McDermott: Katie McDermott, CTE, NC State University (Raleigh, NC)
Siwek: Sarah Siwek, Moderator, President, Sarah J. Siwek & Associates (Los Angeles, CA)
Benjamin: Lynorae Benjamin, Environmental Engineer, USEPA-Region 4 (Atlanta, GA)
Jensen: Gary Jensen, Environmental Protection Specialist, FHWA Headquarters (Washington, DC)
Dennison: Becky Dennison, Air Quality Specialist, FHWA-Texas Division (Austin, TX)
Hyder: David Hyder, P.E., Principal Transportation Engineer, The Louis Berger Group, Inc. (Cary, NC)
Brazil: Harold Brazil, Air Quality Associate Planer/Analyst, Metropolitan Transportation Commission (San Francisco, CA)
Dickinson: Bob Dickinson, Director, Transportation and Environment Research, Southeast Texas Regional Planning Commission (Beaumont, TX)
Sherwood: Arnie Sherwood, caller
Saporowski: Lynn Saporowski, caller

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McDermott: Hello, I’m Katie McDermott with the Center for Transportation and Environment. This is CTE’s National Teleconference Series. The purpose of this live forum is to engage transportation and environmental professionals in a dialogue about current policy, research innovations and best practices. Today’s program introduces four planning and technology innovations that some state and local agencies are using to help meet transportation conformity requirements in light of the new air quality standards for ozone and particulate matter. This broadcast focuses primarily on the PM2.5 standard, and so in addition to our case study presentations today, the panel discussants also include representatives from Federal Highways and EPA who provide a broad overview of the new standard, the conformity rule, and available guidance.

We invite you to discuss today’s topic and share your experiences with our panel. You can use the numbers on your screen to phone or fax in your questions at any time during today’s live broadcast, or you can email us at cte_email@ncsu.edu. I should also mention that our format today is a little bit different from what you might be used to. Over the next three hours, we will be implementing the audience Q & A segment at the
end of each hour, so we encourage you to phone, fax or email those questions in as early as possible at the beginning of each hour.

After the broadcast, we invite you to participate in CTE’s web-based After-the-Program discussion forum, where you can continue to talk about the issues raised during the live broadcast with our panel and other audience members. The discussion forum starts a four o’clock Eastern Daylight Time today and will remain active for up to two weeks.

A few more details before we get started: first, I hope you’ve already had an opportunity to download the program handout, and a copy of the panelists’ PowerPoint slides from CTE’s website. If not, I encourage you to do so at the URL address that will appear on your screen. From this site, you can also replay this program in its entirety, or you can order a copy of the DVD or written transcript. We’d also like to get your feedback on today’s program, and to do that, if you’re participating at one of the satellite downlink sites, you can complete the evaluation from located in your handout, and turn that into your site coordinator before you leave. If you’re participating via the web, you can complete the online evaluation from located on CTE’s website. And we thank you very much for your attention to that.

At this time, it is my pleasure to introduce your moderator, Ms. Sarah Siwek. Sarah is the president of Sarah J. Siwek and Associates, which specializes in advising public and private sector organizations on transportation and air-quality issues. For more than 25 years, Sarah’s helped government agencies to implement the various programs required by the Clean Air Act as well as the last two Federal Transportation bills. In addition, she has developed and provided training on transportation conformity issues for the National Highway and Transit Institutes. Sarah is currently conducting research to study the integration of transportation and air-quality planning through the SIP and conformity processes. Sarah, welcome to the program.

Siwek: Thanks very much, Katie, and good afternoon; good morning to those of you on the West Coast. I’m very happy to be here today, and as Katie mentioned, in developing this program, we decided to focus on innovative strategies to meet the conformity requirements and that will include the second half of our show. The first half of the broadcast will be addressing the PM2.5 conformity requirements, and exactly what’s required under the PM2.5 requirements. The eight-hour ozone standard goes into effect on June 15, at which time the one-hour ozone standard will be revoked in most areas throughout the country. Given the fact that that deadline is upon us, and many areas
already are well underway in terms of getting their conformity determinations completed by June 15, we decided to focus today on the PM2.5 standard, which is the new fine particulate standard.

Before we begin the show, I’d like to introduce our panelists. First, on my right, is Gary Jensen, from the Federal Highway Administration Headquarters in Washington DC. Next to him is Lynorae Benjamin, from Environmental Protection Agency’s office in Atlanta, region four. Next to Lynorae is David Hyder, with the Louis Berger Group. David was formerly with North Carolina Department of Transportation for more than 20 years. Next of all we have Becky Dennison. Becky is with the Federal Highway Division office in Texas. Next to her is Howard Brazil. Howard’s with the Metropolitan Transportation Commission in the San Francisco Bay Area in California. And, finally, Bob Dickinson, from the Southeast Texas Regional Planning Commission.

So with that, we’d like to begin the broadcast, and I’ll begin with our PM2.5 discussion, but first I’d like to ask Gary Jensen to provide for us a brief description of what transportation conformity is. Gary?

Jensen: Thanks, Sarah. Transportation conformity is a provision of the Clean Air Act which links air-quality planning with transportation planning. Specifically, conformity ensures that transportation plans, programs and projects are consistent with state air planning goals. Conformity makes sure that transportation activities do not cause violations of the air quality standards, contribute to worsening existing violations, or delay the timely attainment of those standards. This is done by evaluating the emissions impacts of transportation activities before they’re funded or approved. Transportation conformity applies in non-attainment of maintenance areas, for transportation-related criteria pollutants. These include ozone, carbon monoxide, nitrogen dioxide, and particulate matter, and that’s both PM2.5 and PM10. The Environmental Protection Agency promulgates regulations to implement the conformity provisions and those regulations can be found in 40 CFR, parts 51 and 93.

Siwek: Thanks very much, Gary; that’s a good, concise definition of transportation conformity. I’d like to now ask Lynorae Benjamin to move us into the PM2.5 requirements. Lynorae, could you tell us when the PM2.5 requirements apply, and how many PM2.5 non-attainment areas there are across the United States?

Benjamin: Sure, Sarah. Transportation conformity applies for PM2.5 non-attainment areas on April 5, 2006. And the general deadline, or timeline for this deadline, is as follows: in December of 2004, EPA announced PM2.5 non-attainment areas, and in January of 2005,
January 5 to be exact, EPA published those non-attainment designations in the federal register. These non-attainment designations became effective on April 5, 2005. The Clean Air Act provides a one-year grace period from the effective date of a non-attainment designation before conformity applies, so that gives us the April 5, 2006 deadline for transportation conformity.

Now what this means to transportation partners in metropolitan areas and just in general, is that metropolitan plans and transportation improvement programs must be found to conform by April 5, 2006. Additionally, federal highway and federal transit projects must be found to conform after April 5, 2006.

Now, the second part of your question was how many areas across the country are non-attainment for PM2.5, and there are 39 non-attainment areas across the country, and that includes 208 counties—some are partial, some are whole counties—and this is inclusive of the consideration that some of these areas were originally designated non-attainment in a January 5 notice, and then later got clean data and were able to be re-designated to attainment prior to the April 5, 2005 effective date.

Siwek: Thanks very much. Gary, can you tell us exactly how areas are going to demonstrate conformity to the PM2.5 standards? There have been a lot of questions about this, and in particular, perhaps you could begin with how areas will do regional missions analysis for PM2.5?

Jensen: Well, after a state submits a PM2.5 air-quality implementation planner, a SIP, if that SIP contains motor vehicle emissions budgets the EPA either approves or finds adequate, then those budgets must be used for transportation conformity. A motor vehicle emissions budget provides a ceiling for emissions that can come from a transportation system from all on-road sources. To satisfy the budget test, emissions from transportation activities must be at or below the SIP level for certain years. This is how conformity is currently implemented for the other pollutants, so we have a lot of experience with that. Prior to the submission of a SIP, before their adequate or approved budgets, an area must use one of the inner emissions tests that can be found in conformity rule. These tests include the “No-greater than 2002” tests, or the “Bill no-greater than no-bill” test. All PM2.5 areas can choose between either of these tests.

Siwek: Okay. And that’s the difference of course, with the eight-hour ozone. In any case, let’s talk about what are the different components of PM2.5 from highway and transit sources. Lynorae, would you like to address that?
Benjamin: Sure, sure. Motor vehicles emit PM2.5 from their exhaust, as well as from brake and tire wear. PM2.5 is also generated from re-entering dust that is stirred up on paved and unpaved roadways. Highway construction activities and transit construction activities can also generate PM2.5. PM2.5 can also be generated in the atmosphere from precursors such as volatile organic compounds, nitrogen oxides, sulfur oxides, and ammonia. These are precursors that are released from motor vehicles.

Siwek: Okay, let’s talk a bit about the direct emissions from PM2.5. Which emissions need to be addressed in the regional emissions analysis under transportation conformity?

Jensen: Well, the conformity rule requires that for all PM2.5 regional emissions analysis that exhaust emissions from the tailpipe as well as brake wear and tire wear be included in the regional emissions analysis. These emissions are calculated using EPA’s latest approved emissions model, MOBILE6.2, or if you’re in California, the latest version of EMFAC.

Siwek: Okay. And what about dust, what about road and dust emissions from PM2.5? How does conformity address these issues with PM2.5 and the requirements?

Jensen: Well, under the conformity rule, before a SIP is submitted, road dust emissions both paved and unpaved do not need to be considered in the regional emissions analysis unless the state area agency or EPA finds that they’re a significant contributor to the PM2.5 problem. After a SIP is submitted, the area agency will have analyzed whether dust emissions for PM2.5 is a problem or not, and if it is, then they will have included them in the SIP, and they’ll be part of the motor vehicle emissions budget.

Siwek: Okay. So, how does conformity then consider these precursory emissions?

Benjamin: On May 6, 2005—actually, just a couple weeks ago—EPA promulgated a final rule, and it’s a rule revision to the transportation conformity rule which includes the PM2.5 precursors volatile organic compounds, sulfur oxides, nitrogen oxides, and ammonia. And this final rule specifies when areas must consider these precursors for implementing transportation conformity in PM2.5 non-attainment areas, and it also talks about the consideration to be made prior to a PM2.5 being submitted for EPA approval, and after a PM2.5 SIP is submitted for EPA approval and the budgets in that submittal are either found adequate or approved, and I’m going to talk about that right now.

Basically, prior to a SIP being submitted, nitrogen oxides must be considered as a PM2.5 precursor for the transportation conformity determination, unless EPA and the state make a determination of NOx to be insignificant from motor vehicles in a PM2.5 non-attainment area. Now, the other precursors, volatile organic compounds (VOCs), sulfur oxides (SOx), and ammonia, only need to be considered prior to a SIP being...
submitted if EPA or the state make a finding of significance for these pollutants contribution from motor vehicles to the PM2.5 problem in an area. So, in short, nitrogen oxides are the primary precursor to be considered for the purposes of transportation conformity prior to a SIP being submitted.

Now, after a SIP is submitted, only those precursors for which the state establishes a motor vehicle emissions budget have to be considered. Now the state and local agencies may find through the SIP process that a precursor that was found significant previously, or considered significant previously, is not significant to the PM2.5 problem in an area and in that case, they wouldn’t establish a budget. They might also find that a precursor such as volatile organic compounds, sulfur oxides and ammonia, that was considered insignificant previously, is significant, and in that case, they would establish a motor vehicle emissions budget. So, in short, once the SIP is submitted, any precursor that has a motor vehicle emission budget has to be considered for the purposes of transportation conformity.

Siwek: Okay, now let’s just clear a bit on timing here. Now the PM2.5 SIPs will not be due until three years from April of ’06, is that correct?

Benjamin: It’s three years from designation.

Siwek: Okay, so three years from April ’05, correct, so that would be April ’08.

Benjamin: Right.

Siwek: So for the next three years, if we’re talking from the perspective of a transportation agency, meeting the transportation conformity requirements, the only precursor they need to be concerned with until that SIP is submitted, then are NOx emissions, just that one precursor to PM2.5, is that correct?

Benjamin: Provided that EPA nor the state make a finding of significance for the other precursors, but yes, in general, and also, you know, states have the opportunity to provide us a PM2.5 SIP in advance of the deadline, so for the eight-hour, we found that states are providing us SIPs early, so there could be a potential for a state to provide a PM2.5 SIP in advance of the three-year deadline.

Siwek: Great. That’s a good point, because even though they’ve got three years to provide those SIPs, they can do it sooner, and then the transportation agencies of course would be dealing then with motor vehicle emission budgets that are in the SIPs. Okay, just wanted to be sure on that. What’s the status of EPA addressing hot spot, or localized PM2.5 emissions in transportation conformity?
Benjamin: Okay. In November of 2003, EPA proposed a couple of options to consider localized emissions impacts from transportation projects in PM2.5 areas. We received substantial comments on these options, and so we reviewed the comments, and in consultations with DOT decided to do a supplemental proposal and provide additional options for the public to consider. We published that supplemental proposed rule-making December 13 of last year, and the comment period closed January 27 of this year. And some examples of the options we proposed are not requiring PM2.5 hot spot analysis at all. One option was to require PM2.5 hot spot analysis for certain types of projects at certain locations as I identified through the PM2.5 state implementation plan. And another option was to provide or require PM2.5 hot spot analysis for all non-exempt projects. Now this last option of requiring PM2.5 hot spot analysis for all non-exempt projects is consistent with the current requirements for hot spot analysis for carbon monoxide and PM10 areas. EPA is finalizing the rule, and hopes to have that rule finalized by the end of this year.

Siwek: So we will know by the end of this year what the hot spot requirements are for PM2.5, and as part of that, will there be any addressing of the hot spots for PM10? Currently we have a qualitative analysis requirement. Is that being addressed at all, or is this just strictly PM2.5 hot spots?

Benjamin: No, PM10 is also being considered as well.

Siwek: Okay. Thank you. We’d like to hear if you could both tell us about any guidance materials that your agencies are working on, any tools that would help the transportation and air agencies with respect to PM2.5 analysis. Could you share with us what’s on the horizon within both Environmental Protection Agency and at the Federal Highway Administration?

Benjamin: Sure. EPA just released three guidance documents recently related to transportation conformity for the eight-hour ozone and PM2.5 areas. The first guidance was released in July 2004 and it relates to implementation considerations for transportation conformity for multi-jurisdictional areas. And by multi-jurisdictional areas, I mean areas with multiples MPOs—metropolitan planning organizations—and areas with multiple states to consider. The second guidance document was released in November of last year, and it relates to conformity SIP requirements, in which requirements from the July 1 rule are effective immediately, and which ones the state and locals have to update their SIPs to take advantage of the new requirements. The third guidance document that was recently released was the attainment year of guidance document, and basically it provides guidance on the appropriate years for transportation conformity, or the appropriate
attainment year to use for transportation conformity purposes prior to a SIP being submitted. Now once a SIP is submitted, a state air-quality agency will establish the attainment year and it will be clear with what that attainment year is, but currently the attainment year can be considered the statutory attainment year.

We also have two guidance documents under development, and one is the Fugitive Dust Guidance Document and that basically looks at the AP42 estimates and tries to reconcile the differences between the methodology and real-world situations so that guidance is forthcoming, and then we also have the PM2.5 annual emissions and regional emissions analysis guidance document, and that will be very, very useful for areas as they develop their PM2.5 conformity determinations. So we’re hoping to have those guidance documents out before the summer.

Siwek: Of course, those inventory requirements are going to be really central to areas in terms of making sure that they’re going to meeting the PM2.5 requirements appropriately, and so forth.

Benjamin: Yes, yes.

Siwek: Gary, did you want to talk a bit about what Federal Highways has underway in terms of either guidance and/or training opportunities, and then maybe we’ll come back to the Environmental Protection Agency on some training opportunities you might be thinking about?

Jensen: Well, at Federal Highways we are working very closely with EPA and all of the guidance documents that they produce, as well as we’re working with them on the final rule on hot spots. Federal highways does provide through our resource center a number of specific training activities including MOBILE6 training and some air quality SIP101 training that can be found through our resource center. And we’re also working with EPA to look at having some one-on-one workshops this summer dealing with PM2.5 implementation.

Benjamin: I guess one thing to add to Gary’s list of potential training opportunities is that we’re going to make all the training materials available in the EPA and FHWA websites, I imagine, so that if people are not able to physically come to the training sessions that we offer, they’ll have the materials. And they’ll also have their regional offices and the FHWA state offices as a resource to get additional guidance and maybe ask for training, because I’m from region four and we do a lot of regional training, and we just completed a round of training where we went around to PM2.5 areas that didn’t have any experience at all in implementing transportation conformity requirements, because they weren’t non-attainment for the ozone standard, and we just basically went over the general
requirements of conformity. I found that to be very helpful for those areas, and I hope they found it to be helpful. And then there’s also another thing that we’re partnering with FHWA on from a region four perspective, and that’s the Southern Transportation and Air Quality Summit, and that’s going to be in Charleston, South Carolina August 23-25, and basically that’s an opportunity for transportation and air quality partners to network and also to hear from other areas on how they’re implementing transportation conformity requirements, and how they plan on implementing the transportation conformity requirements for PM2.5, and the focus this year for STAQS is PM2.5 implementation.

Siwek: And is that conference in South Carolina in August open to everyone?

Benjamin: It is. It is. Even though we targeted the southeast and northeast areas, we partnered with FHWA resource center and FHWA headquarters is always supportive, but we have region six states expected to attend, region three states—oh, Texas, for those of you who don’t know the regional areas. But we have areas from Texas on up to New York anticipated to attend. So it is open, it’s free to the public, and the announcement for the summit is on the FHWA resource center website.

Jensen: And of course there is formal training available from the National Highway Institute on estimating regional and mobile source emissions, air quality planning for transportation officials, and a CMAQ program. In addition, that National Transit Institute provides a formal training course on an introduction to transportation conformity. Sarah, I know you’re involved in that course.

Siwek: Right. Yes, I should add we were just in New York City last week. There were a lot of questions about PM2.5 so I think, really commend the agencies for planning a robust training program. I would add we are teaching the National Transit Institute Course in Chicago in June, and then we’ll be going to Baton Rouge, Chattanooga, Tennessee, West Virginia, and I believe at least one other site, plus also Burbank, California in the fall, so we’ll be offering the National Transit Institute Course pretty much every month between now and through January of next year, and we of course will try to update our materials to complement the materials that the federal agencies put together and make sure that we’re all communicating accurately about what the PM2.5 requirements are and what the expectations are, so that’s great.

Why don’t we open up this conversation to some of our panelists here? Does anyone have a question they might want to ask the federal agency staff?
Hyder: Well, Sarah, while they were talking, I jotted down two questions, and the first one is: should the MPOs get involved in determining the significance of the PM precursors, NOx and VOC and ammonia, could they get involved in that?

Benjamin: I would imagine that they would have to work through their state air-quality agency, and that could be done through the interagency consultation group. Now the transportation conformity rule revision, which incorporated the precursors, said that that was a decision that should be discussed through interagency consultation, so yes, yes.

Siwek: I think that’s very important. Again, this leads to some questions we had in New York last week, and that is what constitutes, and who decides, whether precursors are significant, and so I guess we’re hearing we would urge the transportation and the air agencies to work together in that required interagency consultation process to sort those issues out as they proceed.

Benjamin: Yes.

Siwek: Okay.

Hyder: And the second question is a more basic question, and one that periodically I used to get over the years, is, Gary mentioned that the emissions budget is like a ceiling, and some people have asked me from time to time, can the ceiling ever grow?

Jensen: Well, the emissions budget is set in the air-quality planning process, and in order for that to change, a revision would have to be made to the air quality plan. Sometimes that can be done if there was a safety margin in the SIP where there were actually surplus emission reductions, and sometimes those surplus emissions reductions can be assigned to transportation. But, if there are not surplus emissions reductions, then some other sort of emissions reductions would have to come from another source, in order to give those reductions to transportation.

Benjamin: In general, the starting point for the motor vehicle emissions budget is the on-road mobile emissions in a particular year, but as Gary mentioned, if there is a safety margin available, the budget can be larger than the on-road mobile emissions for a particular year. As long as the budget is consistent with the air-quality plan that it’s part of, yes, it can be larger.

Siwek: I think one way to describe that, I always say, the SIP, the state implementation plan, is really a zero sum game. If one sector, like on-road mobile, is allowed to have more emissions, than those emissions have to come out of some other sector, and so that I think is to Gary’s point of view, we have to revise that state plan in order to allow the transportation emissions to grow.
Jensen: Because it means you have to meet the purpose of that SIP, whether it’s to attain or maintain the standards to protect human health.

Siwek: I have one other basic question, and then I know there are some other questions coming in, and this was asked again to me last week; could one of you or both of you just tell us, what is fugitive dust? Can someone define fugitive dust?

Jensen: You want me to talk about dust? Okay. There really—we deal with two types of fugitive dust. One would be dust from paved and unpaved roads. This would be the dust that’s on the roadway surface that is blown up into the air as you drive along. Another type of dust would come from construction of transportation facilities, so if you’re actually building a highway or a transit facility, it would be the dust that’s blown up into the air during that actual construction.

Siwek: Okay, thank you. I will try to remember that definition for the next time I’m asked. We have a question from one of our participants coming in over the phone line. This is from Ronnie Watkins in Alabama, and the question is, “We need a summary of what the state or administrator has to do to determine if the particulate matter is significant.” I think we kind of touched on that a little bit a moment ago, but is there something more you folks would like to add to that?

Benjamin: Yes. In general, as the air-quality agency develops their air-quality strategies, they’ll determine which precursors are significant to the problem that they have. If they determine that those precursors are significant to the PM2.5 problem, then we do expect that they would make a significant response for that, plus provide a motor vehicle emissions budget. Now, prior to a SIP being submitted, it’s a matter of the air-quality agency assessing the problem and really doing a lot of technical analysis to determine that. Gary, do you have anything to add?

Jensen: In the July 1, 2004 rulemaking that dealt with new standards, there is a section that deals with significance and what things should be considered. There’s not a specific criteria, meaning that there’s not a percentage that you’re above or below that’s going to be significant. It really requires the state agencies to consider the different sources in their area and what’s important in their unique situation.

Siwek: And as we know about PM2.5, the different sources of PM2.5 in different parts of the country may be different, and so this is really going to be a state-by-state issue and again to reiterate what David was pointing to, we would hope that the agencies work in interagency consultation to make those determinations about significance until there is a budget set. Are there any other questions from our panelists on PM2.5? Harold?
Brazil: I had a question. If an area is in attainment for the fine PM standard, is there any way, or can you anticipate an area going into non-attainment for PM2.5 standard? At the federal level, are you looking at any potential areas that will come into non-attainment for the fine particulate standard?

Benjamin: We go through a designation process each time we promulgate a standard, and these standards were promulgated back in 1997. It took us a long time to get to the designation point because we were litigated about these standards. But in general, EPA does have the option of going back through the designation process if an area is not monitoring attainment of a particular standard, so even though an area is attainment now, they still have monitoring requirements, and so if there were a situation where they were in violation of a standard, we do have the option of going back and designating an area non-attainment. And we also have an option of not designating that area non-attainment, but dealing with them and their problem through a state implementation plan revision, which will hopefully address the problem, so there are various ways we can deal with a problem.

Brazil: There’s not just one way; there’s multiple ways.

Benjamin: Multiple.

Siwek: Are there any questions over here? Bob?

Dickinson: Just one that’s a little off the thing, but you hear the issue, attainment year and attainment date. Could you elaborate on those two a little bit, please?

Benjamin: Sure, sure. And I’ll talk specifically about the PM2.5 attainment date. We designated areas non-attainment for the PM2.5 standard, January 5, 2005, with an effective date of April 5, 2005, so areas have an attainment date of five years after we do designations, and it becomes effective. So basically they have until April 5, 2010 to come into attainment of a standard. Now, in order to do that, because that’s in the middle, the PM2.5 standard is an annual standard so the monitoring is annual, so we’re in the middle of the year, so areas will actually have to come in to attainment of the standard a year prior, so does that answer your question? Okay.

Siwek: So that would be in mid-2009?


Benjamin: Yes, because it’s an annual standard.

Dickinson: Lyncorae, on that question, what does it take for an area to show attainment of the PM standard? You’ve got to show attainment by 2010, what numbers do you need to see?
Benjamin: Basically, you have to have three years of quality-assured data, monitoring data, and also developing, well, three years of quality-assured monitoring data, yes.

Siwek: I would encourage our participants to phone in, email in, if you’d like to be live on the air just give us a call and we’ll put you on the air to ask us questions. I want to talk a little bit about research in PM2.5 with respect to—this is a question I often get in teaching and so forth, and that is, because we know the sources of PM2.5 are different in different parts of the United States, what are we doing, what are the federal agencies doing, and others that you may know about, to identify what kind of control strategies transportation agencies could adopt to reduce PM2.5 emissions, of course, depending on what the composition of those emissions are in their particular part of the country? Could either you speak to—I know there is research underway, is there any sense of timing or when we might be able to start talking about what types of control strategies folks can think about?

Jensen: Well, I think today we’re going to talk about a couple of strategies that people are implementing. We know at Federal Highways that this is a major concern of what measures are effective in controlling PM2.5. We recently had a PM research meeting to try and look at priorities, and this was one of the priorities that came out. We’ve recognized that and we’re getting ready to start hopefully this summer a research effort to look at the effectiveness of different measures and how they’ll affect PM2.5 and its precursors. So we don’t have anything yet, but we’re working in that direction.

Siwek: Okay. And I think you’re right, as we get into the balance of the program this afternoon, we talk about innovative strategies, some for the strategies that are being used to reduce ozone pollution certainly and PM10 may well also help in terms of reducing fine particulates. Lynorae, is there anything more that you’d like to say? I know again that EPA is also doing a lot of work in this area.

Benjamin: Just that I do believe that there is funding allocated towards researching this issue a little further, but I don’t know of anything that’s firm and concrete.

Siwek: All right. And I guess another question I had is about the whole issue of models and tools. I know we’re working on them; any sense of timing at all in terms of what we might be able to offer people? I know we’re going to do as much training as we can, but in the end, folks are going to need to be able to make conformity determinations for PM2.5 and I guess I’m just wondering, is there any timeframe on the horizon that you can even estimate about when there might be tools developed? I know the academic community’s working on this as well, but any thoughts on that issue?
Benjamin: The two guidance documents will be out sometime soon, within the next couple of months, and that will be helpful for areas in demonstrating PM2.5 conformity. As far as models, are you talking emissions models, or anything like that?

Siwek: Yes, yes.

Benjamin: I know we’re currently developing moves and that’s on the horizon, but I don’t know that it’s imminent. And areas have MOBILE6.2 that they can use right now and other methodologies to demonstrate PM2.5 conformity. So that shouldn’t be a hindrance for them in meeting that April 5, 2006 deadline.

Siwek: Good, good. Okay. On that issue we talked earlier, someone mentioned updating AP42. Could one of you describe just briefly what exactly that is?

Jensen: Well, AP42 is basically a manual of emission factors, of high calculating emission factors. For the exhaust emissions, you can MOBILE6.2, which is a computer model that will give you the emission factor, but for dust you have to use some other methodology to come up with that emission factor, and AP42 is the methodology that’s approved by EPA to calculate dust from paved and unpaved roads. However, there have been some studies done that showed that actual monitored concentrations and levels of PM2.5 along roadways don’t necessarily correspond very well with the AP42 methodology. So that’s the guidance that EPA is working on, is to try to adjust that AP42 methodology to more accurately depict what’s being monitored.

Siwek: Okay, well, great; that helps clarify that. Other questions, possibly, from our panelists? We have one coming in from the group outside. This is for either Gary or Lynora or both. This is from North Carolina Division of Air Quality. Three questions, okay? First question: “Can direct PM2.5 be found as insignificant? In other words, can directly emitted PM2.5 from MOBILE sources be shown to be an insignificant contributor to the non-attainment areas problem?”

Jensen: As part of the SIP process, when a state develops its SIP, they can find that direct PM2.5 would be insignificant, but it would have to be done as part of the SIP process.

Benjamin: Yeah, and I think the criteria, and I could be wrong on this, but 93.109K or something, of the conformity rule there are criteria for developing insignificance findings. Yeah, they could do that, just as they could’ve done with ozone precursors.

Jensen: Because we have certain areas in the country now that were designated non-attainment for PM10, but they found that motor vehicles really weren’t a significant source for that, so when they developed their SIP, they’re not really controlling motor vehicle emissions
because they think they’re insignificant for their problem, so the same thing could be done for PM2.5.

Benjamin: And likewise with ozone areas, and I think Texas has a few of those areas where they did the same things.

Siwek: So that provision is in the rule as to how to determine insignificance. The second question: “Given that brake and tire PM2.5 factors are approximately constant with time, how will growing areas—this is a good question—with increasing vehicle miles traveled in the future years, ever meet an approved 2009 PM2.5 SIP budget?” So I think what he’s saying is, given the relationship between brake and tire wear in PM2.5 emissions, how will, probably at least fast-growing areas, or areas with increasing vehicle mile traveled in the future, meet at ‘09 SIP budget for PM2.5?

Jensen: One option to consider is to work with the air agency to develop out-year budgets. We’ve had this issue come up with other pollutants that because of growth, they were having a harder time meeting their emissions’ budgets in the future, so they developed, worked with the air agency to develop out-year budgets for the years to ensure conformity. So if this is a concern, it really needs to be discussed in a SIP process as well. Of course there is not a single budget for each different element of PM2.5, meaning there is not a brake wear budget, there is not a tire wear budget; they’re all combined together. So even if brake and tire wear goes up, hopefully the exhaust emissions will be coming down and offset some of that.

Siwek: Through various control strategies, presumably. So in essence, then, there would have to be a SIP budget that would allow, in this very defined example, that would allow for some growth in PM2.5, and that would have to be totally a SIP issue negotiating this part of SIP development in order for that to be accommodated, if you will.

Benjamin: And the only that would be accommodated is if the motor vehicle emissions budget is consistent with the air quality goals.

Siwek: With the attainment goal?

Benjamin: Yeah.

Siwek: Yes, okay.

Benjamin: So that would be something to discuss through interagencies.

Siwek: Again, interagency consultation pointing to the importance of it. Third question from North Carolina Division of Air Quality: “If PM2.5 precursors are significant, then will the interim tests need to be done on each individual precursor, or can they be summed?
For example, the sum of precursors in the build scenario is less than or equal to the sum of precursors in 2002.”

Jensen: Each precursor would have to be tested separately, so if you have NOx, you’ll be testing NOx and let’s say the state air agency finds that VOCs are significant too, then you would have to test for VOCs separately. During the SIP process, there is a way that may look at trading between the different precursors, but all that needs to be done in the SIP process. So before there’s a SIP, you’d be testing NOX, and if VOCs are found to be significant, then you’d be testing them separately.

Siwek: An important point.

Benjamin: Or any of the other pollutants as well, or precursors.

Siwek: Precursors; if they’re found significant, they all need to be tested differently using the interim tests until there’s a budget. Okay. Here’s a question from UNC, University of North Carolina. Audrey Denozel: “How do you demonstrate compliance in an area where no monitoring stations exist?”

Benjamin: I guess attainment or non-attainment for a particular standard; presumably there has to be a monitor in the non-attainment for the area to be designated non-attainment, so that monitor, or the monitors in those areas where the county, I guess, which is not non-attainment, or doesn’t have a monitor, basically the monitor that caused the area to go into non-attainment would have to be attainment or something to that effect.

Siwek: Something I get quite a few questions about is the monitoring stations, and we do have a little bit of time, and this is the only thing I’d ask, and feel free to say we need to get back to someone on it, but people often ask who decides how many monitors are in a state or in a county or in a jurisdiction and just maybe if you could provide a brief overview on that.

Benjamin: See, I don’t work directly in that area, but really it’s a state and local decision. State and air quality agencies work with EPA and the monitoring team at EPA to determine the sighting for monitors, how many monitors are necessary, and that kind of thing, so it’s a state decision in consultation with EPA.

Siwek: Okay. Often people want to know that. Other questions on PM2.5 at this point? None coming in from outside. Any of you want to share other, anything else on PM2.5 with our audience? We’ve got a few minutes.

Jensen: Well, I would just remind people that all the things we covered today are covered in the rule-making, either the July 1, 2004 rule-making, or the rule-making that came out earlier this month, on precursors. And all that information is available on EPA’s website or our
website, Federal Highways, and those websites should be listed in the bibliography of your handout from the CTE website.

Benjamin: And there are abbreviated fact sheets which cover the highpoints of the rules on the website, so you wouldn’t necessarily have to go through the entire rule to get a basic understanding of what the rule entails.

Siwek: By the way, we do have another question in from our viewers, but as a frequent visitor to the websites, both EPA and FHWA, I would say they’re very well maintained. I always tell people to look at them because both agencies keep them very much up to date, and they’re excellent resources for just tons of information on transportation conformity.

This next question is an email, and it says: “What kind of assistance is available to rural areas that are new to the conformity process?” Either one of you want to try that one?

Benjamin: Well, rural areas are welcome to come to the transportation conformity trainings that we have across the country, and also the DOT is the primary interagency partner for isolated rural areas, so a lot of times they’re engaged in a conformity process already, so they know what the requirements are and what they need to do. Another thing to note is that isolated rural areas is they have more flexibility than metropolitan areas in demonstrating transportation conformity, so they don’t have that April 5, 2006 deadline. Basically isolated rural areas demonstrate transportation conformity on an as-needed basis, so unless they were introducing a federal highway or a federal transit project that needed funding or approval, they would not have to demonstrate conformity, and those areas do not lapse for transportation conformity. So there is flexibility but also the DOTs are integral partners in the interagency consultation processes in the state, and so oftentimes they will handle those areas.

Jensen: And of course if they’re not isolated rural areas but a rural type county that is adjacent to an MPO, and they’re both within the same non-attainment area, then they should be partnering with that MPO to figure out how to demonstrate conformity.

Siwek: And I would add to that, I know recently Federal Highway Administration had a research project that was completed on how rural areas have been demonstrating conformity in the past, and I think there are many good examples in there on how rural areas can work in the conformity process; as you both mentioned, the State Departments of Transportation typically play a very key role, if not a lead role, in that, so that would be another resource for rural areas to refer to.
Another question here is from Amy in Virginia: “Are there any federal programs that are looking into brake wear or tire wear?”

Jensen: I don’t know.

Brazil: I believe, Gary, that they may have come up at the PM research conference, that some of that data is old, and so is the technology; we need to be revisiting those data sets and doing new research.

Jensen: So there’s nothing that’s underway right now?

Brazil: Not to the best of my knowledge.

Jensen: It’s a need that’s been recognized.

Siwek: Here’s one from my friends in California. This is from Mike Brady at Caltrans, California Department of Transportation. Hello, Mike. “Brake/tire wear is much like [ph] road dust. Both are a direct function of VMT.” We heard that a few minutes ago. “Both will produce the same problem regarding budget compliance in a conformity analysis. There is less problem if the emission budget is for PM10 or PM2.5 as a whole, rather than for individual components of those pollutants, allowing a certain amount of balancing between the different elements of PM. In the past, PM10 budgets have been for individual components; will PM2.5 also have to be by component or will a single budget be allowed for PM2.5?”

Jensen: Well, for exhaust, brake wear, tire wear, if road dust is significant and if construction dust is significant, then they would all be part of one budget. The precursors would have separate budgets for that. But exhaust, brake wear, tire wear, and then dust if it’s significant, they would all be part of one budget.

Siwek: And one thing I want to add on the issue of dust that I just learned this week; I always learn something new in conformity, is that transportation agencies do need to take into account both dust from paved roads and dust from unpaved roads. That’s correct, right?

Jensen: Yes.

Benjamin: Mm-hmm.

Siwek: That’s another question we get a lot, and again, I myself just learned that this week. Another question, this is from Jason Vargo at Georgia Department of Transportation: “Which seasonal information, i.e. VMT or humidity in temperatures for MOBILE6.2 inputs, which seasonal information should be used when doing PM conformity determinations?”

Benjamin: More information on that will be provided in the guidance document that’s going to be released sometime soon, so we hope to have that information out.
Siwek: And that would be in the inventory guidance document?
Benjamin: Yes, the PM2.5 emissions inventory and regional emissions analysis guidance document.
Siwek: I think an important point on that might be that it may well be different information than you would use in the development of your ozone—
Benjamin: Precursors, that’s true.
Siwek: And so I think that people ought to obviously keep their eyes open for that and see how that went, and when that guidance comes out it’s going to be very important.
Benjamin: That’s true, but that will be the focus of that guidance document, so it should be out soon.
Siwek: Good. Great. Any other PM2.5 questions or comments?
Benjamin: Maybe to get into the status of that guidance document, EPA’s reviewed it internally and we’ve shared it FHWA and they’ve reviewed it, and we’re working through all the comments received from the regions and from FHWA and once we reconcile those comments, the guidance document will be released.
Siwek: Okay, great. Now obviously that will be very important and timely as people work toward the April date of next year.

So I think we’ll take our break then. I would urge our viewers to stick with us, stay tuned. We have four excellent examples of innovative strategies that are being implemented, two on the technology side, two on the planning side, to help areas meet the transportation conformity requirements. So thank you for participating in this part of the session, and we’ll be back with you shortly.

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Siwek: Thank you. Welcome back to our program this afternoon. Now we are going to move into the part of the program where we talk about innovative strategies and meeting the transportation conformity requirements. Before we move on to that, though, I’d like to remind you to feel free to call in, fax in, or email in your questions. If you call in, we’d be happy to put you on the air and we can have a little back and forth discussion to make sure you get your questions answered completely. You can call in or send in questions on any of the topics in today’s presentation. So with that, we’ll move on to first of all, this next hour we’re going to talk about innovative strategies in planning strategies related to transportation conformity. Our first speaker will be David Hyder. David is with Louis Berger Group, as I said earlier, and has spent more than 20 years with the North Carolina Department of Transportation. He recently completed a study for the Federal Highway
Administration on land use strategies and transportation conformity. So with that, I’d like to turn it over to you, David.

Hyder: Thank you, Sarah. I appreciate the opportunity to be here and share this study. We just finished a study for Federal Highway looking at the emissions effects of land use decisions, land use choices, travel, and then on into emissions. The goal of the study was to understand what we already knew, to define what the existing practice is, and to determine areas for improvement in that study. Basically, as I said, we were relating land use, travel and emissions. Essentially, what I’m going to do in this short presentation is to just very briefly hit the highlights, tell you how we went about it, some of the findings we had, and review very quickly three case studies I think are important to see.

When we were looking at the study, we began with a review of the existing academic literature. We looked at 46 studies done by various folks who were looking at transportation and land use and air quality. They ranged from studies on the effect of sidewalks on travel, to the effect of automobility on health, how emissions and precursors stay in the atmosphere, where they go, all kinds of things. After that, we then discussed this with 10 academics. We talked with Robert Savaro, Marlon Bornett, and several more that don’t come to mind, and then we did 11 case studies and the thing about the case studies, they look at number one, site-specific cases, they look at corridor-specific cases, and they look at region-wide cases. And they’re organized so that if you’re interested in a site-specific study, you can go and look and pull the three that are site-specific and look exactly at those, and see how they would effect your situation. And as I say, these are very good studies.

The next slide I have shows a path of change. I’m going to go over this one just a little bit and the slide’s coming up; this one has ended in your packet, and I’m going to sort of break it down in the next slide, and look at the land use. Basically, when you look at land use, there are three pieces of land use that have some effect on travel. There is the density, which everyone seems to think, that if you just up density, travel by automobile goes down. Then there is the diversity and the proximity. And what we mean by this is how homogenous are the land uses. Can you walk to the grocery store? Can you walk to work? Can you walk to the park? Can you walk to school? And then there are the issues related to micro-scale urban design: width of the streets, the sidewalks, trees, how the buildings are set back, parking spaces; all of those things. Now these sort of flow through and affect the next linkage, which is the transportation linkage, and there are several things you can change that the three Ds essentially will affect on this.
First, we’ll affect in some fashion the vehicle miles of traveling, and we’ll affect that two ways. We’ll change the ways that people travel. Is bicycling, walking or going by bus or train friendly and useable? We’ll change the trip length. If you have stores that are close, do you go to those, or do you to the ones that are five miles away? We have some changes in the operating conditions. If you opt for shorter block lengths, you’re changing the number of accelerations and decelerations. Well, when you change those things, you actually change the emissions characteristics. There is some very good research that shows that every time you brake and then come back up to speed at a traffic signal, you produce more emissions than if you were driving at a steady state. You may change the percentage of cold starts in a vehicle, and historically cold starts have been up to 30% of the trips. You may also change the fleet mix. You can change the number of passenger vehicles, you can change the heavy diesels. This one, I didn’t dwell on it because that’s probably the least sensitive to the density, design and diversity.

And finally before you can get to the emissions change, you’ve got to into the emissions model and use the conditions from the travel system to estimate your emissions, and that’s my next slide, which the emissions modeling, the effects on the transportation system will affect your carbon monoxide emissions rates, your oxides and nitrogen, your volatile organics, what the folks in California would call reactive organic compounds. And you’ll change the particulates themselves with brake and tire wear, or you’ll change the precursors to the particulates.

The next slide is a brief one of what we’ve learned, and the “what we learned” slide is the one that to some extent is the most interesting to me. We found out that there are any number of motivating factors for this. And transportation conformity surprisingly is not the only motivator. Some people are very motivated by having livable communities. The Lansing, Michigan case study is a case in point. They are not under conformity, but one of their criteria for ranking their transportation plan was how the land use system affected air quality. If you go into the private sector in woodlands development in Houston, Texas, north of Houston, there’s a case in point for that. The private sector sometimes wants to do well by doing good. They want to make a profit by providing something that is environmentally friendly.

We looked at the processes. Most of the processes if you look at them look at multiple land uses, at least two and sometimes five to ten. They look at multiple transportation plans. Highway heavy plans, transit heavy plans, some mixed plans, and we also discovered the biggest disconnect. The biggest disconnect is the one that those of
us in planning have dealt with for the longest time. The plan is an idea, how do you get the plan on the ground. If you can’t get the plan on the ground, it’s a dream. And that’s the biggest disconnect. There are a few others that are small, and I’ll try to get back to those in a moment, but that’s the big one. And in my next slide, essentially a little find more closely with how we practice the process. The first thing you do is to look at why you’re doing the analysis. There is a sort of pre-analysis phase, what’s driving me? Is quality of life driving me? Is transportation conformity driving me? Is the desire to do well by doing good driving me? What is driving me? There is an inventory process, and this is a little different from the SIP inventory that Lynorae is familiar with and some of the others; it’s an inventory of the land use situation, of the transportation situation of what is available, and from that, you’ll develop multiple land use scenarios. I’ll talk about what those land use scenarios are in one or two of the case studies. Then you’ll go into some travel modeling and some emissions estimates.

Now here is a very critical decision that the planners have to make, and that’s whether you’re going to aggregate the emissions at a regional level, or whether you’re going to break the emissions down at a much lower level, perhaps even link-based, and this will have an effect on exactly what your MOBILE modeling finally looks like. In this particular case, we discover sort of two levels of practice. There is what I would call a basic level of practice, and in the basic level of practice, what you come up with is “I am driven by conformity deadline,” and conformity deadline means that I have a set schedule that I must meet. In order to meet that schedule I’m going to do what I must do, I will probably analyze about two land uses and two transportation systems, and try to make the most use of what I have in order to meet that deadline. I’ll be managing, and we also see this in some of the smaller cities. I’ll be managing this situation with spreadsheets as much as possible; I’ll be using the defaults in the mobile model, I’ll be aggregating emissions at the highest level possible. I’m travel modeling, I’m not going to do anything fancy with the travel demand model. I’m going to use, if I’ve got three steps out of four, I’m going to use three. If I’ve got four, I’m going to use four. Whatever I’ve got on-hand I’m going to use that, because, as I say, you’re schedule driven, and I’m going to do the test and turn it in, and when I document, I’m going to document the results.

Say I’ve got X tons or pounds of emissions out of this transportation system, and I got Y out of the other one, and we’re going to take Y. That’s what you do. And in the more advanced cases we saw the desire for livable communities, and here people would go as many transportation systems as they could think of that were reasonable as many as
four, five, six, seven, eight land uses, moving land use from one side of the county to the other, concentrating it in various places, doing all kinds of things to see exactly what their results were. They would tend in these cases to go in their land use planning with a formal land use model. They’ve got time to deal with that. They would use, in the four-step travel demand model, they may tinker with the trip generation stuff. For example, Baltimore uses a land use variable in their trip generation model. They’ll tinker with the mode choice model, to get that right. Their travel demand modeling is essentially driving the issue. They’ll go back to the public several times with this. They will refine the MOBILE defaults and use as many of the local MOBILE defaults as they can, and they’ll almost invariably disaggregate the emissions to as low a level as possible. If they can get them below the link level, they’d get them below the link level.

And the other thing you see with this kind of study is, they will document how they went at it almost as well as they documented the results. And these things are quite honestly a goldmine for finding out what is possible, at least from the modeling perspective.

My next slide is essentially a list of the case studies that we’re going to talk about. I mentioned Baltimore a little bit. Baltimore is sort of fascinating to me as a travel demand modeler. As I said, there is an explicit land-use variable in their trip generation model. They also use that in their mode choice model. They’ve done add-on data into the National Personal Transportation Study to find out on a more refined level, where people go and why they go there, and they’re also going out in the field and collecting additional land-use data, and essentially sidewalk geometry, grades on streets, grades on sidewalks, to see if those things are making a difference, with the eye towards putting those into their travel demand model.

The Charlotte case is a corridor-specific study. They use some sequel money provided by EPA to analyze the effect of a light-rail corridor south of what is called uptown Charlotte, going essentially from uptown Charlotte, south to Rockhill, South Carolina, and the sort of end results of that were they moved 16,000 households and about 10,000 jobs from the fringe area of the urban area into the corridor. They didn’t change the corridor totals, they essentially sort of took the totals and moved them around a little bit. One of the things that they discovered that interested them was that in their first iteration, a lot of the surface streets and highways in that rail corridor got overloaded, so they actually had to go in and revise their transportation plan to account for the additional travel that was in that corridor. This is over and above the rail system,
which they had actually put in the corridor in their first round. So, that indicates that while a rail corridor is probably a good thing, you can’t necessarily depend on that to carry the entire burden if you start adding additional travel in there.

The third case study is Raleigh, North Carolina, and this one is that the MPO was trying essentially to be proactive for the eight-hour ozone standard. They looked at the standard and said, Well, we know it’s coming. We’ve got a relatively new regional model, and we have a breathing space in our conformity process right now. Let’s go in and do, I believe, five land uses and five transportation plans. Let’s peer review the study, let’s do multiple measures of effectiveness. Historic sites were included, air quality was included, travel links were included, wetlands were included, and I’m trying to remember if transit accessibility was one of the factors, but all of this was given to the peer review panel, and they looked at the peer review, looked at this, and gave an opinion on the study. So these are three cases then, and they are not by any means exhaustive. Essentially there are three that illustrate the range of the case studies that we looked at.

The other thing, as I wrap up, I believe is, we found several things that need additional research. One of the things that became clear if you look at some of the data is that when you start adding, when you start depending on diversity and to change the number of trips, you’re going to be changing the traffic analysis zones. Now when you do a traffic analysis zone, it’s supposed to be homogenous. Well, suddenly you’ve more land uses in there than you can think of, and what will happen is, those trips will just disappear from the network because they’ll become intrazonals. So you need to think of a way to account for your intrazonal trips amongst other things.

Those are things that we sort of looked at and discovered and spent a few minutes thinking about. We also looked at elasticities and came to the idea that there may well be—elasticities are a very blunt tool for assessing the effects. You can get from elasticity to transportation, but then you’ve got to get from transportation to emissions. It’s very difficult to go from elasticity to emissions. But it may well be that there is some threshold of elasticity that you can go from A to B and say, “Here’s where my cut off is going to be.”

Sarah, I think that’s a good summary.

Siwek: Thank you very much. That was an excellent summary of the study. I have one question, and then I know some of our other panelists have some questions and my question is, though, you mentioned the disconnect about actually getting these land use plans in
place. Could you maybe just name one or two of what you see as the key challenges to having these land use plans implemented in the areas that you looked at?

Hyder: The key challenge, I think, is just the long-term nature of using land use to influence transportation. Essentially a lot of the studies that have looked at it from a regional level, and the regional levels are going to be implemented individually, so that you’re going to have to go down to a site level to actually show the effects, which is one of the nice pieces of this is that we have several site-specific case studies.

Siwek: Thank you. Do any of our panelists have questions for David?

Dennison: Yes, I have one, or a couple. David, I’m wondering about how long it takes for these land use strategies to take effect. The areas that you studied, about what year where they analyzing?

Hyder: I’d actually have to go back and look at them. Most of them were in the 2020 era timeframe. Some of the site-specific ones actually tended to be now, but the regional analyses tended to be around 2020 or 2025.

Dennison: And I’m also wondering about what kind of effect these land use strategies had on emissions. Did some of these areas specifically include these benefits for the land use strategies in their SIP or in their conformity determination, were they specifically identified or were they just part of that pre-conformity determination process?

Hyder: As I look at my list, I pulled it out because I was afraid somebody was going to ask me that question. San Diego actually included these in their conformity determination. The Atlantic Steel case became a transportation control measure in the Georgia State SIP, so that’s there. The Woodlands, in Texas, became part of both the SIP and the congestion mitigation air quality program, so there is some use for those. There is some precedent for getting those into planned conformity.

Siwek: Any other questions for David from the panelists here? Okay. I think what we’ll do is we’ll move on to Becky’s presentation on interagency consultation, and then we’ll come back and have questions on both of these topics as well as back to the PM2.5 because we are getting a number of questions in on PM2.5 still. So Becky, let me reintroduce you.

Dennison: Laura, thanks for having me. I’m going to start off with a brief background on Texas. We are lucky; we do not have any PM2.5 non-attainment areas in Texas, but we do have four non-attainment areas. Dallas/Fort Worth is non-attainment for one-hour and eight-hour ozone standards. Their boundary actually increased a little bit with eight-hour ozone standard. Houston/Galveston is non-attainment for the one-hour and eight-hour ozone...
standards. Beaumont/Port Arthur is non-attainment for the one-hour and eight-hour ozone standards. And then El Paso is non-attainment for the for the one-hour ozone, carbon monoxide and PM10 standards.

We’ve had a lot of success in Texas, I think, and some of the conformity strategies that we’ve done, and I think they could be transferred to the PM2.5 process. I’m going to talk to you a little bit about what we’ve done. Two major things that we’ve done in Texas are coordination and communication through meetings, and also standardizing the processes of conformity. In meetings and opportunities for communication, one great group that we have in Texas is what we call the SIP workgroup, and it was started a couple years ago. It’s a group that includes TCEQ, the air agency, the environmental agency in Texas, and TxDOT. It’s led by TCEQ and TxDOT. But it also includes EPA, Federal Highways, and the non-attainment MPOs, and then when we were developing EACs in Texas some of the near non-attainment MPOs would participate. This group was started in order to increase communication between TCQ and TxDOT in developing this SIP and the motor vehicle emissions budget in that SIP, and the transportation control measures.

We had an issue a couple years ago where TCEQ included a 55 mph speed limit in Houston’s SIP, and it was not very popular in Houston at all. They had a 70 mph speed limit in the area at the time, and that kind of reinforced the need for communication before strategies were included into the SIP. So we started the SIP workgroup in 2002. It included participation from TCEQ’s technical staff, their policy staff, technical staff and policy staff, so all the staff that works on these SIPs and conformity, everyone at the staff level is a participant, and there’s lots of communication. It really helps so that everyone knows were everyone’s coming from.

We meet monthly. We used to alternate between TCEQ and TxDOT. However, now we’re starting to have these meetings via video conference to make it easier for everyone to participate, so we’re holding the meetings at TCEQ to use their video conference capabilities. And then we discuss the control strategies that are going into the SIP. SIP timelines, when TCEQ is expecting to come out with different emissions budgets because that, as a lot of you know, could trigger conformity determination within 18 months, and we talk about the transportation side, timelines that the MPOs are facing when they need new budgets.

There’s not a lot of wiggle room in Texas SIP so it’s really important that what is included in the SIP—we don’t have, what do you call them?
Siwek: Safety margins?

Dennison: Safety margin. Yeah, we don’t have that in Texas, so everything is important and everyone’s very interested in what goes in the SIP. We had an example recently where there was an issue with how the diesel fraction was calculated in MOBILE6 in Dallas/Fort Worth, so it was great to have this group, and we discovered that that same issue had been included in the motor vehicle emissions budget that TCEQ had submitted to EPA for their upcoming eight-hour increment-of-progress SIP, and through this close coordination, we were able to go and fix the error in the SIP, and fix the error in conformity because if we didn’t have that close communication, and that error had stayed in a SIP with conformity, we knew we needed, if we knew of it, with conformity, you have to use your latest planning assumptions, so we’d have to correct the error in conformity, and if it was not corrected in the SIP that could have been a mismatch and an issue, but through this close coordination, we were able to head off the issue.

Another meeting that we have regularly in Texas is our technical working group meeting. That meets quarterly. It’s a lot of information dissemination, and also we address technical questions that come up. We mostly deal with the technical issues through subcommittees. Some of the subcommittees we have right now is a CMAQ reporting subcommittee to try to standardize how CMAQ is reported among the MPOs. We have a non-federal regionally significant projects subcommittee, which is trying to determine what counts as project approval in these non-federal agencies. We had a documentation subcommittee that I’ll talk about in a minute, a MoSERS subcommittee; I’ll talk about that. And we had a subcommittee to work on transportation control measures substitution, we have a TCM substitution process early on in Texas.

The other thing besides communication that we’ve done in Texas to streamline things is through standardizing our processes and a lot of this is a result of the subcommittees of TWG. Through one of the subcommittees as I mentioned, we standardized conformity documentation. We included that on the CTE website. We have a standardized outline on how all the transportation conformity determinations, or the analyses, look in Texas, so every MPO has the same look to their conformity determinations. We included an information required table which talks about what information the review agencies would like to see and in what format, so that this information is kind of known ahead of time so that we don’t have anyone asking for information late in the process.
Another thing we have in Texas is a pre-analysis consensus plan. There is a link to an example of a pre-analysis consensus plan on the CTE website as well. I included the NCT COX [ph], that’s Dallas’s MPOs pre-analysis consensus plan for their current conformity that they’re working on for the eight-hour standard. That consensus plan includes information on analysis years, which motor vehicle emissions model, which budgets, demographics info, adjustment factors to the travel demand model data, and we use this plan. We talk off this plan during interagency conference calls early in the conformity process, before the MPO begins their analysis.

We also have a MoSERS manual, we stands for Mobile Source Emissions Reduction Strategies, and this was developed by TTI under contract for TxDOT, and it includes standard formulas for calculating the emissions reductions of strategies in Texas, so we use this for our CMAQ projects and for conformity determination for transportation control measures and other strategies included in conformity determination so that every MPO is using the same formula. They can deviate from it, but if they use the MoSERS formula, then basically all the interagency partners have agreed to these formulas and we’re not going to give anyone any grief about using that formula. So it’s a way to standardize those things and make things fair across the state.

Well, I think that’s all I have. Let’s open it up for questions.

Siwek: Great. Any questions from the panelists to start with?

Hyder: Not a question, Sarah, so much as a comment, and perhaps a follow-up question, but essentially, what you’ve described are the elements of every successful conformity process I’ve ever seen. If anybody is successful, they talk a lot, they have meetings that are meaningful; meetings for meetings’ sake are pointless. They talk up front and all those things, and it’s very similar to what we’ve done, and did in North Carolina when I was working there, and it’s similar to every successful process I’ve seen.

Jensen: Could you talk a little bit about, you talked about your pre-consensus plan, what sort of meetings do you have? Do you do this electronically? Do you meet face to face? How do you develop that plan?

Dennison: We do it over the phone, mostly through conference calls. The MPO develops their plan; they kind of say what they want to, well, with input from EPA and everyone else, they develop this plan, and we use that to talk off of in our interagency conference calls. We do most of the conformity consultation through conference calls.

Benjamin: And is there formal documentation of that so that later on down the line people know what was agreed to and there are no late hits?
Dennison: Yes. This plan is included in the conformity determination, or the conformity analysis, and a lot of the MPOs will include that. They’ll include meeting minutes in the documentation for the conformity determination.

Benjamin: Also, is there an opportunity to get input from partners who aren’t necessarily able to make the meeting? Is there some kind of avenue to explain what was agreed, or what was discussed and then get concurrence from people who weren’t available, such as the federal partners sometimes aren’t able to make some of the meetings?

Dennison: Yes, well, actually, we’ve been pretty successful in scheduling meetings so that the federal partners could be there. But if we couldn’t, all the information is disseminated through email, so everyone has it in their email, and meeting minutes will also be disseminated through email.

Benjamin: And there’s an opportunity for concurrence or questions?

Dennison: Yes.

Benjamin: It’s not an FYI, “we agree to this”?

Dennison: No, no, there is constant communication. Everyone is very involved in what’s going on.

Siwek: Becky, from the perspective of the federal agency that needs to actually independently make the conformity determination, have you found that standardization of the format and the checklist, and things of that nature, have helped you in the federal agencies?

Dennison: Oh, definitely. We know what is where. We know that that information is there, that’s what we need; it’s right there. It makes our job a lot easier.

Siwek: And I have one other question about the TTI, which is Texas Transportation Institute; you all call it I believe the MoSERS manual, and it’s a manual as I understand it on how to estimate the impacts of transportation control measures from an emissions point of view as well as CMAQ projects. Is the manual something that everyone is required to follow, and that’s one question; secondly, does it include cost effectiveness per ton reduced, or something of that nature?

Dennison: It doesn’t include cost effectiveness information. And it’s something that areas are encouraged to follow, that can deviate from those strategies, if the interagency partners are okay with the formula they’re going to use. I also want to add, we’ve included a link to the MoSERS manual in the bibliography in your handout. It’s a temporary link, it’s to the TTI website. We’re going to have a website for the Texas TWG group, I guess, maybe next year, and then there will be a spot for all of our information, but right now we’re using TTI’s website as a location for MoSERS manual.

Siwek: Great. Any other questions? Harold?
Brazil: Yes. What are some example project types in the MoSER?

Dennison: It’s a big manual, so it includes the gamut. Signalization, grade separation, HOV lanes, ped/bike projects, almost anything that you could think of. And it also actually includes, the part that we always use, the back part of the MoSERS manual, the front part of the MoSERS manual is actually, if you’re new to the air quality process, it includes information on the standards, and some background on air quality, so that could be useful for some people that are new to this process.

Brazil: Does it include any alternative fuel strategies?

Dennison: Probably. I’m not sure.

Siwek: Any other questions? Lynorae?

Benjamin: I view interagency consultation as really the key to implementing conformity successfully in an area with ease, and I was wondering if you had any advice for the new areas, brand new areas for conformity, on what they should do to meet the April 5, 2006 deadline. Some of the things that we’ve suggested to our areas, and we’ve strongly encouraged it, is one, learn who your interagency partners are; all of them: the federal, state, local, everybody, and engage those partners. Another thing is, talk about the things that we need to talk about early, and ask the federal and state partners for guidance when necessary, and the third is, drafts are very, very important and helpful. So, do you have any other--? The pre-analysis consensus is a good idea.

Dennison: I think one big help is to get the interagency partners involved very early in the process, months ahead of when your conformity is due. For these conformities in June, we started last year. The pre-analysis plan was finalized back in the fall, I think, awhile ago. So when you get all of the partners on the table early on, that’s a big help.

Benjamin: Schedule, too, coming up with a schedule.

Dennison: Yeah, timelines. And also talking with your EPA region and your federal highway folks to see what else they have on their table, because they might be getting a lot of conformity determinations on their desks in June, or if you could get your conformity determination, if you could talk with them, and maybe schedule it for a month when maybe they won’t have another one on their desk, you might be able to get a little better participation, and that’s helped, I know. In Texas, poor El Paso gets the bum end of the stick a lot, and they ended up getting bumped out of the way, because Houston and Dallas are on our table, but they don’t have this imminent deadline maybe sometime, but they’re great. They talk with us and they say, “Okay, what do you have on your table?” and then we can accommodate them a little better, spend more time with them.
Hyder: Becky, I have a question. You mentioned a couple minutes ago, you’d come to the consensus plans back in the fall; do you have a sort of rule thumb how many months a conformity of determination takes you in Texas? Certainly that’ll vary, but I think that’s a piece of information that these new folks just won’t have, they won’t have a feel for how long it takes.

Dennison: I think it varies a lot, so I don’t really have a good—it takes less than a year, maybe, but more than a few months. It would be different if it’s just an amendment to a plan versus a whole new plan. If there’s a big change, then it’s going to take a lot longer.

Hyder: My rule of thumb was always about 11 months, is the reason I ask that. And there’s a lot of play in that, obviously, but that’s the rule of thumb. People say, “How long does it take?” I say a year.

Dennison: Well, we’re looking at it way ahead of time, especially in the SIP workgroup, looking way ahead of time and when we’re going to need these motor vehicle emissions budgets, so that’s well over a year ahead of time, making sure everyone’s on track to have what they need by their deadlines.

Hyder: And another question I guess on draft reports, when do the MPOs start distributing draft reports to the interagency partners?

Dennison: It really depends. These current conformities that we’re working on right now, well, at the moment right now, I have Houston/Galveston’s and Dallas/Fort Worth’s on my desk, and they did it differently. They posted all their information on their website, so it was available to the review agencies at that time on the website, and so some of the partners, right now we kind of split up the duties, I guess, in reviewing the conformity determinations, and this conformity determination, TCEQ is really helpful in looking at the travel demand model link listing, and comparing that to the projects in the transportation plan, and so they did that way ahead of time, and basically they had that information when it was available to the public. The Federal Highway didn’t actually get a copy of the draft report until right after it was approved by the MPO policy committee, but it was available to us on the website, and we had seen a lot of that information in our pre-analysis consensus plan period. As a whole, it was available to us pretty much when it was available to the public. Dallas did it a little differently. They gave us big copies of their binders before the policy board adopted it because they wanted to get comments or main comments from us, before the policy board adopted it.

Hyder: Okay.
Siwek: I think we should move on. We have a number of questions here, so let me get to them. The first question is from Amy Phillips, and Amy is the author of most of the transportation parts of the Bureau of National Affairs Daily Transportation letter out of Washington, D.C. Amy wants to know, “How can the study on land use strategies and potential emissions benefits be obtained? Is it on the web? Is there a link to it?”

Jensen: I can actually answer that question, as the report was done for Federal Highways. We are planning to have that on our website. It is not at this time, so hopefully we should be getting that up on our website in the upcoming months. In the meantime, if you’re interested, please feel free to contact me and we can see about getting you a copy or pieces of the documentation that would be pertinent to you.

Siwek: Okay. We’ll stick with David here for a minute. This is from a gentleman at UC-Davis out in California. For David Hyder, “Are there any plans or efforts to combine the current process with photochemical air quality modeling to evaluate the effects of strategies on secondary formation of ozone and PM2.5 concentrations at the regional level, and if so, could you please describe them?”

Hyder: I’m not aware of any, Sarah. I think Environ did a little bit of work on ozone for the ozone standard a couple of years ago, but I’m not aware of any for PM2.5.

Siwek: Okay. Let’s move to Becky here. This one is from Gene Mazer. Hello, Gene! He’s out in the California Division of Federal Highway Administration. “Does the interagency consultation process occur prior to the official public comment period for the regional transportation plans and transportation improvement programs, or does it occur at the same time?”

Dennison: It’s both. It definitely occurs prior to the public involvement period. And it’s ongoing throughout the conformity process.

Siwek: Okay. A couple more here for Becky. With MoSERS—now remember, MoSERS is the Texas Transportation Institute manual on evaluating CMAQ projects and transportation control measures. “With MoSERS, how flexible are you with the assumptions used in these off-model calculations, particularly with regard to calculations involving percentage mode shift and other subjective variables? What are some sources used to obtain this data?” This is from Jason Vargo at Georgia DOT.

Dennison: Well, that’s where there is a lot of flexibility in how the different MPOs use these formulas, because we’ll just have a formula, but something like percent [ph] could be a big difference. And it’s just basically up to the MPO or where they get the data, and I’m
not sure. I actually am not sure where they get it. We trust that they’re using decent sources.

Siwek: Another on the same subject, and this is from Mike Brady, California DOT. “How does the Texas manual compare to the California Air Resources Board and Caltrans CMAQ guidelines?”

Dennison: I’m not sure. I know that TTI did get a lot of their formulas from other sources and I believe some of them are from California, so some of them may be the same, but I’m not sure how they differ.

Siwek: And is that manual available? You said it is available online?

Dennison: It is available online. And it’s supposed to be updated periodically; it’s not a static document. As of right now, I don’t think we’ve actually made any changes to it since it came out a couple years ago, but it’s an ongoing document.

Siwek: Now we’ve got a few more PM2.5 questions, so I’d like to move to those. This is from Christopher Anderson, at New York State DOT. “Will PM2.5 budgets include areas already under stress of constituents causing acid rain, and any considerations pertaining to air emissions on water quality?”

Jensen: Well, one of the considerations in the precursor rule had to do with the sulfur oxides emissions and ammonia, and that had somewhat to do with acid rain, and that was one of the reasons that areas need to determine whether they’re significant or not, so they should be looking at those issues in air quality and planning process, but of course, the SIP is going to have to show attainment for PM2.5 as well, so they kind of work together.

Siwek: Okay. We’ve got our good friend Arnie Sherwood from Southern California who wants to be on the air. Hello, Arnie, how’re you doing?

Sherwood: Just fine, Sarah, thank you. I was happy to give you the question, but they told me to go online.

[LAUGHTER]

I have a question for David. For land use, which is intrazonal, so it’s smaller than a zone, you mentioned that there were issues. I wondered whether you had data or advice on how to alter trip generation and mode split, either in the model or after the model, or changes in land use, that was within the zone, or a small scale?

Hyder: I think, Arnie, the place that I was headed with that primarily was to make sure you had some way to track your intrazonal trips and then come up with some reasonable estimate of how short or long those trips were, and I think length might be a determiner in what the mode would be as a general rule. I don’t have any really sound advice to you at this
time for that. I’d be glad to talk with you about it later and sort of brainstorm with you, but I do not have any sound advice at this point.

Sherwood: Okay.

Siwek: Okay?

Sherwood: One comment, Sarah, too. On the interagency, that Texas sounds like it has a good process, but I just thought to mention, since Mike Brady was on the line, that California has a quarterly statewide conformity process with all the MPOs and their agencies, which is very useful because it gets the best use of time of the federal and state agencies to all the MPOs and air agencies in the state, as well as brings up any issues that may be relevant to all of them, and Mike Brady is chairing that group this year, and we’re meeting tomorrow.

Siwek: Yes, I was going to mention that, actually, Arnie, and they actually have an excellent website. They keep all the agendas on the website. I found for many years a very good way to communicate in a large state, everyone can join in on it, teleconference, so people don’t have to be traveling all the time. It works very, very well. This is a question moving to the other coast here, from John Zamers. John is the head of Environmental Analysis Bureau at New York State DOT. This is regarding PM hot spots. “What is EPA and FHWA’s view on the relationship between a hot spot analysis for conformity purposes versus for NEPA purposes?”

Jensen: Well, I can address that somewhat. There are two different laws. The Clean Air Act requires us to determine conformity of transportation projects, but the National Environmental Policy Act also requires us to assess the impacts of a project on the environment. In non-attainment and maintenance areas, of course it’s pretty straightforward because we’re doing conformity there so the analysis can meet both needs. But in attainment areas, conformity doesn’t apply, so there’s always kind of a question of how you should look at air quality impacts in attainment areas, and we don’t really have any clear guidance out there, we want people to go through scoping and to look at what the concerns are of the environmental agencies, but we don’t have any specific guidance on that right now.

Benjamin: But are you developing guidance?

Jensen: We are looking at trying to address this in guidance, but I don’t have any specifics right now.

Siwek: Okay. We’ll do one more question before the break, and I would like to say, please keep sending the questions in; we’ll have time in the last segment this afternoon for them and
we still have some that we will get to in the last segment we haven’t gotten to now, but we’ll try one final one for Becky. This is from Denny Arscopeta from New York State Department of Environmental Conservation in New York, and that is, “How are decisions made during interagency consultation? That is, how many principles are involved, and are decisions based on unanimous or majority concurrence?”

Dennison: Well, actually, for principles I guess it’s, the main players are Federal Highway, EPA, TCQ, TxDOT, and the MPOs. Oh, and the transit agencies; FTA as well. In Texas, FTA has given Federal Highway the signatory authority on conformity determination, so they’re not as involved, but it’s more, it’s a consensus process. At the end of the day, it’s Federal Highway signs off on the conformity determinations, so I guess what we say, maybe, goes, but we really, it’s a consensus process. It’s not a vote, make sure everyone is okay.

Siwek: Thank you. We will be back shortly.

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Siwek: Good afternoon. We’re back. Now we have our final session of the day. We’ve saved for this our technology innovations, and I hope we don’t lose our West Coast people to the lunch hour. Stick around; I think it will be very interesting for you. And before we begin, let me remind you to again, please continue to send your questions and we will have time, hopefully, to get to all of them today, and again, you can either do it by fax, email, or certainly if you’d like to call in we’d be happy to talk to you over the phone. Let’s begin this session with Harold Brazil. Harold works at the Metropolitan Transportation Commission, which is the MPO representing the nine counties, I believe, in the San Francisco Bay Area in California. Harold is going to talk about technology innovations and some work they’re doing there to get very cost effective emission reductions on transit buses in the San Francisco Bay Area. Harold?

Brazil: Thanks a lot, Sarah. Thanks for having me, everybody. I’m going to talk about our urban bus transit program that we have in the Bay Area that we started about three years ago. The overall goal of the project was to accelerate attaining the federal and state air quality standards, and also speed up implementation of the state’s urban bus rule. How the project came about was, it was basically a coming together of three items. First, again, the California Air Resources Board, urban bus rule, our own Bay Area 2001 SIP, which was our ozone attainment plan. We had a component of that that included further study
measures that I’ll talk about a little more later. And then also, possible inclusion in transportation control measure substitution. Going back to CARB’s urban bus rule, the rule came about in the year 2000, and it basically gets NOx and PM reductions. There’s a four-point grams per brake horsepower-hour NOx fleet-wide average that transit operators have to get by based on October 2002, and then also between 2003 and 2008 there is about an 85% PM reduction from the baseline.

Also part of this rule is that it gives the transit operators in the state a choice of either meeting the standards by using alternative fuels or using diesel fuels. Most of the operators in the Bay Area use diesel fuels. Going along here, back to our ozone SIP, again, we have these further study measures that we weren’t committed to implement, but we wanted to look at these measures for a possible inclusion in some SIP down the road. So even though this is a particulate matter reduction strategy that was in our further study measures, we still basically got ourselves into the business of looking at bus retrofits. And then with the TCM substitution process, around the time when these other two issues were coming about, we were thinking about maybe coming up with some replacement emissions reductions for substitution purposes.

I’d like to describe a little bit about the Longview device. It uses a lean NOx catalyst to get the NOx reductions, and then also has an active PM filter that uses together. You get multiple emissions reductions with the one device. It’s pretty simple to install. Things are pretty straightforward with it. Basically looks like a muffler, or a muffler for a big diesel engine. On the downside, it’s about twice the cost of a conventional PM filter retrofit device, and in addition to that, there’s a potential 3-4% fuel penalty because the fuel is actually used to regenerate the PM filter, to keep the temperatures high on the filter. Again, where my agency was a little more interested in this device was these NOx benefits we could retain from use of this device, would be beyond any CARB-required NOx emissions reductions.

The next slide here, two pictures, that’s an actual type bus that would have the device installed, and then on the right is a picture of the device itself that goes in the back compartment of the bus, pretty straightforward, pretty simple. I actually ride that bus line that’s being displayed right now.

And then, when we talk about the planning of the project, the scale of the project was to install these devices on about 1,700 buses around the region. That equates to 12 different operators from around our region. We have up to around 30 transit providers around the region. This program is only affecting the 12. There are some operators that
actually don’t use diesel fuel, so this program would not be applicable to them. There is an allocation of $14 million in CMAQ to pay for the NOx component of the program. And by putting that funding out there, MTC potentially can claim the emission reduction credit.

Going back, setting up the program, we had to get approval from our commission to use CMAQ funding in this way. And then a very important part of getting this program going was to get our local transit operators to buy in to using this device. I can’t overemphasize this enough; the transit operators are really taking a risk by installing this type of device. It was new thing for everybody, and there is a potential that things could go wrong, and the transit providers can’t even do exactly what they’re there to do, and that’s provide transit service, so we had to get that buy-in from our operators.

With the funding breakdown, the total cost of the individual device, is about $18,500, again, half the money would come from regular funding sources that transit operators use such as 5307, 5309 FDA funding. Again, our share, the MTC share, covers about 44% of the device’s cost, and then there is the need to provide that CMAQ match portion, which can come from our partners in air quality planning in the region, our Bay Area air quality management district funds, and other local funding sources. It’s about $1,000 for the match per device.

And then as far as emissions reductions go, in our region we’re getting about a ton and a quarter per day NOx reductions, and about a quarter of a ton per day ROG reductions, volatile organic carbon reductions. I’ve got the NOx and the ROG reductions in red, not white, because these are the reductions that MTC can clam for potential SIP planning purposes. The PM emissions benefits for us in the state of California are to address CARB’s urban bus rule, so you get an 85% PM reduction there, and it’s about 0.15 tons per day PM reduction in our region. Additionally, you get CO benefits with the device too.

Then with the cost benefit calculation, again, we’ve got 12 operators in the region participating in this program, and the annual mileage can vary, so that’s an average annual mileage for these 12 operators. We’ve got operators that function in the city of San Francisco; trips will be very short there, versus other commuter-type transit operators that have longer annual mileage lengths so that 39 is about an average, but this table is here just to give you a ballpark estimate of what the costs of this program are, and the total installed costs represents the costs of just one device and the CMAQ cost below it is just the cost of one device also.
Current status of the program, about a quarter of the devices have been installed so far, and we’re on schedule to install the balance, 1,300 devices, by the end of calendar year ’06. Minor glitches with the device, nothing fatal at all, and the manufacturer’s been very responsive to addressing any minor issues. Therefore the agencies in our region that are using this device are very positive about it. If they were to give the device a grade like in school on it, they’d give it an A- or B+ rating at this point.

And that’s basically it, my contact information is on the last slide here, and there’s also the CARB transit, urban bus rule website (www.arb.ca.gov/msprog/bus/bus.htm) and the manufacturer’s site (www.cleaire.com/site/products/).

Siwek: Thank you very much, Harold. One thing is very impressive, certainly is the cost effectiveness, if you saw that number on the order of a little more than $3,000 per ton I believe of NOx in terms of CMAQ cost effectiveness, very, very good. Are there any questions from any of our panelists on this? Any thoughts?

Dickinson: I just have one. Harold, what about other applications for other heavy-duty vehicles for cities or counties in your region? We’re looking for some of those kinds of ideas in the state of Texas.

Brazil: The Longview device, this one device, is verified on a variety of engines. Basically it’s diesel engines, between model years 1994 and 2002. These engines go in kind of public transit fleet—not transit fleet, but heavy-duty vehicle fleets, like our State Department of Transportation, those big, bulldozer-type vehicles can use this device. Garbage trucks can use this device, and then power generators, diesel power generators can use this device also.

Siwek: Other questions from the panelists for Harold on this? Okay. Why don’t we move on to the next technology innovation, and then we’ll come back for questions on both of these and any others people have. Bob Dickinson is going to talk to us. He is from the Southwest Texas Regional Planning Commission, and he’s going to talk to us about Texas Truck Stop Electrification Program, and as many of you may know, there is a tremendous amount of interest around the country and both trucks stop electrification and in diesel retrofits these days, fleet monitorization and so on, as cost effective ways to get emissions reductions that can help in terms of making conformity determinations and cleaning up the air. So with that, Bob?

Dickinson: Sure, I appreciate it, and it’s a pleasure to be here. Thank you. Back in the spring of 2003, a lady called me and said she worked for this company called IdleAire Technologies, and
she wondered if we were going to have any kind of call for projects pretending to our CMAQ program, our Congestion Mitigation Air Quality program. We’re a non-attainment area on the Texas coast, about 100 miles east of Houston; we’re a heavily industrialized area, oil refineries and petrochemical manufacturing facilities. I said, sure, we were getting ready to have a call sooner than later, so she came down and did a dog-and-pony show for my transportation planning committee. It was very innovative, and it just sounded tremendous, so I told her when we got ready to send a call for project notice out we would be sure to send her one. So anyway, we put the call for projects out and they submitted a project, and we were fortunate, over several years we’d built up a fair amount of CMAQ dollars and we were able to allocate funding for that project, so truck stop electrification basically—if we could go to the next slide, please?

Basically, what that is, is just unique, and I wish I would have thought of this idea myself. But basically, it’s just equipment that you deploy at a major truck stop that allows semi drivers or larger over-the-road truck drivers to heat and cool their cabs when they’re stopped without having to leave their engine idling for a number of hours. Almost any type of truck can utilize this process, but the big thing is, I found out about this, quite honestly, I never thought about the reality of conformity issues and using this as a strategy to get our transportation plan approved for our region.

So anyway, as we had several things happen to us in the last several years, basically our state implementation plan, a lawsuit by the Sierra Club against EPA, they had to withdraw that; we had to go back to an old SIP where all we had was a VOC budget. We didn’t have a NOx budget. We went into conformity labs and then we had to use the bill/no bill scenario to try to come out of this conformity mess. We needed a tremendous amount of NOx emissions in the future network years of our plan.

So we got to talking about the truck stop electrification, and the only problem with the truck stop electrification is, of course, conformity deals with emissions from on-road sources. Well, this truck idling, that’s off-road, when you’re parked at a truck stop idling, that’s off-road emission. So we entered into a lot of dialogue, and I get back to—I guess I’m a prime example of an area that’s benefited from what Becky talked about, our interagency consultation process, our several groups that we have in Texas. The EPA region six, Federal Highways, Federal Transit, our TCEQ, they all agreed to work with us to use this, some amount of the emissions from the truck stop, the off-road emissions.

EPA was developing through the MOBILE6 model for the conformity analysis, you had to use other data. They looked into our emission inventory and looked at some of the
heavy-duty trucks, and we were able to come up after a number of meetings, and I might say tremendous support from our EPA region six folks, and our federal highway, and our Texas Commission on Environmental Quality folks, to work with us, so it was agreed that we could use that as one of our strategies to meet our conformity.

Basically, what we did, we were one of the first in the state of Texas to use truck stop electrification for conformity purposes. I think one of the first in the country, as well. Several of these, they had already started to build one out in the El Paso, Texas area, but it wasn’t for conformity purposes. But it was a diligent effort. First we had to limit the number of total emissions about 3%, but it was enough along with another strategy we planned to implement in the future that’d helped us get our metropolitan transportation plan approved with the conformity analysis on there. And here again, we have a unique project. It’s a public/private partnership. Please go to that next slide.

Basically, we’re putting the total cost to implement, it could be up to 523 units at four truck stops within our MPO region, a three-county region, all of them are along Interstate 10, it could be up to four stops, up to 523 units. The estimated total cost was about $7.8 million, with our CMAQ share being $5.2 million, and IdleAire Corporation agreed to match that with $2.6 million, and basically that’s an 80/20 match on this project. There is just a tremendous amount of benefits from a project like this; like I said, it’s unique. It’s a public/private partnership, but what it does, when you turn the vehicle off and put the device into the cab, and you heat and cool it, it provides a wider array of other services to a truck driver. But what it does, all those criteria pollutants, it eliminates all those.

The only emissions you have are about 10% for the electric grid that it takes to power the truck stop electrification device. They deploy these—they deploy 15 of them in a row. That’s the way they do their business model. But what it does, when that truck driver is… And I have the picture up. It shows the device. It is a device—they put the window down. It’s a cardboard cutout, really, that they hook the device into their cab. But what it does for that driver is it eliminates noise, vibration and having to constantly breathe carbon dioxide or other types of diesel pollutants. And what it also does—a big side benefit of this project is that it helps when that driver gets up after he’s slept, especially in the morning, it helps him be more wide awake and alert. That improves his safety because we have so many of these big rigs operating on the interstates in our country.
It is a very positive thing also from a traffic safety standpoint. So there are just a lot of tremendous positive benefits, but the great thing for us, when I heard about this, was that it was an innovative project that we could implement in our region. In our region, most of our emissions come from mobile stationary or industry sources. And to try to find large numbers of NOx emissions from the mobile site in a region like ours, it was very, very difficult. But by having this one come along when it did, I think it was just like a manna from heaven in our case. And the great thing about it is they say the useful life of these systems is 15 to 20 years. They have several major partners that partner with them. They are trying to—they are getting ready to expand these things and they already have across the country.

But it is just another unique strategy or technology to try to do things to reduce emissions, you know, other than the normal ones that we’ve looked for where we are trying to do conformity on an MTP. That’s just kind of an overview, but I think it is a great strategy if you have the ability to use that in a future conformity determination on an MTP.

Siwek: Great. Thank you, Bob. Could you just talk about what other types of strategies you might have considered had this not come along?

Dickinson: Well, we looked at other things. Becky talked about the MoSERS Handbook, but most of the other TCMs or any type of carpooling, vanpooling, or traffic signalization, none of those could get us to what we really needed. We looked at some other things, but with a lot of the strategies you’d get a few NOx emission credits and a few there, but what we ended up using, the truck stop electrification, when EPA agreed to take credit for those emissions, we were also, in future years, going to use a speed limit—just to try and lower the overall speed limit through enforcement is another one. But all the others we’ve looked at, frankly, I don’t know if we would have come up with enough strategies to get the type of emission reduction we needed in NOx in the future year of one of our analysis years.

Siwek: It seems to me that may be one of the challenges that many of the areas are either facing now or will face as we move ahead with the eight-hour ozone standard and the PM2.5 standard. We’ve been doing a lot of the traditional transportation control measures for quite awhile now, and we really don’t get enormous emission reductions out of those. And so as we’re challenged to meet the conformity requirements under the new standards, these technologies offer some real promise to do cost effective things that actually do get sizeable emission reductions.
We’ve got a question from Lynorae on that?

Benjamin: Where can people go to review the methodology you used to estimate the emission reductions if they are interested in doing a similar thing?

Dickinson: The Texas Transportation Institute calculated the emissions. But you could go, I think, to our website. I think we have some of that information on our agency website. But I think if you go to IdleAire Technologies, they have a lot of information that they calculated on the benefits of this kind of project. And you look at all these different types of strategies, and this one is very cost effective—very, very low cost compared to a lot of these other strategies that you can implement.

Benjamin: Is it in the Conformity Determination Report itself?

Dickinson: I don’t know if we list it. I will make that available. If we don’t, we’ll put it on our website or we’ll make it available to CTE.

Hyder: Another organization that has a lot of information on that is Advanced Energy here in Raleigh. They’ve been working on evaluating those technologies for some time.

Dennison: One thing to note with the Beaumont Conformity Determination was that they were capped on the emissions reductions that they could take for the IdleAire strategies by EPA guidance. We worked with EPA to try to come up with this guidance and they came out with it before Beaumont Conformity Determination, or at least a draft version of it. So we used that. And so we could calculate an estimate of what the emissions reduction would be from these IdleAire facilities, but we couldn’t take whole credit for that in the Conformity Determination. What Beaumont ended up doing in their Conformity Determination was just saying, “This is what we’re capped at, so that is only 50 IdleAire units,” even though in actuality, maybe they were installing a couple hundred. They only included a certain number of units in their conformity report.

Siwek: We’re got a question here from Kip Billings out of the Wasatch Front Regional Council out in Utah. How are you doing, Kip? It is regarding TSE and conformity. “Can truck idling emission reductions be credited toward conformity if those truck idling emissions are not included in the mobile source SIP budget? Truck idling emissions at truck stops occur on private property rather than on federally funded public roads. Are these idling emissions therefore part of the general area sources rather than on-road mobile sources, and therefore not subject to conformity regulation?”

Jensen: This was the guidance that Becky was mentioning. What EPA determined was that a portion of those emissions are accounted for in the on-road source sector. When areas run MOBILE6 and develop their mobile source inventory for their SIP and their motor
vehicle emissions budget, a certain percentage of that budget is accounting for idle emissions. So what this guidance says is that this cap is that portion of emissions that are already part of the on-road source. So yes, some of the emissions can be credited in conformity because they are part of the on-road budget already.

Siwek: We’ve got two here for Harold. The first one is from Jay Whit [ph], from Compass. He is a modeling person. “What fuel are the busses using: low versus ultra-low sulfur diesel? How does fuel impact the effectiveness of the retrofit devices?” Why don’t we start with that and then we’ll go from there.

Brazil: I’m pretty sure the devices are required to use ultra low sulfur diesel fuel, which is required in the state of California at this point, or I believe it’s 2007 when—it is either 2006 or 2007—

Siwek: 2006.

Brazil: —2006 when the fuel is in place in the state. I think that addresses that part of the question. As a matter of fact, I think the fuel is available in a lot of locations in the state right now. What was the—

Siwek: Well, how does fuel impact the effectiveness of the retrofit devices?

Brazil: How does fuel—?

Siwek: Impact the effectiveness. I think you’ve kind of answered that.

Brazil: Yes. From my understanding fuel doesn’t have an effect on the effectiveness. I think what he is asking is, is it reducing the effectiveness of the device, and like I said, it is required to use this ultra low sulfur diesel fuel in the first place. So your benefits aren’t going to get reduced, because you are using what you have to put in the vehicle in the first place.

Siwek: And you are still getting your 85% PM reduction, 25% NOx and additional CO and VOCs?

Brazil: Exactly.

Siwek: Great. How does this technology compare with the hybrid bus technology?

Brazil: If you have kind of a conventional diesel bus, meaning a late ’90s bus that has a 4.0 grams per brake horsepower hour NOx emission rate, you would bring that down to a three instead of a four. So instead of four grams, it would be a three gram engine with a Longview device on it. I think he is talking about diesel electric hybrids.

Siwek: He doesn’t specify, but it could be.

Brazil: Well, if it is a diesel-electric hybrid, I think their emission rate is around 1.8 grams per brake horsepower hour NOx. A diesel-electric hybrid bus is going to have a lower
emission rate, even with the conventional diesel bus with a Longview device on it with a four gram engine. There are some lower NOx emitting conventional diesel busses below 4.0 grams per brake horsepower hour out there. They are some of the newer ones. But on the average, the diesel-electric hybrid is going to do better.

Siwek: Another on this subject: “Has the fuel penalty become a bigger issue due to the increase in fuel costs?”

Brazil: Not really. The fuel penalty is probably a little more overestimated instead of underestimated. It is probably something lower than 3 to 4%. What I’ve heard from the transit operators that are actually using this device is that they… It is negligible, you know, the fuel penalty really.

Siwek: Let me go back here for a minute to Bob and then we’ve got another couple for you and then some more PM questions. This is from Susan Hardy. She is out in the Mountainland, Midmountain Planning Organization in Utah. “Did I understand it correctly? Did you manage to use TSE credits—truck stop electrification credits—in a conformity analysis even though you did not have these credits specified in your SIP?”

Dickinson: Yes. It wasn’t in the SIP. Yes we were. Through the cooperation of our EPA region—our headquarters and our federal highway folks in Texas and DC.

Dennison: To add to that a little bit, if the TSE credits weren’t specifically identified in the SIP, but per the guidance that Gary and I have mentioned, the EPA guidance, it is determined that a certain percent of idling emissions are already included in MOBILE6. So MOBILE6 that was used to develop the emissions budgets in the SIPs didn’t include truck stop idling. And so that is the credit that we could take in conformity.

Siwek: This is back to the Cleaire retrofit that Harold was talking about. This is again from Mike Brady out at Caltrans in California. “Caltrans has been running a fleet greening program, similar to the bus program Harold discussed, for several years. We’ve used the Longview as well as several other devices on trucks used for our maintenance forces.” They have a comprehensive program there. “One thing to note is that the Longview and other devices we use require the verification from the California Air and Resources Board. It requires ultra low sulfur fuel to get the 85% PM reductions and 25% NOx reductions, which can carry a significant cost penalty in outlying areas.” Then he gives us a website for this.

The one thing I would say about that, and it will apply nationwide of course, is that the ultra low sulfur fuel diesel rigs will go into effect in June 2006. I think to an extent there is a cost differential right now in the ultra low sulfur fuel. I think we all hope it will come down once the only retail on road diesel fuel that will be available
nationwide is then available nationwide. It does carry. In different parts of the country I’ve heard different numbers in terms of the incremental cost per gallon difference of ultra low sulfur.

And then we had, let’s see, go back to PM2.5. This is from John Martin. He is with the New York State Department of Transportation. Of course they are a significant part of the Ozone Transport Region. His question relates to that. And that is, “How will SIPs be able to quantify long range transport of PM2.5 into non-attainment areas? Will there be dispersion modeling tools made available to make this quantification? Will EPA address control of interstate transport of PM2.5 in the conformity process?”

Benjamin: That might be something we need to respond to in the After-the-Program session.

Siwek: After the program?

Benjamin: Yes. We’ll get back to him on that.

Siwek: John, they’ll get back to you on that.

Jensen: I think on the transport issue. I think from the conformity standpoint we don’t consider long range transporting conformity.

Benjamin: Right. We’ll have to get back to him on that.

Siwek: I’ve got another one here. This from Delana Hardy and Delana, as some of you may know, is the executive director of the Association of Metropolitan Planning Organizations in Washington, DC. Delana asks, “What if you have conflicting advice from your DOT Division Office and your EPA Regional Office?” I think she may mean the FHWA Division Office and your EPA Regional Office. She doesn’t specify on what issue. I guess I’d have to ask you all how you would advise.

Benjamin: We always agree. [LAUGHS]

Jensen: You need to get people together then. If you are getting different stories from different people, then you need to get those people in the same room. I think that is why inner agency consultation is so important. You know, get in on a conference call and get them together.

Hyder: I think from a state perspective, if you can’t get it resolved at the FHWA Division and EPA Region level, then you need to go and bring some of the FHWA Headquarters folks in. It may just be a misunderstanding within one agency or the other.

Benjamin: Yes. But the normal process is if the EPA regional office and FHWA State Divisional Office can’t agree, we bump it up to our headquarters offices.
Jensen: I mean, we have a memorandum of agreement between our two agencies to where we—you know, if we disagree then we are going to elevate it to try to work out the differences in a timely manner.

Siwek: Yes, I think that’s important for people to realize. We often talk about that memorandum of understanding in our training courses, but there is a memorandum, and maybe one of you would like to just say a bit more about it, so that folks understand that the memorandum of understanding between the federal agencies to make sure they are coordinating, is, as I understand it, really the intent of that MOU, so where conformity issues arise, there are no surprises at any level in the federal government as well as at the state level. Does that basically summarize it, or is there something else you want to add on that?

Benjamin: I think you summarized it. But the bottom line is, we work together. We’re all trying to help the state and local partners meet their requirements, and we do work together, so we don’t let an issue fester. We will bump it up and resolve it in some form or fashion.

Siwek: We have about five or six minutes left. I’d like to open it up among the panelists here, and again, if anyone from outside wants to give a call in, we’re happy to try and answer your questions. We’ve answered all the ones we’ve received, but I wanted to open it up a little bit here on the technology issues, or anything we’ve talked about today. I guess, Harold, how many different transit operators did you say are operating the Cleaire Technology, will be in the Bay Area?

Brazil: Twelve in our region.

Siwek: Twelve.

Brazil: And that would include the six major transit operators, so even, as I was saying, there are about 30 total transit providers in our region. Those 12 operators, when you include the top six in our region, you’re getting 90-95% coverage of the transit services in our region, vehicles that are using this device. So, in addition to that, more recently, as Bob had mentioned, this technology can be used on refuge vehicles also, and CARB has come out with the refuge rule part of their PM regulations, so we’ve made some CMAQ funds available for that purpose also, to retrofit garbage truck diesel engines also in our regions, and that’s worked out pretty well.

And again, going along with that, with our fleets, they’re a little cleaner relative to the rest of the country, NOx-wise. Again, with addressing our state’s urban bus rule, we can’t really take credit, or we can’t really take, but the transit operators can’t, they’ve already satisfied the requirements for their NOx reductions, so when the retrofit device
Siwek: And just quickly on that, I know one of the problems in introducing new technologies is to get our mechanics and transit operators, and all of us are naturally resistant sometimes to new technologies, whether it be computers or automobile technology. What has been the reaction so far among the mechanics at the major transit operators that are using this?

Brazil: Pretty positive. Personally, I have to give a lot of our transit operators a lot of credit, because similar to our interagency working group, that type of process and that type of coming together, and working together— In our region, our transit operator, since they’re so diverse, there’s so many, they’ve come together on this issue, not just this issue by itself, but other issues dealing with the CARB regulations and so on. But they’ve come to a consensus among themselves, and you just can’t talk enough, and you keep on talking and it really helps.

Siwek: Great. We actually have one other caller on the line. I bet that’s Lynn Saporowski from the Kentucky Transportation Cabinet on the line. Lynn?

Saporowski: Hello, Sarah, panel. The question I have is, how are power plants and hotspots going to be treated, alike or different, within the PM2.5 analysis?

Siwek: I don’t know if we heard the first part of the question, Lynn; could you just repeat that?

Saporowski: With the PM2.5 analysis, and hotspots and power plants, how will the conformities be similar or different?

Benjamin: This is Lynorae. Gary and I were actually discussing the PM2.5 hotspot analysis requirements during the break, and the potential confusion. PM2.5 hotspot analyses are for transportation projects specifically; they’re not for a regional emissions analysis, so the hotspot analysis is associated with a particular project, so…

Jensen: And of course right now, we don’t know what the requirements are going to be yet; we’re still in the process of working with EPA and developing the final rule, so we’re not sure, we’re not certain at this point what the final rule is going to state regarding PM2.5 hotspots.
Benjamin: Yes, but definitely, it won’t address power plants; power plants are addressed through other rule-makings, the Clean Air Interstate rule, and NOx SIP call, and those kind of things.

Saporowski: I guess one of our greatest concerns is that the power plants that were designated as non-attainment under PM2.5 supposedly have some sort of transportation component with their conformity.

Benjamin: Oh, see you’re referring to those, I call them satellite areas, you’re talking about maybe the Ashland area that has the satellite areas in Ohio and West Virginia that are part of the non-attainment area, but not directly connected with a non-attainment area?

Saporowski: Correct.

Benjamin: The reason they’re part of the non-attainment areas is because they contribute to that area’s problem, but as far as addressing the transportation conformity requirements, we’ll have to deal with that in the interagency group, and we’ll talk about that more, but the bottom line is there are donut areas and they have to meet the transportation conformity requirements. I hope that wasn’t a short answer to your question, but we’ll talk about it more, Lynn.

Saporowski: I look forward to it.

Siwek: Thank you. Well, we’ve come to the end of our program today, and on behalf of all the panelists, I’d just like to thank all of you very much for joining us. We appreciate your questions. We hope that we’ve answered them as well as possible given the knowns and unknowns out there at this point in time, particularly as it relates of course to PM2.5 issues, and it really was a pleasure. We’re very happy to have been able to bring in the speakers on innovative strategies because I think as we all move ahead, we’ve been with conformity now almost 15 years, and as we move ahead with the implementation of the new standards, the eight-hour ozone standard, the PM2.5, of course we still have PM10 issues as well, we’ll likely find ourselves even more challenged to meet some of these requirements, and looking to the innovative strategies that we identified for today’s discussion.

We’ve been hoping to be able to let folks know there is an awful lot going on around the country, a tremendous amount happening in the technology area, a good amount happening with people attempting to assess emissions impacts of various land use strategies, and of course we did emphasize what I think all of us agree is probably the most important thing about the transportation conformity process, and the difference between making it work or not, and that really is interagency consultation, human beings
talking to one another, keeping up to speed on what’s going on, keeping on top of deadlines and so on, so we certainly thank Becky for giving us some very good examples from Texas, and David had some good examples in North Carolina as well. Becky put some excellent materials on the website. I did want to mention while I have a minute, I believe it was the North Central Texas Council of Governments has developed a very nice and extremely detailed GANT chart, which all of our engineering folks would love, where they actually show how many days each element of the process needs to be reviewed, who’s in charge of reviewing, and they actually also overlaid the SIP development issues with the transportation conformity plan and tip issues and frequency requirements, so that everyone in the area can see on this chart exactly who needs to do what when and how these processes are going to fit together. So I wanted to add that.

So in closing, again, thank you very much for joining us today. It’s really been a pleasure coming back to CTE to do this teleconference, and thanks to all of our speakers for joining us.

McDermott: Well, thank you, Sarah, and on behalf of CTE, thanks again to all of our panelists, and thanks especially to you, for being an important part of today’s program. I’d also like to acknowledge the many downlink sites across the country that tuned into today’s broadcast, including EPA’s Air Pollution Distance Learning Network. And I must also recognize the efforts of the Agency for Public Telecommunications, the UNC Center for Public Television, NC State University’s Video Communication Services and Nine Systems, all of whom helped produce today’s live broadcast and web simulcast.

Just a few reminders before we leave you. You can continue today’s discussion on new standards and transportation conformity in CTE’s After-the-Program web discussion forum. We hope you’ll take advantage of this opportunity. The web discussion forum will remain active for two weeks starting at four o’clock this afternoon. DVDs or written transcripts of today’s broadcast can also be ordered from CTE’s website, or you can view this broadcast in its entirety. Online versions of the handout and the panelists’ PowerPoint presentations will be available as well.

And finally, please remember to complete the evaluation from located in your handout, or if you participating via the web, please complete the online evaluation from located on CTE’s website. We invite you to regularly visit our website or check out our newsletter for more information on the teleconferences that we’re developing throughout the year. We’re going to take a bit of a break over this summer, but we hope you can join us this fall, on September 29, when in our next broadcast, we’ll look at “Technologies to
Improve Environmental Considerations in Transportation Decisions,” which will feature the results of the second phase of the National Cooperative Highway Research Program Project (NCHRP) number 25-22.

Well, that’s our program for today. It’s been a pleasure being with you. Until next time, thank you, and good day from Raleigh, North Carolina.

[END OF RECORDING]