

Blue Skyways Webinar
June 16, 2010

*“Opportunities to Improve Air Quality,
Reduce Greenhouse Gases, and Get Co-Benefits”*

Introduction ~ Jim Yarbrough

(Next Slide – “Introduction Slide”) Good afternoon. It’s about 2:00 central time. We’ll get started in just a second with the Blue Skyways Collaborative webinar. My name is Jim Yarbrough and I’m with the US Environmental Protection Agency’s Region 6 office in Dallas. I’m joined today by several other EPA colleagues from our Region 7 office in Kansas City and the EPA’s headquarters office in Washington. The webcast today is sponsored by EPA Regions 6 and 7 Air Programs and the Blue Skyways Collaborative. It’s intended for local governments and metropolitan planning organizations, departments of planning, health and economic development, chambers of commerce and industry coalitions, environmental, transportation and sustainability non-profits and other federal partners, especially in communities that are approaching the air quality standard for ozone. This is the second in our initial series of two webinars.

(Next Slide – “Webcast 2”) The first webinar held on June 2nd provided an overview of the Ozone National Ambient Quality Standard including how it is set and what is meant by “nonattainment,” gave an overview of the state air planning process and information on local inputs into this process, and it gave information on some of the co-benefits and synergies that communities have achieved when taking proactive actions to improve air quality. Power Point presentations from webinar one are available on the Blue Skyways Collaborative website at www.blueskyways.org and the presentations from this webinar will be available shortly. Following this webinar, we are planning to hold more specialized webinars beginning in late summer or early fall and we will be sending you more information about those later in the summer.

(Next Slide – “Having Technical Problems?”) For this webinar, you will be able to see the presenters’ slides on your screen and you will be able to hear the presenter either by dialing into the conference number provided or through your computer speakers.

(Next Slide – “Technical Notes”) You can switch options for the audio once you’ve logged into the webinar through the webinar dashboards. You will not be able to ask

verbal questions during the webinar. All participants will be on mute to limit background noise. You will be able to ask questions via the chat feature of the webinar as described in the next slide.

(Next Slide – “Asking Questions”) There may be a slight delay between when the speaker transitions slides and when you see the slide change however. You can type in your questions using the questions function on the webinar dashboard. Send your questions as you think of them and include the name of the presenter whom you would like answer the questions if applicable. We will prioritize questions based on broad applicability to the audience. At the end of the presentation today, we hope to have 15 to 20 minutes reserved to respond to as many of your questions as we can. We will not be able to answer all questions live, but we will provide answers to questions via a document shared with all those registered for this webinar.

(Next Slide – “Blue Skyways Collaborative”) The Blue Skyways Collaborative was created to encourage voluntary air emissions reduction in North America’s heartland. The idea started in 2004 and with the help of the Central States Air Resources Agency (CenSARA) and the US EPA, the Collaborative celebrated a kickoff meeting in February of 2006. Through partnership with non-profit environmental groups, private industries, international, federal, state and local governments, Blue Skyways strives to improve air quality. Participants of the Collaborative pledge to make that goal possible through active and meaningful participation and planning or implementation of projects that use innovations in diesel engines, alternative fuels and renewable energy technologies. Working together allows members to leverage funding, share technology and professional expertise. Today, Blue Skyways incorporates ten states: Minnesota, Iowa, Nebraska, Missouri, Kansas, Arkansas, Oklahoma, Louisiana, Texas and New Mexico and the area along the borders with Canada and Mexico. The Collaborative envisions a future where organizations will work together to reduce air emissions and make the heartland of America the central corridor of innovations.

(Next Slide – “About the Webinars”) This webinar today, this webinar series, is intended for communities that may be facing new nonattainment designations for ozone. The Blue Skyways Collaborative hopes to provide information that addresses the questions that stakeholders are currently asking. That is, those dealing with how will this affect my community? The Collaborative wants to continue the tradition of providing information on innovative, real life solutions to air quality problems through a network of stakeholders. The Collaborative typically hosts an annual meeting, but this year is

bringing the information to the stakeholders through an initial set of background webinars followed by additional in-person meetings or more detailed webinars.

(Next Slide – “Agenda”) The webinar today will provide information on the co-benefits that can accrue to a community as it works to reduce ozone pollution. We will learn from our EPA colleagues at the Office of Air and Radiation in Washington about technical guidance that can assist communities in choosing the right co-benefit actions for them. We will also hear from representatives of the Kansas City and Austin metropolitan areas about the specific co-benefit programs those communities are pursuing. For Kansas City, this includes the Cleaner Action Plan, Climate Protection Plan and various sustainability and energy initiative. For Austin, this will include transportation planning initiatives, its Climate Action Plan and various energy demand reduction activities.

(Next Slide – “Questions & Answers”) As a review, in posing questions and receiving answers for this webinar, you should use the webinar dashboard to send a question. Please include the name of the person you are asking a question to and remember that not all questions will be answered live. A question and answer document with answers to those questions will be provided several days after the webinar to registered attendees. And after the webinar, if you have any other questions, please direct those to Gloria Vaughn at the email address listed in the slide – vaughn.gloria@epa.gov.

Now, it’s my pleasure to introduce our individual speakers today. Our first presenters will be Neelam Patel and Robyn Kenney. Neelam Patel works with US EPA’s Local Government Climate and Energy Program and manages EPA’s Heat Island Reduction Program. In EPA’s Office of Air and Radiation, Neelam works to connect federal level climate policy and programs to local governments through outreach and communication and technical assistance. Robyn Kenney works in US EPA’s State Climate and Energy Program where she provides guidance and technical assistance to state and local governments to help quantify greenhouse gas and critical criteria for pollutant emission reductions as well as associated co-benefits. Following Neelam and Robyn will be Amanda Graor, Cathy Stephens and Jennifer Clymer. Amanda Graor is the Senior Air Quality Planner at the Mid-America Regional Council in Kansas City, Missouri. Her work focuses on ozone and other air pollutant policy planning particularly related to the region’s Clean Air Action Plan and Transportation work.

(Next Slide – “Choosing Actions that are Right for your Community and Quantifying Co-Benefits”) Cathy Stephens is the Environmental Program Manager for the Capital Area

Metropolitan Planning Organization (CAMPO) in the Austin, Texas area. Cathy, along with her colleague, Bill Gill, from the Capital Area Council Governance co-chairs the Regional Staff Level Group that develops the region's three voluntary reduction initiatives and provides support for the elected officials serving on the Regional Clean Air Coalition. Jennifer Clymer is an Environmental Program Coordinator with the City of Austin's Climate Protection Program. In the Climate Protection Program for the City, Jennifer's primary responsibility is to work with all City departments to develop and implement customized Climate Action Plans.

Now, I'll turn the webinar over to Neelam and Robyn.

Neelam Patel ~ *Choosing Actions that are Right for your Community*

(Next Slide – “Outline”) Thank you, Jim. My name is Neelam Patel and I'm co-presenting with Robyn Kenney from the state and local branch here at EPA Headquarters. I want to quickly run through what we'll be covering today during the webinar. We'll talk briefly about drivers for local action and focus on the co-benefits piece for today's audience. We'll also discuss evaluating potential actions to help communities choose the right action for their needs, and then briefly go over some examples. Robyn will be spending time going through quantification examples and you'll hear from Austin and Kansas City. So we're not going to spend too much time on this, but what we do want to emphasize is that the estimated calculations of benefits can be used after local ... [inaudible – audio problem] ... by local governments.

I just, can everyone hear me okay?

Jim Yarbrough

Yeah, we had a little glitch. It's over now.

Neelam Patel

Okay, great. Thank you. So, the examples that Robyn will walk through focus on how to quantify and estimate various co-benefits and in each of her examples she will show you where you can get data and introduce tools that can help local and regional governments quantify benefits.

(Next Slide – “Drivers for Taking Local Action: Mandates, Opportunities or Both?”) So, again, today's focus is on reducing ozone and then also achieving co-benefits. So when we're thinking about mandates or opportunities, we really are focusing on the first

mandate that's listed here – “Meeting State Air Quality Standards,” and then from an opportunity side, looking at “Achieving Co-Benefits.” So while today's audience is focused mainly on compliance for new criteria air pollutant standards like ground level ozone, I'd like to point out that in the bigger picture, there are other mandates that local actions can help support at both the federal and the state level and there's also other opportunities that can help moving action forward. And the opportunity I'd like to highlight is available funding. Recently, there's been a lot of federal funding coming out for actions that can not only mitigate climate change and encourage clean energy actions, but can also reduce criteria air pollutants.

(Next Slide – “Benefits Go Far *Beyond* Air Quality”) So I just want to spend a moment going over the co-benefits framework. This is how we tie together air quality improvements, climate change mitigation and clean energy, which is renewable energy, and energy efficiency programs. By focusing on this, on how applying this co-benefits framework, we can achieve multiple benefits: the mitigation, energy security, cost savings, economic development, protecting public health. And this framework is especially important for communities that have limited resources and would like to achieve diverse sustainability, energy conservation or public health goals.

(Next Slide – “Identifying and Evaluating Actions”) Here, you see there are different considerations for communities when thinking about which actions to pursue. For co-benefits, there is some of the things I talked about in the last slide. But I would just like to add that food security is an emerging interest and it also relates to public health. So while we don't have a robust co-benefits estimation for this, for the communities that are on the line, this could be a very important co-benefit to consider.

The second piece of identifying and evaluating actions is really about the timeframe, especially for today's audience, because we're focused on co-benefits that help support ozone compliance, future ozone compliance. So in this situation, when you're thinking about timeframe, it's important to think about a couple of factors such as institutional capacity. You know, does your staff have the skill set? Do you have the equipment, the software, to pursue certain types of actions? Is there, for measurability, what type of results do you need in order to get those results? What type of equipment is necessary? And then from an enforceability perspective, going further down the list, can this be enforced? Will you be able to make these actions happen?

(Next Slide – “Actions and Strategies”) There's many different factors to consider when you're deciding on actions or implementing strategies. And here's a quick overview of

some of the different types of strategies – short term, medium term, long term. It's difficult to assign a timeframe for short, medium and long, but what we can say is that some efforts can take a longer time. So, for example, if you're looking at land use and transportation planning, not only do you have to invest time into the planning process, and it's critically important to have public involvement in that process, but once that plan is established and accepted by government and the public, then there's the implementation which can take an additional number of years.

So, again, I think, like I said, Robyn's going to talk about some of these actions and Kansas City will as well. So I'd like to skip over some of the specifics and focus on just one example.

(Next Slide – “Public Education Campaign, Omaha, NE”) We learned that Omaha in Nebraska recently started a public education campaign to help reduce ozone by doing outreach to the public and talking specifically about actions that individuals can take. This campaign has been in place for less than a year, but it's already starting to show success. People have recognized the Environment Omaha Program, “What You Can Do,” and they've done this by putting advertisements in their local transit, the buses, both inside and outside, and also then outreach through their newspaper.

(Next Slide – “Why Estimate Co-Benefits?”) So we've gone through some of the actions, some of the considerations when determining what local government should do. What we'd like to focus on now is why it's important to estimate these co-benefits. Robyn's going to talk about how to estimate and it's especially important to do this so you can demonstrate the broader value of these actions, appeal to your audience with specific metrics and then also build support through financial resources.

Robyn Kenney ~ How Do I Choose Which Benefits to Quantify?

(Next Slide – “How Do I Choose Which Benefits to Quantify”) Thank you, Neelam. Now, I'll be talking about how to choose which benefits to quantify and what all the quantification methods, tools and resources that you can use to do this type of analysis.

(Next Slide – “Multiple Benefits of Emission Reduction Activities”) So I normally like to start with this slide that talks about all of the different benefits that are available to quantify when you are reducing your energy use. And what I'll do is walk through two examples to help illustrate how to apply the resources and tools when pursuing emission reduction activities targeting reducing your energy use in the building and mobile store sectors. And so the different types of benefits that you can achieve when

you're pursuing emission reduction activities through clean energy strategies is greenhouse gas savings and that can be communicated through the equivalency metrics that people can relate to. You have criteria air pollution savings that can lead to public health benefits such as avoided mortality and morbidity and related costs to your public health benefit. It's also important to understand what energy cost savings are available when you reduced your energy and fuel consumption. And that information can inform the analysis for a macroeconomic impact. That includes jobs created, income or gross state product. Energy system benefits are also very important, but we won't be discussing that in detail today. But that should be a part of your analysis and it's an important component to your community. And then lastly, there are a number of other benefits such as water savings, land use benefits and social benefits that are indirectly related and sometimes can be harder to quantify.

(Next Slide – “Resources for Co-Benefits Quantification”) So here's some of the resources that we'll go through and I'll briefly touch upon them, but won't give detailed explanation for each slide in the section, but I'll elaborate more on how you can apply this useful information when I go through the examples.

(Next Slide – “Estimating Air Emission Reduction Benefits”) So first off is estimating your air emission reduction benefits of your clean energy goals or activities. And essentially, to estimate these benefits, you would take the energy saved in kilowatt hours or gallons of fuel and multiply that by an emission factor which is normally expressed in pounds of pollutant per energy consumed or grams of pollutant per energy consumed. And so for electricity, EPA has an excellent resource called eGRID which stands for the Emissions and Generation Resource Integrated Database. You can get your emission factors for SO₂ emissions, NO_x emissions, mercury emissions and CO₂ emissions from this database. And for transportation, EPA's MOVE2010 model also can estimate criteria, air pollutants from the mobile sector. There's also a simplified tool called the EPA's Diesel Emissions Quantifier where you can go in and quantify the emission reduction benefits as well as cost effectiveness of employing your reduction technologies for diesel fleets.

(Next Slide – “Estimating Air Quality & Health Benefits”) Second up is estimating your air quality and health benefits. So once you have your criteria air pollutant reductions estimated, you can enter this information into our COBRA Screening model and that converts the reductions into changes in air quality, health effects and the economic value of avoided health incidences and we'll go through that in a little bit more detail when we do the examples.

(Next Slide – “Economic Benefits”) Economic benefits are always very important. Localities are always trying to improve their bottom line and it’s a key component to your benefits message. And what this slide shows is the very short term and long term economic benefits as well as the direct and indirect economic benefits from your project. So it’s really important to understand your audience and what available information is out there to quantify economic benefits and that will help you shape which benefits you choose to pursue and communicate to your audience.

(Next Slide – “Estimating Energy Cost Savings and Other Economic Benefits”) Some resources available to estimate these energy costs are data sources from an arm of the Department of Energy called EIA. They have price data for electricity prices and fuel prices that are updated on a regular basis. And this is a great resource, especially if you need to do a back of the envelope calculation and the electricity prices and gasoline prices are available on a state level basis. For job estimates, the easiest way to estimate impacts is through a rule of thumb and there are a number of studies out there that talk about for every dollar spent on energy efficiency, a certain amount of jobs are created. And so if you can relate back to an applicable report that is similar to what your project is, then you can apply a rule of thumb, which we’ll do an example.

(Next Slide – “Social and Societal Benefits”) And then lastly, we have social and societal benefits that normally are a little bit harder to quantify. But here you could think outside the box a little bit and you can communicate your benefits through program participation numbers, how many people or households or businesses you’ve reached, etc. So this is very important, but unfortunately, it’s sometimes hard to quantify.

(Next Slide – “Calculating Multiple Benefits”) Okay, let’s move on to calculating the multiple benefits and go into specific examples for clean energy activity that you might want to pursue in the future.

(Next Slide – “Example: Reduce Energy Consumption Within Local Government Buildings”) So for the first example, we have a scenario where your local government might want to reduce their energy consumption by 15 percent in five years and they decided to use 2007 as their baseline. So the first thing you need to do is get your baseline data and for 2007, you would need to get annual energy use. And so there’s an example of how much energy a typical 200,000 square foot building would use within a year and this example is for only one building that is about 200,000 square feet. So just keep that in mind when you look at the results. You also need to understand the energy costs as well as how much emissions are being emitted because of all the

energy that you consumed in 2007. You take your baseline information and – oh, I’m sorry. So the message that you would need to do to collect that information is for energy usage and costs, you obtain that from your electricity bills or EIA data you can use for the cost of electricity. To obtain your emission factors, you would use the eGRID resource that I referred to earlier. And so after you get that information, you would apply your baseline emissions information, cost information and energy use information and find out the delta between your baseline and reducing your energy by 15 percent in five years, so in 2012. And after you get that delta, from your baseline to your new emissions scenario, you can input that information into the third bullet underneath “Methods” which would be into COBRA. So you could get your air quality and health impact input information when you input that delta emissions into the COBRA model. And you can also utilize the rules of thumb for job impacts and a resource for that would be the Assessing Multiple Benefits of Clean Energy Guide.

(Next Slide – “Co-Benefits Tools for Reducing Energy Consumption Within Local Government Buildings”) Here’s some tools that are very useful to doing this type of analysis. First up is eGRID and you can see here that eGRID is separated by regional basis and this represents the regional emissions factors that are generated in the different regions of the electricity transmission grid. So for this example, I looked at Kansas, so I looked at the espiano [sp], the pink spot in the middle of the US map. And so based on where you live, you would have different average emission factors applied to the energy reduction from your policies. Portfolio Manager is also a very important tool that is free and easy to use. It is administered through ENERGY STAR and you can track your energy data, your water data. It also has the eGRID emissions data inside Portfolio Manager where you can track all of that information over time and you export that information into an Excel spreadsheet where you can do other analyses. The important air quality tool is the COBRA screening model and the COBRA screening model can look at air quality effects at the state or county level. So if you are just looking at your county and you want to see how much air quality benefits could occur from reducing your emissions either by a percentage or by a certain number of tonnage, you can put that into the COBRA model and get that type of information – air quality and health impacts. And then lastly, rules of thumb. The rule of thumb that I use for this scenario is the first bullet, one GWh of electricity saved through energy efficiency programs in New York yields 1.5 sustained jobs.

(Next Slide – “Sample Results for Reducing Energy Use Within Local Government Buildings”) And here are the results from this scenario and you can see here that you can quantify how much electricity saved, the cost savings, how much emissions are

reduced and the air quality benefits as well as the jobs created from reducing your energy use by 15 percent by 2012 from one building that is 200,000 square feet.

(Next Slide – “Clean Fleet Policy: Anti Idling Example”) The next scenario is a clean fleet policy scenario, looking at anti idling as an example. And the goal here is to reduce your idling time by installing electrified parking spaces within the region 6 and 7 area. And for this scenario, what the goal is is to reduce your idling time from the sleeper trucks and the information that you would need is you would need to collect the baseline data for the mobile source sector, and vehicle type, vehicle model year, fuel type, fuel cost, reducing idling hours, and all the emissions that are associated with that is the important information that you would need. And then the methods that you would use to obtain that information is either through calling a fleet operations manager serving parking space areas to find out how many trucks are idling within certain parking spaces. You also need fuel burn rates, emission factors and sometimes you’ll have to use average fuel economy information if you don’t know the exact fuel economy for that vehicle type.

(Next Slide – “Co-Benefits Tools for Reducing Diesel Fuel with Anti Idling Rules or Ordinances”) And here are some of the tools that I used to do the quantification. I want to highlight the Diesel Emissions Quantifier which is a great tool which is a simplified tool. It’s a web based tool and you can employ different emission reduction strategies to your diesel fleets and get NO_x reductions, PM reductions, CO₂ reductions and even cost effective information that tells you per number of dollars spent, how much emissions reduction would you get per ton from a retrofitted vehicle. So it’s very useful.

(Next Slide – “Anti Idling Example: Benefit Results”) And finally, here are the results of that quantification and you can see that there are gallons of fuel saved, there’s NO_x emissions, CO₂ emissions saved, and there’s \$11,000 of economic value of avoided health impacts.

(Next Slide – “U.S. EPA’s Quantification Tools”) And then finally, EPA has a wealth of quantification tools that you can utilize.

(Next Slide – “EPA Tools: Measuring Air Emissions and Energy Consumption”) Here is a small subset of EPA tools that are available to help you measure your air emissions and energy consumption. We have utility information in our appendix to show more detailed information on how these tools can help you and links to these tools. In addition, at the bottom of the page, you can go to our state and local resources web site

where there are a number of resources publications and data as well as tools that you can find to help quantify the co-benefits from your emissions reduction activities.

(Next Slide – Contact Information) And finally, if you have any questions, you can always contact myself or Neelam Patel for more information. Thank you.

Jim Yarbrough

Thank you, Neelam and Robyn. Very informative. What we'd like to do now is move to hear directly from some of our local partners, hearing directly from the Kansas City metropolitan area and the Austin area. First up, Amanda Graor. Amanda. Just a slight difficulty. We've muted Amanda. We'll have her back up in just a second. Amanda?

Amanda Graor

(Next Slide – “Air Quality in the Kansas City Area: Recent Trends and Plans for the Future)

Oh, I think I just got unmuted. Are we all set to go? Okay, great. My name is Amanda Graor. I'm the Senior Air Quality Planner at the Mid-America Regional Council in Kansas City. And we are both the Council of Governments and the MPO for the region. And so we are able to do some interesting things with transportation and our environmental planning since we're all in the same building. It's a little bit easier to coordinate on some of this stuff.

(Next Slide – “NOx Sources”) The first thing that I wanted to go through was the main sources of NOx and VOC in the Kansas City area just to give a little bit of background for how we choose our projects to implement. As you can see, our NOx sources, our biggest source of NOx in the area is on-road vehicles, but followed closely by electricity generation and non-road equipment. So those are three of our big focuses for NOx emission reductions and the same with VOCs.

(Next Slide – “VOC Sources”) Our main VOC source is solvent use and we've got on-road vehicles and non-road equipment. So we have a little bit less of a clear focus on the VOC emission reduction projects. They're a little more varied. But those are the main sources that we're looking to reduce for ozone.

Ozone is the main criteria pollutant that we look at reducing, but we've also got some potential greenhouse gas focused projects coming up here. But we obviously do

recognize the co-benefits of our ozone emission reduction projects with our greenhouse gas emission reduction projects.

(Next Slide – “How Are We Preparing?”) So how are we preparing? The three projects in Kansas City that I wanted to focus on today are our Clean Air Action Plan which comes out of our Air Quality Program here at MARC, the Kansas City Climate Protection Plan which is the Kansas City, Missouri, the City of Kansas City, Missouri’s Climate Protection Plan that they went through a long planning process to come out with, and then our Long Range Transportation Plan for the first time has some very specific environmental goals associated with it. So I’ll go through some of those.

(Next Slide – “Clean Air Action Plan”) First up, we’ve got the Clean Air Action Plan which was initially developed in 2004. It was anticipated that Kansas City would be designated as a nonattainment area in the early 00’s but ended up basically sliding under without a nonattainment, an official nonattainment designation. But it was decided to use a lot of the synergy that was going on in the area already to come up with a voluntary plan so hopefully we could stay out of nonattainment for a number of years to come. And so the Clean Air Action Plan is a comprehensive voluntary plan for reducing emissions before EPA requires us to do so via nonattainment designation. The Plan targets both stationary and mobile sources and has short, intermediate and long term measures associated with it. After a long public engagement process, it was decided that the four main categories of those strategies were going to be power plant emission reductions, diesel emission reductions, public education and sustainability efforts.

For the power plant emission reductions, some of the biggest successes that we saw out of that was Kansas City Power & Light, which is one of the main energy providers for the area, at three of their plants, they installed either SERs and/or Low NOx Burners on the plants which constituted a majority of the NOx emission reductions that we saw from the Clean Air Action Plan. For our diesel emissions reduction, we focused on a lot of different things. Both on-road retrofits and replacements and off-road and construction equipment replacements, locomotive retrofits and idle reduction policies and programs were all part of our diesel emission reduction part of the Clean Air Action Plan.

(Next Slide – “Updates to the CAAP”) Updates to the Clean Air Action Plan are currently going on right now. As I mentioned, it was written in 2004 and it was never meant to be a static document. It is very much meant to be a living, planning document that evolves with whatever the issues are going on at the time. And so right now, we’re

updating it to include the project implementation of projects that were committed to in the original Clean Air Action Plan and also bringing on new partners and new projects and ideas. One of the big things that the Kansas City area is facing with this most recent revision to the ozone standard is that we're expected, our air quality boundary is expected to change geographically in a very significant way. And so we're looking to bring in some of those counties that have never dealt with the air quality planning to the extent that our current air quality boundary counties have in a less regulatory way, so once we do start our State Implementation Planning, Kansas City is expected to be redesignated as nonattainment next year. And once we do get into that, the counties that are going to be new to the boundary will have a better idea of what's going on and what's to be expected of them in the SIP planning process because of the Clean Air Action Plan updates.

(Next Slide – “Updates to the CAAP”) As we defined it in the proposed update, as I mentioned before, the four main tenets included the power plants, diesel emission, public education and sustainability. At the time, the sustainability tenet wasn't as easy to kind of fill in as the other ones were. And so as we defined this update, we wanted to know if there was a clear direction that the region is heading with regards to sustainability efforts. And since it's an air quality plan specifically related to air quality, energy efficiency and climate change and if we couldn't determine a clear direction, we wanted to figure out what type of facilitation or leadership we needed to put together in order to achieve a unified goal for regional emission reductions and energy efficiency measures to be the most effective. You know, we knew early on that there's a lot of projects going on in a piecemeal way, but how can we bring those together and maybe do cooperative purchasing or something that can make it more regionally efficient and effective.

(Next Slide – “Updates to the CAAP”) So we're currently in the initial stages of new project development and we've had several meetings with our working group trying to determine what projects people are already working on, what projects they might like to implement, but need a little bit of help from somebody else, a little bit of collaboration or what are kind of wish list projects that we can start on in the future or have committed to as part of the Clean Air Action Plan. And also, involvement in the process is also keeping stakeholders up to date on the State Implementation Plan development and we're keeping them involved in the process, letting them know what the timelines are and kind of keeping them up to date in a less regulatory way. And this update process is planning to lead into the SIP process and hopefully provide voluntary support to the

regulatory agencies being the State Air Agency to their State Implementation Planning process.

(Next Slide – “Funding/Success?”) Talking about funding and success, the funding is partially through planning grants and CMAQ education and outreach funding, but many projects in the Plan are private or funded through the committed agency, the agency that committed to doing the project in the first place. The Clean Air Action Plan in and of itself does not have funding associated with it. But federal programs such as DERA have helped tremendously in certain aspects. I don’t know that we’d nearly as far as we are in the diesel emission reductions had it not been for DERA, although we did use some CMAQ and EPA Clean School Bus funding to retrofit over 600 school buses in the Kansas City area. And through that project, we also did our Idle Free Zones at Schools program. That was before DERA, but certainly federal programs have helped out a lot in directing funding to certain priorities. And I’ll touch on this when we get to the Climate Protection Plan next. But I think one of the important things about these voluntary plans is setting priorities. So even if there isn’t funding already associated with it, when funding becomes available, you’re able to prioritize projects immediately and have those grant applications, you know, already half written because you already know what your regional priorities are and you can focus on certain things instead of trying to facilitate that conversation once the notice of funding availability comes out or something like that. You’re a little bit ahead of that.

(Next Slide – “KC Climate Protection Plan”) The Kansas City Climate Protection Plan was officially adopted in 2008 although planning started for it a few years before that. And these are the four main recommendations that came out of the planning process for the City, and this is just for the City of Kansas City, Missouri. They were encouraged – this was encouraging the City Council to adopt a goal of reducing community wide greenhouse gas emissions by 30 percent below year 2000 levels by 2020; adopting an aspirational goal of reducing the community wide greenhouse gas emissions by 80 percent by 2050 and focusing long term outlooks on being a climate-neutral Kansas City; adopting Phase 2 greenhouse gas emission reduction measures in the Climate Protection Plan – the Climate Protection Plan has a few different phases and I’ll get into that in a minute – as a statement of intent and strategy, while providing the City administration with the flexibility to implement them in a timely and workable way; and also to support the continuation of the Steering Committee as an ongoing oversight entity for the implementation of the Plan.

(Next Slide – “2010 Update”) And all of these were adopted by the City Council in 2008 and they just recently came out with a 2010 Update. And this table shows when each phase, Phase 1 and Phase 2, were adopted, the number of greenhouse gas emission reduction measures in each phase and when they were adopted by City Council resolution. And you can see their estimated greenhouse gas reductions are significant and over 55 different emission reduction measures have been committed to by the City of Kansas City, Missouri and adopted by City Council resolution at this point.

(Next Slide – “Funding/Success”) The Plan has been very successful for the City in identifying priorities for planning and projects and the second bullet point is really just an example of where some of the funding is coming from. But they submitted and received a grant to DoE for the Conservation Block Grants of \$4.8 million to address some of the energy efficiency improvements committed to in the Climate Protection Plan. And since the adoption of both phases of the Plan has begun, on some level 48 of the 55 different reduction measures have begun, including implementing a primary policy recommendation to regionalize the Climate Protection Planning effort. So while this effort started with the City of Kansas City, Missouri, they’re trying to help regionalize the effort through MARC and through all the other communities in the area to make the entire region consider their energy efficiency and some of these other greenhouse gas emission reduction measures that the City of Kansas City, Missouri has committed to.

(Next Slide – “Adaptive Scenario”) The last thing that I’ll touch on and this is going to be a bit more brief than the other two, because this one is a little bit more in its infancy, is the Adaptive Scenario which originally started out as the forecast for our Long Range Transportation Plan that we’re updating – well, we’re almost complete updating – and this time around there was, our Research Services Department looked into what ... they called it a Baseline Scenario and Adaptive Scenario and they put together all the land use plans and all the different community plans from our membership and showed what the region would look like land use wise and population wise and economically by 2040 if we used all the existing plans and then set certain goals for redevelopment and more brownfield instead of greenfield development and increased transit, increased walkability, to see what the region would look like if certain percentages were achieved in those kind of goals. It promotes and notes in corridors approached for development, it looks at preserving natural resources and increasing walkability meaning the access to transit, and accommodating – this is one of the important parts was that it was accommodating economic growth in a more fiscally and environmentally sustainable manner. So it wasn’t just focused on environmental, it was also focused on making

sure the region could stay both environmentally sustainable and economically sustainable.

(Next Slide – “Adaptive Scenario”) It’s been met with varied levels of support on different points. There’s obviously, we’re a bi-state region and there are very different cities around the region. Some have a lot of land, others are completely built out, and so cities have different priorities. And so we are still working towards the Adaptive Scenario with our planning and different percentages have either been agreed or disagreed upon. We don’t really have a final answer on the Adaptive Scenario yet. A part of our board did approve part of it to be used as our forecast for our long range plan so we could get that finished. But the Adaptive Scenario has more than anything started a conversation on regional land use planning and regional adoption of certain measures to make them the most effective. The funding for the Adaptive Scenario is mainly transportation related and based on long range transportation plan priorities at this point. They’re, again, like I said with the Clean Air Action Plan, there’s no direct funding associated with the Adaptive Scenario, but it is helping us set our regional priorities for transportation and land use.

(Next Slide – Contact Information) So those are three of the main projects that we’re working on in Kansas City right now and, as the moderator said, we’ll take questions at the end.

Jim Yarbrough

Thank you, Amanda. And now we’ll hear a bit about the Austin experience. First up I think is Cathy Stephens and then we’ll hear from Jennifer Clymer. Cathy.

Cathy Steven ~ Ground-Level Ozone Reduction Programs in the Austin Region

(Next Slide – “Ground-Level Ozone Reduction Programs in the Austin Region) Hi. I’m glad to be here today. I’m going to talk a little bit primarily about how we’ve been doing voluntary air quality planning in the Austin region with a focus on some of our transportation measures and a brief discussion of how we get co-benefits from that. So, waiting for my slide to change.

(Next Slide – “Voluntary Emission Reduction Initiatives”) What we’ve done in the Austin region, we’ve been on the verge of nonattainment for many years, so we’ve taken advantage of the opportunities available, that EPA made available for Voluntary Emission Reduction Plans. We’ve done three of them so far – first in 2002, the last in

2008 and the one in 2008 will be in effect through 2013. We think this has been a great tool for getting local involvement and getting people to understand the overall problems and what they need to do. Wanted to point out, that option is still available to people, so it may be something if you're near nonattainment you want to take a look at doing a Plan yourself. One of the big reasons we think that our efforts were successful is we put together a coalition of local governments and also a staff level group to support that, and that was what overall I think made this be successful.

(Next Slide – “Austin Area Emissions 2008 Emissions Inventory”) This is just a shot that shows our emission inventory. That's really the place you need to start, as others have mentioned, to see where your sources are and that will tell you where you need to reduce. We seem to be very similar to the Kansas City area for NOx, our main source is on-road, mobile. For VOC, our main sources are area sources.

(Next Slide – “Emission Reduction Measures”) As far as the emission reduction measures, we took an approach that would help us get buy-in. We called it the Fair Share Approach. We took a look at the emissions inventory split out by county and were able to determine what each county's contribution was to the overall hole and we also took a look at the emission inventory by source category and then only targeted sources and counties for reductions that were proportionate to their contribution. We also did appeal to the State to help us with our efforts and for the 2004 Early Action Compact, the state did adopt several rules that were applicable in our area and made a lot of difference. We are probably the only area in the country that voluntarily opted into a Motor Vehicle Inspection and Maintenance Program. The State did assist us with that and because we were doing it voluntarily, we were able to negotiate a less stringent and less costly program and I think that helped a lot with getting buy-in from the public. All of the measures that we went forth with, we had source category work groups and worked through with the stakeholders what they thought would be acceptable and what they thought not so that we had buy-in prior to rule adoption. We also included a lot of local measures and these came just from local governments. The State didn't need to do anything.

Our last Plan is strictly local measures and for the local governments we felt very strongly that they needed to be provided with choice. So what we would do is give them a menu of options for measures and a target of how many they needed to pick. We had a minimum of three, you had to do an Ozone Response Plan, for example, and then depending on your contribution, you would pick more measures. So the City of Austin ended up implementing the most measures. Some of our more rural areas just ended

up with the three. Then for all of these Plans, we've rolled everything together so all the measures roll into the next Plan for a cumulative effect.

(Next Slide – “State Assisted Measures”) This is just a brief overview of the State assisted measures. As I mentioned, we have the Vehicle Emission Inspection and Maintenance. Also, the State passed a rule that applies state-wide, but is only applicable in areas that agree to enforce it for idling restrictions or particularly targeting diesel. We got a lower threshold on our Stage 1 Vapor Recovery implemented from degreasing. Also, cut back asphalt. Those were all VOC measures as well as low emission gas cans. And then the State has a Texas Emission Reduction Program and we applied for projects through that as well as they had agreements with local power plants were additional reductions.

(Next Slide – “Over 200 Local Government Commitments”) Local governments ended up committing to over 200 measures. These are just a sample of them. Tree planting was a big one, the Ozone Action Day Response Program, a lot of fleet measures using cleaner vehicles, cleaner fuels, fueling in the evenings and making sure you're using the right vehicles for the task at hand; also, resource conservation and things as simple as using e-Government and multiple locations to cut down on the number of trips that the public has to make and then several transportation emission reduction projects as well. We did all these looking at ozone, but over the course of time, I've realized there are significant co-benefits for climate change as well.

(Next Slide – “Community Oriented Measures”) Community oriented measures, these were implemented by regional groups or non-profits. We have a Commute Solution Program that encourages folks to find alternatives to solo commute. The Clean Air Partners Program – we think this a very good program. This is done by a local non-profit. It's the coalition of over 100 businesses and they all pledge to reduce their emissions by 10 percent over three years I believe. A lot of those folks do that by commute related measures or buying green choice or energy conservation. Then we also have the Clean School Bus Program and Electric Lawnmower Rebate Program.

(Next Slide – “Transportation Focused Measures”) As far as transportation, these are the main ones that we've gotten the most bang for the buck. The Inspection and Maintenance program and as part of that, there's a component for low income repair and replacement assistance so that if your car is over 10 years old or fails the emission test, you can get up to \$3,500 to buy a replacement vehicle or up to \$600 for repair if you meet income requirements. Also, with the I&M Program comes Local Initiative

Project Funds, so part of the seed money goes into this pot and then the counties where the program takes place can implement additional emission reduction programs. We're about to kick off in our counties a Inspection Fraud Program that will be funded through this money. The locally enforced idling restrictions – that enforcement is funded by the local governments that have signed on to it, and then the Transportation Emission Reduction Measures, these are very similar to TCMs you would do for a SIP, and those are funded by the MPO with federal STPMM dollars. We do not get CMAQ money, is have had to use other funding sources.

The Commute Solutions Program includes a regional ride matching website. We actually partnered with the San Antonio area, so we have a ride matching website that covers 22 counties. We have Employer Transportation Coordinator Training where we go out and train the trainer so to speak and then they implement their own commute program at their workplace. We have an Innovative Grant Program essentially providing seed money to Commute Solutions Programs in the region, conduct outreach and events and we fund all that, again, with federal transportation dollars. And then the Texas Emission Reduction Program, again, to replace or retrofit diesel vehicles and equipment. That is funded by the State through fees in the areas where that Program applies.

(Next Slide – “Other Funding Sources”) And a few other funding sources – we've been fortunate in Texas with the legislature has provided for several years a grant for those areas that are near nonattainment. And with that grant, we are able to do a lot of the technical analysis and set up our ozone monitors, also develop and implement emission reduction measures. Our local COG administers that grant, CAPCOG, and it comes through the State. And then as far as education and outreach funding, we really all work together on this. We have several entities that kind of leverage our advertising money and our media buys so that we're able to get the best bang for the buck.

(Next Slide – “Co-Benefits”) And just briefly on co-benefits, we are in Texas, and the State has not really bought into the whole climate change argument as a whole. So that's a little bit of a difficult sell. In many respects, we do have cities and probably most notably the City of Austin is working on this, but other folks don't really want to hear about it. Is it's a little bit of an issue for us, but what we've found is the solution is the same. So regardless of how you're pitching it, you may come up with the same solution. So you really need to know your audience's concerns and people that don't buy into climate change may be very concerned about being a nonattainment area or be concerned about energy independence and are willing to have the conversation through

those venues as opposed to climate change. And so you need to really structure your approach accordingly and in particular it's not often helpful to get into discussions on the science of climate change, at least in our region, and again implementing solutions is the most important part.

(Next Slide – Contact Information) And if you'd like more information, there's our contact information and we'll wait for questions at the end. Thank you.

Jim Yarbrough

Thank you, Cathy. Again, if you have questions, use your dashboard and send those to us electronically and we're compiling those now. I would like to introduce now Jennifer Clymer with the City of Austin to hear more about the City's role in this. Jennifer.

Jennifer Clymer ~ Austin's Evolving Air Quality and Climate Protection Efforts

All right. Good afternoon, everyone. I'm just getting my slides up and running here. One moment. Okay.

(Next Slide – “Austin's Evolving Air Quality and Climate Protection Efforts”) Can you all see my slides now? All right. So my name is Jennifer Clymer. I am with the City of Austin's Climate Protection Program. The previous speaker, Cathy, is with our local metropolitan Clean Air Organization here and I've worked with her on some of our voluntary regional Air Quality Improvement efforts and she is now beginning to help us with our City of Austin specific Climate Protection effort. And really we've sort of evolved, our City Council has kind of shifted its priorities over time so that now most of the actions that we take to try to reduce emissions of any kind is presented from the climate change lens, but really for the most part, most of the activities that we do reduce both types of pollutants. And so we've kind of folded our Air Quality, our Urban Heat Island Mitigation Program and our Clean Cities Alternative Fuels Program all up under our Climate Protection umbrella. So that's the approach that we're taking.

(Next Slide – “Agenda”) Today, I wanted to give you just a little bit of perspective on why it's imperative that local governments take action on climate change and then go into specifically the Austin Climate Protection Plan that we're implementing locally here. And then I believe I'm the last speaker so we'll be able to open it up for questions and discussion after that.

(Next Slide – “Why Local Climate Action?”) So why local climate action? First of all, we, urban areas tend to have a very disproportionate impact in terms of causing climate

change. Urban areas represent less than one percent of the global land area, but we also house half of the global population. And with that population density comes intensive energy usage and the greenhouse gas and other air pollution emissions associated with that. So urban areas consume 75 percent of global energy use and consequently emit 75 percent of global greenhouse gas emission. So not only do we have a disproportionate impact in causing climate change, but we also are likely to be disproportionately impacted by the effects of climate change as well. And just to give you a couple of examples of that, you know, as we see temperatures change and precipitation patterns change, that may exacerbate the urban heat island effect in which urban areas tend to be anywhere from, say, two to ten degrees warmer than surrounding suburban and exurban areas due to the concentration of vehicles, paved structures, lack of trees. And so rising temperatures will only worsen that, which also has a relationship with air pollution level. So not only will we be feeling hotter, but we could also have exacerbated air quality issues as well contributing to both heat and air pollution related illnesses and potentially death.

There's also, related to that, could be increased demands for emergency management function, one just in the sense of dealing with extreme weather, dealing with extreme heat, dealing with flooding, dealing with the impact of drought. All of those have implications for our social services that we provide to the community because it tends to be lower income and elderly populations that are the most vulnerable and they may not, especially during extreme heat days, which is our main issue of concern down here in Austin, they may not have access to air conditioning or fans or places to go and be cool and comfortable. Also, has implications for our health and human services departments in that, with climate change, we're seeing shift in ecosystem species, including insects that carry diseases. And so those may shift into your region and you have to be able to respond to that impact. Also, something that we face here in Austin is that we are kind of a sister city for Galveston which is along the Texas coast. Galveston and Houston, not too far away, are already starting to see, whether they're climate change induced or not, they're already starting to experience more extreme coastal storms including hurricanes. And when that happens, we, Austin, takes in evacuees from those cities. And so ourselves, like other inland cities, that can put a strain both short term and potentially a longer term strain on our human services and economic services departments and non-profits. And then also there are some economic impacts associated with changing climate patterns. Again, this can be tied to agricultural production as we see changes in temperature and precipitation patterns that could alter

the types of crops that we're able to produce locally which our economies are tied to as well.

(Next Slide – “Austin Climate Protection Plan”) So just wanted to set the stage for you a little bit. And now I'm going to go into the, kind of the specifics of the Austin Climate Protection Plan. It was a Council mandated policy that was adopted in early 2007. Because it was driven by our City Council, they also blessed us with some budget to create a program to implement the Plan. The staff and the program itself were housed within Austin Energy which is the City of Austin's municipally owned electric utility. And it really, like I mentioned earlier, our Climate Protection Plan has been a natural evolution of earlier City Council efforts to address especially our voluntary ozone reduction efforts that Cathy mentioned, resource conservation policies that have been in place before that, renewable energy and alternative fuel promotion policies that have been in place. So it was kind of the next step trying to tie all these different resource, conservation and sustainability concepts and air quality concerns together under one cohesive plan. And I just point out that it will be interesting for us to see now if our Climate Protection Plan and the program created to implement it now evolves into a broader sustainability program as we're in the process of hiring a Chief Sustainability Officer. So we're waiting to see what implications that has for our program as a whole.

But just to quickly go over, there are five kind of sub-plans of the Austin Climate Protection Plan and I've grouped them together in kind of three main impact areas. So we have our Municipal Plan which has a goal of making the City's internal operations completely carbon neutral by 2020. I'll go over that in more detail in the following slides. And then the next two plans, the Utility Plan and the Homes & Buildings Plan get lumped together under the responsibility of Austin Energy, our electric utility, which has set a goal to reduce its greenhouse gas emissions 20 percent below 2005 levels by 2020. And then the last piece is the Community Plan and the “Go Neutral” Plan which are aimed at reducing the entire community's carbon footprint such that the community as a whole is carbon neutral by 2050. So again, they're all tied towards some type of carbon reduction or carbon neutrality target, but they're also helping us achieve some of our air quality efforts as well.

(Next Slide – “Comparison of GHG and O₃ Emissions Inventories”) Before I get into too nitty gritty of the details of the five plans that I mentioned, I wanted to just give you a snapshot of what our local emissions inventories look like. This slide is similar to one that Cathy presented, but it's for a different year so you might notice some slight differences in the percentage breakdowns of the pie chart. So on the left hand side,

you'll see our greenhouse gas inventory for Travis County which is a county in which the City of Austin resides. And then on the right hand side, you'll see our NOx emissions inventory and the distinction there is that building energy use is the primary contributor to our local greenhouse gas emissions. It makes up nearly half of our greenhouse gas emissions. Transportation is a close second, making up 40 percent of our greenhouse gas emissions and then solid waste and waste water make up the balance at about 11 percent. So we really focused our efforts in terms of climate protection on reducing energy use and transportation related emissions and then also dabbling in the areas of waste as well. Whereas, on the NOx side, nearly 75 percent of our emissions, NOx emissions, come from the transportation sector followed by point and area sources. So the breakdown's a little bit different. But again, we really strive to take actions that are going to reduce both types of pollutants. We do run into some potential tradeoffs and one example being in the area of alternative fuels. We're trying to ramp up our use of different alternative fuels among the City fleet and have had the discussions about ethanol that it's, you know, one fuel available to potentially reduce manmade carbon dioxide emissions, but it may potentially increase nitrogen oxygen emissions. So kind of had that discussion and weighing the pros and cons of using it as one portion of our portfolio of alternative fuels. And then on the power production side, we've been looking at, within Austin Energy, making some operating, like improving the operating efficiency of our power plants which reduces CO₂, but potentially increases NOx as well. So there are tradeoffs inherent in those and we really leave it to our political leaders to provide guidance on what their priorities are.

(Next Slide – “Municipal Plan”) So now I'll delve into the five plans that I mentioned. The Municipal Plan which has the goal to make the City's operations carbon neutral by 2020 and we're taking kind of a combined top down and bottom up approach in doing that. From the top down, we do have a couple of mandates. One is to make all City facilities powered by renewable energy by 2012. We currently have about 20 percent of the City's total electricity use coming from renewable energy with a plan to convert our remaining electricity accounts to renewable energy by 2012. That has been a bit of a challenge in that we kind of put off addressing that until the past couple of years of having to meet that 2012 goal and now we're facing the economic downturn that everyone is and having discussions about ... [inaudible – audio problem] ... about premium for the renewable energy for our City facilities. And we're trying to balance that with the fact that we also recently received some block grant funding to do municipal energy efficiency project and we're trying to show the benefit of the avoided operating costs from the energy reduction projects and how that can offset or balance

out the increased cost in paying for clean burning renewable energy. So that's some of the discussion that we're having right now.

Another top down mandate so to speak is to make our vehicle fleet carbon neutral by 2020 through the use of fuel efficiency, alternative fuels and potentially carbon offsets. And that, you know, if we want to make our fleet entirely carbon neutral, the options available to us are to purchase 100 percent electric vehicles and charge them with renewable energy, or to use 100 percent biofuels. So not just B20 which is what we're running now in all of our diesel vehicles, but B100. Not just the E85, but E100. Something along those lines and so there are still questions about will the technology be there? It's certainly there for our light duty passenger vehicle fleet, but and to some extent for the medium duty fleet as well, but we are concerned that the technology may not progress enough to power all our construction equipment and our heavy duty vehicles as well. So we are still leaving the option to use offsets on the table. But as of now, we've got over half of our vehicle fleet is alternative fuel capable.

And then the last top down approach is that we developed an interdepartmental climate action team that has been meeting since January of 2008. And at the moment, they're working to address, to identify and come up with a solution to kind of universal barriers that all the departments are facing and helping the City achieve its goal of carbon neutrality. But we are taking a little bit of a grassroots approach in that we have worked with each and every department to create their own customized climate action plan. So we've developed a carbon footprint specifically for that department that takes into account their major emissions forces and then allowed them to pick from a menu of strategies how they're going to achieve different energy and water and fuel and waste minimization goals. So they've really allowed that to be tailored to their specific scope of operations, what their budgetary implications are, what their pressure is from the community and those plans have been finalized and vetted through our City Manager's office and made available to the public to hold the department accountable for achieving their conservation and greenhouse gas and air quality and ozone reduction goals that they set for themselves. We have used those departmental climate protection plans to kind of integrate our greenhouse gas and ozone reduction efforts in that we had existing coordinators within each of the departments that kind of led ozone action day efforts and so we've used some of those to be our climate protection coordinators as well. And so we're trying to cross message there.

And then the last piece of the bottom up is that we're working to get all roughly 13,000 of our City employees trained on basic climate change science, what the City is doing

and ways that they can help the City as a whole make its operations carbon neutral. So we've gotten about 20 percent of our employees trained so far.

(Next Slide – “Utility Plan”) I'm going to move into the Utility Plan. And the goal here is for Austin Energy to reduce its greenhouse gas emissions to 20 percent below 2005 levels by 2020. That was the target that was adopted in collaboration with the community that we serve. We just completed a two year, public participation process where we came up with that greenhouse gas reduction target and the specific sub-goals in terms of energy conservation and renewable energy that we wanted to achieve to help meet that emissions reduction target. So the utility in combination with the public has set a goal to reduce customer demand for energy by 800 megawatts by 2020. This is equivalent to a pretty large size power plant. Austin Energy has had energy conservation programs for at least 20 years and so we've been able to successfully avoid roughly this amount of energy in the past and we're trying to double that effort by 2020.

In terms of renewable energy, we have a goal to obtain 35 percent of our energy from renewable resources by 2020. We're currently at about 11 percent and most of that comes from wind, but we're trying to increase the variety of renewable energy resources available to us. And along those lines, we have a specific carve-out to install 200 megawatts of solar energy capacity by 2020. So we're right now at about 5 megawatts of installed solar capacity and a 30 megawatt plant and development and plans for rolling out new production based incentives for commercial customers. We're looking at potentially property tax financing options for residential customers and we've also received some stimulus funding to work with our local school district here to get solar in the schools to not only help provide some of their energy needs but also to serve as an educational tool.

(Next Slide – “Homes & Buildings Plan”) The next plan, the Homes and Buildings Plan, goes into more detail on how we plan to meet that 800 megawatt energy demand reduction goal by 2020. So we're trying to address both new buildings as well as the existing building stock. So for new buildings, we're working to increase the stringency of local building energy codes. So we're addressing that both for single family homes and for multi-family and commercial buildings. For single family homes, we're trying to make all newly built single family homes zero net energy capable by 2015. And I know that's a mouthful, but basically what that means is that we want to make homes so energy efficient that the little remaining amount of energy that is required to power their homes can be generated on site through hopefully some type of renewable energy

generation. So that means that new homes by 2015 will be 65 percent more efficient than the level they were in 2007 by code. And similarly for multi-family and commercial buildings, we're trying to increase their efficiency to 75 percent above the levels they were in 2007 and we're doing that through a round of four different building energy code changes. Two of the four are complete which has brought single family homes up to being 34 percent more efficient and commercial and multi-family property is 32 percent more efficient. So we're on our way and that's moving forward. And then to address the existing building stock, we adopted an ordinance that requires all buildings upon the point of sale to undergo an energy audit. So this is kind of similar to the fuel economy sticker that all new cars have when they're sold, we're trying to make consumers aware of the relative differences in how efficient different homes are and how that impacts your utility bills over the long term. So trying to change that mindset from just thinking about the upfront purchase price of the home, but to think about what it takes to operate and maintain that home as well. So we've had good success with that without little over 80 percent of the homes that would be subject to this ordinance have completed an audit and we've seen there's no requirement that they actually undertake energy efficiency upgrades as a result of that audit, but that is the hope, that we can show them where their home could use some improvements in terms of adding attic insulation, doing some basic weatherization, weather stripping, sealing ducts. In fact, our audits have shown that 98 percent of the homes that were audited needed at least one energy efficiency improvement. But because there are no requirements that they undertake those improvements, we've seen about a 10 percent follow up rate in terms of the people that get an audit done actually go through one of Austin Energy's rebate or loan programs to do some of those upgrades. So we're hoping to increase that in the future.

(Next Slide – “Community Plan”) The next component shifts us into our Community Engagement piece. So the Community Plan is trying to make the community as a whole carbon neutral by 2020. And again, we're trying to mimic the approach that we're taking with our internal City operations that we're taking both a top down and a bottom up approach. So from the top down, the energy conservation and renewable energy target that Austin Energy recently adopted are really driving, going to drive down the entire community's carbon footprint. And then from the bottom up, we're in the process right now of convening a stakeholder group that's developing our Community Climate Action Plan that will outline the specific strategies we're going to take to become carbon neutral by 2050. And then of course we have our usual community outreach and education attending events and getting out in the schools and neighborhood groups.

(Next Slide – “Go Neutral Plan”) And then finally, the very last component, is the “Go Neutral” Plan. Essentially, this is the piece that provides different tools to help the community measure and reduce its carbon footprint. So for individuals and households, we have developed an online carbon calculator that launched this past January. I know that there are 101 different calculators online, but ours is unique in that it captures local electricity and water emissions data and it allows you if you’re a City of Austin utility customer to enter your utility number and it will auto populate some of the carbon footprint data for you in terms of your electricity use, water use, information about the waste that you create. We’re trying to get this calculator out into our airport and convention center as well. And then we’re also working to develop some type of green fund that would link with the carbon calculator so that people could go in and calculate their carbon footprint and then make a donation to help fund local projects that would be required to reduce, not just greenhouse gases, but ozone forming pollutants as well and have local, other local co-benefits. And for businesses and organizations, we have leveraged an existing Austin Energy partnership that they had with some large commercial customers to develop an offshoot that’s really focused on sustainability issues. So it’s allowing them to raise awareness about different companies’ sustainability programs and share ideas and lessons learned. And then we’ve also reintroduced an environmental awareness awards program this past spring that recognizes individuals, small businesses, large businesses, non-profits, governments and then school and educational groups as well. So we’re trying to kind of promote local voluntary action.

(Next Slide – Contact Information) And I will leave you all with that. I’m happy to answer any questions along with the other panelists. Thank you.

Jim Yarbrough

Thank you very much, Jennifer, and thank you to all the speakers – Neelam, Robyn, Amanda, Cathy and Jennifer. Thank you for the questions that have been submitted. We have several and I’d like to have all of our presenters unmuted at this point, so individually, they can respond to these.

Begin Q&A Session

Q: Amanda Graor, I have a question for you. One of our participants or our listeners has asked, do the figures in your slides for waste disposal include burning of vegetation or storm debris?

- A: (Amanda Graor) Did I have figures on waste disposal?
- Q: We were thinking maybe you had those under your NOx emissions totals.
- A: (Amanda Graor) Oh, oh, oh. No, I'm sorry. What was the question again?
- Q: Do the figures for waste disposal include burning of vegetation and storm debris?
- A: (Amanda Graor) In the Kansas City Air Quality Boundary which includes Jackson County, which those numbers are from, there's general restrictions on burning of storm debris and things like that and so my guess is that they don't. I don't specifically know the answer to that, but I would guess that it does not.
- Q: Okay. We've got another question for Amanda, a little bit more broad, a broader question. Could you please talk a little bit about the educational component of your Clean Air Action Plan?
- A: (Amanda Graor) The educational component of our Clean Air Action Plan is really broad and far ranging. We had commitments from some of our local governments to establish educational and outreach efforts around ozone with their employees at the city government level and one of our county, a couple of our counties did that as well, where they promote ozone alert days and they promote carpooling and other ozone reduction actions and then they educate their employees on having the newest lawnmower or not mowing on ozone alert days and not filling up your car on ozone alert days and things like that. We also have extensive efforts that come out of MARC. We have what's called the Workplace Partnership where we've got roughly 170 local businesses that have signed up for this partnership and every other week during the ozone season and then once a month not during ozone season we e-mail out basically kind of a newsletter, but it includes the main content is tips on ozone emission reduction, like personal actions that people can take to reduce their ozone emissions and those are sent out to all the employees of those companies. And then we offer "Lunch and Learns" and different educational opportunities for the companies that are involved. We have a pretty extensive ozone alert day, tools ... we have "The Kansas City Scout" which operates all of the traffic boards around the area, promotes the ozone alert days and we have relationships we the TV stations and some radio stations and we have a Twitter account that tweets the skycast everyday including ozone alert days. We, gosh, there's so much of it. I'm trying, I'm sure I'm leaving big parts of it out. But there's a lot of different – we collaborate a lot with our Regional Rideshare program which is also housed out of MARC and in fact coming up in July and August is our Green Commute Challenge where we have prizes and educational opportunities for businesses to compete against each other on a commuter challenge. We partner with our local

Kansas City Corporate Challenge which is a two month long athletic competition where companies compete against one another and we run a contest where companies rack up miles for carpooling to those events and we offer educational opportunities and “Lunch and Learns” for them. So we have a pretty wide ranging public education and outreach effort and we had that before, before the Clean Air Action Plan, but I think it ramped up a lot and gave us some new priority areas through the Clean Air Action Plan.

Q: Wonderful. Thank you, Amanda. I have a question and comment really for Jennifer. Jennifer, one participant writes, “Are you aware of the benefits of nitrogen inflated tires in improving tire wear by 30 percent, thus reducing spent tire casings disposed of in landfills? Comments that this might be a perfect fit for the Clean School Bus Program in Austin or any other major place. Any comment about that?”

A: (Jennifer Clymer) I wasn’t specifically aware about using nitrogen, but we are looking at different vehicle and fuel efficiency technology options as well as behavioral changes as well. So integrating fuel conservation techniques into our driver training programs and educating employees and local citizens about our anti-idling laws and then helping to do some increased enforcement as well. So that’s certainly something that I’ll look into. I haven’t heard about that before.

Q: Thank you. Cathy Stephens, I have a comment and question for you. It’s more in the area of kind of public outreach and what your strategy can be in this area. The comment and question is, other areas in Texas didn’t buy into climate change or greenhouse gas controls. What’s the best terminology to use to convince those particular groups in taking action?

A: (Cathy Stephens) Well, we’ll give the example we just went through when we adopted our Long Range Transportation Plan and we had included a goal in there that we wanted to implement a transportation plan that would reduce greenhouse gas emissions. And some of our members wanted that goal or objective removed and it ultimately went to a vote of the board on whether or not we would include this as an objective, and main ways that we convinced people that it would be a good thing is that we see regulation likely coming and in particular is going to impact MPOs and transportation. Most of the things that you would do from the transportation perspective to address climate change, we also do for other reasons, whether it be ozone, whether it be reducing dependence on oil, traffic reduction, all kinds of things. So again, the solutions are not that different, but we were trying to couch it that, you know, it’s not going to change that much what we will do, it’s just stating it as an additional goal and the benefit of that is it may get us access into the larger conversation so that we

can better effect the outcome as far as what will come down as far as regulations. I hope that addresses the question.

Q: Thanks, Cathy. A question now for Robyn and Neelam. What methods do you suggest for gauging the effectiveness of outreach efforts such as the one that you mentioned for Omaha?

A: (Neelam Patel) Hi, Jim, it's Neelam and Robyn and you know, behavior change is a very difficult thing to measure. So oftentimes, you have to have a different type of metric. So for example, it would be important to [inaudible] surveys or look at the number of visits to a website after there has been an outreach effort. For example, after the brochure from Omaha Environment went out in the newspaper to see what people were doing, or if people are actually falling off on the information. And you know, to see if the actions are actually taking place is a little bit more difficult to determine. And one, I think some of the other presenters talked about working with schools. Working with schools, the students, is a great way to make sure those actions are being discussed in the community. So those are just a couple of ideas on gauging the effectiveness of outreach efforts.

Q: Thanks, Neelam. I have a question here for Cathy Stephens. How much is the elevated ozone situation in Austin a function of emissions from outside the Austin area? And if it is significant, how does that complicate your ozone and co-benefits planning?

A: (Cathy Stephens) Well, we do see significant emissions coming in from outside of our area. We've been very concerned. There have been a lot of power plants that were supposed to be built right outside of Austin and we show through photochemical modeling that that would definitely have an effect on our area. We also get transport from Houston, sometimes Dallas, so it is a very significant concern and it's often raised by people of the public, you know, kind of why should we do anything? It's all coming from somewhere else. And we've basically just tried to say, you know, we work to try and minimize these emissions from outside of our area to the best of our ability, but ultimately, we can only do what we can do here. So we do the best we can to reduce what we have here to counteract what's coming from the outside. And Bill Gill is probably on the phone too and he may want to add something to that.

A: (Bill Gill) Well, our conceptual model has shown on high ozone days that up to 80 percent of the high ozone could be background coming into the area. On other conditions, it could be 30 or 40 percent of the emissions are generated locally. But pretty much in most cases, it's going to be over 50 percent of the high ozone is transported background. And that's not uncommon. Other urban areas see the same thing. And so the solution really is for the state and the EPA

to get together and take care of that transport part and the local areas to do what they can locally. And don't just point the finger at the state or EPA, but take care of what you can locally. And I think our public has bought into that.

Q: Okay, thank you, Cathy and Bill. I think I have one last question, given the time we have left, and this is really for you, Robyn. The question is, could the EPA please elaborate on the job creation rule of thumb? This may relate to one of your slides, Robyn, where I think you indicated that so many jobs were created based upon a certain megawatt hours of energy efficiency measures adopted or something of that nature.

A: (Robyn Kenney) Thank you, Jim. So there are a couple of resources that the audience can go to to look at different reports and assessments that have been done to talk about the rules of thumb for the number of jobs created based on the number, the amount of money spent on energy efficiency. And there are a couple of ways you can look at the rules of thumb. You could look at money spent on energy efficiency such as appliances or retrofit technology and because you're spending those dollars to reduce your emissions through energy efficiency by buying new technology, you could create a certain number of jobs in the manufacturing sector of the economy. Or, if you are going to be generating a certain number of megawatt hours by installing wind turbines or wind technology and that would require a certain amount of investment in wind generator components that could also spur jobs within the manufacturing sector of certain communities. And the Department of Energy actually has an excellent tool that is not on this slide, but it is something that we recommend that people can use, and that's the JEDI tool and as a follow up I can send the website and information regarding that tool so that people can actually use that tool when deploying new energy generation in their communities and assessing the job impacts from that new energy generation that they're investigating.

Very good, Robyn, thank you very much. Well, thank you everyone for your patience and your participation today. I think that's going to conclude our webinar. Let me remind you that the presentations from this webinar should be available soon on the Blue Skyways Collaborative website at www.blueskyways.org and we'll try to include that reference that Robyn made just now to the JEDI tool on the website as well. And also, we will provide answers to all the questions that were submitted via a document to be put together and shared with everyone that registered for the webinar. Again, thanks very much for your participation and look for updates this summer for our more detailed webinars that we'll be planning later in the year. Thank you.

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