hearing from several of our communities about their projects.

You will be able to submit your questions after all five of the speakers have talked about their projects, then we will have a Q&A session at the end of the call. And now, I'm going to turn it over briefly to Lauren Pederson at ICF to run through the GoToMeeting logistics.

Slide 4: GoToWebinar Software Logistics

Lauren Pederson: Thank you, Andrea. So a few logistics before we get started. You will be muted throughout the Webcast to minimize background noise. And as Andrea mentioned, you will be able to submit questions and comments in writing. And I'll go over how to do that in one moment. The PDF and audio files of today's session will be made available for download in a few weeks at the links provided below. And throughout the Webcast, if you have any problems, please send me an e-mail. And I'll be able to respond to you and hopefully resolve the issues you're having. Next slide, please.

Slide 5: Questions (GoToMeeting)

Lauren Pederson: If you have a question, you're going to be submitting your question through the question pane and we'll be compiling these questions and asking them at the end during the question-and-answer session. If you could please include the name of the presenter you would like to answer your question, we greatly appreciate it, that way we know who the question is directed to. Next slide, please.

Slide 6: Optional Feedback (GoToMeeting)

Lauren Pederson: There will be a pop-up window that will appear once you exit out of the GoToMeeting. Please take a few minutes and respond to some of the questions there. We'd love to have your feedback on the Webinar and future topics you might like to see. Next slide.

## **EPA State and Local Climate and Energy Program Overview**

### Slide 7: Local Climate and Energy Program Goals

Andrea Denny: Thanks, Lauren. So, just a quick overview of EPA's Local Climate and Energy Program. Today's Webcast and the Climate Showcase Communities program are part of the larger Local Climate and Energy Program. Basically, the goal of the program is to help communities and local governments. And we define local governments pretty broadly. So, that include things like tribes, regional governments much smaller and planning authorities, as well as cities, counties, towns, risk management authorities, et cetera.

But the goal is to help all of those different groups to reduce greenhouse gas emissions while adhering to their sustainability goals, identifying work with expert partners and programs and to really understand and integrate multiple benefits into planning and designing their programs.

### Slide 8: Local Climate and Energy Program Elements

Andrea Denny: Just some of the key resources with the program offers. Everything can be accessed through our Web site, which is – and you see here at [www.epa.gov/statelocalclimate/](http://www.epa.gov/statelocalclimate/). A couple of specific resources I wanted to call out are our Local Climate and Energy Strategy Guides. These are written for local government officials and policy makers. And we have a number of different topics and walk through see – walk through each of those different topics.

So, for example, energy efficiency and affordable housing or smart growth or transportation measures. We also have a Listserv. And on that Listserv, we've sent out information about funding opportunities, training opportunities, conferences, reports, et cetera. We also provide peer exchange opportunities like the Webcast and other – this Webcast, as well as other trainings. I did want to mention our State Technical Forms, which are available as well. There are – there are a companion to these local government Webcasts. And we do have one tomorrow that's kicking off a series on the multiple benefits of action on greenhouse gases. And then, finally, the Climate Showcase Communities program, which is the focus of today's Webcast.

### Slide 9: Climate Showcase Communities Program

Andrea Denny: So, the Climate Showcase Communities Program was a program started about two years ago. We gave out \$20 million over two funding solicitations and competitive grants to local and tribal governments. And the charge for those applicants was to demonstrate documentable, replicable, long-lasting greenhouse gas reductions to build community capacity and collaborative partnerships and to address multiple benefits, by which we mean economic benefits, as well as environmental, social, quality of life, et cetera. As a lot of people may have heard, the funding for this has been limited to those 2009 and 2010 grant recipients.

We do not have funding to do a new solicitation this year. However, this program is still very active and we're really focusing on the 50 pilot communities we have and looking at ways that we can use those as model for action and build network and peer exchanges for other

communities across the country. And the idea is to really document how this could be a showcase that all communities can learn from.

And you will see tools and resources and lessons learned that can hopefully catalyzed broad local and tribal action. We're only going to hear about five of these 50 projects today. There is a much larger range of projects, and I would really encourage you to visit the Web site for the program to find out more about those projects.

#### Slide 10: Climate Showcase Communities Map

Andrea Denny: And then, just a quick map to kind of show you the range and where these projects are. We cover 30 states, and we have populations ranging from 600 up to 2.8 million. So, really, no matter what type of community you represent, you'll be able to find projects that are similar to projects you might be interested in or communities that have similar characteristics to your community to use as a model for action.

#### Slide 11: Local Climate and Energy Contacts

Andrea Denny: And then, I just particularly wanted to put up some contacts for the Local Climate and Energy Program, myself, as well as my colleagues Neelam and Emma. And any of us would be happy to assist you. If you have questions, just only feel free to contact us.

## **Building a Municipal Energy Conservation Corps: Springfield, MA**

Andrea Denny: And with that, I'm actually going to introduce our first speaker. Our first speaker is Joe Forest from the Springfield, Massachusetts project. He is the facilities engineer for the city of Springfield, Massachusetts. He joined the city in 2007 to assist in helping to make the city of Springfield a greener place to live. Before he joined the city, he worked in private industry and engineering design build and project management and brings years of experience and strategies to the sector. Go ahead, Joe.

### Slide 1: Title Slide

Joe Forest: Thank you. How you guys doing? This is Joe Forest. I'm going to try to go as quick as possible but try to give you a little bit of a background and how we ended up even applying for the grant.

### Slide 2: Springfield, Massachusetts

Joe Forest: Our grant was based on building a municipal conservation corps basically creating a preventative maintenance program by hiring four HVAC technicians to go through the facilities, which you can see were roughly about 150 buildings, which ranged over 5.7 million square feet of buildings. City of Springfield received \$491,067.

And that funding is funding the salaries and benefits for these individuals to go through. And our strategy is to first attack the elementary schools then move to the middle schools and then eventually make it to the high schools. The thought behind that is that we want to try to affect or make a difference for the most amount of kids and for the longest period of time.

When I came here in 2007, we went through a \$15 million escrow. We replaced the heart of all buildings, the boilers, the basic control system. But we could not reach the veins. And the veins of what these guys are attacking it's the retro-commissioning and the preventative maintenance on the individual classrooms and the controls in there. My first, I think, three months of being here I walked in to a classroom with a hot water system. The first classroom was 60 degrees. Kids were wearing gloves. The teacher had a hat on, and she is trying to teach a class. I walked in to the next classroom. Same type of heating system with 85 degrees. And the kids were sleeping on their desks. This is no way to teach. There is no way these students can learn.

### Slide 3: Springfield's CSC Grant Award

Joe Forest: So, at that point in time, I didn't have the funding to hire any guys. But I had to attack this some way because I promise this school through the escrow that we were going to make a difference in the environment in those classrooms. So, I'll stay with the PowerPoint here. What did the – what did the four guys do? We do retro-commissioning in all – in all the buildings.

Focusing on trying to improve the indoor quality, reduce energy consumption and obviously the greenhouse gases, extend equipment lifecycle and then, lastly, we educate not only the custodial staff but the teachers, the principal. You have to get buy-in by everybody to make this work long-term.

#### Slide 4: Preventative Maintenance (PM)

Joe Forest: Here is a quick – I'm a visual type of person. So, I think being able to see what we found as we went through. The top picture you will see, that's the classroom, you know, that covered in dust. You see the other guy blowing out. So, we go through, we clean, lubricate, inspect, test, calibrate, replace.

#### Slide 5: PM Program Overview

Joe Forest: Once we complete – and, again, I will show – as we move forward, you will see some more graphic pictures. Those were actually some of the better ones.

#### Slide 6: Retro-Commissioning

Joe Forest: But once the PM crew and I enter a building, we take out the original design drawings; we review the systems in these – in the design intent. And then, we go through and we do what you have seen before as clean, calibrate, adjust.

#### Slide 7: Energy Audits

Joe Forest: And then, we – when we are complete, we go through and we do an energy audit to look at further ECMs that should be funded and put them all into and document everything into one manual that when we leave after we completed the PM, the audit, the training of the custodian and the staff, now they have a document that they can refer to. If we have a problem in a class room – and I'll show you one later slides – that we take down every motor information, equipment information, air handler exhaust. And they are left with something and also it helps us to push and sell for completing further ECMs. I'm going to jump through a few of these.

One of the other parts of the program that we do is we've also been able to connect to some of the students in the middle and high school level as we're going through. We actually get them involved. That helps us enough to get a different perspective. The kids will actually do research at home and come back to us the next day and give us further ideas and give us feedback of what it was like when they were in that elementary school or middle school. And also, how hard it was or the difficulties they had learning based on the environment. And then, we obviously are selling the program.

#### Slide 8: Documentation

Joe Forest: Here is kind of brief overview of the checklist. The datasheet that you see to the right is something we develop and that's one of the pages inside the sheet or inside the book that we leave with them. And again, I kind of went over the training part of that. Our focus from day

one is our number one goal is to improve the indoor air quality for the students and for our staff. Controlling and providing even temperature in every single classroom between 68 and 74 degrees. So, they are able to learn and the teachers are able to teach.

#### Slide 9: Education

Joe Forest: Without the second one – the second poll is there is training, building custodians but it's training the custodians, training the principals, training the staff, getting buy-in even from the mayor and from the finance department on how important it is to maintain our investments. If you buy a new car and you don't change the oil, you wouldn't think of doing that. So, we're building brand-new facilities, walking away and think it needs air handling systems or control systems can run themselves. And as you will see in a few photos coming up, it doesn't work. Thirdly is reducing our energy consumption and greenhouse gases. This is very important.

#### Slide 10: PM Program Results

Joe Forest: It's important on the bottom line the goal of this project and we thank the EPA very much because they are funding four positions for two years. When we're done after the two years, the documentation that we're going to prove is that the sustainability of these four positions are going to be based on the energy savings by making these buildings more efficient not only through the preventative maintenance and the calibrating but also taking some of the city's funds to invest in the energy conservation measures and adding control device or putting a new EMS system in. And that's going to sustain their positions and allow us to make it through the rest of the buildings.

Each PM has been on staff for ten months. And we are just leaving building number 11. So, we've got 150 buildings to get through. Do the math. We need these guys study through. And the last thing is extending the equipment life. If you don't maintain it, you're going to lose it. And then, it costs you twice as much. I'm going to show quickly through a few photos to give you more of a visual of the condition.

#### Slides 11-16: Zanetti School PM Photos

Joe Forest: This is a coil inside one of the air handlers in vent. This one I'll go through quickly for you. We found a mouse that lived there. That is actually in a classroom unit vent. These are pictures from when we were cleaning out an air handler. This air handler feeds 17 classrooms. That's vent going in to the classroom and the same air handling system. And then, here's another good news. Just kind of an educational piece for our teachers that if they pile books on top of the heating units and the blower units, we cannot provide the proper heat nor the proper fresh air.

So, we take pictures of everything we find because we use it as a tool. As we move to the next school, we bring these presentations. And this is how we sell what we're going to do to the next location that we walk into.

#### Slides 17-28: Elementary School PM Photos

Joe Forest: Here, you can see to the left before and then after the PM crew got through. And this is, again, a classroom unit vent with a blower running. The blower is actually pulled out at this right now. So, to give you a better visual. You can see the top before and then – and that again is in the classroom blower separately pulled. The bottom left is a magnified graph. Our vent air handling system or handling system unit vents, this is one of our elementary schools. The top picture is the same as the bottom picture. It's a makeup air from the outside going in of air handling.

So, I think that was a pretty good visual of what we're running into and how easy this is going to be to sell once it comes time to bring on these four guys on to the municipal budgets. But without having them, without getting in deep, without having the man power, we would not be able to lead and have these pictures to present and justify and fix.

We have some testimonials from the schools. We left one of the schools in a month after. The principal of the school said the attendance went up 1 percent. We are waiting to hear they did on the MCAS (Massachusetts Comprehensive Assessment System). In Massachusetts, we have a required testing student state. Two of the classrooms that were 85 to 90 degrees the year before, we walked in to those classrooms. After the PM crew went through, they were 70 and 72 degrees. Those two classrooms were the lowest scoring MCAS in the school. So, we put the same students in the same classroom. And I'm looking forward to seeing those results.

#### Slide 29: Energy Conservation Measures (ECM)

Joe Forest: The slide I've got up now, energy conservation measures. These are just some of the things that we have implemented and we continue to do boiler replacements energy management insulations to control the boilers energy saving light, lighting and sensor retrofits, pool cover installations. Bottom right picture, motors and drives and radiator control valves and every one of these. We have completed I think over \$20 million worth of energy conservation measures in the past four years with savings of over \$2 million to date.

#### Slide 30: ECM Justification

Joe Forest: Some of the justifications which are pretty commonsense increasing your efficiencies and decreasing your consumption. Cutting your maintenance cost by having dependable equipment but it's key to maintain them. Providing better control of our schools and our environment and providing more comfort to all building occupants.

And that is it for me. And I will take questions after.

## **Sustainable Transportation for a Sustainable Future: Salt Lake City, UT**

Andrea Denny: Thanks so much. And this is a reminder to everybody, if you do have questions about the Springfield project or about any of the other projects as we go through them today, remember to type them in. And we'll collect those and get them at the end of the Webcast.

### Slide 1: Title Slide

Andrea Denny: Now, I'd like to introduce Kate Lilja. Kate works for Salt Lake City's Division of Sustainability with systematic air quality outreach programs including the Clear the Air Challenge; Care to Clear the Air Initiative and Idle-Free Schools Outreach. These programs encourage residents to drive less, drive smarter to reduce vehicle pollution and help improve air quality in the Salt Lake Valley. Take it away, Kate.

Kate Lilja: Thanks, Andrea. I'm Kate Lilja, and I work for Salt Lake City. I manage our grant Sustainable Transportation for a Sustainable Future and will to give you an overview of our projects since we are a year in.

### Slide 2: Salt Lake City, Utah

Kate Lilja: Here's a quick rundown of Salt Lake City. We are an urban city with about 185,000 residents. Of note is that our population doubles during the day with people commuting into the valley and into the city for work or recreation. So, we're an urban city. And we are in a mountain valley. So, we're surrounded almost 100 percent by mountain ranges. It's a beautiful place to live to be surrounded by these gorgeous mountains. But it does host some challenges with our geography.

### Slide 3: Temperature Inversion

Kate Lilja: This is one of our main challenges. Because we are in a basin, depending on a couple of times a year we will have weather patterns that stagnate and basically put a lid on the top of our valley. So, what that means is that it traps all of our pollution. Anything that we emit into the air, we're stuck with it until a weather pattern will come through and clean it out. So, it's a pretty big challenge for us.

### Slide 4: The Situation

Kate Lilja: And this next picture, sorry to say, that I took this past winter. And it's up above the capital. And to give you an idea of what you and usually see is our beautiful mountain valley structure from miles you get the big western sky. But this is doing a pretty bad P.M. 2.5 inversion that we – that we had. So, it's really hazy. It's very unpleasant. This is our winter problem. But we also have a summer ozone issue as well. And we're actually non-attainment for both.

Of note, however, is that over 50 percent of our air pollution comes from motor vehicles. So, that means there's not really a quick fix to this problem. But it also means that there's a lot of – a lot of potential in terms of solutions. And it really starts coming down to our population and people making different transportation choices.

#### Slide 5: Clear the Air Challenge

Kate Lilja: So, I'm going to give you an overview of the three different programs that fall under our Climate Showcase grant. And they kind of run under the banner of Drive Less, Drive Smarter.

#### Slide 6: Clear the Air Initiatives

Kate Lilja: Our first program is the Clear the Air Challenge. And this is our biggest program. And it runs in the summertime. It's a month-long initiative. It's really a challenge to get people to utilize alternatives to driving alone whether that is driving smarter with carpooling or trip chaining or just leaving the car at home and taking public transportation, walking, biking and those alternatives. We just finished in January our pilot of our winter program to address our PM 2.5 problems called, Care to Clear the Air. And, so, we had a pilot of that last January. And are currently still evaluating our different data and had a really, really informative and interesting great experience of that.

And then, our third program is Idle-Free Utah. And that is a program we work really closely with a lot of our different partners. And it has historically been focused just in the fall especially related to elementary school parking lots where parents idle to pick up children and they create these pockets of a huge pollution basically that these kids are then walking through. But we're looking at extending that to drive through and it really is a year-round issue.

#### Slide 7: Drive Less, Drive Smarter

Kate Lilja: So, our program really addressed a gamut of different things that are all since the end goal of reducing the amount of vehicle emission and pollution that we put into our air shed. So, you know, whether that's taking public transportation but it goes all the way to teleworking, in which you can avoid getting in your car in the first place. But being idle-free or even looking at flex fuels or compressed work weeks.

#### Slide 8: Goals

Kate Lilja: Our goals are pretty simple. We want to improve our air quality. You know, our air quality is something – it's a very uniting topic here. We all know that we have this problem, and we really need to ensure that Utahans are educated not just about the issue but about the role that they can play in being a part of the solution to this problem.

And really the end goal is to get those – get individuals to make a long-term behavior change. So, our programs are focused, you know, in certain times of the year to kind of view the full spectrum of year-round programs. But what we hope is that our programs are then a catalyst to

encourage people to try something new. And then, really understand the benefits, the ease of these alternatives and the intrinsic benefits of utilizing public transportation or walking or biking or carpooling. And then, to really make that a lifestyle behavior change.

#### Slide 9: Results

Kate Lilja: Here are some of our preliminary results. We have successfully, over the past year, held each of our three programs once. And we have been tracking things as we go along. But we also will have a pretty comprehensive analysis that will be done at the – towards the end of our three-year grant cycle. But we have been collecting information through the Clear the Air Challenge Web site and actually have our 2010 last summer's results that were pulled from the Web site. So, just to give you a little background about the challenge, individuals create an account on our Web site, [cleartheairchallenge.org](http://cleartheairchallenge.org).

Oh, OK. They can create a profile on [cleartheairchallenge.org](http://cleartheairchallenge.org). And they track the trip and the miles that they use by utilizing alternatives to driving alone. So, if I took light rail into work today and then back home, I saved two trips and ten miles. I don't live that far away from where I work. But then that information is then aggregated and we are able to translate that into pounds of emissions, gallons of gas saved and total vehicle costs that are saved

We also have worked with UDOT. We work very close to this during our winter pilot program to look at traffic counts on green versus our red and our yellow air days or our poor air quality days. And we also work with UCA to look at their ridership numbers. So, so far, we have seen an almost 2,000 pounds and metric tons of greenhouse gas emissions reduced to date. And like I said, that's just going to grow. So, in the few minutes I have left and I could talk forever about all of our programs.

#### Slide 10: What Works

Kate Lilja: But I was asked to really think about what is working for us and what might be helpful for our listeners to hear. So, I was able to pull out four different themes that I think have really been a huge component of our success in our program so far.

#### Slide 11: Community-Based Social Marketing

Kate Lilja: The first is community-based social marketing. And this is a model that is very well established. It's known and utilized worldwide. It was developed by a gentleman Doug McKenzie-Mohr. And it is a model and a step-by-step process that was created to encourage sustained behavior change. So, environmental behaviors that not only people give those a try but they actually sustain them and continue to have that be a part of their lifestyle. This model has a huge emphasis on preparation and evaluation really looking at is your program working and if it isn't, why isn't it and what can we do to improve it.

So, there's a book out there called, *Fostering Sustainable Behavior*. And then, a two-day training that he hosts throughout the world. And I was lucky enough to attend that training not long after we received the grant. And it has just influenced us every step of the way with our program. So,

I put the Web site URL up there as well. They have online forums. You can ask questions. It's just an excellent resource. And I really strongly encourage people who are really looking at not just getting people to try something but to actually get them to change their lifestyle and their lifestyle behavior to take a look at this.

#### Slide 12: Air Quality Partners Team

Kate Lilja: Our air quality partners' team is another thing that has just been huge for us. This is a team of government, business, nonprofit and faith-based organization. They bring the representatives to the table. A couple of times a year, we meet in person. But we also meet virtually. And they are really the driving force behind our program. It's been just a great collaborative process to have all of these different organizations who all have a stake in our air quality and the solutions to our air quality, to be sitting at the same table and helping as we take a look at our programs and how we can really reach out to our population. Having such a large group together has been really helpful because they take ownership of the program.

So, it's not just Salt Lake City's program, it's the state of Utah, Salt Lake County, the South Lake chamber and so many other nonprofit and faith-based groups that really have a stake in this and believe in it. And that has been especially helpful for us as we look at spreading the word throughout the community because that person-to-person recommendation is just so effective. And that's actually something that comes from the community based social marketing model is that, you know, a whole spectrum of how you can hear about something. But if you're hearing about – hearing about something from someone you respect or organization that you know and trust, you listen more and you're more likely to adopt that behavior or at least give it a try. So, this has been huge for us.

#### Slide 13: Outreach Tools and Strategies

Kate Lilja: Our outreach tools and strategies, we do so much to try and reach our residents. And I think that really works in our favor. Like I said, we have our partners' team that's a huge force with the word mouth and spreading the word throughout certain different communities. But we also utilize a lot of different tools. We are very active in attending community events all throughout the valley that our existing event, you know, tabling and reaching out to people having those one-on-one conversations if need be. Providing resources, signing people up to the challenge and really engaging them that way.

And we also just as last January started to host some of our own community events that are focused on our past January program where our Learn to Ride series where we partnered with public transportation and what two key areas throughout the valley and really taught people how to utilize public transit because you haven't used it before. That can be pretty huge knowledge barrier there.

At the Clear the Air Challenge this year, we are hosting one of our own community events. We'll be our first Clear the Air Fair where we bring all of our partners and/or partnering with an outdoor venue space here in downtown Salt Lake City. Live music, refreshments, like just tons

of air quality and alternative transit information bringing, you know, a fun that that people can get that information.

We also work with community organizations and have a very strong electronic and social media presence. We update Facebook and Twitter everyday and have a couple of ongoing YouTube series, one is our Learn to Ride series and the other one is our Resolutions to Clear the Air where we profile individuals who are resolving to do better to utilize alternatives and sharing their story and why it matters to them. And, of course, we utilize our traditional media outlets whether that earned or whatever advertising that we can afford.

#### Slide 14: Know Your Audience

Kate Lilja: The last thing that I'd like to share is just know your audience. This has been such an important component of community-based social marketing and their program. Survey your population and really understand what the barriers are to them utilizing, you know, alternative transit. We think we might know what the barriers are. But it's so helpful to hear it from them.

And then, this is very important. You will have a longer list of barriers but cross off the barriers that you can. And I have to set an example that driving isn't more convenient than the alternatives. This is a perception that has a huge, wide-range of – our people who have already utilized these behaviors don't think that driving is more convenient than the alternative. So, it's something we can work on, something that we can address emphasizing extra benefits.

#### Slide 15: Resources

Kate Lilja: And then, this is a list of our different resources, and we've got a lot out there and we're always working on them.

#### Slide 16: Contact Information

Kate Lilja: And, finally, just my contact information. And, of course, I'll take questions at the end.

Andrea Denny: Thanks so much, Kate. And I just wanted to mention to everybody, Kate included a link to their YouTube site. And I would really recommend that people check out some of the videos they put together in association with some of these campaigns. They are really great. Good example of innovative outreach being done by a government.

## **Project HELP (Healthy Energy Living Project): Choctaw Nation, OK**

Slide 1: Title Slide

Andrea Denny: Next, I want to introduce Tracy Horst.

Tracy is with the Choctaw Nation of Oklahoma. She's been there for four years and is the Director of Project Management, which includes the responsibility for the tribe's ongoing green initiative, as well as their Department of Energy Block Grant. She's also a board member for the Oklahoma Recycling Association and is working with several cities in Southeastern Oklahoma to assist them in understanding how building retrofits and recycling can benefit their communities. And she is one of our brand-new grant recipients. And she's going to talk a little bit about their plans.

Tracy Horst: Thanks, Andrea. And as Andrea mentioned, I'm with the Choctaw Nation of Oklahoma. Our project is known as Project HELP, which means Healthy Energy Living Project.

There's a little bit about – OK, next slide.

Andrea Denny: Tracy, you click on the slide or click the down arrow in your computer.

Slide 2: Choctaw Nation Introduction

Tracy Horst: Here it goes. I was trying to – OK. And the Choctaw Nation of Oklahoma just a little bit of background about that, we cover 11,299 square miles in the Southeastern corner of the state of Oklahoma. We serve about 205,000 members worldwide. And one of our big initiatives is healthcare for all of our tribal members. The Choctaw Nation Health Services Authority is a member of the Indian Health Services Systems for the federal government of United States. And we maintain a hospital and seven outpatient clinics throughout that region. We were also the first tribe to build our own hospital in collaboration with the federal government. That facility is about 145,000 square feet. It has 37 inpatient beds and 52 exam rooms that all contain state-of-the-art equipment.

Slide 3: CSC Grant Initiatives

Tracy Horst: Our grant initiatives were mainly surrounding energy efficient lighting in the hospital in one of our outpatient clinics in Choctaw, Oklahoma. From that, we will be going through and removing older light bulbs replacing them with the newer T8 light bulbs and reducing the amount of energy required from that side of things.

Along with that, we will be conducting an education program to our employees and our patients. And also surveying them to assure that the lighting still, after the changes – still meet their needs and also making sure that we are able to reduce the amount of energy that we consume based on the grant requirement. The plan is to create and disseminate a white paper, which will then

process each of the processes that we've done and hopefully explain the success of the project as well.

Along with that, we plan to create a DVD explaining then about the process and encouraging others to do what they can to reduce the amount of energy that they have in their homes or offices or businesses, as well as in other hospitals whether they are tribal hospitals or just small rural areas similar to the region that we are located in.

#### Slide 4: Our Energy Conservation History

Tracy Horst: And just a bit of background on our energy conservation history, we started looking at energy conservation and what we can do for the environmental perspective a couple of years ago. And we started looking at all of the different possibilities that we could do from the conservation perspective. At that point, we identified several heating or air-conditioning replacements that we could make any improvements on that side. We also looked at and started replacing lighting and learned about how we're doing in the hospital facilities and some of our other buildings, as well as replacing old windows and adding insulation.

We hired an energy manager. And that energy manager has been able to go in to our various facilities and do energy audits. And in our new buildings that are being constructed, we're trying to be more proactive with those and construct those with energy efficiency lighting and windows.

#### Slide 5: Building Retrofits to Date

Tracy Horst: To date, these show some of the items that we have done thus far. Our grant headquarters facility is comprised of three large and one small brick buildings it's about 70,000 square feet. You can see there. That building we have done window replacements, the lighting replacements.

And we've also gone through and reduce the amount of lighting required with the – and we are just going sort in identifying if we really need as much light in those rooms as we did. And we found that we've been able to reduce the amount of energy required by being able to use that meter and reduce them. We've installed vending machine miser and we've also installed occupancy sensors in many of our conference rooms and bathrooms and are getting ready to do some hallways. So, that when those areas are not occupied, then the lighting will go out. In some of our gaming facilities, we're doing this one in phases but we have about eight different buildings there with the significant amount of lighting. And we are going into those facilities also replacing the light bulbs and reducing the amount of light required there and installing occupancy sensors.

#### Slide 6: Facility Audits

Tracy Horst: Over the last 18 months, with the help of the energy managers that we have hired, they have completed 95 energy audits as almost. And as of now, we've actually done a couple of more so there. I put this slide together. So, we're now over a million square feet in space that

we have audited. You can see a listing there of what we're actually do in going and do those audits. It includes reviewing 12 months of utility building billing history. Looking at the utility rates to see if we're getting the best rate that we possibly can. We look at the amount of level of insulation where the temperatures were set out in rooms with their – to summer or the winter and how they – how they maintain that temperature. Whatever is located in the building, the number of people in the building. And anything that may be external to the building whether it's lighting or hot water et cetera.

#### Slide 7: Benefits of Program

Tracy Horst: The benefit of the program that we have received this grant for we're really looking forward to. But we plan on the elevated ceiling. We think, though, benefit to the Southeastern Oklahoma area, as well as the other vendors that we educate worldwide would be to raise their awareness and let them know of what they can do from an energy perspective based upon we have been doing. And what's in there that they can go out and do these same types of retrofits in their homes and their offices and locations where they work and be able to get the same of type of savings and conservations that we are doing.

#### Slide 8: Upcoming Plans

Tracy Horst: From that, we – as I mentioned previously, we'll be doing employee training sessions. We will also be having newspaper and – newspaper articles in the local community throughout the 10.5 counties that we cover. We do border Arkansas and Texas. And, so, some of those community newspapers will be covering other states as well. And then, we have numerous tribal events throughout the year. And we usually try to involve the “going green” theme and have a going green to those types of events where we'll be of the share this information as far as what we're doing from the conservation perspective on lighting at those events as well.

And then, of course, from our environmental perspective, we hope to reduce the amount of energy consumption needed in the – and therefore reducing the greenhouse gases. Some of our upcoming plans, of course, to continue with some of the audits. We will begin the lighting replacement for the hospital facility and the clinic within the next 60 days. We plan to do the training video, the DVD. And then, we also have a Facebook page for education that we share. And there is a section on there about going green.

So, feel free to look at those and see what all we have going on there. And then, I will turn it back over to Andrea for questions at the end. And you got my contact information there.

## **Maximizing GHG Reductions through Food Waste Diversion: Humboldt Waste Management Authority, Eureka, CA**

Andrea Denny: Thanks, Tracy. And just as a reminder to everybody, if you do have a question for Tracy or any of our other speakers, just remember to click the box in your control panel. There is a lot of great projects here. And I'm sure our speakers can give some really valuable insights into some of the challenges they encountered or how they were able to get the projects started.

Slide 1: Title Slide

Andrea Denny: Next, I want to introduce Juliette Bohn. Juliette is a program analyst and project manager for the Humboldt Waste Management Authority in Eureka, California. Juliette's main projects include managing the development of a regional food waste digester and the utilization of the local landfill gas resource. She also contributes to technical advisory groups related to state-wide aerobic digestion infrastructure development. And she is going to talk a little bit about the plans that the Humboldt Waste Management Authority has to do some food waste diversion.

Go ahead, Juliette.

Juliette Bohn: Thank you. It's great to be on the phone and share the last year project's lessons learned. We are very excited to be working on our Humboldt regional food waste digester project.

Slide 2: Purpose

Juliette Bohn: And the heart of this project in terms of this grant is to maximize the greenhouse gas emissions reductions through food waste diversion. Now, the main goal – oh, mine didn't seem to click down. Main goal of this project is to divert food waste away from the landfills and reduce the cost and environmental impacts of waste management in Humboldt County.

We will be doing this by taking the food waste, having its source separated out of the waste stream, and converting it into renewable energy and fertilizer via the anaerobic digestion process, which I'll talk a little bit more about here in a minute.

Slide 3: Map of California

Juliette Bohn: For those of you unfamiliar with Humboldt County, we are at the top of the state on the coast. We are a rural county of about 130,000 residents with about 35 persons per square mile. And, again, my slides not advancing. Our current waste management in Humboldt County is to haul our food or all of our waste about 385 miles away roundtrip.

Slide 4: Waste Management in Humboldt County

Juliette Bohn: As you can see here, we haul to Medford, Oregon and Anderson, California. This results in not only one of the most highest tipping fees in the nation but also as you can see a lot of greenhouse gas emissions due to long-distance hauling. And in addition, it leaves us very vulnerable to fuel price increases over time. In other words, as you see here, gas and diesel price is increasing at the pump. Our waste management costs are increasing. So, clearly, we need to come up with some local solutions for waste management here at Humboldt County.

#### Slide 5: Policy Drivers

Juliette Bohn: In addition, here in California, we have some waste diversion policies already in place. One mandates 50 percent waste diversion from landfills for all jurisdictions. Another is a goal of our state waste agency to divert 50 percent of the organic portion of the waste by 2020. And we also have our AB 32 Global Warming Solutions Act geared towards reducing greenhouse gas emissions to 1990 levels by the year 2020. And in addition to that, we have the California Renewable Portfolio Standard requiring 33 percent renewable energy on our grid by the year 2020. So, this project ceased to address not only the local issues of ongoing expensive and greenhouse gas emissions with waste management, but also our state-wide goals as well.

#### Slide 6: Food Waste Diversion Program Flow Diagram

Juliette Bohn: This, in essence, is how our overall projects will work: The food waste will be collected much like recycling, separated at the source at the restaurants, hospitals, schools, and our community and brought in traditional trash trucks to our preprocessing facility where it will be ground up and have the plastic and metal and other non-organic waste contaminants removed.

And then, the waste will be put into a storage tank where it can be put into our anaerobic digester, which is essentially a big tank that is cutoff from air or oxygen. And the micro-organisms that live in that tank break down organic matter and produce a biogas, which is much like our natural gas that we use to heat our homes or cook our food. And also a stabilized nutrient-rich liquid and solid residual, which can be converted into a compost, a liquid fertilizer and put on our local soils to reintroduce as nutrients to local soil.

The biogas or the renewable energy component that's produced will be used in an internal combustion engine to produce both heat and electricity. The electricity part of it will be used to run our facility and then the rest of it will be sold. And the heat will again be used to heat our digester and reduce basin water heating at our facility. So, that's a general layout of how this entire project is going to work. The Climate Showcase Communities grant is going to help us establish the collection and hauling; that very first portion of the project that you see here at the top of the flow diagram.

#### Slide 7: Organic Waste Streams

Juliette Bohn: These are the some of the waste streams we plan to include in our digester. Food waste collected from the commercial and industrial sectors for our first phase and eventually residential sector for our second phase. The fats, oils and grease you can see on the left side that pipe that's clogged there. Fish waste with the fishing industry here. Potentially cow manure and

also cheese whey. We have three cheese factories in our area and potentially spent brewers green, which I don't have a picture of here but has a – is a recent waste stream that we have been made aware of.

#### Slide 8: Satellite Photo of Site

Juliette Bohn: This is our site. As you can see, we are located along the Humboldt Bay here, next to the Pacific Ocean.

#### Slide 9: Close-Up Satellite Photo of Site

Juliette Bohn: And this is a close-up version. You can see we planned to site and an adjacent property that's adjacent to the city-owned waste water treatment plant. This property is also city-owned owned by the city of Eureka who is partner in this project. And we will be able to send our gas directly over to the treatment plant where they have and those internal combustions already on site. So, they will be maintaining those engines and using a portion of that electricity as well.

#### Slide 10: EPA CSC Grant Work

Juliette Bohn: For the grant work, we are working specifically on coming up with the most efficient form of local food waste collection so that we can maximize those greenhouse gas reductions derived from diverting the food waste from the landfills and also reducing those vehicle miles.

#### Slide 11: GHG Reductions (per 10 years)

Juliette Bohn: And to give you a sense of what those look like at our first phase plan for 10,000 tons per year, you can see we have the potential to achieve pretty substantial greenhouse gas reduction from reduced land filling and long-hauled trucking. And also, setting and filling that electricity into the grid and offsetting grid electricity. Now, all of these will be – these reductions gains – will be offset by the amount of local trucks we have to send around to collect an additional route of that diverted food waste. So, we're going to look into strategies to minimize the addition of greenhouse gas emissions so that we can maximize all of the gains we are making by putting these projects in the first place.

So, some of the strategies we are going to approach are going to be looking at how a split truck versus a single-vessel truck could make a difference. How collecting your trash works frequently since you have less trash with the food waste separation system in place, how the rest frequents collection needed will reduce or balance out those greenhouse gas emissions. And also just efficient routing practices and, you know, using the same bin for two different waste streams that may be having a separate bag of food waste. Different strategies we're going to look at to try to really minimize our local greenhouse gas emission through this project.

#### Slide 12: Work Plan

Juliette Bohn: The work plan will first be to establish our 50 early adopters from that commercial and industrial sector. We have been contacted by a few entities so far like the university up here in the main hospital, as well as Costco. We're going to go around and do waste audits and really try to assess how much of their waste stream is food waste and start to work with the company called, ESA, the Environmental Science Associates. They work with San Francisco and across the county in developing their food waste diversion programs. So, they are going to come up here and do some capacity building. Training myself and there or four other folks in the community to go around and do these assessments of each waste generator and also help them to figure out how they can reduce their need for trash collection and how that economics is going to work. Also, work on the logistics where you place the bins. How you make this easy for people to participate and sort of make those behavioral changes?

In following that, we are going to be measuring how much food waste we can collect at each different spot so that we can get a sense for the overall magnitude of what this product is going to look like in the commercial sector and work with a contracted GIS developer to create a mapping tool that can show both the magnitude of the remaining solid waste, the food waste and how that routing truck – the capacity of the truck house able to collect that waste. So, that, we can, again, look for efficiencies in this new waste diversion program. We will – after doing that sort of initial work, then start up our pilot collection, food waste collection program for a year.

That's going to be really exciting, and we are going to compost that food waste in order to keep it out of the waste stream and give away that compost to some of the local farmers in the area during this pilot collection period. But, also, measure – carefully track and measure the food waste diverted and how that translates into measurable greenhouse gas reductions.

#### Slide 13: Sharing Results

Juliette Bohn: And, finally, we are going to develop some means of sharing the results of this work. Our goal has always been to help other communities who don't necessarily have the staff or the time to develop these programs or trying to put some or trying to add to the general pool of knowledge the people have resources to start these programs in their communities with the overall goal of having a larger greenhouse gas reduction widespread across the nation for people – from people doing food waste diversion program. So, we will definitely be collecting a waste resource assessment toolkit, how we went about figuring out how much waste we had. We will share the data that we collect from our waste audits and how contaminated it is and how much of the food waste that's originally in each waste stream we are able to capture.

We'll be sharing our outreach and education materials that are going to be used in the kitchens, as well as around our community. We're going to hopefully have a GIS mapping tool that could be either modeled after or changed and utilized within different communities to develop their own collection strategy. And we'll be hosting on a Webinar to present the results of the different strategies, the different approaches that we modeled throughout the course of this grant and, also, the greenhouse gas reductions that we achieved create some recommendations for those looking to start their own food waste diversion program.

#### Slide 14: Closing Slide

Juliette Bohn: And that is the end of my presentation. I look forward to your questions afterwards. We are very excited to be a part of this grant program and have it sort of increase the momentum as we launch into getting our project off the ground in the next year. So, thank you.

## **Regional Circuit Rider for Energy Efficiency: Delaware Valley Regional Planning Commission (DVRPC)**

Andrea Denny: Thanks, Juliette. And if you do have questions for Juliette, feel free to type them in and we will get to them after our last speaker.

And, today, our last speaker is Rob Graff. Rob manages the Office of Energy and Climate Change Initiatives for the Delaware Valley Regional Planning Commission. In his position, he manages initiatives to reduce energy use and greenhouse gas emissions in the nine-county Greater Philadelphia region. And a particular focus of this work is reducing energy use in municipal operations. And he's going to tell us a little bit about their plans to do that. Thanks, Rob.

Rob Graff: Hi. Are my slides on the screen there?

Andrea Denny: No, if you – if you select screen clean from the draft tab. There you go. Now, it's on.

Rob Graff: I just did that. Right. OK.

Andrea Denny: OK.

Slide 1: Title Slide

Rob Graff: Good afternoon. I'm Rob Graff of the Delaware Valley Regional Planning Commission. I'm very excited to be involved in this series of presentations. Since I'm the last presenter, I have the benefit of seeing the wide diversity of projects that are out there. And I just realized that it is only five of the 50.

We're at the very front-end of this at our end. As Andrea mentioned, I work for the Delaware Valley Regional Planning Commission. The Delaware Valley Regional Planning – I'm trying to get my slide to go down here. Let's begin.

Slide 2: The Delaware Valley Regional Planning Commission (DVRPC)

Rob Graff: We're the Metropolitan Planning Organization for the nine counties of Greater Philadelphia. Five of our counties are in Pennsylvania and four in New Jersey. We have about – we do a range of planning activities.

Slide 3: Overview of DVRPC's Work

I have the privilege of managing our Office of Energy and Climate Change Initiatives where a large amount of organization that we have the ability to have such specialization.

Slide 4: Planning Context

Rob Graff: This slide shows the Greater Philadelphia region. One of the things that characterizes our region – just to give orientation here, this is the Delaware River here that separates Pennsylvania from New Jersey. This is the city and county of Philadelphia, city of Chester, city of Trenton – city of Camden, rather, and city of Trenton. Our project, the one thing that characterizes our region is we have 352 local governments in this region. By contrast, Greater Washington, which has around the same population that we have, has, I believe, 23 or 24 local governments. So, we have a real lot of small local governments, which have very limited capacity to work on energy efficiency in particular.

#### Slide 5: PECO Electric Service Territory

Rob Graff: We also have an interesting conjunction between the electric service territories of the major utility for Southeastern Pennsylvania. This, again, is the Delaware River, city of Philadelphia and then the more suburban counties of Bucks, Montgomery, Chester and Delaware, which is almost exactly the same as our Pennsylvania territory, which feeds into some of our project design, which I'll show to you in a moment.

#### Slide 6: Project Background and Context

Rob Graff: The real gap here is of the 238 municipalities in the four Pennsylvania suburban counties, all but ten were too small to receive the EECBG, Energy Efficiency Conservation Block Grant allocation. So, that means that only – if there is 228 that received no assistance through that program, there were grants that went to the county but the county is pretty much used – mostly used those to – for their own facilities. The smaller municipalities of median population of just over 6,000 and they range from sizes under – to under 600. And over a million people live in municipalities under 15,000 in our four counties.

Because this is so small, they are less likely to have the expertise and capacity to identify and manage energy efficiency projects. They are often marketed very heavily by vendors who have particular technologies. They went to sell them and that may well be and usually is the case with those technologies are not what serve their best interests from a cost-effective standpoint. As context, we at the DVRPC are involved in a number of partnerships that we're leveraging in this project.

We're on the stakeholder committee of PECO Energy, the electricity company I just showed you, which is required to have a reduction in energy or electric usage in the region through a state program. And 10 percent of that reduction – 10 percent of the reduction, these have come from local governments and nonprofits. They are very interested in working with us. The counties, as I noted, have some EECBG funded program. Three of the four counties have a small amount set aside to assist the municipalities when working with them on that. There is a regional retrofit loan program – energy retrofit loan program also funded through the EECBG that we have been involved with.

And I'll show you later we developed a toolkit for measuring energy use in municipal operations that was developed through a foundation grant. This was set up to leverage the city of

Philadelphia Greenworks program, which is a wonderful program. I would suggest you look at it similar to plan OIC. And to try to bring some of this learning and structure out to the region as a whole. We've also done work with The Climate Initiative's outdoor lighting program, which is energy efficiency and outdoor lighting. And that we have been working with the state of Pennsylvania's small ESCO program, which is part of their Guaranteed Energy Savings Act.

#### Slide 7: Regional Energy Efficiency Circuit Rider Program

Rob Graff: And, so, what the goal of our program is is to pull these pieces all together into a single program that is designed to help small- and medium-sized municipalities find cost-effective ways to reduce energy use in their operation. So, we are leveraging the partnerships that I spoke about, developing and leveraging existing tools including EPA's portfolio – ENERGY STAR Portfolio Manager, developing training for workshop both on best practices and how to make use of tool. And then, we are providing technical assistance to 12 municipalities per year – per year for the two years that the program – that levels the three-year program but the two years of actual technical assistance in this.

#### Slide 8: Program Areas

Rob Graff: The program is organized around the four areas of energy use that municipal operation comprise, which are buildings and facilities; outdoor lighting, which is streetlights and traffic signals; vehicle fleets; and then for those municipalities that have wastewater and water treatment facilities, including pumps that may pump to a facility and another municipality given the number of small municipalities and a lot of shared treatment facilities.

And as you can see, I won't go through these in detail. But we have been developing some best practices guides on building, providing training on Portfolio Manager. On the outdoor lighting side, we have developed some very detailed toolkits for evaluating different street lighting retrofit scenarios. You know, the saving that can accrue from those. On the fleet, some – developing some toolkits to measure or to enter data on fleets.

#### Slide 9: Local Government Technical Assistance: Tools and Guidance for Municipal Operations

Rob Graff: Our main toolkit as I have mentioned is basically a large spreadsheet that allows – or a series of spreadsheets, capture –in one place all the energy use of municipal operations from building facilities. We use the ENERGY STAR Portfolio Manager output. For vehicles, we developed a custom spreadsheet that allows you to enter each of your vehicle yields by individual vehicle or by class of vehicle. For outdoor lighting, again, a custom spreadsheet that in our case is tied directly to the tariff structure of the utility, the local utility. So, like a municipality that we have to have their bill in hand and they can match it very closely. And this puts an output to the municipality. There are energy use by operational sector and energy cost in greenhouse gas emissions, which is first step in knowing where to look. You know, if you use 80 percent of your energy in your – in your – we're trying to use 50 percent of your energy in your outdoor lighting and 40 percent in your buildings and facilities. Those may be places to start looking. And then, we go through and drill down further in each of these.

## Slide 10: Program Goals

Rob Graff: So, overall program goal is to institutionalize better energy management by local governments. We have found in talking to the – especially the smaller local governments – that energy management is often limited to putting a binder clip on the stack of electricity bills and writing “OK to pay” on the front of it.

We want to have people put their energy data into spreadsheets to do some analysis on their buildings, on their lighting and simply – and also through that process may uncover some billing errors as well. Also, to reduce the confusion that a lot of the smaller municipalities have when they’re approached by or hear about the whole bunch of different program from the utility, from different vendors and giving them a central place that doesn’t really have any skin on the game that can help them, you know, evaluate the different options to figure out the best way to make most efficient use of their resources. And particularly, in this tight financial market, we’re looking into hoping to develop some market rate – some market-based approaches to getting funding for multiple municipalities.

One key issue is trying to get the economies with scale. We can fund different municipalities together to attract a single escrow to work with the number of municipalities. And then, throughout this process, we’ll be developing case studies of what works and also what the – what the financial analysis is of the different investment.

We have two specific facilities-based goals. One is to reduce the energy use by 25 percent at least in – at least 50 buildings. The second is to switch out a minimum of 10,000 incandescent traffic signal lamps. We understand from the utility that there are 30 – at least 30,000 incandescent traffic signal lamps installed in the region. And those can be swapped up for LED lamp with a tremendous savings there. And, right now, that utility has a significant financial incentive in place for municipalities to do that. We estimate the greenhouse gas reductions from this will be 5,000 tons per year. And the total energy savings will be about \$680,000 per year.

## Slide 11: Sharing Results

Rob Graff: As far as sharing results, we look forward to – in addition to the case studies and best practices guides that we’re putting out—to learning about other ways to share what we learn, particularly out in the Denver workshop. We’re looking forward to using the mechanism of the Climate Showcase Communities program to achieve that sharing.

## Slide 12: For More Information

Rob Graff: And for more information, I don’t think we have the information on this particular program up on our Web site yet. But if you want to learn more about what we’re doing as a whole, there is our Web site. We look forward to addressing questions in the Q&A portion. Thank you.

Andrea Denny: Thanks so much, Rob. And so, now, that concludes all of the presentations that we have and we did have a few questions that have been submitted. And you can still type your

questions in. And if we have time, we will try and get them. And I'm going to turn it over to Lauren to facilitate the Q&A.

## Question & Answer Session

Lauren Pederson: Thanks, Andrea. So, for our first question, it was for Juliette Bohn from Humboldt County Waste Management Authority. And the question is, how do you deal with the “yuck or smell” factor in collecting organics?

Juliette Bohn: That is the classic issue. We called it the “ick factor” in our grant proposal. And I think region education is really the main and most important approach. But also frequency of collection and working especially in the resident – or excuse me, the restaurants working to get a collection schedule that’s going to minimize the amount of smell.

One thing to remember is the same amount of food waste and ick is currently in the waste stream. But, so, you know, that same amount of smell should really be there. But having it all concentrated in one spot should have a potential for increasing ick unless we collect it frequently. So, that’s what we’re trying to do. Just make a frequency of collection schedules that the decomposition on site is minimized and do a lot of that region education.

I think that people generally – I know a lot of people feel like they want to do the right thing. They feel bad about throwing the food waste to a – into the landfill because they know it has environmental consequences. But they don’t really have any other ways of dealing with some other approach or solutions. So, I think that once we really can promote all of the environmental benefits, as well as the economic benefits of processing this waste locally. It will be with that more of – and sort of the – an environmental program versus a way of dealing with gross food waste.

Lauren Pederson: Great. Thank you. And then, our next question is for Kate from Salt Lake City, Utah. Do your state and/or local governments allow for telecommuting? And if so, is telecommuting allowed all the time or just associated with high pollution needs?

Kate Lilja: So, it really varies. But from city to city and I know that it definitely is a program that is encouraged on the state level and also in a lot of – the state has a program called TravelWise. And they do a lot of outreach to both larger and smaller companies throughout the Salt Lake Valley. So, it’s something that has a lot of un-captured potential in our valley. And we’ve been working a lot with education with our partners just to – I think there is a huge – a huge knowledge kind of barrier to utilizing teleworking. I know in my office we all utilized teleworking. But even within the city, it varies from department to department. I guess depending on that office. And it seems like it’s like that throughout our partners that we’ve talked to.

So, we’re working with our state partners, the TravelWise to encourage teleworking. And we found – I mean, it really is a top-down conversation that needs to be facilitated with the leadership before you even go to the individual who is interested in utilizing its alternatives. I do know that there a lot of larger companies that through these programs have started to kind of pilot teleworking program because of our poor air quality.

So, specifically, on for air quality days, they say – you know, they identified who can telework on those days and allow them to telework. And, so, something that we tried to do and are still looking at is sharing those success stories with other businesses and really – and I think the local success stories are more powerful. And so, in conjunction with the chamber, we're really working on educating and saying, well, this does work for this business. And here's some help and some tools that you can utilize to have this – even if piloting in your different business. So, it's spotty and it's got a lot of potential. And we're working on it. It's the sure answer.

Lauren Pederson: Great. Thanks for that answer. And then, are program managers for the Clean Air Challenge program able to sell – able to verify the self-reported information provided by participants?

Kate Lilja: The self-reported information, we monitor it to see if there is something that is looking just outrageous on the Clear the Air Challenge Web site. But it is generally honor code in terms of reporting. We figure some people that might, you know, report a little extra. But there are also a lot of people who kind of report pretty low like, you know, they don't do it every single day. And, so, we figure it kind of comes out in the lost. But, yes, some of the inputs last summer, we made a couple of phone calls to follow up with some individuals who had some highly questionable information on their Clear the Air Challenge account.

Lauren Pederson: Great. Thank you. And then, the next question is for Joe Forest from Springfield. A participant wanted to know where the funding to actually implement any of the actions done for the retrofit came from. And was the retrofit performed by the four maintenance personalities you're able to hire?

Joe Forest: Can you give me the beginning of that again? I'm sorry.

Lauren Pederson: Yes. The participant was curious where the funding to implement any of the actions done for the retrofit came from.

Joe Forest: So, there is – we have – in 2007, the city bonded for \$15.1 million to do an ESCO program. So, within escrow with the – to retrofit a number of buildings. So, bonded was part of it. We've also received some EECBG money, \$1.5 million. We've done some retrofits in the boilers and control systems through that. And we just received our designated a green community. We got about \$988,000 on that. And we are doing further energy conservation measures. But on top of that, we've also educated our staff who are in charge of department heads or in charge of certain budgets.

And we have been trying to implement further energy conservation measures by chopping into the general fund budget. We've also – I have another program that I do with, which I kind of briefly mentioned with one of the high schools. And I'm actually part of their curriculum, which I take four high school classes. The first year for tenth grade. The last two years have been for eight – ninth grade classes. We take them out. We audit a school. Each class audits one school, a total of four. And I work with them to get – choose the energy conservation measure, get pricing, work on the energy savings and put together what we call the Green Print. And there has been three editions of the Green Print. The first one was a \$160,000. The second was

\$270,000. Both have been funded through another funding source that the city created, which is a productivity bank, which allows a department to take a loan as long as from the general fund account or it's actually a separate account that we took out of the general fund money. And as long as it's applied to your payback or less, they will fund the project. And I have received like I said a little over \$440,000 that way.

Basically, I have looked, searched, begged, borrowed, pleaded for any type of funding to complete the energy conservation numbers. Now, the key thing to getting this money is proving the energy savings, proving the indoor air – the benefits. But you need to show the numbers. In some cases, an energy management system has reduced my oil or natural gas consumption by 40 percent. So, any and every way I can locate funding, I go forward as this P.M. crew. I mean, it's all out of the box thinking. My captain at a local trade – the local trade school, which is our high school and I use the three AC department teachers and a number of students who actually go out and I create – I give them a – we go through the building. I educate them on the new and old technology.

And then, I use their manpower to do further preventative maintenance and further installs at no cost to the city except for materials. So, again, I kind of bring in that my history of private industry and really doing as much out-of-the-box thinking as I can to change the mentality of our – of the old ways. It can't be that way. We've got to get smart.

Lauren Pederson: And did you calculate return on investment for these projects. If so, can you use the simplified version of how you calculated it?

Joe Forest: What I've done is we – you have to create a baseline. And when I came to the city four-and-a-half years ago, we were tracking dollars. And now, we track – you must track the usage. So, we track the usage. Our base here is 2007. And then, we have a – we used – we're using a number of, you know, Portfolio Manager and Mass Energy Insight. But we have an internal staff. One of my guys who tracks, we have 500 electric accounts, we've got about 120 natural gas accounts and about 45 local accounts. He tracks everything. So, we – you got to create your baseline. It's got to be usage because, of course, the cost of utilities change every year as we know it.

And, you know, you take that data and you prove it because the numbers don't lie. If I use 10,000 therms last year and use 9,000 this year, then, I save 1,000 terms. On top of that, if you take into effect, which I don't do is that this winter was about 10 percent colder. So, but again, my numbers are working. It's proven. Our utility – our regional budget six years ago was \$18 million and we're down to \$15.5. So, it's working.

Lauren Pederson: Great. Thanks, Joe. That was really insightful.

And then, we have a question for Rob Graff from DVRPC. Is your best practices guide on buildings and street lighting available on your Web site?

Rob Graff: We have completed the best practices guide on street lighting and it is available on our Web site if you go to the Web site that I had, which is [dvrpc.org/energyclimate](http://dvrpc.org/energyclimate) and go to the

energy efficient traffic signals and street lights section. I believe that will lead you to that guide. We're working on the – potentially the guidebook for the toolkit that we're putting that together and then for the building for putting that together as well. Those have been put together as part of their Climate Showcase Communities grant program and are not yet completed. They should be done by the – sometime this summer I'd hope.

Lauren Pederson: OK, great. Thanks.

Rob Graff: And both them and the – and also just to know the toolkit that we're completing will be – also be available at note that your – from our Web site too once this completed.

Lauren Pederson: Great. One last question for Juliette. Are you going to use a wet or dry anaerobic digester? And if you could explain your rationale behind that.

Juliette Bohn: Yes, we plan to use a dry or what we're calling high solids anaerobic digester. And the rationale behind that is that food waste is a high solids waste stream and sort of a – I always use this reference to my old water wastewater teacher who said never dilute what you must concentrate later. And we aim not to have to add too much water on the front-end because that's something that you're going to always have to deal with on the backend. So, we would like to use an anaerobic digestion process that is designed to handle the waste in as close to its form coming in as possible in terms of the total fire content.

Lauren Pederson: Great. Thank you. And Andrea, I think we have addressed all of the questions today.

Andrea Denny: OK. Great. Thank you, Lauren.

And I just wanted to thank all of our speakers again. And as I mentioned, we do have descriptions of these projects with some additional details about the work they will be doing and how they will be tracking their emissions reduction. And we will be updating those Web sites roughly quarterly as we got quarterly reports from the grant recipients.

So, you can check back and get updates, photos, videos, et cetera and really see how these projects are progressing, as well as read about the other 45 projects that receive funding and hopefully get some ideas and insights as to how you might be able to implement similar projects in your community. And that concludes our Webcast today. Thanks, everybody for participating.

**END**