

# Measuring Up: How to Track and Evaluate Local Sustainability Projects

Webcast Transcript

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## Webcast Agenda and Meeting Logistics

Slide 1 and 2: Introduction Slides

Good afternoon my name is Leshanda and I will be your conference operator today. At this time, I would like to welcome everyone to the Measuring and How to Track and Evaluate Local Sustainability Projects.

All lines have been placed to mute to prevent any background noise. If you should need assistance here in the call, please press star and then zero. And an operator will come back online to assist you. Thank you.

Ms. Victoria Ludwig, you may begin your conference.

Victoria Ludwig: Thank you. Hello everyone. Thank you for joining us. I'm Victoria Ludwig with EPA's Local Climate and Energy Program. And we are very pleased to be presenting this webcast today on a topic that is very important to practitioners implementing climate change projects. We have a great line up of speakers. And in this webinar, you will learn about federal resources that can help you measure, track, and report progress and we also have a case study of an underground project that has measured the benefits of energy efficiency program.

So between the resources and the case study you will have some – you'll leave with some practical tips and advice and tools that you can use to help you track your own project, because we all know that tracking and analyzing results of programs is really important not only for securing funding and support but also to track your success and help to identify areas of improvement and make decisions about going forward in the future with this – your project and other projects.

I'm going to start by showing – by giving you some logistics about how to work the control. I'm going to have Lauren Pederson of ICF who's supporting us on this webcast. She'll explain some of the ways to participate today.

Slide 3: How to Participate Today

Lauren Pederson: Great. Thank you, Victoria. On here you have to go to meeting control panel and just a few things to cover. The orange area you see here will help open and close your control panel. You're going to be on mute as this is recorded. So the way to communicate with us is to type your questions in to this box and then click send once your questions entered. You could please indicate the presenter that the question is directed to in your question. That will help us organize during the question and answer session.

The question and answer session will be at the end of the web cast. They will be asking the questions then. Audio is available only by telephone and this is the conference number and the conference I.D. If you experience any technical difficulties, you can contact me at [lauren.pederson@icfi.com](mailto:lauren.pederson@icfi.com). Back to you, Victoria.

#### Slide 4: Webcast Agenda

Victoria Ludwig: Thanks. Pulling up the agenda – just to reiterate, the first two presentations are going to talk about the federal programs and resources that I mentioned that can support you in measuring and evaluating your progress and the last presentation will be a presentation on the case study happening in Washington State.

As Lauren said, at the end we'll do a Q&A session. But just as a reminder, you can type in your questions anytime during the webcast. And also we will pop a evaluation form that we would kindly ask you to fill out to give us your feedback.

#### Slide 5: U.S. EPA's State and Local Climate and Energy Program

Victoria Ludwig: I'm going to start by explaining the program – the umbrella under which we are doing this webinar. This is part of a series that we offer under EPA state and local climate and energy program. This program provides technical assistance, analytical tools, and outreach support to states, local governments, and tribal governments. Specifically, to help this entities implement climate change and clean energy projects and sustainability projects, we help them to identify projects that are cost effective and that can be successful. So we try to do it by promoting the co-benefits of this project so that practitioners can kill two birds with one stone measuring environmental economic and other benefits.

We promote the fostering of inter agency collaborations to help the success of the programs that the states and locals are implementing. And most importantly, we help them make the case for action which is often a challenge. We do this by developing analytical tools, promoting best practices, and helping to foster exchanges and networking. We have a wealth of resources on our website, [epa.gov/statelocalclimate](http://epa.gov/statelocalclimate). We hope you bookmark it.

#### Slide 6: U.S. EPA's State and Local Climate and Energy Program

Victoria Ludwig: Following on, more specifically within the State and Local Climate and Energy Program, there is a program that focuses on helping local government. This program similar to that overall program, promotes peer exchange, opportunities, and helps with planning policy, technical, and analytical information to advance local government's climate change, mitigation, adaptation and clean energy goals. Under the local program, we also have a small effort to promote the reduction of the heat island effect as well.

As a showcase project of the Climate Local Program is the Climate Showcase Communities Program which was a grants of opportunity to promote in within 50 communities – local government and tribes – the implementation of cost effective and replicable greenhouse gas reduction projects. These 50 cities and tribes throughout the country are implementing successful climate change mitigation programs in many areas including energy efficiency, waste management, transportation, smart growth. These are – there's information on all of these programs on our website. And they're more than willing to talk to people to share their experience. So we encourage you to read up on that.

In addition to the climate showcase communities program, we have a wealth of guidance and tools. The website that we're operating is under construction. It will be new and improve to help you navigate more. On the website, you can find the Local Government Climate and Energy Strategy Series which is a series of guides that focuses on different sectors within the climate change realm to help you understand the topic and design programs within those sectors.

We also have a newsletter and we have the ability to help local governments get access to other federal programs. Speaking of which we have one on the line today, the Office of Sustainable Communities within EPA and we have peer exchanges which is what this webcast is designed to do to allow you to come together and learn about a topic and ask questions of EPA.

#### Slide 7: Contact Information

So that's an overview of the umbrella under which we're doing the webcast. We hope you visit our website. If you have any questions, you can contact me. I'm one of the folks in the local program. I also manage the Heat Island Reduction Program. Thank you for joining us.

We are going to start with our poll question. We have series of poll questions just to get your feedback and make it more active. Lauren is going to ask the first poll question.

## Poll Question #1

Victoria Ludwig: We are going to start with our poll question. We have series of poll questions just to get your feedback and make it more active. Lauren is going to ask the first poll question.

Lauren Pederson: Great. Thank you, Victoria. So the first poll question is what is your level of experience with monitoring and evaluation – M&E? Have developed an M&E plan, have formed an M&E team, I'm in the process of developing an M&E plan or team, considered it not taken action due to lack of resources, or lastly considered it not taken action due to lack of information. Would you please select your answer?

All right. And, I'm going to launch the poll result.

Victoria Ludwig: Great. Thanks for submitting your response. This is interesting but kind of not surprising. The majority of folks have considered it but not taken action due to lack of information. Well, we really hope the webinar does that today for you to help you understand more and gain more knowledge.

And congrats to the 12 percent that have developed an M&E plan. Five have done a team. 29 are in the process of developing a plan or a team and 23 have considered it but not taken action due to lack of resources.

I think you're all going to learn a lot to help you move forward with the various places that you're in. Thanks for that.

# Tracking and Reporting Program Results with EPA's New Local Climate Action Framework

Slide 1: Title Slide

Victoria Ludwig: We'll start with our first presentation. This is the presentation on tracking and reporting program result with EPA's new local climate action framework. We'll hear about this exciting tool from Emma Zinsmeister who's also with the Local Climate and Energy Program.

As the lead local climate strategy analyst for the program, she's specializes in the design and implementation of climate change mitigation and adaptation strategies for communities across the United States. She also has primarily responsibility for the strategic planning and development of the Climate Showcase Communities Program that I just mentioned. And she recently received her Master of Public Health degree. Take it away, Emma.

Emma Zinsmeister: Thank you, Victoria. And next slide please.

Slide 2: Coming in 2015: EPA's Local Climate Action Framework

Emma Zinsmeister: So today I'm going to be sharing with you a new – portion of a new resources that's been in development by the State and Local Climate and Energy Program. As Victoria mentioned, we're redesigning our website and we're taking the many years of experience working with local government and tribes on climate change issues and turning that into more tangible step by step guidance.

And so, all of the analytic tools that we've developed, the peer exchange opportunities, case studies, technical information, and links to a wealth of other resources will now be organized in a step by step process that we've designed to walk you through designing, implementing, and evaluating program that either mitigate climate change and reduce greenhouse gas emission or help to build resiliency within your communities.

And a framework that we've developed intended to be a universal planning resource that you can use if you're working on any type of program under that umbrella. So if you're working on transportation issue, energy efficiency, clean energy – and we hope this resource will be useful for you. Next slide please.

Slide 3: Coming in 2015: EPA's Local Climate Action Framework

Emma Zinsmeister: And I have to say I'm not terribly surprised to see that on our fist poll question there's really clearly a need for information on monitoring and evaluation. So basically tracking the result of your programs as we implement them and then assessing their effectiveness. And so, we've chosen to start sharing our local climate action framework – this new web resource that we're developing – by talking about tracking and reporting.

As you can see here, that this is one of six phases in the process designing and implementing Climate and Action Program. And so, as we release our new resources online at 2015, you'll see we'll have separate sections on developing greenhouse gas inventories, setting goals, and selecting the programs that you're going to implement, finding resources financial and technical for those programs actually getting down to taking action and implementing your program. And then, of course engaging your stakeholders and communicating.

Tracking and reporting is an essential element of this process. And the section of our framework that focuses on this step will help you track and analyze various performance indicators so that you can assess and share your programs process as we get underway. Next slide, please.

#### Slide 4: Tracking and Reporting Program Results

Emma Zinsmeister: So thus far, we've use the terminology both monitoring and evaluation and tracking and reporting. These things are pretty much the same. Essentially, tracking is continual process of collecting data and taking measurements that will help your assess how your program is being implemented, identifying ways which you can improve your implementation and making – and form choices about what you will invest in the future.

And then once you have tracked that data, reporting is essentially the evaluation and communication of you results which of course is important to keep your stakeholders engaged, to let them know about your progress, to remain accountable to your communities, and of course, to demonstrate the value of investing in the work that you're doing. Next slide, please.

#### Slide 5: Tracking and Reporting Program Results

Emma Zinsmeister: So, of course, the question remains why are we talking about tracking results first when we're just getting started in the process just thinking about this program.

Well, all too often, we see programs that get off the ground are doing good things but just think about monitoring their success until the end. And at that point you may not actually have the data that you need to make the assessments. And you often don't have time to make forced corrections if there are things that really you couldn't improve along the way.

So we thought we would start off sharing our local climate and action framework by talking about tracking and reporting so that this is something you think of as you start the design process for your program. Early planning enables you to get a more comprehensive understanding of the intended impact of your program and ensures that you'll have systems in place to collect the data you need. And give you the opportunity to plan your budget and schedule for supporting the data collection and evaluation processes review. Next slide, please.

#### Slide 6: Key Steps

Emma Zinsmeister: So under tracking and reporting, once we launch our new website and you go to the local climate action framework and you put on the tracking and reporting section, you'll

see these series of steps that comes up. And in my presentation today, I'll be walking you briefly through each of these steps to give you a sense of the content involved. And essentially it walks you through a continual process of measuring learning and improving for your program.

So identifying indicators that you'll measure on track along the way, determining timeframes over what you evaluate them, creating a plan for tracking and evaluating, and then going through the actual data selection evaluation and reporting processes. Next slide, please.

#### Slide 7: Step 1. Identify Performance Indicators

Emma Zinsmeister: If you'll see, as you – when you keep up the process of tracking and reporting, the first thing you need to identify are your essential indicators. And these are going to be the quantifiable or measurable characteristics of your project that you can actually track overtime. And in those cases, when you start to think about the programs that you're implementing, things such as a logic model will be helpful for you.

If you see here I have an example from the EPA's logic model of course. And this is essentially just a conceptual depiction of what you invest in a program, the actual activities, people that you engage that leads to your ultimate outcome.

Generally speaking, you can develop a logic model for any program based on what you think your theory of changes. If your ultimately goal is to reduce greenhouse gas emissions from transportation in your community, maybe your plan is that if you invest in outreach community members that alternating forms of transportation, you can achieve this greenhouse gas emissions reduction.

So maybe that's your theory change. You can break it down into the input, the staff, the money, the time that you'll put into the program, the media events, the outreach event which you'll conduct, the target audience as you hope to engage, and then short, medium, and long-term outcomes that will show the impact of your program.

And then, each of these boxes here on the screen, these are all things that you can measure in various ways. Indicators can both be quantitative or qualitative things that are ranked high, medium, or low. Next slide, please.

#### Slide 8: Step 1. Identify Performance Indicators

Emma Zinsmeister: So in the process of identifying performance indicators, essentially the goal is to develop a sufficient – lots of indicators that will assess all the important aspects of your program without being unrealistically long over for tracking purposes.

So we recommend sort of like casting a wide net – thinking creatively about your programs, and what things can you measure, and then evaluating your potential indicators to ensure that they're relevant, that they're actually things that if you see changes in them you can attribute those changes back to your program, that they're measurable, that you can in some way assess change overtime, and that they're expressible. Is the data that you need going to be available? Does it

exist? It's something that you can get to – there are own privacy concerns or other things that might impede you from getting to that data.

And once you've selected your list of indicators, you should be able to essentially have a set of measures that will help you tell the story as you put together through your logic model and your theory of change about what your program is doing. What is your intended impact and how you intend to evaluate it? Next slide, please.

#### Slide 9: Example Indicator Selection Process

Emma Zinsmeister: This is just an example of an indicator selection process. Again, if we're talking about say public transportation issues, you may consider looking at public awareness and transportation options. And of course that will be relevant because one of the goals of your program is to increase information awareness and accessibility of transportation options. It's something that you can definitely measure. You can survey people before and after the implementation of your program if they are aware of the options available to them. And that data can be accessible if you have the ability to survey your target audience.

So again, that's – this is just one example and there are others that sit on the screen here of ways – of metrics that you could use for program like this and the process of looking at whether or not they are relevant, measurable, and accessible. Next slide, please.

#### Slide 10: Step 2. Set Baseline Year; Step 3. Define Targets

Emma Zinsmeister: Once you had your set of indicators selected, you need to determine what time period you want to measure them over than align with the implementation and the goals of your program. So you want to think about if there's a specific baseline here as a starting point that make sense to your program. Generally, it can lead your program to start or if there are other significant events that occur that makes your – relevant for your program.

You need to make sure if there's going to be data available and then if it's typical year. If you're looking for ridership of your metro system, you may not want to choose the baseline here where you had a terrible storm and had several lines washed out. And that would artificially drop your ridership rate and changes overtime that looks inflated.

You need to consider the actual conditions and make sure you're not choosing an anomalous timeframe. And once you have your baseline, the next step is to establish target, your objective for each of your indicators. And the targets are essentially going to be the quantitative companions of your indicators. They describe this are level of change of baseline that will represent meaningful change and success at implementing your program.

So targets can be interim – check points along the way. And ultimately your long-term target reflects your ultimate long-term program goal. And ideal targets represent meaningful change. It should be realistic and achievable and are bound to specific timeframe.

And the easiest way to establish progress is to look at your historical performance. If your ridership only increases 3 percent a year, you may not want to establish a target of 50 percent increase in five years. You think about what will make that for your program and what is relevant to your communities for in states. And then – and also in cases of policies and regulations we'll have targets established in them. Communities and states that may have greenhouse gas reduction also may have targets already established that the things that you can align with programs at fall. Next slide please.

#### Slide 11: Example Outcome Indicators and Targets

Emma Zinsmeister: This is just a quick example here from the City of Gallup climate action plan and targets that they've used in their transportation program. I mean you can see here, for example, I'm looking at passenger vehicles; they're looking for 20 percent reduction and by 2030 vehicle miles travels. They're looking to reduce greenhouse gas emission and intensity of travel at 75 percent by 2030 and so on.

And some here have clear quantitative targets and others are just looking at trends which are also one way to assess indicators where you may not necessarily have a good sense of what a quantitative benchmark might be but you know that you want to assess our trends in a certain direction. So, certainly check out the City of Gallup plan and others for examples of the targets. Next slide please.

#### Slide 12: Step 4. Develop Plan; Step 5. Collect Data

Emma Zinsmeister: And once you have your target plan and decided upon – and really the meat of the process is getting your plan in place for how you're going to go about checking and evaluating your program. So essentially you want to design a program that will provide a consistent, efficient, and reliable process for collecting your data to ensure the integrity and accuracy of that information.

So things to include specifying in your – or consider specifying your plan are allocating responsibilities, who's going to be responsible for tracking what indicators, who's going to be the person that manages that data and ultimate submits report, test, evaluations, what protocols, templates, resources, or units are you going to be using as you evaluate – go about tracking your indicators, where are you going to store your information, what types of programs or databases are you using, when – what is the schedule for doing your tracking and evaluation, and how are you ensuring the integrity and security of your data particularly if you have personally identifiable information or things that should be protected.

And ultimately you want to make sure it's a part of your plan that you have efficient resources for each step in your plan so that you have the staffing and the budget available. And, you know, there may be processes in place where individual components of your program are already checking information you need to able to – I mean incorporate those processes or sometimes that they may already have it to your program. And ultimately once a plan is in place, that's when you can start collecting your data, working from your baseline here on to years where you've established interim target and collecting data along the way. Next slide, please.

### Slide 13: Step 6. Analyze Data & Evaluate Impacts

Emma Zinsmeister: And once you start in collecting a data and have a scheduled for doing evaluations and thinking about assessing your program, you'll undergo the process of evaluation which is really analyzing the changes in your indicator to determine to which element from this program are effective and which have room for improvement.

Process evaluations look at things like the output of your programs. If you think back to the logic model, to see, you know, are you providing the services to your target audience as you hoped. And your impact evaluation which whether or not you're reaching your short, medium, and long-term objective.

So in the process of sending out an evaluation there's – there are many different ways to go about it but ultimately you're looking at big picture questions that will tell you whether or not your program is being effective. And certain things that you're – that are helpful to look at are how much progress have you made between your baseline year and your interim target or your long-term targets depending on where you are in the timeframe.

Are your results on track for achieving those targets? What other factors are external parties could have influence the change between your baseline and post implementation years? Again, you want to make sure that any change that you receive distributable to your programs activities. And, does the data that you have support (in there) – say if you established with your theory of change in your logic model. Are you – are the activities that you're engaging and leading to the outcomes that you would hope for?

Ultimately, you want to document all of your processes and assumptions for the sake of transparency. And then of course base on those findings, you may find that it would be helpful to tweak some of the aspects of your tracking and reporting process. Maybe you find that some of you indicators aren't necessarily as relevant to your program as you thought. They're not telling you as much as you thought they would and you might need to make the changes there. Or you may find that targets are really off base. You've got – you're really sort of underperforming compared to your target. It was too ambitious. There may be opportunities for tweaks.

But of course, all adjustments should be made with caution. You don't want to keep changing targets to make your performance (to feel) better but you do need to be realistic.

### Slide 14: Step 7. Report & Adjust

Emma Zinsmeister: And so to wrap up, the final step in this process is you know going through the actual reporting in communication process, you know, use the findings from your evaluations and from your stakeholders and to improve your program. So, in this – at this point, you know, it's important to know your audiences, their informational needs, and the best way and time to reach them. And, as you think back to my initial diagram of our local climate and action

framework, we do have – we will have a whole section on engaging and reaching out to your stakeholders. So there'd be many more resources available to support that process as well.

And of course, you know, we're using the process of reporting to identify program strengths and weaknesses and opportunities and to adjust program activities and then to go about continuing to pull out and track data to see if there's adjustments for improving performance.

And ultimately, you want to think about as you're developing reports how your program results can be used to inform budget and strategic planning processes so that your timeline coincide in the way that will benefit your program. If you know that your program is doing well, releasing reports prior to your budget planning process for the next year, it can help demonstrate the value of investing and garner support.

So ultimately, collecting data, analyzing and reporting, is a continual process that should go on for the duration of the (licensure) program. Next slide.

#### Slide 15: Putting It All Together

Emma Zinsmeister: So as I mentioned, there's a lot of other resources that are on the local and climate action framework that will support – and are related to tracking and reporting, not just a communication resources but information on setting goals because ultimately, you're tracking progress towards those goals, obtaining resources as you track and report and have results show that can make the case or getting more investment in your programs and things like that.

So the many connections, I mean that resource once it is available. In the meantime – next slide please.

#### Slide 16: Appendices

Emma Zinsmeister: My presentation includes several appendices with lengths to the data sources protocols, templates, and case studies that are going to be in the lab resource but as not publicly released. Just wanted to make sure that you had that information. So in the copy of the presentation you received today, you've have links to all that information. Next slide.

#### Slide 17: Questions?

So in closing, I just want to mention that if you sign up online for our local – our state and local climate energy newsletter, you can get updates about when the – this new framework is released and also just see all of our – the resources that Victoria mentioned.

#### Slide 18: Contact Information

So, with that, that's the end of my presentation. And on the next slide, here is my contact information. If you have any question or – about our resources feel free to ask those today at the end of webcast or to contact me. Thank you.

## Poll Question #2

Victoria Ludwig: Great. Thanks, Emma. We're very excited about the local climate action framework at EPA. And so, we hope you'll get on our newsletter. Look at our website. Go the links that Emma mentioned that will be in the presentation and keep on top of it for when it's released. And we will – we love to get your feedback on it as well.

The next – we're going to do another poll question to set the stage for our next speaker and Lauren is going to give that.

Lauren Pederson: So here is the poll question. If you could please evaluate our track and report framework key steps based on your experience. So here are the answers for your selection. All key steps are captured, one or more steps should be renamed, one or more key steps are unfamiliar to me, the order of the steps needs to adjusted, or one or more steps should be removed. If you could please answer, we'll give you a few seconds to do that.

All right. I'm going to go ahead and close the poll and launch the result. It looks like we're on the right track. 76 percent said all key steps are captured, 17 percent said one and more key steps are unfamiliar, and 4 percent one or more steps should be renamed. If you would like to and at the end of the webinar, we're going to have some optional feedback. For any of those who selected anything other than all key are captured, feel free to provide your feedback and what you think of the framework.

Back to you, Victoria.

Victoria Ludwig: Thanks Lauren and thanks for everyone answering those poll questions.

# Measuring Smart Growth and Location Efficiency

Slide 1: Title Slide

Victoria Ludwig: Moving on to the second federal resource that I mentioned, Ted Cochin is going to talk about measuring smart growth and location efficiency.

Ted works in our Office of Sustainable Communities where his work focuses on technical assistance, research and policy all related to incorporating sustainability into local and regional planning.

Ted, it's all yours.

Ted Cochin: Great, thanks a lot. So yes, my name is Ted Cochin with the EPA Office of Sustainable Communities.

Slide 2: Background

We are within the EPA office policy and we also work closely with HUD and DOT on the partnership, the Federal Partnership for Sustainable Communities.

Ted Cochin: As part of that partnership, we have developed a set of performance measures. We've been working for several years now on doing research looking at the measures that are out there. And the Sustainable Communities indicator catalog that I'll be talking about today which is really the result of several years' work that we thought was important because there was quite a bit of regional community planning going on especially at the regional level, a lot of grants for planning. Many of you on the phone today may have received one of those grants, the Sustainable Communities grant.

Ted Cochin: And there were – there seemed to be a need for some sort of a framework or some sort of guidance on how to measure the community or region's progress towards meeting their really long range goals. Most of these plans can be 20, maybe 30 years out. Some of them have to do with metropolitan planning organizations, existing planning framework long range – for long range planning and then incorporating addition to transportation including things like land use, housing, equity and environment considerations.

So we have the Partnership for Sustainable Communities indicator catalog that we've developed. And as I mentioned, we had started initially amongst the three agencies that's looking at performance measures, trying to come up with a set of performance measures that might apply across the country to a wide range of potential users, communities and facing all sorts of different challenges.

And that became daunting because, you know, every community is different and you can imagine all the other reasons why it might be hard to just come up with a small set of indicators.

And also some communities that we already have federal indicators we use or we don't want to measure those things.

So, what we did was we partnered off with University of Pennsylvania and the Institute for open Research and the Ford Foundation along with HUD's international and philanthropic group and looked at the research we had done, taking partnership expertise in working with communities under the Partnership for Sustainable Communities. And our goal is to develop a set of indicators that would allow communities to measure the progress in keeping long-term outcomes as they outlined in their plans.

Slide 3: A built environment perspective that emphasizes community sustainability goals

Ted Cochran: So just to get an idea of what we're talking about here, with HUD and DOT as partners, there's a lot of funding exists for infrastructure, things that impacted those environment. So, a lot of the measures here will – you'll see will look at things like housing, transportation both – transportation and the idea of public transit and locating new development near public transit, the co-benefits that you can get from that, the myriad of benefits actually that you can get from locating compact development near – very close within walking distance of transit, create a livable community.

So, livability principles is outlined but part of the partnership look at some transportation choices, affordable housing, economic competitiveness, supporting existing communities, coordinating and leveraging federal policies investments and valuing communities and neighborhoods.

Slide 4: Methods

Ted Cochran: So, we took those principles and then we went one step further to think to about what are the goals associated with those, and really came out with access and equity, health, economic competitive and sort of efficiency, affordability, environmental quality resilience, community and sense of place.

So as you can imagine as I mentioned, there are a lot of audiences, a lot of different types of users that express the need for these measures. So, we – one thing we did was look through the planning grants that were issued. Those include HUD regional planning, regional sustainable creating planning grant as well as DOT's Recovery Act, TIGER planning grants, and thought that there was – there were a lot of grant to fund the land use planning and a lot of potential users were small and didn't have at least resources on their own do a lot of this type of measuring, thinking about what indicators really worked for them and even how to put together, you know, find the data that they need and go through all the preparations that you really need to do to start measuring certain performance indicator.

Slide 5: Partnership for Sustainable Communities

Ted Cochran: So in coming up with, you know, trying to come up with this catalog, this group of measures that we should include, that would be appropriate to a wide variety. We actually held

two panels, one in Washington D.C. which included grantees and some folks from regional planning agencies, local planning agencies as well as other type of partners. We held one in D.C. and then we held one in Cambridge, Mass. And we also asked them to suggest an equity measure because that's all – that's part of what we are working since looking at equitable development.

And also as a part of that, we created tip sheets on some of the more challenging aspects of measurement indicator use for their – and created them for a lot of different topics which I'll show you in a little bit.

#### Slide 6: Create Use Cases

Ted Cochin: We also created use cases because that seems like the best way to sort of think about all the different uses, all the different context, all the challenges that different places might face. So, by creating use cases, we were able to sort of – our database design into that, a little bit into that format. We also had to identify tabs in developing the database that the tabs were really matched to include the most important characteristics of the project then the planning work that we have seen being done out there, so the area of concern, geographic scale, and then some of it more subject area to land use housing, transportation, ways that we could organized the database and have people search us. So, and he was starting to get to that level by doing this. And here's just some examples of what I'm talking about, housing and house and land use and transportation where we did that to sort of simplify things that's within the housing also includes household energies use for example.

#### Slide 7: Development- Identify Tags

Ted Cochin: And land use have a lot of various different aspects to it, to the types of indicators we have under that, transportation also where you can think about, it's not just automobile and public transit as by biking, walkability and then the most important, one of the real, I guess it's more probably more of a long term maybe have an intermediate type of measure is vehicle miles travel that we focus on quite a bit, trying to reduce (BMT) and do that by the certain strategy that's improved pedestrian access, walkability, access to public transit, those types of things.

#### Slide 8: Indicators

Ted Cochin: Next, just get sort of the way of mapping, mapping out some of what these communities might think about, their broad outcomes, their long-range goals, at first we've done as a strategy, they're actually say, places like California actually have sustainable community strategy, so one of them hear then high quality trend of service to employment centers, then you have a performance measure associated with that percent of job and then an indicator progress might be trend-adjusted per capita, percent of commuters made by transit trips per capita, percent of commute trips made by transit.

#### Slide 9: Expand Transportation Choices

Ted Cochin: And then in the far right hand column, we have a list of the broad outcomes, one of course being reduction in greenhouse gas emissions which is probably one side of the coin for all, you think of, when we think of smart growth, you know, reducing waste, reducing greenhouse gas emissions through VFT and other ways, also protecting the lands and conservation and now even more so that more resiliency is sort of taking up a large part of that as well.

#### Slides 10: PSC Website

Ted Cochin: So, if people want to go to the PSC website now, just in live for a little while now, it's actually [www.stablecommunity.gov](http://www.stablecommunity.gov), I'll be going through some screen shot, but if you want to go to website, while I do that, that's fine or just follow along with me. So again, this is a partnership for sustainable community's website. It's run by DOT and EPA. It's on, the web address is there and on that site is a link to the indicator's catalogue that I've been talking about.

#### Slide 11: PSC Website: SCIC Overview Page

Ted Cochin: So, what you do when you get to that main page, you click on in, discover sustainability indicators. If you brought to this page which is an overview, landing sites, that allows you to go either to the tip sheets that I mentioned that I mention or there are two places where you can click on – where you can click to access the indicator stages.

#### Slide 12: PSC Website: SCIC Indicator Catalog

Ted Cochin: Once you're at the indicator stage, you'll see a list of indicators that are there. And, also some filters at the top that you can – we can do a go-by topic, geographic scale, level of organization and issue of concern. And you can try to filter up, you can filter out indicators based on those – or filters and as you can see in the table there, you end up with indicator name, the topic issue of concern, level of organization, and geographic scales. As you can see, we're trying to get it a lot of different characteristics that communities might have on a lot of differences, bet community.

#### Slide 13: PSC Website: SCIC Indicator Detail

Ted Cochin: So, when you do that is if you want to get more detail on a specific indicator such as in this case, right, an actual energy use. You can just click on that and you'll get an indicator detail page which includes definitions and data sources, instructions and other community, using the indicator and also a link to other indicators in that broader category.

#### Slides 14: PSC Website: SCIC Indicator Detail

Ted Cochin: So, this is the page that shows you – come to that just gives the great description of that particular indicator. You can see who else is using it. In this case, with sudden different places then you can link to those websites and show you how they're using the indicator.

#### Slide 15: Partnership for Sustainable Communities

Ted Cochin: And then at the very bottom as I mentioned, the energy uses included under housing is a main topic. You can click there and also get other indicators under that topic if you so desired. So here is – which you'll get if you clicked on Baltimore's Office of Sustainability, their measure for energy use reduction.

#### Slide 16: PSC Website: Tip Sheets

Ted Cochin: Now, at the tip sheets, it's a list of the tip sheets that are available. You can get there again by you know, that blue box. That stuff in the left, you can click on tip sheets. And then you can choose any of the tip sheets that you – they want some of them are – get a little bit technical on their, you know there are a lot of places out there that use some pretty complex calculations and of measuring things like, so we got guidance on calculating pedestrian access, shed, and sort of unique one is using indicators to promote smart growth and actually. But then we also have some that – that point out that some of the data sources that are available at the national level, communicating about indicators and using indicators for performance measurements.

#### Slide 17: PSC Website: Using Indicators and Performance Measurement

Ted Cochin: So, again here is the exercise, again with the tip sheets and in this case, you put there on the top line, you would get this tip sheet that gets you a kind of just an introduction to performance measurement indicators talking about the types of indicators, descriptive indicators, performance indicators, efficiency indicators, aggregate indicators. And then the other tip sheets.

#### Slide 18: Applications

Ted Cochin: So, the applications of these tools that we sort of see are, you know I mentioned a lot of the grantees. We're interested that was the original driver for us getting involved in this in the first place, but at this point I think we've made, you know, we've expanded it, you really include all sorts of different users you can imagine even, you know, universities, or researchers small towns and large cities, places that make it interesting and show them that they might qualify for certain types of funding and then in some places that have received funding and are trying to measure progress on the improved measured progress towards – getting towards a – it said they would.

We'd like to also extend the level of access service. This is actually for a place that would like to – sort of like to expand their data measures, use sustainability goals they hadn't thought of before, equity considerations which most of the plans that we looked at, a lot of them seem to love that and then some of them are rigorous and complex methods in the calculations that I mentioned before. Again, eliminate resources is also problem it seems for many places to do this work. So, hopefully we're we think we're providing that at least some of the capacity and technical assistance here to at least get them started.

#### Slide 19: Contact Info

Ted Cochin: And also, if they want to look at some of the other peers, some of the other places are doing in regard to performance measures to provide that as well and with that, I end the presentation. Thank you.

Victoria Ludwig: Thanks a lot, Ted. We thought that it would be great to have Ted speak about the indicator catalogue and all the work that they're doing because it's a great compliment to our framework. As you noticed, their framework is more of a general template so to speak that you can use for any type of program that you're running. But once you have identified some indicators and identified your baseline year and things like that, the indicator catalogue will help you get more specific about finding data sources for that indicator. As Ted said, finding out who else has used it. So, we think these two resources really complement each other.

Moving on to the last speaker before we do that, speakers I should say, we will do one more poll question that Lauren will give.

## **Poll Question #3**

Lauren Pederson: Thank you, Victoria. So, in this question, we're interested in learning what types of indicators you are using and so below we have economic indicators, housing indicators, land use, environmental or either indicators that these four don't capture in the indicator you're using. We'll give you just a minute to complete the survey.

Victoria Ludwig: Great. Thanks for answering folks. Most of you, wow, more than two-thirds have track environmental indicators. But some of the other ones are not too far behind economic and other – it would be great to know what those were but it's hard to do that on a webinar. But thanks for – it's great to see all of you using some kind of indicator whatever that is.

# **NW Washington Case Study: The economic Impact of \$1 Spent on Community Energy Efficiency**

## Slide 1: Title Slide

Victoria Ludwig: Moving to the case study that I mentioned, we will have a double feature here, two speakers that will be talking about a case study in Washington State discussing the economic impact of \$1 spent on community, energy efficiency and I forgot to mention to plug our program that sustainable connections the organization that Alex is with, work with the City of Bellingham on climate showcase communities project.

So, they are one of the 50 that I mentioned before. As I said we have a double feature, two speakers, Alex Ramel and Graham Marmion. Alex Ramel is the energy and policy director at Sustainable Connections in Bellingham, Washington. He is one of the architects of the Community Energy Challenge which is a very successful energy efficiency campaign that provides an opportunity for small business to be effective leaders in implementing practical and effective solutions to climate change.

Speaking along with Alex will be Graham Marmion who is a recent graduate of Western Washington University where he served as the director of the Representation and Engagement Programs Office and earned a degree in economics.

As a culmination project, Graham completed an in-depth economic impact analysis of the Community Energy Challenge. Go for it guys.

## Slide 2: Agenda

Alex Ramel: Great. Well just a quick thank, this is Alex Ramel. A quick thank you to Wendy and Victoria, Emma and Lauren, thanks for the opportunity to present today. Thanks for organizing this webinar.

So, as we have mentioned I think we're sort of a case study of how some of these tracking and measurement tools can be used in the example of our program. So I'll give a quick overview of how the Community Energy Challenge works and quick review of some of the metrics that we track, some of the data that we collect. And we'll talk about what we've been able to do, what Graham was able to do with some of that information in terms of a detailed economic impact analysis.

I'm going to talk a little bit about what we can do with that analysis and really about how we message the economic results of our program.

## Slide 3: Community Energy Challenge

Alex Ramel: So just a quick orientation Bellingham is in the very northwest corner of Washington State. We're about 90 miles north of Seattle about 20 miles south of the Canadian border.

The Community Energy Challenge started in 2010. It's partnership between sustainable connections and the opportunity council with a lot of support for local governments, the utilities in our region, state government and a federal government. Our goal with the program is to make energy efficiency as easy as possible. We want to clear all of the barriers to implementing cost effective, energy efficiency projects in both homes and small businesses. We started off working one county over the last several years. We've expanded now into a four-county region.

#### Slide 4: Overview the CEC Process

Alex Ramel: Just a quick overview what county program works? If you're a homeowner in the area and you're interested in signing up for the Community Energy Challenge, the first step is to get an energy assessment. Other people would call them audits. We did focus group research that found people don't want to get audits and so we called them energy assessments.

This cost \$200, that's a leader for us but we do the initial four hour diagnostic analysis on the home and then we come back a week or two later and meet with the homeowner and show them the results.

Those results come along with recommendations for ways that they can improve the home. This is a third party system so we are not selling windows. We're not selling furnace upgrades. We're hoping homeowners make smart decisions based on what's on the ground in their specific building.

Once they decided on the project that they're interested in, we help them get bids for completing the project from contractors that we have trained to meet our quality standards. They move forward again with whatever project that homeowner selects based on the bid from the contractor.

In the end, we provide quality assurance to make sure that the project was done well and we help connect the homeowner with both the utility rebates that are available and through grant funding, we're able to help buy down the cost of some of the most some of the deeper energy efficiency retrofits.

Two more process available for small businesses done under the same auspices. Few minor changes but ultimately for businesses it's just about the same.

So when we started this program, one of the grants that we received in 2010, working again with the City of Bellingham was climate showcase communities grant and we were required to develop a logic model like that one that Emma showed earlier on . And as we – once we had received those funds or once we've been approved for that grant, we realize that not only were we going to have to, you know, achieve all of these things that we said at the grant application. But we're also going to have to be able to demonstrate it to achieve them. And because Emma

hadn't completed that presentation for us that we actually ended up hiring someone to, a consultant to help us develop serious metrics and figure out how to do all of the data collection and organization to make sure that we were meeting the goals that we had set at the beginning.

#### Slide 5: Results to Date: Residential Retrofits

Alex Ramel: So, just quickly walking through some of the metrics that we record, on home energy projects we track the number of assessments that we complete and then how many of those turned into projects. There's a little bit of a difference between the number of projects completed and the number of homes that complete projects.

The fact is some homes complete more than one project is basically the difference there. Which in fact the energy savings and the cost savings that correlates to that from each project and we track the average cost of those projects. This is the slide about how difficult it is to make commercial energy retrofits interesting to look at. These really are the best pictures I could find of a duct and a group insulation project, although they're not visually appealing, we are excited about the energy savings that results.

#### Slide 6: Results to Date: Business Retrofits

Alex Ramel: And again, for businesses, we track the number of assessments completed, the number of projects and the number of businesses implementing at least one project.

#### Slide 7: Results from Customer Satisfaction Survey

Alex Ramel: We also did surveys. We are – we try to be customer service-oriented. We track a lot of the indicators but this is the one that I do like to brag a little bit about. When we ask people whether they would recommend a program, what we found is that most people not only said that they would recommend the program but most people already has.

#### Slide 8: Results to Date

Alex Ramel: Because we keep track of these numbers we're able to add these up into environmental indicators both for total amount of energy that we're saving in the community each year, dollars or we can tell you kilowatt hours in terms of natural gas.

We can also convert that to greenhouse gas indicators and because we're keeping track of the cost of each of these projects, we know the total economic activity resulting from the program.

#### Slide 9: Results to Date: Job Creation

Alex Ramel: We're also of course interested in job creation. One of our initial or several of our natural grant is actually was through the American Recovery and Reinvestment Act and it goes to be that worked under those grants. No, we have to keep track of job hours and we look at certified payrolls and we added up the number of hours of every person working on any of these projects.

## Slide 10: Using Program Data to Conduct Evaluation

Alex Ramel: It might be that that didn't end up being an indicator of the job creation results of the program and what we found for communication until Graham came along, the best thing we could do is talk about the total economic activity and just listing the contractors especially when we're talking with local or regional government officials just the list of contractors like on this slide, they're going to know some of these people and know that they're benefiting from the job creation.

So, once we've sort of been collecting that information for a number of years, we do have a couple of points. The first thing I would say is that it took us a couple of years to get really good systems for tracking data month to month, quarter to quarter and those systems, once they're in place, make my life from a reporting perspective much easier when the EPA calls me up and says, "Can we do a webinar for you, it makes – putting together your first 10 slides a lot easier," and it makes budgeting and future grant requests much easier. My budgets at the end of the year are much more closely mirror the prediction at the beginning of the year now than they did at the beginning of the program because we know what it costs to do things so we keep careful track of that.

Those are important values that come out of keeping track with that information and that data. And then it becomes responsible to do some deeper analysis and we've been fortunate to be able to coordinate with higher education institutions specifically Western Washington University to do some of those analysis.

## Slide 11: Economic Impact Analysis Results

Alex Ramel: Last year, I gave a presentation to a class at Western Washington University located in Bellingham. And afterwards, Graham Marmion came out to me and said, "Do you – are you looking for interns?" And I have this project in mind and estimates, those was something he was interested in working and he agreed to do it and took on the project and it's resulted in analysis that we're pretty excited to analysis that we're pretty excited to share with on a minute.

I turn over now to Graham. He's going to walk you through the results there.

Graham Marmion: Yes. So this is Graham. We pretty quickly or through my economic impact analysis, we identified that \$1 sent through the CEC ends up a couple \$5.27 in economic impact. Part of that impact is in the very first year like right with the efficiency upgrades are installed and then another portion of it is spread out over the next 20 years. But the majority of it, it comes upfront right at the beginning. And this \$1 that's turning into five 27, comes from a – it comes from public funding. Or when the CEC spends money on that, they all – is match by the person who's receiving it and also their utility rebates coming in. And it all adds up to jump up the number from that \$1 that goes into it.

## Slide 12: Local Economic Impacts

Graham Marmion: Then because local contractors are used and local – I mean, local supplies purchase, that money then spreads out in global community which then those people go ahead and spread it around the community or go ahead and make purchase of other place in the community. And then that ends up causing what's called an induced effect where personal income in the area increases and so more people are able to spend more money in the community.

And overall, if that lead to create, there was about 380 of the economic impact. And then, because these are energy efficiency upgrades, and now it's set at saving money, that money causes more personal income being saved and effectively, a personal income increase for the community. Who then goes and spends out over the course of the 20 years as they made those energy efficiency savings.

Now, and this is what that ends up breaking down into. As you'll see, we've started out with the 1.6 million in public spending from coming from the Community Energy Challenge and then that is immediately matched by private investments, leading us that 3.2 million that's the direct economic impact taking place.

Then we go – all right. Then we want to add on the growth local impact which is basically the result of what we spend that 3.2 million. Here is that – all right that extra portions that ends up being caused by spending that because the person you're –contracting is you're purchasing throughout more hiring, end up going on spending their money in the community. That is also the 5.6 million. Then we want to add in the future energy savings. Then as it's reaching up the 8.5 million over the course of 20 years and we end up being potentially more in that initial 1.6 invested.

And you will see where we've illustrated these, play at lower \$5.4 million at net local impact. What that is – it has any good economic impact such as we should do. We look at what are the alternative situations. This is public spending. It is effectively tax dollars. We decide to look at the next alternative being what if we just gave this money or back as a – as I said, tax rebates in the middle class.

We found that doing so would still produce societal economic impact however because it's not matched by that private, but it's not matched by that private investment. You end up giving to them or you end up getting substantially smaller. That's also caused by people spending more money than not into within the community. Whereas this program directly spends it within the local community.

So, the alternative was that – all the alternative of giving the money back and not spending it on this. Only created 5.4 million activities whereas spending the money on the CEC produces \$8.5 million in economic activity.

So substantially, better to spend it on a program like this Community Energy Challenge. And then you'll also see that we have \$600,000 in additional between the additional federal taxes and initial state and local taxes. That taxes are calculate to be generated through the investing of this

initial 1.6 million and over the course of it as a result of all of the spending that happens. It generates \$600,000 and tax dollars from this area. Next slide.

### Slide 13: Key Assumptions

Graham Marmion: Yes. In order to create this economic impact study, I think just to make up numbers. I came from developing a program called Implant which is input-output model that effectively allows you to describe economic activity to it. And then, it takes those inputs and give to the output of telling you how much direct effect that's going to have on the community or in the economy. How much indirect effects of – effects from those contractors spending money on other businesses, and then induced effects from general personal income increasing from spending happening and then spending that caused us.

So then, just giving you output in the form of employment, labor hours, value-added and general economic output.

However, in doing so, we did require to have several key assumptions to let the program function. And what we used was a 3 percent discount rate in order for us to calculate our ongoing impact, because we recognize that money now is worth less than – earning what's worth then more then money later.

So we used a 3 percent discount rate in that 20 years I've talked about for how long the ongoing energy benefits will be, basically, calculated for.

Our cost of energy that we assumed, we assumed using (two sound) energies basic residential schedule and commercial schedule for electric and for gas, that was basically our baseline there.

And we also assumed that for the sake of the study that the cost of energy would remain the same and stagnant for the next 20 years.

We also – our Implant also requires us to make several assumptions assuming where the funding is actually spent. Because while Implant has built into it, basically, economic information regarding the district or regarding the region selected, and the region that they can performed on as in Implant is aware of every industry that exist there. It's still falls to us to have to strategy various expenditures to each region.

We also made an assumption regarding the ongoing impact that the utility would respond to the decrease in energy consumption by – through, basically, suffering a decrease in revenue. That was actually a worst-case scenario assumption so we could – we can see what the most negative impact that come out of this is. And we saw that regardless of them paying the decrease in revenue, it still has a positive economic impact.

And we also run under the assumption that Washington State solar production credit would expire in 2020 as it's currently set to unless it's expanded.

Slide 14: So is this any good?

Alex Ramel: Thanks again. This is Alex again. And just to discuss a little bit how we have been using this model and how we haven't been using this model. In going to developing this project, my hope was that this would be more like an energy performance model on a (hole) that we would be able to compare one program to another and figure out how to make improvements based on the model. And, unfortunately, that isn't something that we can do with this model.

Apples to apples comparisons just aren't available for other users in public funds. We were able to measure the one alternative that Graham described. But we're not really able to say, "How can we make our program more effective at increasing the economic multiplier?" The tool just doesn't have the granularity to be able to do that.

What the tool – what this tool, what this data is useful for is starting a conversation that allows us to discuss the impacts of the program.

#### Slide 15: Communicating about Economic Impacts

Alex Ramel: So, our audience for that is occasionally webinar attendees, but more generally, funders, grant makers, decision makers, budget writers, community leaders, this is people who are working with our program who are funding our program.

And what I try to always remember is that as interested as I am in the methodology and the details, is that for those audiences, that's not something we haven't really want to talk about. What we want to think of is that the statistics are the beginning to telling a story. They're not the story itself.

#### Slide 16: Communicating about Economic Impacts

Alex Ramel: And so, this is the slide that I used in a presentation to the Washington State Office of Fiscal Management a month and half ago.

And the way that I described it quite simply is that the program has an economic multiplier greater than 5 to 1. And that's a result of the fact that public investments motivate private investments. And then those public and private dollars both have the economic multipliers associated with them, and because we're reducing energy costs, that saving is also close into the end of the local economy.

And that's as complicated as they try to get it and I've never gotten a question in presenting this information. I've never gotten a question asking for a greater detail on the methodology or anything else. So that's what I've learned so far about messaging on this.

#### Slide 17: Questions

Alex Ramel: And with that, I think we'll wrap up and we'll happy to take questions, and to turn it back over. Thank you again.

Victoria Ludwig: Thank you, Alex and Graham. That was a really great presentation, and I think the results of your analysis are really great as well. Especially, I like that you – thank you that you talked about how you communicate at those results. That is part of our framework.

Going back to Emma's presentation to – after you track the program results and measure, don't forget to communicate those, but think about how you communicate as Alex mentioned in order to be the most effective.

That is the end of our formal presentations.

## Poll Question #3

Victoria Ludwig: Before we start the Q&A, we have one more poll question, I believe, that Lauren is going to ask. If you would kindly answer, that would be helpful.

Lauren Pederson: And in this poll question, we're asking how you've used indicators.

So, we've successfully used indicators to the care partnership, obtain funding, increase public awareness, (highlights) development indoor infrastructure improvement, or alternatively have not used indicators to gain support or funding yet.

Please take a moment to respond.

Victoria Ludwig: Thank you for answering. The results are, you know, illustrative, I think, of what most people would probably find that it looks like it's been used – indicators have been used for all of the options, but more so for increasing public awareness and obtaining funding.

These poll questions are great for us to get a sense of where our audience is at to help us develop more tools. So thanks again for answering them.

We only have less than 10 minutes left. So I think we'll probably just have time for one question for each speaker.

And just to remind you, we will have the – if we don't get through all of the questions as we probably won't, we will post – we will still try to answer the substantive one and post those on our website, and you will all get an e-mail letting you know when those have been posted as well as the transcripts and all the presentations from this webcast.

## Questions and Answers

Victoria Ludwig: I'm going to turn it over to Lauren to pick the questions to ask of each speaker.

Lauren Pederson: Thank you, Victoria. My first question will have – directed towards Emma. What is the timing of availability of other five parts of the local climate action framework?

Emma Zinsmeister: Great. Thank you for that question.

So, our entire local climate action framework will be posted all as one resource. And we'll be launching that in the spring of 2015. We do not have a precise state yet. But as I mentioned, the best way to stay in touch about the release of that resource is to sign up for our newsletter, because we will certainly be posting a lot of information as we have more certainty in our schedule. Thank you.

Lauren Pederson: Great. Thank you. I'm going to move on to Ted. We had a couple of questions come in about how you measure certain indicator. So, we can combine this into one question.

First, how do you measure walkability that you mentioned in some of your indicators? And also in the land use indicators, you mentioned access to various things like transit, parks, jobs, trail networks, et cetera, how do you measure access?

Ted Cochin: Well, we've actually – this is a topic for a whole other webinar, but we have developed what's called the Smart Location Database. And it actually has block group level data from across the country for quite a few built environment variables.

One of them is street intersection density. And the way that measure is set up or that data is set up is that it gives more, it favors four-legged intersections more than it does three. So, very walkable communities will rate highly on that street intersection density measure, so that's one way to – that you can look at street – at walkability at – in different places.

As part of that tool, we also have transit feeds. We recently got transit feeds from transit agencies all over the country, we don't have the law yet. So, if you're looking for certain things like access to transit, access-type measures, if you're in a certain area, there might not be data – there might not be all those measures, but for most of you, if you go to the EPA Smart Location Database. It's EPA – it's epasmartgrowth/sld or just Google EPA Smart Location Database, should take you there. And that would get you quite a bit of those kind of measures.

Lauren Pederson: Great. Thank you, Ted.

And then our last question for Alex and/or Graham. In the job creation metric, did you use a standard conversion of economic activity to jobs?

Alex Ramel: Sure. So, there's two different ways that we tackle that. As I mentioned at one point with – in the beginning of the program, we were tracking hours and we were looking at certified payrolls. And so we were adding up the total number of hours worked directly on energy efficiency projects.

But as part of Graham's analysis, he developed his – the Implant model to develop alternative methodology.

Graham Marmion: Yes, the Implant model, they can give you report or they can give you output in four terms as I've said, employment labor hours, earning labor income, value-added and economic output, which are all, basically, translations of the same number.

So, our number, while we've got \$1 equals – turns into \$5.27 of economic activity. We were also given the total that that converts into one job equals – or there's one job for every \$56,818 invested into the program. And...

Alex Ramel: Is that a public investment or?

Graham Marmion: And that's for total investment, so for public investment, it would actually be about \$23,000. One job for every \$23,000 of public investment.

Lauren Pederson: All right. Thank you, guys. And back to you, Victoria.

Victoria Ludwig: Thanks, Lauren. Well, we're getting close to 3:30.

So, I would like to thank you again for attending. And thank you to all of our speakers, Emma, Alex, Graham and Ted. I think it was a great webcast and I hope our audience enjoyed it.

As a reminder, we will have the results – the presentations and audio files posted on our website, [www.epa.gov/statelocalclimate](http://www.epa.gov/statelocalclimate). But, if you go to that website, you can get on our newsletter and we'll let you know when that comes out as well as everyone's contact information. So you can ask more questions if you like.

And some of the unanswered questions that we didn't get to today, we'll post answers to those on that same website as well.

We hope you enjoyed our webcast on tracking and measuring program results.

And with that, I will end. We hope you enjoy the rest of your day. Thanks.