To: Russ, Timothy[Russ.Tim@epa.gov]; Patulski, Meg[patulski.meg@epa.gov]
Cc: Dresser, Chris[Dresser.Chris@epa.gov]
From: Berry, Laura
Sent: Thur 12/1/2016 1:47:21 PM
Subject: RE: Information Transmittal from FHWA/CDOT: I-70 East Project PM Hot-spot Modeling Background Monitor

So Tim, do we know what monitor value they're going to use for the background?

Laura Berry

(734) 214-4858

berry.laura@epa.gov

From: Russ, Timothy
Sent: Wednesday, November 30, 2016 10:54 AM
To: Berry, Laura <berry.laura@epa.gov>; Patulski, Meg <patulski.meg@epa.gov>
Cc: Dresser, Chris <Dresser.Chris@epa.gov>
Subject: Information Transmittal from FHWA/CDOT: I-70 East Project PM Hot-spot Modeling Background Monitor

Hi Everyone,

I went in and re-packaged Chris Horn's (FHWA) email of this morning to get a better view of what was presented to us (just read from the top down now). That way you can see the flow of the information and especially that from Gordon Pierce (CDPHE).

Thanks!

Tim

Tim Russ

Environmental Scientist
USEPA Region 8
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1595 Wynkoop Street (8P-AR)
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Ph. (303) 312-6479
Fax (303) 312-6064
e-mail: russ.tim@epa.gov

From: Horn, Chris (FHWA) [mailto:Chris.Horn@dot.gov]
Sent: Wednesday, November 30, 2016 7:21 AM
To: Russ, Timothy <Russ.Tim@epa.gov>; Houk, Jeff (FHWA) <Jeff.Houk@dot.gov>; Perritt, Karen (FHWA) <Karen.Perritt@dot.gov>; Henderson - CDOT, Vanessa <vanessa.henderson@state.co.us>
Cc: Jackson, Scott <Jackson.Scott@epa.gov>; Patulski, Meg <patulski.meg@epa.gov>; Berry, Laura <berry.laura@epa.gov>; Dresser, Chris <Dresser.Chris@epa.gov>; Anderson, Carol <Anderson.Carol@epa.gov>; Odendahl, Steve <Odendahl.Steve@epa.gov>; Dubey, Susmita <dubey.susmita@epa.gov>; Denawa, Mai <Denawa.Mai@epa.gov>
Subject: RE: Information Transmittal to FHWA/CDOT: I-70 East Project PM Hot-spot Modeling [WARNING: DKIM validation failed]

Tim,

Referred to FHWA

Referred to FHWA

Referred to FHWA

Referred to FHWA

Chris Horn, PE

Senior Area Engineer

Colorado Division

Federal Highway Administration

720-963-3017

---------- Forwarded message ----------
From: **Pierce - CDPHE, Gordon** <gordon.pierce@state.co.us>
Date: Wed, Nov 23, 2016 at 1:41 PM
Subject: Re: I-70 East Air Quality
To: "Henderson - CDOT, Vanessa" <vanessa.henderson@state.co.us>
Vanessa,

Sorry for the delay. I have had staff look at the data and site locations and we are having a hard time justifying the use of the La Casa site for background PM10 concentrations, even though the site is closer to the Globeville-Elyria-Swansea (GES) area. The primary issues are:

1. La Casa is located on a little higher terrain outside of the Platte Valley, so wind flows related to sources can be different versus the Alsup/Commerce City site.

2. La Casa has little to no significant industrial activity nearby whereas the GES area does have nearby industrial activity, including Purina, Metro Denver Wastewater, Suncor Refinery and Xcel Cherokee. Alsup/Commerce City is downwind of these sources as well, so it better reflects the GES area.

3. The GES area has impacts from both I-25 and I-70, including the "mousetrap". Due to its topographically higher location to the west and wind patterns (see wind roses in our Annual Data Reports that show a predominant SW component) we do not believe that La Casa is fully picking up all the impacts from the existing highways.

We have looked at the continuous PM10 data from the near-road Globeville site at I-25 and 49th Avenue as well made comparisons to other sites. For Oct. 2015 - Sep. 2016, the Globeville 1st max 24-hour concentration at local temperature and pressure (LTP) conditions is 93 ug/m3, the 2nd max is 87 ug/m3. For standard temperature and pressure (STP) conditions to directly compare the PM10 NAAQS, these concentrations would be roughly 20% higher, or about 110 and 105 ug/m3 respectively. So, the Globeville location is much more comparable to what was seen at Alsup/Commerce City. (Note: as these values are not from a reference or equivalent analyzer, we are reporting what comes from the instrument, which is at LTP, not STP conditions.) These data are in an attached file.

I don't know how the Federal Highways calculations work, but keep in mind as well that the La Casa site operates every 3rd day, not every day, so that would also affect the values used.

I have attached the La Casa data for 2013-2015, as requested, including the 24-hour FRM every 3rd-day and the hourly data. Note that the hourly data were initially from a TEOM (which is an equivalent analyzer with data at STP), but changed to a GRIMM analyzer (which is not an equivalent analyzer so data are at LTP) in March 2015.

In regards to meteorological data, the Stapleton data would be more appropriate to use as the La Casa data do not have all the needed parameters. Stapleton is the best dataset we have for the area.

For staff, you are correct:

Dale is MOVES

Emmett is met data

Paul is the transportation liaison

Nancy is the monitoring/background data

Let me know if you want to discuss this further.

Gordon

On Thu, Nov 17, 2016 at 5:21 PM, Henderson - CDOT, Vanessa <vanessa.henderson@state.co.us> wrote:

Perfect - thanks so much! Good luck with the SIP hearings!

On Thu, Nov 17, 2016 at 1:07 PM, Pierce - CDPHE, Gordon <gordon.pierce@state.co.us> wrote:

Vanessa,

Yes, I did get your voicemail. I already have staff looking at it and will add in your other requests. It may be Monday before we get back to you as we have our Ozone SIP hearing going on today and tomorrow.

Gordon

On Thursday, November 17, 2016, Henderson - CDOT, Vanessa <vanessa.henderson@state.co.us> wrote:

Hi Gordon -

I left you a voicemail at the end of the day yesterday and wanted to follow-up on that because FHWA just had another call with EPA this morning. EPA has indicated that

they would be okay with us switching background monitors from the old Commerce City monitor to the newer La Casa monitor as long as APCD is okay with it. If you're able to confirm that APCD is okay with it, that'd be great. Here's the information that we provided to EPA about why the La Casa monitor would be better for this project (as a refresher for you from the recent Cooperating Agency meeting).

At the time we began development of the air quality protocol for the I-70 East project in the summer of 2012, the La Casa site was not yet in operation, and we selected from the existing nearby monitors with 3 years of PM10 data (CAMP, Commerce City, and Welby) as potential sources of background concentrations. However, as we noted in the protocol, it may also be appropriate to use a different monitor, or interpolate between these and/or another monitor.

The La Casa site began operation 9/27/2012, and it now has 3 complete years of PM10 data (2013-2015). It is located approximately 3/4 mile west of the I-25 interchange, which has the highest modeled concentrations (excluding background) anywhere along the project. (The Commerce City site ceased operation in 2015, so 2012-2014 data are the most recent available from this site, and it is located over 4 miles northeast of the I-25 interchange.) In addition to the La Casa data being newer and closer, APCD has indicated verbally that this monitor is more reflective of land use in the project area, and would provide a more representative background concentration than the Commerce City site that we are currently using. This in turn would result in more accurate design values for the PM10 conformity and NEPA analyses.

We propose to use this site as the source of background data for the revised PM10 hotspot analysis and conformity determination to be released for public review later this month. We would like to request your assistance in calculating the applicable 2013-2015 background value from this site (considering data completeness, as well as the multiple samplers present at this location). We will also prepare a technical justification for using this site as a source of background data (in consultation with APCD), addressing the factors outlined in section 8.3.1 of the PM hotspot guidance.

Also, EPA has requested the data from the La Casa monitor in order to help us determine the appropriate background concentration to use. So, I was hoping that you or one of your staff would be able to provide that information to me for them. I think I can pull it from your website, but it'd make me feel better getting the data from you guys just in case I didn't pull the right stuff.

Is there anything else that we'd need from you guys in order to proceed with the La Casa monitor that I haven't noted? I'm wondering if our Stapleton met data set is still the appropriate set of met data of if Emmett would need to get us new met data. Also, anything else you guys can think of would be great to know.

Feel free to give me a call if you want to discuss anything or add whoever you think should be included from your group to this email. I'm not sure of everyone's roles still (I think Dale is MOVES, Emmett is met data, and Paul is the transportation liaison, but not sure of anyone else), so I figured I'd just start with you and go from there. As I'm sure you're aware, we're very tight on time (still need to get the conformity out for agency/public review at the beginning of December), so if you're able to get back to me pretty quickly, I'd really appreciate it.

Thanks in advance for your help with this!

Vanessa

Vanessa Henderson
I-70 East Environmental Manager

From: Russ, Timothy [mailto:Russ.Tim@epa.gov]
Sent: Friday, November 18, 2016 1:20 PM
To: Horn, Chris (FHWA); Houk, Jeff (FHWA); Perritt, Karen (FHWA); Henderson - CDOT, Vanessa
Cc: Jackson, Scott; Patulski, Meg; Berry, Laura; Dresser, Chris; Anderson, Carol; Odendahl, Steve; Dubey, Susmita; Denawa, Mai
Subject: Information Transmittal to FHWA/CDOT: I-70 East Project PM Hot-spot Modeling

Hi Chris, Jeff, Karen, and Vanessa,

Based on the Cooperating Agencies consultation meeting of October 25, 2016, subsequent information provided by FHWA, and on our EPA-FHWA conference call of November 17, 2016, EPA offers the below information regarding the I-70 East project's conformity determination evaluation for PM_{10}. The first item is with respect to the selection of the La Casa air monitoring location, and its three years of data, for the background monitor for the PM_{10} hot-spot modeling. The second item addresses EPA's recommendation to FHWA regarding a sensitivity analysis for the for the PM_{10} hot-spot modeling.

Please let me know if there are any questions.

Thanks!

Tim

Tim Russ
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1.) Change to a Different Background Monitor for the PM_{10} Hot-spot Modeling:

During the October 25, 2016 inter-agency consultation meeting, and as confirmed by FHWA in an email dated November 2, 2016, we were advised that CDOT/FHWA were considering using the CDPHE La Casa monitoring location as being more representative of PM_{10} background level for the project rather than the CDPHE Commerce City monitor whose background monitoring values had been used in the Supplemental Draft EIS (SDEIS) and the FEIS. It is our understanding that CDPHE had suggested the use of the La Casa monitor as it is about ¾ of mile west of the I-25/I-70 interchange and typically upwind of the project. Also, CDPHE felt the Commerce City monitor could be showing influences from nearby stationary sources.

EPA agrees this monitor is appropriate to use as the background monitor for this hot-spot analysis now that three years of CDPHE-certified data are available. We also concur that the value of 73 $\mu g/m^3$, as the second highest reading from the last three years, should be used for the background value for the PM_{10} hot-spot modeling. This is explained below. If CDPHE also concurs with this 73 $\mu g/m^3$ background value, then no additional consultation is necessary. Please advise us of CDPHE's concurrence or if CDPHE has a different opinion.

La Casa (CASA)
Region: Denver
Monitoring Station

4545 Navajo Street
SAROAD:
AQS ID: 080310026
Latitude: 39.779460
Longitude: -105.005124
Reporting capabilities (hourly)
SLAMS: CO, PM10, PM2.5
NAMS: O3, SO2
SPM: NO, RD, RS, TEMP, WD, WS

EPA's November, 2015 PM Hot-spot modeling guidance ("Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas") notes the following in section 9.3.4 *24-hour PM_{10} NAAQS*:

Calculating Design Values and Determining Conformity

The 24-hour PM_{10} design value is calculated at each receptor by directly adding the sixth-highest modeled 24-hour concentrations (if using five years of meteorological data) to the appropriate monitor value for the 24-hour background concentration from three years of monitoring data, based on Exhibit 9-6.[153] Exhibit 9-6: Monitor Value Used for Design Value Calculation

Number of Background Concentration Values from the Monitor	Monitor Value Used for Design Value Calculation
< 347	Highest Monitor Value
348 -695	Second Highest Value
696 -1042	Third Highest Value
1043 -1096	Fourth Highest Value

PM_{10} data from the La Casa monitoring site are provided in the table below:

POC 1 1 in 3 Sampler

Year	N	Highest value	2nd highest	3rd highest	4th highest
2015	119	55	48	44	43
2014	127	66	65	62	62

2013	122	81	73	56	45

"N" = the number of days of valid data recovery.

NOTE: There are actually three PM_{10} monitors co-located at the La Casa monitoring location. POC#1 is a "1 in 3" sampler and takes a sample every 3rd day; it is our understanding that this is the primary monitor as so designated by CDPHE. POC#2 is a "1 in 6" sampler and takes a sample every 6th day and POC#3 is a continuous monitor and samples every day.

As the number of days of data recovery at the La Casa POC#1 monitor is 368 (119+127+122= 368), EPA's hot-spot guidance indicates that the **second** highest value, **73µg/m^3** is appropriate to use as the background value for the PM_{10} hot-spot modeling. This assumes that the method in Section 9.3.4 of the PM hot-spot guidance is used (i.e., with a total number of background concentration values between 348-695, the appropriate monitor value is the second highest value).

2.) Revised PM_{10} Hot-spot Modeling for Western End (Swansea) Portion of Project:

In reviewing the revised PM_{10} hot-spot modeling information for the western end of the project, which is now split into two adjacent portions, EPA recommends that a sensitivity analysis be performed. This sensitivity analysis is needed in order to fully evaluate the potential for the possible influence (or lack thereof) of emissions from the I-25/I-70 Interchange with respect to the Swansea community. As noted in our conference call of November 17, 2016, please contact Chris Dresser at Region 8 to discuss this recommended sensitivity analysis.