MEETING

STATE OF CALIFORNIA

AIR RESOURCES BOARD

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SACRAMENTO, CALIFORNIA

THURSDAY, NOVEMBER 16, 2017

9:07 A.M.

JAMES F. PETERS, CSR
CERTIFIED SHORTHAND REPORTER
LICENSE NUMBER 10063

A P P E A R A N C E S

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Hector De La Torre

Mr. John Eisenhut

Assembly Member Eduardo Garcia

Supervisor John Gioia

Ms. Judy Mitchell

Mrs. Barbara Riordan

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Mr. James Aguila, Air Resources Engineer, Portable Equipment Registration Section, Enforcement Division(ED)

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Mr. Joseph Gormley, Air Pollution Specialist, Training Section, ED

Mr. Michael Guzzetta, Branch Chief, Citations and Registration Enforcement Branch, ED

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Mr. Webster Tasat, Manager Central Valley Air Quality Planning Section, AQPSD

Mr. Jon Taylor, Interim Division Chief, AQPSD

Ms. Sylvia Vanderspek, Branch Chief, Air Quality Planning Branch, AQPSD

Ms. Sydney Vergis, Interim Legislative Director, Office of Legislative Affairs

Ms. Kelly Weatherford, Manager, Portable Equipment Registration Section, ED

Mr. Daniel Whitney, Senior Attorney, Legal Office

Mr. Earl Withycombe, Air Resources Engineer, Central Valley Air Quality Planning Section, AQPSD

A P P E A R A N C E S C O N T I N U E D

ALSO PRESENT:

Mr. Frank Caponi, Los Angeles County Sanitation Districts

Ms. Kendra Daijogo, California Council for Environmental and Economic Balance

Mr. Tony Dorsa, United Contractors (UCON)

Mr. Jerry Fernandez, C&J Well Services, Inc.

Ms. Jennifer Finton, Breathe California, Sacramento Region

Ms. Genevieve Gale, Central Valley Air Quality Coalition

Mr. Michael Lewis, Construction Industry Air Quality Coalition

Mr. Mark Loutzenhiser, Sacramento Air Quality Management District

Mr. Bill Magavern, Coalition for Clean Air

Mr. Robert McLaughlin, Butte County Air Quality Management District

Mr. Mike Meyer, California Groundwater Association

Mr. Bill Mueller, Cleaner Air Partnership

Mr. Brent Newell, Center for Race, Poverty and the Environment

Mr. Mark Rose, National Parks Conservation Association

Mr. Larry Rottman, California Groundwater Association

Mr. Jim Zaben, Kings Oil Tools

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P R O C E E D I N G S

CHAIR NICHOLS: Good morning, everybody. The November 16th, 2017, Public Meeting of the California Air Resources Board will come to order. And before we take the roll and begin we will open with the Pledge of Allegiance to the Flag.

Please rise.

(Thereupon the Pledge of Allegiance was Recited in unison.)

CHAIR NICHOLS: Madam Clerk, would you please call the roll.

BOARD CLERK McREYNOLDS: Dr. Balmes?

BOARD MEMBER BALMES: Here.

BOARD CLERK McREYNOLDS: Mr. De La Torre.

Mr. Eisenhut?

BOARD MEMBER EISENHUT: Here.

BOARD CLERK McREYNOLDS: Senator Florez?

Assembly Member Garcia?

ASSEMBLY MEMBER GARCIA: Present.

BOARD CLERK McREYNOLDS: Supervisor Gioia?

BOARD MEMBER GIOIA: Here.

BOARD CLERK McREYNOLDS: Senator Lara?

BOARD MEMBER MITCHELL: Here.

BOARD CLERK McREYNOLDS: Mrs. Riordan?

BOARD MEMBER RIORDAN: Here.

BOARD CLERK McREYNOLDS: Supervisor Roberts?
BOARD MEMBER ROBERTS: Here.
BOARD CLERK McREYNOLDS: Supervisor Serna?
BOARD MEMBER SERNA: Here.
BOARD CLERK McREYNOLDS: Dr. Sherriffs?
BOARD MEMBER SHERRIFFS: Yes.
BOARD CLERK McREYNOLDS: Professor Sperling?
BOARD MEMBER SPERLING: Here.
BOARD CLERK McREYNOLDS: Ms. Takvorian?
Vice Chair Berg?
VICE CHAIR BERG: Here.
BOARD CLERK McREYNOLDS: Chair Nichols?
CHAIR NICHOLS: Here.
BOARD CLERK McREYNOLDS: Madam Chair, we have a quorum.
CHAIR NICHOLS: Thank you very much.
Couple of announcements before we get started this morning.
First, we have interpretation services. The interpreter is standing at the podium right now. There will be interpretation in Spanish for item 17-11-5, an update on secondary particulate matter 2.5 formation in the San Joaquin Valley and research on potential controls. There will be headsets -- there are headsets available outside the hearing room at the attendant sign-up table,

and they could be picked up at any time.

(Thereupon translated into Spanish.)

CHAIR NICHOLS: Thank you.

Anyone who wishes to testify should fill out a request-to-speak card, also available in the lobby outside the Board room. Please turn it into a Board assistant or the clerk down in front here prior to the commencement of that item.

The Board will impose a three-minute time limit on oral testimony. We would appreciate it if you'd state your first and last name, and put your testimony into your own words rather than reading your written testimony. If you have written testimony, it will be submitted into the record.

For safety reasons, I ask everybody to note the emergency exits at the rear of the room. In the event of a fire alarm, we are required to evacuate this room immediately and go down the stairs and assemble outside the building in the park across the street until the all-clear signal is given.

I think that's it for preliminary remarks.

We do have a couple of consent items. The first, the Chico PM2.5 Maintenance Plan. And I believe that item does not have any witnesses; is that correct?

BOARD CLERK McREYNOLDS: (Nods head.)

CHAIR NICHOLS: Are there any Board members who would like to see this item removed from the consent calendar.

If not, then we can just close the record and have all the members have an opportunity to review the resolution.

BOARD MEMBER RIORDAN: Madam Chair, I'd be happy to move Resolution 17-41.

CHAIR NICHOLS: Do we have a second?

VICE CHAIR BERG: Second.

CHAIR NICHOLS: Thank you.

All in favor please say aye.

(Unanimous aye vote.)

CHAIR NICHOLS: Any opposed?

Thank you.

And then a second item on consent is consideration of -- I'll read this exactly because I'm going to trip over the words. "Consideration of the Low Carbon Fuel Standard Litigation Order Compliance Action."

And I need to ask again the clerk if there's any witnesses.

BOARD CLERK McREYNOLDS: (Shakes head.)

CHAIR NICHOLS: None.

Are there any Board members who'd like to take this item off of consent?

All right. Hearing none. The record will be closed. And I'll ask for a motion on the resolution.

BOARD MEMBER RIORDAN: Madam Chairman, I'd move Resolution 17-48.

CHAIR NICHOLS: Do we have a second?

BOARD MEMBER SPERLING: Second.

CHAIR NICHOLS: Thank you.

All in favor please say aye.

(Unanimous aye vote.)

CHAIR NICHOLS: Any opposed?

Any abstentions?

Great.

Okay. The next item on the agenda is an update to the Board on this year's legislation in the air quality and climate field. This was a very strong year, very busy year for legislative action on climate and air quality, particularly as it relates to the post-2020 climate goals and identifying and reducing air pollution in highly impacted communities. Assembly Bill 398, which was authored by Assembly Member and our fellow Board Member Eduardo Garcia, provides clarity to cap and trade, a cornerstone of our efforts aimed at helping to prevent climate change, will continue to deliver cost effective greenhouse gas emissions reductions.

I also want to recognize that Senator and Board

Member Lara has continued to provide leadership on reducing short-lived climate pollutants by authoring Senate Bill 563, which sets a framework for reducing black carbon from wood stoves.

As you know, the climate impacts of short-lived climate pollutants are many times more potent than carbon dioxide. So our board has been well represented in the Legislature as well.

In addition to their work on climate, the Legislature took action on criteria and toxic air pollutants. AB 617, authored by Assembly Member Cristina Garcia, establishes a suite of actions to address and improve air quality in impacted communities. This bill builds on previous legislative efforts by significantly expanding monitoring activities and controlling sources of air pollution and toxic air contaminants, and our implementation activities are already well underway.

So we could say in a way that AB 398 and AB 617 are really symbolic of CARB's dual responsibilities both of assuring clean air for all Californians and preventing the worst impacts of climate change.

And without further ado, I will turn this over to our Executive Officer Richard Corey.

EXECUTIVE OFFICER COREY: Thanks, Chair. You summed it up well. The Legislature's continued commitment

to CARB's mission with respect to both air quality and climate was clear.

And really with that, I'm going to turn it over to our Acting Legislative Director, Sydney Vergis, who will cover this year's significant legislation as well as highlight potential areas of legislative interest for next year.

Syd.

(Thereupon an overhead presentation was Presented as follows.)

INTERIM LEGISLATIVE DIRECTOR VERGIS: Thank you. Good morning, Chair and members.

2017 was another busy year for the Legislature and bills relevant to this agency and its goals. Members introduced 2,980 pieces of legislation, a little over 970 made it to the Governor, and he signed 859.

CARB's Office of Legislative Affairs tracked 354 bills related to air quality and climate, and analyzed 122 of those bills, of which 40 analyzed bills went to the Governor. He signed 34, of which 24 had direct requirements for CARB. The 2017 Annual Summary of Air Quality and Climate Legislation, which is included in your packet, summarizes each bill that we tracked and includes a section that summarizes CARB's new responsibilities. Due to legislative interest in CARB's programs, the number

of bills tracked and analyzed by the Office of Legislative Affairs continues to grow.

In addition to tracking and analyzing legislation, CARB participated in multiple hearings and special events at the local, State, and federal levels on topics such as SB 375, low carbon fuels, Volkswagen, the Federal Clean Air Act, AB 617 implementation, Cap and Trade, and Cap-and-Trade auction proceeds.

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INTERIM LEGISLATIVE DIRECTOR VERGIS: There were several key areas of legislative interest this year related to CARB, including post-2020 climate action, community air quality protection, transportation planning, truck and bus compliance, funding, and clean vehicles. In the next series of slides I'll discuss the key bills and developments for each of these subjects.

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INTERIM LEGISLATIVE DIRECTOR VERGIS: Last year brought us SB 1383, SB 32, and AB 197, which respectively addressed short-lived climate pollutants, codified the State's 2030 greenhouse gas reduction goal, and highlighted the importance of co-benefits of greenhouse gas programs as well as created the Joint Legislative Committee on Climate Change policies, chaired by our very own Assembly Member Garcia, which has already been holding

hearings. This year, with a two-thirds vote, AB 398, authored by Assembly Member Garcia, built on that legislative momentum, specifically to continuing California's greenhouse gas reduction efforts through the Cap-and-Trade program.

The bill clarifies CARB's authority to pursue the Cap-and-Trade program post-2020, provides specific direction on the post-2020 Cap-and-Trade program, as well as other program design features.

The passage of AB 398 is truly momentous for the State and the public process to conform the Cap-and-Trade program to AB 398 began in October.

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INTERIM LEGISLATIVE DIRECTOR VERGIS: AB 398 was accompanied by AB 617, authored by Assembly Member Cristina Garcia. AB 617 will result in substantial new actions to tackle air pollution in the most heavily impacted areas of the State. This bill includes a number of new provisions and new responsibilities for CARB.

Specifically it:

Establishes a community monitoring program;

Requires CARB to prepare a statewide strategy to reduce toxic air contaminant and criteria air pollutant emissions in communities affected by a high cumulative exposure burden;

Requires annual reporting by stationary sources of criteria and toxic air contaminant emissions;

Requires updated best available control retrofit technologies on facilities subject to California's Cap-and-Trade program; and

Increases certain penalties, which have not been increased in decades.

As our Executive Officer noted, these two bills, AB 398 and AB 617, are emblematic of CARB's multiple responsibilities as an agency. And implementing this new initiative has resulted in the formation of CARB's new Office of Community Air Protection as well as substantial staffing.

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INTERIM LEGISLATIVE DIRECTOR VERGIS: There were two bills of note that relate to transportation planning.

AB 179, authored by Assembly Member Cervantes, required CARB and the California Transportation Commission to hold at least two joint meetings per year to coordinate on the implementation of transportation policy. In particular, this bill notes the coordination opportunities inherent in implementation of the Governor's Sustainable Freight Action Plan, development of the California Transportation Plan, and setting regional greenhouse gas reduction targets under SB 375.

SB 150, authored by Senator Allen, would have originally required a county transportation commission to recommend for implementation only the highest priority projects identified in their sustainable communities strategy. However, the metropolitan planning organizations, or MPOs, argued it was premature to do so and the author had agreed to amend the bill. The bill as chaptered requires CARB to assess and report on the progress of MPOs in achieving their regional greenhouse gas reduction targets.

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INTERIM LEGISLATIVE DIRECTOR VERGIS:

Transportation funding has been another topic of interest to the Legislature for multiple years. This year, with a two-thirds vote, the Legislature passed SB 1, authored by Senator Beall, which expands California's transportation funding by 2.78 billion per year.

As part of this bill, there is much legislative discussion about the role of zero-emission vehicles in contributing to transportation infrastructure funding. The bill imposes a $100 annual fee on zero-emission vehicles, or ZEVs, beginning in 2020. A similar transportation funding bill that did not move forward this year, AB 1, proposed a $165 annual fee on ZEVs. To continue that conversation, SB 1 also required the

University of California Davis' Institute of Transportation Studies, to report on how to incentivize ZEVs while ensuring funding for roads and highways.

Notable for CARB's Truck and Bus Regulation, SB 1 also prohibits DMV from registering or renewing the registration of vehicles not in compliance with the Regulation. This prohibition will phase in starting in 2020. This will provide a more efficient enforcement mechanism for California to help ensure that the vehicles used on California roads and highways are compliant with the regulation.

SB 210, authored by Senator Leyva, will continue through the second year of the legislative session. And this bill authorizes CARB to develop and implement a Heavy-Duty Vehicle Inspection and Maintenance Program, which many have likened to a smog check for heavy-duty trucks. There is substantial ongoing coordination across multiple agencies on this bill and the Administration is supporting it.

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INTERIM LEGISLATIVE DIRECTOR VERGIS:

Cap-and-Trade auction proceeds have been a running theme for the Legislature for multiple years now, and this year was no exception. There were 11 bills that would have created new programs using Greenhouse Gas

Reduction Funds, none of which made it through the process this year. Two separate "budget bill juniors" appropriated over 1.5 billion in Greenhouse Gas Reduction Funds to State agencies; 929 million was appropriated to CARB.

Of that the Legislature directed 560 million for CARB's low carbon transportation suite of programs, including heavy-duty, passenger, freight, and equity projects. New programs too were created and funded, both through cap-and-trade auction proceeds and other sources of funding, including a one-time appropriation of $50 million for a new zero and near-zero emission warehouse program and a total 135 million to reduce emissions from agricultural equipment.

Some of these appropriations came with new constraints on CARB's investments and projects. For example, AB 134 directs CARB to work with the Labor and Workforce Development Agency to develop procedures for certifying manufacturers of vehicles included in the Clean Vehicle Rebate Project as being fair and responsible in the treatment of their workers. The Legislature also stated its intent that the Labor Secretary, beginning in 2018-19, to certify manufacturers as fair and responsible before their vehicles are included in any rebate program funded with State funds.

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INTERIM LEGISLATIVE DIRECTOR VERGIS: Greenhouse Gas reduction fund appropriations also including helping implement the AB 617 Community Air Protection Program. This includes 11.7 million to CARB for implementation, up to 5 million for technical assistance to community groups, and up to 250 million for local air districts to implement community emission reduction programs.

Local emission reductions will also benefit from AB 1274 by Assembly Member O'Donnell, which extends the exemption to the Smog Check Program from for 6- to 8-year-old vehicles and directed the increased funding from a Smog Abatement Fee to CARB's Carl Moyer Program. While we won't know the exact revenue generated by the bill until 2019, an initial estimate is that the bill could increase the program's funding by 47 million per year. The new Carl Moyer projects funded by this increase will result in NOx reductions that are in excess of the potential emissions disbenefit from the loss of two years of smog check.

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INTERIM LEGISLATIVE DIRECTOR VERGIS: There have been several legislative developments with regards to the Volkswagen settlement. As you're aware, there have been four consent decrees between VW and CARB, each with

differing funding dedicated to specified purposes.

With respect to the penalties, the California Third Partial Content Decree resulted in 153.8 million in civil penalties to the Air Pollution Control Fund for the Legislature to appropriate. And this year the Legislature appropriated those penalties to CARB to help fund the construction of the new Riverside laboratory.

Further, the California-only 3 Liter Agreement required an additional $25,000,000 payment to the Air Pollution Control Fund, for the Legislature to appropriate, which it did, to CARB for ZEV-related aspects of vehicle replacement programs.

The Legislature also weighed in on the mitigation funds, the 423 million coming to California to reduce the excess NOx emissions created by VW's use of defeat devices, as well as ZEV investment plans. You may recall that Electrify America, a subsidiary of VW, brought their first 30-month $200 million investment plan to the Board in Spring, which demonstrated how they were going to support the ZEV market in California, and the Board approved it. These funds do not come to the State coffers.

SB 92 by the Senate Budget and Fiscal Review Committee provided legislative guidance to CARB regarding the expenditure of both the 423 million mitigation funds

and the ZEV investment plans. The bill specifies that to the extent allowed by the consent decree, CARB should strive to ensure 35 percent of allocation benefits low-income or disadvantaged communities, strive to ensure expenditure was aligned with State priorities, and that the Board approve investment plans in a public hearing.

SB 92 also requires CARB to provide an annual report to the Legislature on the progress of the implementation of Electrify America's ZEV investment plan, as well as on the proposed and actual expenditures of the mitigation funds.

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INTERIM LEGISLATIVE DIRECTOR VERGIS: Incentives for clean vehicles continue to be a theme in the Legislature. Assembly Member Cooper's AB 630 codifies the enhanced Fleet Modernization Program Plus Up as the Clean Cars 4 all Program, which offers additional incentives for replacing a high polluting vehicle with an advanced technology vehicle for participants living in or near a disadvantaged community. AB 544 by Assembly Member Bloom extends the Clean Air Vehicle Decal Program that allows specific clean vehicles to use the car pool lane until 2025.

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INTERIM LEGISLATIVE DIRECTOR VERGIS: Moving on

to Additional Climate Action.

AB 563 by Senator Lara established the Wood Smoke Reduction program to replace older, uncertified wood-burning stoves with cleaner-burning, more energy-efficient alternatives. This bill codifies the related work that CARB has been undertaking and creates a structure for potential future funding.

Given the author, I'd also like to take this opportunity to note that California was the recipient of an award from the Climate and Clean Air Coalition at the Bonn Climate Change Conference for the State's work on short-lived climate pollutants, which Governor Brown and Senator Lara accepted on behalf of the State.

In addition to climate-change-related bills that directly impact CARB, the Legislative Office analyzed bills impacting other agencies that help support the State's greenhouse gas and ZEV goals but didn't necessarily call for significant new CARB responsibilities. For example, AB 262 by Assembly Member Bonta requires the Department of General Services to set greenhouse emission standards for common construction materials. This disclosure will help ensure that certain materials for Public Works projects do not exceed the maximum greenhouse gas emission standard established by the department. AB 739 by Assembly Member Chau requires

15 percent in medium and heavy-duty trucks purchased by the Department of General Services to be zero emission by 2025 and 30 percent to be ZEVs by 2030.

Finally, AB 1083 authored by Assembly Member Burke authorizes utilities to develop pilot programs for installation of EV charging stations at State parks and public beaches.

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INTERIM LEGISLATIVE DIRECTOR VERGIS: Looking forward to the next year of the legislative session, there are a few items that may be of interest.

Assembly Member Ting has announced plans to introduce a bill next year to ban the sale of internal combustion vehicles beginning in 2040. And Senator Lara recently announced plans to introduce the California Cooling Act to help reduce one of the fastest growing sources of greenhouse gas emissions - hydrofluorocarbons - present in refrigerants and air conditioners.

And in 2018 we'll hit the ground running with a committee hearing of the Joint Legislative Committee on Climate Change Policies where Chair Nichols will be reporting on emissions of greenhouse gases, criteria air pollution, and toxic air contaminants. Chair Nichols will also be participating in a hearing later that month, held by the Senate Environmental Quality Committee on the

Scoping Plan.

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INTERIM LEGISLATIVE DIRECTOR VERGIS: Our success this year required a collaborative effort among the entire Legislative Office, not to mention the support of the agency as a whole. The outstanding legislative staff includes: Marci Nystrom, the Deputy Director for Legislative Affairs; Robin Neese, our Executive Assistant; Analysts Ken Arnold, Dominic Bulone, Sotak, and Steve Trumbly.

This year also brought us a new member of the team, Nicole Hutchinson, an analyst who has rapidly distinguished herself as an integral member of the office and critical player particularly on issues related to CARB's incentive programs and heavy-duty vehicles. And we wish Natalya Eagan all the best as she embarks on a new adventure in CARB's Transportation and Toxics Division. We're going to miss you.

This concludes my presentation, and I'm happy to answer any questions you may have.

CHAIR NICHOLS: Thank you very much, Syd.

Do any Board members have any questions or comments on this report?

It's a big report. A lot has happened. We're as usual going to have a lot of work to do implementing these

statutes.

Are there any witnesses who signed up to speak?

There are not.

Okay. Well, thank you. Going to be another busy year.

(Laughter.)

CHAIR NICHOLS: All right. The next item on the agenda is the Sacramento Regional Ozone Attainment Plan for the 8-hour standard of 75 parts per billion.

So we'll reconfigure the seating here at the front table.

This plan represents the next major building block in the planning efforts to meet increasingly protective health standards for ozone and demonstrates how the Sacramento Region will attain the 8-hour standard.

Mr. Corey, do you want to briefly introduce the item?

EXECUTIVE OFFICER COREY: Yes. Thanks, Chair Nichols.

The plan before you addresses the federal 8-hour ozone standard of 75 Parts per billion for the Sacramento Region, which includes all or portions of five air districts.

Ozone level in the Sacramento Region have improved substantially over the past 10 years, primarily

due to reductions emissions from mobile sources. These reductions, combined with existing strategies to reduce emissions from local sources, will enable the Sacramento Region to attain the 75 parts per billion 8-hour ozone standard by 2024, two years earlier than required under the federal Clean Air Act.

I'll now ask Earl Withycombe from the Air Quality Planning and Science Division to give the staff presentation.

Earl.

(Thereupon an overhead presentation was Presented as follows.)

AIR RESOURCES ENGINEER WITHYCOMBE: Thank you, Mr. Corey.

Good morning, Chair Nichols and members of the Board.

In today's presentation, I'll review the background and setting for the Sacramento Region 75 ppb 8-hour Ozone Plan and summarize CARB's review and conclusions with respect to the Ozone Plan. This plan is required by the Clean Air Act and provides for attainment two years earlier than required for the area's classification.

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AIR RESOURCES ENGINEER WITHYCOMBE: This graphic shows the complexity of the nonattainment area. The Sacramento Metro nonattainment area, or Sacramento Region, includes all or portions of five air districts - El Dorado County, Feather River, Placer County, Sacramento Metropolitan, and Yolo-Solano. Ozone levels in this region have historically exceeded the federal standards as the mountain ranges bordering the Central Valley limit dispersion and trap emissions under an inversion layer. Mobile sources are the largest contributor to ozone, generating 85 percent of the NOx emissions in the Sacramento Region.

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AIR RESOURCES ENGINEER WITHYCOMBE: This Plan represents the next step in meeting increasingly protective health-based ozone standards. The region attained the 1-hour ozone standard in 2009 and the 80 ppb standard in 2015. About one-third of monitoring sites in the region, mostly in the western and central portions, now meet the 75 ppb standard. Currently, the highest ozone levels are recorded at sites in the eastern portion of the region.

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AIR RESOURCES ENGINEER WITHYCOMBE: As mentioned earlier, 85 percent of NOx emissions are due to mobile

sources. Therefore, it's appropriate that the Ozone Plan relies on the reduction of NOx emissions from mobile sources to attain the 75 ppb standard.

This plot illustrates the total inventory of actual NOx emissions in the region over the past 17 years and forecasted emissions out to 2024, the projected attainment year. Almost all of these reductions are due to CARB's successful mobile source control program.

I'll now highlight the key provisions that drive these reductions.

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AIR RESOURCES ENGINEER WITHYCOMBE: The NOx reductions in the Sacramento Region come from CARB's existing mobile source control measures. These control measures contain phase-in schedules that continue to deliver emission reductions beyond the attainment year for the Region, and include controlling light-duty vehicle emissions through Advanced Clean Cars and the accelerating turnover of trucks, buses, and off-road equipment. The pace of NOx reductions will enable the Sacramento Region to attain the 75 ppb ozone standard a full two years before the statutory attainment deadline.

The continuing reductions that will occur after 2024 will assist the Region in attaining future revisions to the ozone standard. Mobile source reductions have also

been key to the progress to date that I'll review in the next slide.

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AIR RESOURCES ENGINEER WITHYCOMBE: Design values calculated from monitoring data are used to determine whether an area meets the ozone standard. The ozone design value is calculated as the average of the annual fourth highest 8-hour ozone average recorded during each of three consecutive calendar years ending in the reporting year at a single monitoring station. Because of meteorological variability, the monitoring station recording the highest design value in the region may vary from year to year. This plot shows the highest design value recorded at any monitoring station in each year from 1990 to 2016.

The fluctuations in the design value from the dotted linear trend line also result from meteorological variability in the Sacramento Region. However, the trend clearly shows improvement since 1990.

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AIR RESOURCES ENGINEER WITHYCOMBE: The Clean Air Act and EPA's guidance require the inclusion of several elements for a submitted plan to be deemed complete. Each of these elements must also conform to detailed specifications in order to be approved by EPA. For the

Sacramento Ozone Plan, CARB staff prepared the emission inventory, air quality modeling attainment demonstration, reasonable further progress demonstration, transportation conformity analysis, VMT offset demonstration, and contingency measure demonstration. Data collected and submitted to CARB by the Sacramento Area Districts and by the Sacramento Area Council of Governments played a critical role in enabling CARB staff to complete several of these analyses.

The Sacramento Air Districts prepared the remaining elements of the Ozone Plan. CARB staff carefully reviewed the Ozone Plan and determined that its contents satisfy all of the requirements applicable to State Implementation Plans in the Clean Air Act and in EPA guidance.

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AIR RESOURCES ENGINEER WITHYCOMBE: CARB staff recommends that the Board approve the Sacramento Region Ozone Plan along with the Weight of Evidence analysis prepared by CARB staff as a revision to the California SIP. In addition, staff recommends the Board direct staff to submit these documents to U.S. EPA.

This concludes my presentation. We would be happy to answer any questions you might have. Thank you.

CHAIR NICHOLS: And thank you.

We have three witnesses who've signed up to testify, all in support on this item, beginning with the Sacramento Air Quality Management District.

MR. LOUTZENHISER: I thought it was already on. Good morning, Chair Nichols, members of the Board. My name is Mark Loutzenhiser. I'm a division manager with the Sacramento Air Quality Management District here representing both our agency and the region, as was noted.

The SIP before you today or the SIP revision before you here today is indicative of work by the entire Sacramento Metro nonattainment area. All the partnered air districts, information from SACOG worked with the California Air Resources Board staff, and so I definitely want to take a moment to acknowledge the efforts of all of the groups. It was definitely a very collective and collaborative effort - the analysis, the data collection, the valuation, if there are additional control measures that are necessary. And fortunately we were here before you today with a great news story in the sense of not only are we planning on attaining, but we're proposing to attain two years earlier than our statutory deadline.

So with that, we definitely are looking to recommend and hopefully have your support on moving this item forward so it can be submitted to federal EPA.

I also want to acknowledge a few of our other

partners in the region. A couple of them are here to testify today. But certainly Valley Vision and Breathe California. These are partners that may not have even worked directly on the plan, but they were instrumental in terms of the efforts at the community level, the business level, making sure that we have the support in our area to be achieving the air quality goals that we all need in order to attain these standards.

The one other note I'd like to leave you with is this is a good-news story we're here with before you today. At some point federal EPA will move forward though on the newest standards. That will be lowering it at, at least as far as we know, five more parts per billion lower at some point hopefully in the near future. With that though, as was already mentioned by CARB staff, we are the -- a big part of our emission reductions are -- or needs are mobile-source based.

We are in a great region. However, we are at a crossroads of numerous highways, depending on how many of them you wish to count in that context. So as we move forward though the efforts of the State in terms of their regulatory efforts on mobile emissions and also as we go forward the opportunity for incentive funding to convince people to make different changes in their on-road decisions, whether it be light duty because of some of the

VW money, and certainly a continuing presence in the heavy-duty area, will be critical especially on the next standard as we move forward in order to be able to make sure that we can attain those future standards.

So with that, I'd like to thank you for your time and again thank ARB and all of our partners on this effort.

CHAIR NICHOLS: Thanks. Congratulations.

Bill Mueller from the Cleaner Air Partnership.

MR. MUELLER: Good morning, Chair Nichols, members of the Board. I'm Bill Mueller. I'm the CEO of Valley Vision. We're a civic leadership group based here in Sacramento. ButI'm here in a dual capacity as the manager of the Cleaner Air Partnership.

The Cleaner Air Partnership is a very unique partnership that has existed based here in Sacramento for over 30 years, a partnership between the business community represented by the Chamber of Commerce and public health community, represented by Breathe Sacramento, and also the wider civic community represented by Valley Vision.

And over the course of those 30 years we've seen dramatic improvement and it's based on a very unique partnership that brings together the interest of job creation, balanced with public health and the ability to

achieve both, as we've demonstrated here with this plan.

We've made great progress working together. And while the news is great, as Earl Withycombe noted, 85 percent of our inventory is mobile. And so it is critical that we continue to work with you, with the State to ensure that we are seeing the adequate investment in order to reduce our mobile source inventory.

We want to deploy projects on the ground that work to benefit our communities, do them in a way that rid them of toxic pollution, help our businesses turn green, and also make sure that we're making continued progress over the next few years. And with your help, we will continue to do so.

Thank you very much.

CHAIR NICHOLS: Thank you.

Jennifer Finton.

MS. FINTON: Good morning, Chair Nichols and members of the Board. I'm Jennifer Finton with Breathe California, Sacramento Region. And we are so pleased to be here today to help support and add our hurrah for this plan.

We have been partners with the air districts in the region for almost 40 years doing various projects, and we're able to carry out the education and outreach into the communities and into the schools. So we've been in

continuous operation for a hundred years, educating and advocating about clean air to the region's citizens. And together we've helped phase out rice straw burning and educate the public about the harmful effects of ozone and particulate matter.

Chronic lung disease is still a significant problem in our region. As an example, Sacramento County has consistently had a higher lifetime asthma prevalence rate than compared to California as a whole. We are grateful that these numbers have been declining since 2001, but there are still over 200,000 residents affected by this disease.

Improving air quality in warmer months will help these people breathe easier and still remain active.

While we know there is more work to do, we are thrilled that the plan achieved the ozone standard two years earlier than required, and has no new restrictions on businesses.

This plan is a perfect example of the partnership that Sacramento Region enjoys with business, the citizens, policymakers, and advocates.

Our children and elderly are the most vulnerable to poor air quality, and we will continue our innovative programs in schools and the community to educate and protect lung health.

We appreciate the collaborative efforts demonstrated by all five air districts and look forward to working with them for improved lung health and reducing the incidences of asthma through better air quality in the future.

Thank you for consideration of this attainment plan and our support.

CHAIR NICHOLS: Thank you.

That concludes the list of witnesses that I have.

I would like to turn to Supervisor Serna for any comments and a motion.

BOARD MEMBER SERNA: Absolutely. Thank you, Chair Nichols.

So I guess I'll start by saying the only regret that I have today is not seeing this chambers fuller, with more folks to witness what we're about to do. Today is a fairly remarkable day, I think by any measure. And I'm glad that our partners from Breathe California, Valley Vision, the Cleaner Air Partnership, and certainly a representative from one of the five local air districts that I have the great honor of representing on this Board were here to help express the kind of collective congratulations that's due to a great number of partners to get us to this day.

And as has been mentioned, we're reaching

attainment two years early, which again I think deserves to be underscored.

If I could have -- oh, I see it's already up there.

This is a graph -- this is -- very good, staff.

(Laughter.)

BOARD MEMBER SERNA: So during my briefing on this item, paid careful attention to the charts and graphs that were part of the presentation. I appreciate Mr. Withycombe's presentation. But what I didn't see was something I think that kind of says a lot in a single image; and, that is, what we strive to do in many different contexts on this Board and certainly on our individual air boards and, that is, to -- how do we grapple with reducing toxic air contaminants, criteria pollutants, and greenhouse gas emissions at the same time we have population growth, economic growth in our communities?

And so this chart represents on the right-hand vertical axis population growth in the area, and on the left-hand size the amount of NOx measured in tons per day. And as you can see, even though we had population growth over the period between 2000 and 2016, we had significant reduction in NOx, which is what we're celebrating today with this resolution.

So again I want to thank everyone. I do want to mention a few names.

He's not here -- I don't see him, but Larry Greene, our former executive director for the Sacramento Metropolitan Air Quality Management District deserves a lot of credit for helping us implement, as was mentioned, the very successful CCAP program.

I also want to recognize my good friend Mike McKeever, a former executive director of our local COG - SACOG - now serving as the mayor's chief of staff across the street.

And I want to certainly acknowledge our Mayor, Darrell Steinberg. When he was in the State Legislature as an Assembly Member back in 2000 he introduced Assembly Bill 2511 which established the CCAP program, which I think is obvious to everyone has really proven to have a very poignant efficacy here and that is part of what we're again celebrating.

So with that, I am delighted to move this item.

CHAIR NICHOLS: Very good.

Dr. Balmes also wanted to make a brief comment and hopefully second.

BOARD MEMBER BALMES: Yes, I will definitely second when I get there.

So I've spent much of my academic career studying

the health effects of ozone, so I'm very pleased to see the progress that's been made.

And I also was pleased that the Sacramento District is aware of a new target of 70 parts per billion, which isn't going to be that far in the future, which will require even greater efforts. But I would point out, as much as I don't want to take anything away from the achievement of the Sacramento District, as Mr. Withycombe pointed out, in most of the reduction in NOx is from mobile sources which really highlights the importance of our power of regulation. And I just want to make that point, you know. Ozone is a regional pollutant that definitely needs strong state regulations and we're seeing the benefits of those strong regulations.

But I will second the motion.

CHAIR NICHOLS: Okay. Thank you.

Yes, Professor Sperling.

BOARD MEMBER SPERLING: Could I ask one question -- one big question? But it's just one question.

You know, I see this large reduction in NOx emissions, and that's very impressive. I was curious though if we're going -- it's still out of compliance and still -- and now we're aiming for 70 parts per billion. So that means still large reductions from where the emissions are now. Could I just get some -- even a list

of what are the actions that are being taken and programs to get these large reductions on the mobile source side? I kept hearing -- you know, when I hear 80 percent mobile sources, it gets my attention. So what are the local governments and local and regional doing? What's the vision, what's the plan to get there?

DEPUTY EXECUTIVE OFFICER KARPEROS: So as we said in the presentation, Dr. Sperling, from the graph that Supervisor Serna showed you, we're expecting another -- essentially a halving of the NOx levels between now and 2024. And those will come on the mobile side, as we had on one of our slides, truck and bus and the off-road rules.

To further reduce those, as we're looking towards the 70-parts-per-billion standard, your action last March in adopting the Mobile Source Strategy underscored the need for a lower NOx standard, beyond what we have on the road today, as well as other actions.

On the district side, part of what one of the reasons we wanted to bring this item to you is not only does it demonstrate the efficacy of our mobile source strategy, but I think it demonstrates the efficacy of the planning structure of the federal Clean Air Act. So within that process, the local and regional agencies will have to evaluate what are the next round of reasonable

available controls that could be implemented on stationary sources. We'll also be working, as we've been talking with you, Dr. Sperling, about actions that could further reduce vehicle activity that can occur at the local level. So that will be our focus as we look towards the 70-parts-per-billion standard.

BOARD MEMBER SPERLING: Well, I didn't mean that as a softball question. But I was looking for, like I've been hearing words about drive to zero and how the district and SACOG and the city are working together to come up with a vision how to support, you know, whether it's through -- you know, the VW is of course a part of it; but providing infrastructure, providing incentives, as you said, reducing VMT, sharing -- shared rides; you know, there's a lot of -- are those the kind of things that are queued up?

DEPUTY EXECUTIVE OFFICER KARPEROS: Those are certainly things that we're have -- in conversations now with the regional agencies. And I would add to that the regional agencies are particularly interested in understanding the benefits of a pricing structure as we're looking to connect it in autonomous vehicles and an impact on that on VMT.

CHAIR NICHOLS: I think maybe we should call on Mr. Loutzenhiser to respond also.

Mr. LOUTZENHISER: Good morning once again.

So to go over maybe some quick things as well. So part of both this plan and what will be happening with the next plan as well when we need to move forward is a part of that was a big work with our local cog - SACOG, Sacramento Area Council of Governments. Part of their government on the light-duty side is looking at the transportation conformity budgets, and that's part of a big element.

Another program at the local level that's going on that has been quite successful over the years and is part of this SIP and will likely continue to be a part of future SIPs is our Spare the Air Program during the summer months where we are working with getting the information out to the public, encouraging them to make alternative arrangements during the summer:

Are they biking?

Are they carpooling?

Are they taking public transportation?

Are they avoiding the trips that are going on?

And that actually does result in a not insignificant portion of our light-duty traffic.

As is already mentioned, on the state side though there is -- the big piece is the ongoing efforts of the truck and bus regulation itself. And that has -- you

know, as we continue to move forward here in time, it has additional deadlines that are coming up on fleets of getting cleaner. And so those are some of the more immediate ones.

On the local level, this part of both this SIP and future SIPs we do take a look at all possible control measures, and whether or not there are additional reductions we need to get on our stationary sources as well, how they -- they certainly aren't as big of a portion as the mobile is in our region. That is a part of our evaluation as we go forward as well.

On the light-duty side, we do have some opportunities with the VW money. We are looking at putting some of our additional Moyer money toward electrical vehicle infrastructure. I don't have the staff here from those programs here today, but that is definitely an area that we are looking at kicking off in order to encourage the deployment of those type of technologies in vehicles in our region as well.

BOARD MEMBER SPERLING: Thank you.

CHAIR NICHOLS: Okay. I think it's fair to say that we are in a position to pause and celebrate some very significant accomplishments here which are both local and state. And I'd also just like to acknowledge that, based on what I've heard here today but also prior to today, I

think this region is one that really is poised to be a model for the kinds of planning activities that we all would like to see happen. So I'm looking forward to the next steps here.

We have a motion and a second.

All in favor please say aye.

(Unanimous aye vote.)

CHAIR NICHOLS: Any opposed?

Abstentions?

Great. Thank you very much, and congratulations. And for all those who are watching on videos - I'm sure is where the multitudes are watching us - congratulations to you too.

Thank you.

Okay. Our next item for consideration is one that's been in the works for a very long time, and it's a really important step forward. This is the proposed amendments to the airborne toxic control measure for diesel particulate matter from portable engines rated at 50 horsepower and greater and to the Statewide Portable Equipment Registration Program Regulation.

So we've got the team coming forward here.

Mr. Corey, you can do your intro while they're getting settled.

EXECUTIVE OFFICER COREY: All right. Thanks,

Chair.

The proposed amendments before you today address rules that regulate portable equipment in California. Current regulations require operators to upgrade their equipment by 2020 to meet emission requirements. However, staff has determined the requirements are financially and in some cases technologically infeasible. As a result, the regulations currently written will not provide the emission reductions and public health protection envisioned when the rules were adopted.

Staff worked closely with industry, air district staff and other stakeholders to develop the amendments proposed today. Staff is proposing to amend two regulations:

The air toxic control measure covering portable equipment; and

The voluntary portable equipment registration program.

Together, the amendments restructure emission requirements so regulated fleets can comply, improve the ability to implement and enforce the regulation, provide needed emission reductions, and protect public health.

And with that I'll ask James Aguila of the Enforcement Division to provide the staff presentation.

James.

(Thereupon an overhead presentation was Presented as follows.)

AIR RESOURCES ENGINEER AGUILA: Thank you, Mr. Corey. Good morning, Chair Nichols and members of the Board.

Today we are presenting amendments to two regulations applicable to portable equipment. The Airborne Toxic Control Measure for portable diesel engines and the Statewide Portable Equipment Registration Program Regulation work together to govern the operation of portable equipment throughout the State of California.

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AIR RESOURCES ENGINEER AGUILA: Our agency's regulations require all diesel fleets to transition to the cleanest technology currently available. Portable engines are a small part of the overall inventory affected by these regulations.

We are proposing amendments today because assumptions we made in 2004 when the ATCM was designed did not come to pass, and as a result the rule as written is not technologically feasible nor economically achievable.

In proposing amendments, our goal is to maintain the long-term emissions and technology targets while improving our ability to implement and enforce both regulations. The proposed amendments we will discuss in

our presentation impact both the portable engine ATCM and the PERP regulation.

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AIR RESOURCES ENGINEER AGUILA: The presentation will begin with an introduction to what portable equipment is and how it is regulated. Next we will explain the current regulations and compliance challenges. Then we will discuss the proposed amendments and how we address stakeholder issues throughout the process. We will show the expected benefits of our proposal. And, finally, we will make our recommendations to you regarding the regulatory amendments.

I will start with an introduction to portable equipment.

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AIR RESOURCES ENGINEER AGUILA: Portable equipment is defined as engines or equipment units that are capable of being moved to different locations but are not vehicles. To be considered portable under the program, and therefore not stationary, an engine or equipment unit must not reside at a single location for longer than 12 consecutive months. The picture on the left shows a portable compressor equipped with a diesel engine. The picture on the right shows a rock crusher, which emits non-combustion particulate matter during the

crushing process. We define portable equipment that emits only particulate matter as equipment units.

Portable equipment is often mounted on trailers. However, they are not mobile sources because they are not self-propelled, and they are required to have a permit to operate in most air districts? In general, fleets that own portable equipment also own trucks and off-road vehicles that are subject to other in-use diesel fleet rules.

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AIR RESOURCES ENGINEER AGUILA: Portable equipment typically include engine-driven equipment such as generators, compressors, pumps, and also equipment units such as wood chippers, rock crushers, screening plants, tub grinders, concrete batch plants, and abrasive blasting units. Portable equipment is used by a variety of private businesses and government entities such as construction, well drilling, public works, water and sanitation districts, and rental companies.

All certified engines, including those used in portable equipment, must be equipped with an Emissions Control Label also known as an ECL.

The ECL contains relevant emissions information necessary to determine compliance such as the maximum power rating, the engine family name, the model year, and

emission controls. And the ECL is critical to implementation and enforcement.

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AIR RESOURCES ENGINEER AGUILA: Diesel engines used in off-road vehicles and portable equipment are certified to the off-road compression-ignition engine standards which are defined as tiers based on production model year and engine power rating. These certified engines began production with Tier 1 in 1996. Non-certified engines built before the standards took effect are commonly referred to as Tier 0 engines.

Tier 4 interim engines meet very low particulate matter levels and are equipped with diesel particulate filters. Tier 4 final engines are equipped with a NOx control catalyst referred to as a Selective Catalytic Reduction.

This table shows emission values associated with each tier for an engine rated between 175 and 300 brake horsepower. Tier 4 engines in this power range are 25 to 40 times cleaner for diesel particulate matter than Tier 1 engines and 10 to 15 times cleaner for diesel particulate matter than Tier 3 engines.

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AIR RESOURCES ENGINEER AGUILA: This slide shows the population of diesel engines registered in PERP by

horsepower, tier level, and application. There are over 26,000 certified engines between 50 and 750 brake horsepower registered in the program. Approximately 38 percent of these engines are certified to Tier 3 standards, which do not comply with the final standards of the ATCM but are still much cleaner than Tier 1 engines. Engines certified to Tier 4 standards in this size category comprise almost 30 percent of the engines registered in the program and are widely available and often used in the field.

By contrast, 1,747 engines have been registered in PERP that are greater than 750 brake horsepower. These larger Tier 4 engines have only recently become available, and they are very expensive relative to previously produced engines.

Engines registered in PERP are used predominantly as generators, compressors, pumps, and wood chippers, with generators being the most common equipment type.

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HEALTH AND EXPOSURE ASSESSMENT BRANCH CHIEF ALVARADO: As mentioned earlier, portable engines are a relatively small portion of the overall inventory of diesel emissions statewide. Portable engines are used on average about 850 hours per year. They produce 4.7 percent of particulate matter and only 3.2 percent of NOx

emissions when compared to all categories of diesel engines.

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AIR RESOURCES ENGINEER AGUILA: Next I will talk about the regulations that apply to portable equipment.

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AIR RESOURCES ENGINEER AGUILA: Most local air districts have required permits to operate for portable equipment since the mid 1990s. For businesses that operate at multiple locations throughout the State, it became a financial and logistical burden to obtain a separate permit in each district they wished to operate.

The affected industry approached the California Legislature for a solution, which led to the adoption of the Statewide Portable Equipment Registration Program Regulation, which became effective in 1997. The PERP Regulation established a voluntary registration program for portable equipment and equipment units which allowed them to operate statewide with certain limited exceptions.

The Portable Engine ATCM came about as a result of the Diesel Risk Reduction Plan which the Board adopted in September of 2000. The Board adopted the ATCM in February of 2004, and it became effective in March of 2005.

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AIR RESOURCES ENGINEER AGUILA: Although CARB sets the requirements and issues the registrations, the legislation that authorized the creation of the PERP Regulation also specified that the districts were to provide primary enforcement of the regulatory requirements. As a result, district inspection provisions have been included in the PERP Regulation.

It is important to remember that registration in PERP is completely voluntary. Nothing is required to be registered. When a local district states that a portable engine or equipment unit must have a permit, the owner then has a choice to get the local permit or a PERP registration.

As part of their normal enforcement activities, local air districts search for unpermitted equipment out in the field. If they find something portable that is unpermitted, they will often refer it to PERP.

The Portable Engine ATCM states that both CARB and the local air districts have the authority to enforce the applicable requirements. In recent years the local air districts have been pursuing enforcement of the ATCM requirements in addition to the PERP Regulation requirements.

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AIR RESOURCES ENGINEER AGUILA: To date, there

are approximately 28,000 engines, 5,000 equipment units, and 3,000 Tactical Support Equipment registered in PERP. Tactical Support Equipment are portable engines owned by the military to be specifically -- used specifically in combat or combat support operations.

When an engine or equipment unit is registered, we issue a certificate, operating conditions, identification sticker, and a placard. The process is very similar to stationary source permitting.

By law, registration must be issued 90 days from the receipt of a complete application. Depending on the number of applications received by the program, registration currently takes an average of between 30 and 60 days. Once issued, the registration is valid for three years, after which it may be renewed.

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AIR RESOURCES ENGINEER AGUILA: ATCM is applicable to all diesel engines -- portable diesel engines rated at 50 brake horsepower and larger whether registered in PERP or permitted by the local districts.

The ATCM is designed to achieve diesel particulate matter emission reductions from portable engines through three main mechanisms:

A mandate to remove higher emitting Tier 0 engines from the State;

Strict eligibility requirements for newly permitted or registered engines; and

A set of fleet average emission standards.

The fleet average emission standards in the current ATCM apply to all fleets regardless of size, and were designed to force all fleets to upgrade Tier 4 technology by 2020.

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AIR RESOURCES ENGINEER AGUILA: When the ATCM was originally developed, staff assumed fleets could take several pathways to compliance.

First, we expected that Tier 4 engines would be available long before the fleet average compliance dates, so fleets would purchase compliant Tier 4 equipment on their natural turnover schedule.

Second, we thought that older engines could be retrofitted with a verified Level 3 device such as a diesel particulate filter that reduces particulate matter emissions at least 85 percent.

Third, we anticipated that equipment could be repowered with a Tier 4 engine if a retrofit did not work.

And lastly, we anticipated that fleet owners would replace some equipment on a more accelerated schedule than natural turnover.

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AIR RESOURCES ENGINEER AGUILA: In contrast to the assumptions made 13 years ago, fleets are facing challenges when attempting to meet ATCM requirements. Compliance is not possible in the greater than 750 brake horsepower category because the particulate matter certification standard for Tier 4 engines is higher than the final ATCM fleet average standard.

In all size categories, Tier 4 engines came to market later than originally anticipated. This occurred because Federal and State engine certification laws allowed the production of Tier 3 engines for an extended period of time. Fleets then purchased these Tier 3 engines in great numbers, which is good because they have lower emissions than previous tiers, but they do not meet the final ATCM fleet average standards.

Retrofits have not been applied successfully on portable engines largely because they were not specifically verified for portable use. Repower is often not an option because Tier 4 engines with their larger cooling packages and additional after-treatment devices will not fit in older equipment housing. These after-treatment devices and other design changes increased the cost of Tier 4 engine packages to generally be twice that of Tier 3 engine packages, which drove up the cost of new equipment significantly. Since retrofits and repowers

are not an option for most fleets, they will have to replace even the recently purchased Tier 3 engines with new, more expensive Tier 4 equipment by 2020 to comply with the current ATCM.

As a result of these factors, compliance is simply not economically or technologically achievable for many fleets, which is why we are proposing amendments today.

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AIR RESOURCES ENGINEER AGUILA: Now I will talk about the proposed amendments.

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AIR RESOURCES ENGINEER AGUILA: In creating the proposed amendments, we established several goals:

First, we want to continue the transition of portable fleets to the cleanest engines, which are Tier 4. We also want to protect public health by reducing exposure to toxic emissions, especially where exposures may be the highest.

Next, we wanted to simplify regulatory requirements and spread costs out so that fleets can make the necessary investments to achieve compliance.

Finally, we would improve enforceability so that we realize the benefits we envisioned.

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AIR RESOURCES ENGINEER AGUILA: In the past, portable equipment regulatory requirements have been complicated and at times controversial. Our goal was to resolve these issues by developing these amendments through a completely transparent public process which involved working with industry and air district staff in order to provide stakeholder input to regulatory concepts.

We held eight public workshops at locations in Sacramento, Fresno, and Los Angeles. We also reconvened the portable workgroup consisting of about 40 members including air district staff; and industry representatives from utilities, rental companies, drilling contractors, engine manufacturers, and construction companies. This workgroup met in person a total of nine times and discussed key issues numerous times during conference calls. These public workshops and workgroup discussions played an active role in forming today's proposal.

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AIR RESOURCES ENGINEER AGUILA: The proposed amendments contain an easy-to-understand tier phase-out schedule for all fleets, although we also provide an option for large fleets to use a fleet average if certain conditions are met.

We are proposing to change how we handle low-use engines, and we are including expanded incentives and

credits to encourage clean technology.

Finally, the amendments include additional changes to address specific stakeholder concerns and to improve implementation of both regulations.

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AIR RESOURCES ENGINEER AGUILA: The tier phase-out schedule is fairly simple and straightforward. Since noncertified portable engines have already been phased out, they are not included on this schedule.

The majority of engines certified to Tier 1 and Tier 2 standards will be phased out between 2020 and 2023. The removal of these dirtiest of engines provides approximately two-thirds of the overall emission reductions expected from our proposal.

Tier 3 engines, some of which are still being sold today, will eventually be phased out between 2025 and 2029.

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AIR RESOURCES ENGINEER AGUILA: Large fleets, or those with more than 750 cumulative portable horsepower, are being given the option to comply with the fleet average standards shown here. A fleet average approach uses each engine's particulate matter emission factor and horsepower rating to calculate the average PM emission rate across the entire fleet.

We are proposing that a fleet must register all of their portable equipment in PERP, and they must submit a written request to use this option.

These new fleet average standards account for the higher PM certification standard for Tier 4 engines greater than 750 brake horsepower, so compliance will be feasible.

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AIR RESOURCES ENGINEER AGUILA: The amendments redefine low-use engines as those used less tan 200 hours per year, which is consistent with other in-use regulations.

Low-use engines will be exempt from the new tier phase-out schedule and the fleet average standards.

We are also proposing new recordkeeping and reporting requirements to ensure that the emissions from these engines remain low.

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AIR RESOURCES ENGINEER AGUILA: We believe it is important to encourage the use of zero-emission technology.

Therefore, we are proposing to expand the current provision in the ATCM that gives credit for the use of electrification by adding more scenarios where this credit may be used. The current ATCM only gives credit for

substituting electrification for part of the time that an existing diesel engine would have been used. Under the amendments, credit will also be granted for completely replacing an existing engine with electrification.

Additionally, we proposing to give benefits to fleets that voluntarily reduce emissions early or beyond the requirements in the ATCM. For example, if a fleet replaces a certain older engine two years before the phase-out date, they can operate a specific Tier 3 engine one additional year beyond the phase-out date.

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AIR RESOURCES ENGINEER AGUILA: And now Mr. Joseph Gormley will tell you about other amendments we are proposing to the portable engine ATCM and The PERP Regulation and the future benefits staff expects to see from our proposal.

AIR POLLUTION SPECIALIST GORMLEY: Thank you, Mr. Aguila.

In addition to providing the much needed restructuring of the emission requirements in the Portable Engine ATCM, the proposed amendments contain additional language and provisions meant to protect public health, improve implementation, address stakeholder concerns, and provide clarity where needed.

I will now discuss some of these provisions in

the next few slides.

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AIR POLLUTION SPECIALIST GORMLEY: Occasionally a large group of portable engines will be needed at a project site to complete the job.

To limit exposure and protect public health, we are proposing to add an enforcement mechanism to an existing requirement in the PERP Regulation that states that the operation of registered equipment shall not cause an exceedance of any California or federal ambient air quality standard.

Under our proposal, large projects in extreme ozone nonattainment areas will notify districts of their operation, which in turn gives the districts the ability to perform an Air Quality Impact Analysis. If that analysis shows that the operation of the registered engines in that project will cause an exceedance of an air quality standard, the district will have the authority to require mitigation in order to prevent or limit the exceedance.

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AIR POLLUTION SPECIALIST GORMLEY: The proposed amendments prohibit the sale of engines to end-users in California after the phase-out date. This will enable the local air districts and CARB to pursuant enforcement

action against sellers that knowingly sell noncompliant engines to unsuspecting buyers.

We are also proposing to add a Disclosure of Applicability requirement to the ATCM, which is consistent with identical provisions already contained in the Truck and Bus Regulation and the Regulation for In-Use Off-Road Diesel fueled fleets.

We plan the to create a new disclosure statement that can satisfy the requirements of all three regulations.

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AIR POLLUTION SPECIALIST GORMLEY: The PERP Regulation has always stated that PERP Registration preempts local district permits, with certain limited exceptions. Basically these exceptions denote the scenarios where PERP Registration is not valid. One of these scenarios states that a portable generator registered in PERP may not be used to power stationary equipment or a stationary source, except under certain circumstances stated in the rule.

In order to clarity the circumstances where PERP generators may be used, we added detailed language allowing registered generators to serve as temporary replacement for stationary back-up generators, but only upon local air district approval and only if the

registered generator has the same or lower emission rate. We also extended the allowable use of registered generators during electrical upgrades from 60 days to 90 days based on stakeholder input that these operations may need that much time.

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AIR POLLUTION SPECIALIST GORMLEY: The PERP Regulation allows unpermitted engines to be brought into California during an emergency event such as an earthquake or the recent wildfires to help alleviate the threat to public health and safety. During the recent drought, many water well drilling rigs with noncertified engines were brought in from out of state to pump more groundwater. The operation of these unpermitted rigs over a several year period put the California-based water well drilling industry at an economic disadvantage.

Staff is proposing to limit the emergency event provision to only allow certified engines into the State and to allow -- only allow them to operate unpermitted for one calendar year. Staff believes this approach will provide a more level playing field going forward. The Governor does have the authority to extend the operation of unpermitted portable engines beyond this one-year period if necessary during an emergency event.

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AIR POLLUTION SPECIALIST GORMLEY: During the process of developing the proposed amendments, some stakeholders express concern about Tier 4 technology, specifically that the diesel particulate filter would get clogged with soot and cause the engine to shut down. These concerns are similar to those expressed several years ago about trucks certified to the latest emission standards.

We studied the issues raised by stakeholders. We believe that Tier 4 engines can work in portable applications. In fact, there are over 8,000 Tier 4 engines registered in PERP today. That being said, while issues are rare, they can occur during low-load and long-idle conditions.

Occurrences of these issues can be reduced by properly maintaining the engine, correctly sizing the engine for the application, and making sure the engine is properly tuned. In some cases it may be necessary to work with manufacturers to address the issues with engines.

We do not believe regulatory amendments are needed to address these issues, but we remain committed to monitoring industry concerns and providing assistance. However, we are proposing an amendment related to Tier 4 engines to address a separate issue.

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AIR POLLUTION SPECIALIST GORMLEY: Some stakeholders express concerns about the operation of Tier 4 engines specifically in well drilling operations where there may be combustible gases released that pose a safety hazard. The EPA currently certifies engines designed for use at hazardous locations that meet Tier 3 standards. These engines and related electronics are manufactured to be spark-proof, and are available in low volumes and at higher cost.

EPA is considering an exemption from Tier 4 standards for these types of engines used at hazardous locations. If EPA grants that exemption, they will continue to be produced as Tier 3 engines, which would not meet the proposed emission standards in the ATCM.

To accommodate these engines and address the safety concerns raised by stakeholders, we are proposing to exempt EPA certified hazardous location engines from the Portable Engine ATCM and also allow them to be registered in PERP.

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AIR POLLUTION SPECIALIST GORMLEY: PERP staff have always endeavored to best serve the regulated community by processing applications and issuing registrations as quickly as possible. Portable engines or equipment units may not be operated until a district

permit or PERP Registration is in hand. So stakeholders lose revenue when waiting for PERP issuance. In order to provide the best possible service, staff is proposing to streamline the application process and to offer temporary registration for Tier 4 final engines while full registration is being processed. These changes will result in faster issuance of registration so that the portable equipment owners can get to work more quickly.

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AIR POLLUTION SPECIALIST GORMLEY: State law authorizes the Air Resources Board to collect fees to cover the reasonable costs of administering the Portable Equipment Registration Program.

We performed a fiscal analysis of the program and found it to be significantly underfunded. Therefore, we are proposing a fee increase that will cover the cost of the implementation and enforcement now and into the foreseeable future.

With the proposed increase, the cost of initial registration for an engine will increase from $620 to $805. This increase is expected to pull the program from a deficit and at the same time continue to provide a cost effective statewide air quality permitting program for industries that operate portable equipment in multiple air districts in California.

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AIR POLLUTION SPECIALIST GORMLEY: When we were crafting the provision for the temporary replacement of stationary back-up generators that we discussed earlier, we were told by stakeholders that the existing definition of mechanical breakdown in the PERP Regulation was confusing because local air districts use the term "breakdown" in their rules. In order to provide as much clarity as possible, we decided to replace the term "mechanical breakdown" with the new term "engine failure" and gave it the same basic meaning. The original "mechanical breakdown" term and the new "engine failure" term only reference the engine and related components.

After the staff report and proposed language was published, we had further discussions with certain stakeholders who expressed concerns about the situation where the associated generator itself had a problem and had to be removed from service. In that scenario they would not be able to utilize the temporary replacement provision because it only refers to instances of engine failure. To resolve this problem, we are proposing to convert the term "engine failure" into the term "equipment failure" and include the engine and associated equipment into the definition.

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AIR POLLUTION SPECIALIST GORMLEY: The expected benefits from the proposed amendments are emission reductions, cost savings, implementation improvement, and strengthened enforcement.

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AIR POLLUTION SPECIALIST GORMLEY: The proposed amendments continue our efforts to transition all fleets to the cleanest technology available, which is Tier 4 for portable engines. The Tier 4 engines are 99 percent cleaner than uncontrolled engines for diesel particulate matter.

The proposed amendments reduce peak costs between 2017 and 2020 by 50 percent, so that fleets can afford to make the investments necessary to meet compliance requirements. The amendments also ensure that reductions can be achieved by spreading out compliance requirements over a longer period of time.

To further protect the public from negative health effects during the transition to Tier 4, the proposal allows the South Coast and San Joaquin Valley air districts to mitigate emissions from large projects if an air quality standard would be exceeded. The amendments also ensure emission reductions are achieved by streamlining implementation and strengthening enforcement.

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AIR POLLUTION SPECIALIST GORMLEY: This graph shows the statewide particulate matter emissions from portable engines without any regulatory requirements. The emission reductions expected from the original version of the ATCM are shown here, which we have explained already that has standards that are not technologically or economically achievable.

The emission reductions expected from our current proposal are shown here and show that the amendments will still provide an emissions benefit relative to the "no regulation" scenario, and will eventually catch up to the reductions envisioned by the original ATCM by 2027.

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AIR POLLUTION SPECIALIST GORMLEY: NOx emission estimates from the proposed amendments show the same pattern as particulate matter emissions shown on the previous slide.

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AIR POLLUTION SPECIALIST GORMLEY: The proposed amendments are consistent with the Board's environmental justice policies and do not disproportionately impact people of any race, culture, or income.

Staff have performed the required analysis under CEQA. This analysis determined that the amendments would not result in any potentially significant adverse

environmental impacts to any of the resource areas included in Appendix G of the CEQA guidelines.

Staff have performed the required economic and fiscal impact analyses and made the required determinations that the amendments do not impose a reimbursable mandate on local agencies or school districts, and does not cause a significant statewide adverse economic impact. The analyses showed that none of the potential alternatives to the proposed amendments would be more effective at carrying out the purpose for which the regulation is intended or would be as effective and less burdensome to the affected entities than the proposed amendments.

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AIR POLLUTION SPECIALIST GORMLEY: This regulatory package was the first to go through our new process for ensuring effective implementation and enforcement upon adoption.

Under the proposed amendments, registration will be issued more quickly, compliance requirements are less complicated an therefore easier to understand, and the statewide registration program and local enforcement programs will be fully funded.

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AIR POLLUTION SPECIALIST GORMLEY: Under the

proposed amendments, the Air Resources Board will take on a greater enforcement role. The phase-out schedule will be enforced through registration or permit expiration, and those large fleets that use the fleet average option will have their compliance evaluated by CARB staff since every portable engine in the fleet has to be registered in PERP to use that option.

To assist air district enforcement staff in locating noncompliant engines in the field, each tier will be issued a different color placard to make identification easier.

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AIR POLLUTION SPECIALIST GORMLEY: This brings us finally to staff's recommendation.

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AIR POLLUTION SPECIALIST GORMLEY: The proposed amendments promote emission reductions and protect public health by reducing exposure to toxic diesel particulate matter. They address compliance challenges and spread out costs so fleets can comply. And finally, the amendments improve our ability to implement and enforce both of these regulations.

We recommend that you adopt the proposed amendments.

Thank you. That concludes our presentation.

CHAIR NICHOLS: Thank you.

This is obviously a complicated set of changes. But I think the thrust of it is clear, and the intent is certainly in the direction where we want to go.

So let's hear now some specific testimony. We have nine people who've signed up; and the names are up on the board, so you can see where you fit on the agenda, beginning with Robert McLaughlin.

MR. McLAUGHLIN: Good morning, Chair Nichols and members of the Board. My name is Robert McLaughlin. I'm the Assistant Air Pollution Control Officer with Butte County Air Quality Management District. I'm here today representing Butte County and to offer support for the proposed amendments to the regulations.

I participated in the workgroup meetings with your staff, my colleagues at CAPCOA, and other interested stakeholders. The proposed amendments to the ATCM provide much needed regulatory relief, particularly for small businesses, while simultaneously improving the enforceability of the regulation.

I want to express my sincere appreciation for all the hard work that your staff put into the proposed amendments. Staff listened to the concerns and recommendations of your CAPCOA partners, and the result is a set of complementary regulations that are easier to

implement and enforce.

As an example, at the request of CAPCOA, staff included a prohibition of the sale of older engines. Through a collaborative workgroup process staff were able to address industry concerns with the prohibition of sale and the related disclosure requirements.

The prohibition of sale included in the proposed amendments will help prevent the resale of old dirty engines to end users that may not be aware that the engines can no longer be legally operated in California. This will significantly reduce air district resources spent bringing engine owners into compliance, and is an example of one of the most cost effective ways air districts can partner with CARB to prevent high emitting engines from continuing to operate in California.

For these reasons and many others, I encourage your board to adopt the amended regulations as proposed.

I am available if you have any questions. And thank you for your time.

CHAIR NICHOLS: Thank you.

Mr. Fernandez.

MR. FERNANDEZ: Good morning. My name is Jerry Fernandez. I'm with C&J Well Services. We're an oil field services provider.

We have a few concerns with the current

regulation. The first is the assumption that the estimated equipment costs are too low. Right now our company has 180 PERP registrations. And of that, we have 54 mud pumps that will complete -- have to have complete engine replacements and equipment replacements. Those cost $1.2 million each for a complete replacement because the engines are too large to put in this equipment anymore.

One of our other concerns is the staff is assuming the fleets will realize a resale value of the older equipment. Most of our oil field equipment is designed and engineered specifically for oil services industries, and therefore there is a very low resale value of it. And most of the people in the industry will not resell a piece of equipment because it will be used against them as a -- with a competitor.

The next one is the stakeholders in California are required to comply with three current regulations, as our company is. We are currently registered in doors. I have two fleets in truckers. I also have a fleet in PERP.

We'd ask the Board to have the staff do an evaluation, a cumulative impact of what the cumulative cost is for all of our equipment going through all the changes that are happening right now, because they're happening for all the fleets and our PERP equipment at the

same time.

In the report staff states that they are working with engine manufacturers for low load and long idle operations. We would request the Board to direct the staff to develop a document listing all the fines, including technologies and manufacturers to provide this information to stakeholders, including the estimated time to market and the cost associated.

My company put $20 million into Tier 3 engines, and now we're replacing some of them that have less than 2300 hours on them.

The last item that I have for us today is the development of the cost curve for the portable equipment was based on the data of 230 pieces of equipment. That is 0.008 of the current PERP fleet. I feel the data needs to be adjusted and we need to have a better -- better data points. Over 30,000 pieces of equipment we only had results on 230.

I would like to thank the Board and the staff for the opportunity to participate in the modification. The company I work for has been involved with PERP. We met with the PERP group. We took them down and showed them all of our equipment. We have participated in load factors, and we have been participating as one company or another for the last 24 years with the PERP regulation and

ATCM.

Thank you for your consideration.

CHAIR NICHOLS: Thank you.

MR. ZABEN: Good morning, Chair Nichols and the Board. First and foremost I want to thank you for the opportunity to participate.

Like my counterpart, I've been in the oil business for quite some time. In fact, I've been in the oil business for 41 years.

Excuse me while I fumble through this because I'm not used to public speaking. I can write pretty good, but talking's another venue.

(Laughter.)

MR. ZABEN: But, anyway, the package that's presented has a -- you know, some positives with it. Okay. One of them is of course there are two extra years for compliance. And the low-use definition is being increased from 80 hours to 20 hours. That was presented earlier on in this presentation. And credits for those who have complied with the 2017 regulation are being given early credits.

However there are some concerns. Okay?

One of the statements in the report that focuses on the cost of a Tier 4 engine. All right. It stated that it's twice as much as a Tier 3. Well, I'm here to

tell you it's a little bit more than that. Sometimes three and four times the cost. That's just for the engine. The equipment cost has never been factored into the cost methodology of the report. Okay?

And the concerns also regarding the recoup costs when you sell retired equipment. The inference was made as to companies like ours, anybody else in the oil field industry, we could sell this equipment outside of California. Well, that's an inference that can't really be done in my mind. Our equipment is unique to the oil field business. Therefore our audience is finite. And getting equipment to auction to go outside of California is probably a cost ineffective endeavor.

Okay. It implies also that this is a straightforward task. And again, our equipment is unique only to the oil field business. Therefore that's all we can sell to is oil fields. And as it was mentioned just earlier in a speech, that for us to offer equipment to sell -- or to be sold to our competitor, it's not going to happen. Most likely be cut up.

Okay. Regarding the operating the low load and long life cycles, it is stated that the ARB is working with manufacturers to address some of these concerns. We have just boughten a -- or purchased -- excuse me -- Volvo Penta. Now, this Volvo Penta does not have a DPF. It has

its SCR. We bought this in December of 2016. To this date, we can't operate this piece of equipment because the engine does not fully function. It gets hot and shuts down.

We are working currently with the manufacturer to address this concern. There have been some solutions, but at this point nothing's working.

Anyway, I know I'm out of time. But understand this: The oil industry has had a tremendous downturn in the last few years. All of our companies have experienced tremendous fee decreases. This endeavor that we're up against right now is an intensive expense. We're all hoping to survive. But this may not help.

I appreciate your time.

CHAIR NICHOLS: Thank you. Thanks very much. And thanks for your participation and your very balanced presentation also.

BOARD MEMBER BALMES: And you were actually pretty articulate too.

(Laughter.)

CHAIR NICHOLS: Mr. Caponi.

Hi.

MR. CAPONI: Good morning, Madam Chair, members of the Board. My name is Frank Caponi representing L.A. County Sanitation Districts. You know, I stand before you

today in full support of the regulation.

I want to express kudos, which was done before, for the staff, their hard work on this. They listened to all the concerns of industry, as well as our CAPCOA partners, and I think struck a reasonable balance. I think you've heard others that are not as happy, but I think in general we struck a reasonable balance.

You know, this regulation has gone through a lot of updates since 1997 with the original PERP. I've had the pleasure of being part of every workgroup that's gone on since then. You know, it's been a tough road and we've gone through a lot of controversy, but I think we've always managed to strike a balance.

The reason I'm always so interested in being parts of this workgroup is because of our particular needs in terms of, you know, public safety and health. We heard about the air quality aspects of this regulation. But there's also the aspects of the need of emergency generators to be utilized during emergency events for another type of public health and welfare. And so we always have to make sure that that equipment is going to be available and adequately functioning.

I think if you study some of the recent disasters, the hurricane disasters - which I really recommend this Board do - I think you'll find a lot of

successes and failures. And just going through some of the successes, all involved the ability to operate diesel generators and have a strong availability of fuel in the public sector and the infrastructure sector. This is so important, so critical to all our public facilities and our essential public services.

I had noticed also a FEMA report of the Northridge earthquake. And we live in earthquake land here, not hurricane land. And that was only a 6.7 earthquake, and there was a number of failures that happened there; and it's instructive to find out why that happened.

But we -- if we get into the big one, we're going to need a large availability of functioning portable generators. And once again, I think -- I think right now we have struck a balance, hoping this is the last update I have to go through because I don't enjoy doing this. But I think it -- if this goes out a number of years, it means we did truly strike a balance here. But we have to always keep in mind that we have to keep an eye on this regulation to ensure that our very important portable equipment keeps functioning and is fairly treated out in industry.

Thank you.

CHAIR NICHOLS: Thank you.

I saw heads nodding at the staff table about not wanting to go through this again. So I think --

(Laughter.)

CHAIR NICHOLS: -- think there's unanimity on that point.

Mr. Rottman.

MR. ROTTMAN: Thank you, Madam Chairman and the Board. And I want to give particular thanks to our people at the Portable Division, because they put up with me for the last two years at these CARB meetings, and I know I'm not the most popular guy on the block. But I try to bring some reason to what we're doing.

We've got Appendix K in the proposed regulation which our association, the California Groundwater Association, cannot support because it -- it contains 22 paragraphs, 13 of which are true, and the other 9 are blatantly false or contain recommendations that defy real-world conditions in our industry. It's not only here in California but across the United States.

Some of those facts I'm going to bring to you this morning.

Thank you very much.

There are 40 Tier 4 rigs and pieces of equipment in California. They're registered with PERP and with the Department of Motor Vehicles. These fall both in the

Portable Division Program and in the Highway Bus and Truck Division.

CARB statements that there are no Tier 4 engines in California is blatantly false. And a little homework that could have been done in your own registration program would have shown that.

We basically have three people here - California Groundwater Association, who I represent; C&J, who spoke; and the other gentleman that just spoke in the oil and gas industry - all of us have Tier 4 engines. None of them work. None of them work as designed because they're not made to be worked as designed. These are highway engines; they're made to work at a 50 percent duty cycle, not at the 10 to 20 percent duty cycles that we encounter during our drilling operations.

Southwest Institute research has done many studies on this and you've paid millions of dollars for those studies.

And all of those studies, Mr. Chris Sharp's comments at Diamond Bar, Mr. Lee Wong's comments at Diamond Bar show that these engines do not work in low -- in high horsepower, low RPM applications. They soot up with the DPFs, and the SCR systems don't work either.

So you don't have a solution for our industry. And to prove that fact, in 2013 Mr. Corey went to U.S. EPA

with a list of concerns about what the hardship dispensations were going to be for water well drillers in the United States. This was 2013.

In 2014, when the final rule was passed, they ignored Mr. Corey's comments. Because we have a 40-year exemption for these Tier 4 engines from the date of manufacture. That's a nationwide, 50-state law in the Federal Register, and California's CARB has ignored that.

So where that goes legally in the future, I don't know. But it may be addressed.

If that's my three minutes, I'm sorry, because I will include my comments here as well as my October 5th letter to CARB to be -- I want them included in the public record because they address all the issues we have here.

CHAIR NICHOLS: They are already included. Thank you. Thank you. Thanks for your participation.

MR. ROTTMAN: You're welcome.

CHAIR NICHOLS: Mr. Lewis.

MR. LEWIS: Good morning, Madam Chairman and members of the Board. I'm Mike Lewis. I'm with the Construction Industry Air Quality Coalition.

And I'm happy to say that we were the initial sponsors of the legislation that created this program. So we feel we have a terrific stake in it. And I think our goal was to come up with something simple that worked

everywhere in California. I'm not sure we achieved the first, but we -- I think we've got the latter.

I do want to also add my thanks to the staff for the effort that they put into this. Mike Guzzetta and his guys in particular were terrific. This was a long, arduous effort. There were a lot of issues that needed to be dealt with, and they were very professional. And they made a real genuine effort to get the numbers right, which as you've heard from me in the past, is something that I think this organization owes the regulated industry. And in doing so, they were able to make some changes to ease the compliance burden without impacting air quality, and that's given us some additional ability to achieve what you're after here.

You don't have many regulations at CARB to love.

(Laughter.)

MR. LEWIS: But we like the changes that you've made to this one. We like the exemptions for the second engines, for emergency events, for hazardous locations. We like the increase in low use from 80 to 200 hours. We appreciate the option of the fleet average or the phase-out. We like the credit for early compliance. We appreciate the extra time given, the high cost and the low availability of this equipment. This is still going to be very expensive. There are a lot of small businesses that

are just going to shut down as a consequence of this; and I think your own staff analysis indicates that. And that's unfortunate, and I'm hoping that -- unlike the rest of these folks, I suspect we'll be back here in five years with a few more amendments to this regulation and Mr. Guzzetta will then be able to retire after that last round of amendments.

(Laughter.)

MR. LEWIS: I do have one big concern which I would like you to address or try to fix; and, that is, there was a late addition to this regulation of the provisions regarding -- related to the South Coast and the San Joaquin districts with this provision of having to report any time you have more than 2500 horsepower of equipment on a construction site. I would like to suggest that you modify the language in section 2455, the very first paragraph, to add the word "simultaneously" between "used" and "on" on the fourth line.

The only time there's going to be an exceedance is if this equipment is actually in use. There could be 20 -- there would be 5,000 horsepower portable equipment on a jobsite and unless there's 2500 horsepower of it in use at any given time, there isn't likely to be an exceedance. And I think it's unlikely that a contractor is going to know with all the subcontractors 14 days

before construction commences that there's going to be 2500 horsepower on the site. And I think by putting the word "simultaneously" in there, it puts the project manager on notice that he's got to be paying attention so if he has more than 2500 horsepower operating, he could be in an exceedance and that's when the air district ought to be notified that that possibility exists and that the -- come in and do an analysis to determine whether or not additional measures need to be taken to reduce those emissions.

So I would make that one request of you and make --

CHAIR NICHOLS: Thank you.

We've missed you. It's been a while, you know.

MR. LEWIS: Well, you know, I figure it can't be good if I'm here.

(Laughter.)

CHAIR NICHOLS: I don't know. We always appreciate your input.

But I have a question for you. Maybe this is -- this is not directly related to the proposed regulation. But it's related to the topic that we were discussing earlier about Sacramento and about the challenges that we're facing everywhere meeting air quality standards, which are still very real. Just a curiosity, has your

industry been involved in any testing or development work for any ultra-low emission equipment or engines? I realize there was -- it's a stretch here, I understand, and they're very diverse applications. But just out of curiosity.

MR. LEWIS: Well, some. I mean, we did do a test quite sometime ago on the on-road equipment of particulate filters in the early years that those were developed. And I think in part that was what caused the amendments to the off-road rule where we just eliminated the requirements for the retrofits because they simply didn't work under those load factors and the conditions under which off-road equipment operates.

I know that there have been some specific instances -- and I believe you may have attended a press conference at the Long Beach Port where they used a hybrid excavator. I asked the contractor afterwards what happened to that equipment. He goes, "Man, we gave it back. It was way too expensive." So that equipment didn't get used on any other projects to the best of my knowledge.

So I -- obviously we're experimenting. I mean, I think the contractors recognize that wherever they can adopt these new technologies, it' worthwhile. But you also have to recognize in the construction industry

everything you do is based on your being the lowest bidder. So anything that drives up your costs makes you noncompetitive and less likely to get the work. So those are the -- those are some of the trade-offs that we're trying to deal with.

And there are a number of locations - the airports, the ports, and particular where they're mandating all Tier 4 equipment on the jobsite. And that's put a lot of stress on the rest of the region because all the -- there's only a limited amount of equipment and then it goes to those sites and nowhere else. Which is -- might be problematic at some point with this 2500 limitation as well.

So we're looking for opportunities. And, you know, we've been very aggressive in the Carl Moyer Program in repowering equipment from 0s and 1s to 2s and 3s. I've spent hundreds of millions of dollars on that. So I think the industry has made every effort to address those issues, and I'm assuming --

CHAIR NICHOLS: Well, understanding that they're, you know, coming out of tough times also. But just thinking about the fact that there's been a lot of work going on on renewable natural gas and due to opportunities in that area might be something that we could even look at partnering on.

MR. LEWIS: I think the issue with natural gas in the construction environment is raw horsepower and the fact that natural gas just can't develop that horsepower. It's the problem that on-road trucks had, you know, climbing a hill. As long as they were on flat land, they worked pretty well.

So I think -- I think if you could come up with a better fuel that could be used in all that equipment that would reduce those emissions, that might be the better way to go.

I've also been encouraging our guys to look at the technology, the use of drones and GPS and things of that sort that might make construction sites more efficient, and therefore reduce fuel consumption, and therefore reduce emissions. And that's in its formative stages right now, but there appear to be some opportunities for that.

CHAIR NICHOLS: Thank you.

BOARD MEMBER RIORDAN: Madam Chair?

CHAIR NICHOLS: Yes, Mrs. Riordan.

BOARD MEMBER RIORDAN: Just to ask staff to be thinking about, because I -- he made an observation of a -- suggestion, excuse me, for substitution of kind of a definition there. And I would like your input maybe after all the commenters have made their presentations. But I

don't want to forget that because it might be a worthwhile effort to look at that change.

CHAIR NICHOLS: Okay. Mr. Dorsa.

MR. DORSA: Good morning, Madam Chair and members of the Board. I'm here on behalf of the United Contractors, which is an association of contractors mostly in northern California. We're also members of the construction industry or quality coalition. And unfortunately I had to follow Mike Lewis here, and he said it all. So...

But primarily what I want the Board to understand is that when we first heard that there were going to be some changes and that workshops were going to be formed, I thought, "Oh, no, what are they going to do to us now?"

Then when I saw the workgroup being formed and the people, such as Mr. Gormley, and of course Mike, I changed my mind. And we participated fully. They asked us, "What do you think we should do," not "This is what we're going to do."

They worked with us in various methods - phone conferences, meetings, face-to-face - and we ended up with what you have before you today. And in my experience, with all the regulations that we've been involved in, this is the first time we actually can say, "Yeah we did it. They listened."

And in the words of the great philosophers of our time, the Rolling Stones --

(Laughter.)

MR. DORSA: -- you don't always get what you want, but if you try you can get what you need. And that's what we've done today, and I just want to thank everyone.

BOARD MEMBER GIOIA: You know, I used that quote about 10 years ago on an issue. I appreciate hearing it again.

(Laughter.)

CHAIR NICHOLS: It's always good to have a reminder of one of the great groups of our time.

Okay. Kendra.

MS. DAIJOGO: Good morning, Madam Chair and Board members. That's a hard act to follow. Kendra Daijogo with the Gualco Group on behalf of the California Council for Environmental and Economic Balance.

CCEEB is a coalition of California business, labor, and public leaders; and we strive to advance strategies to achieve a sound economy and a healthy environment.

Our only comment to you today is to say thank you to the ARB staff. They were very gracious and welcoming to CCEEB and CCEEB members. I did attend most all of the

meetings and they were very detailed, and everything was conducted in a very professional and amazingly welcoming manner.

This is a -- and these amendments are of critical importance to CCEEB members. We believe it's been a productive rulemaking effort between CARB and stakeholders, and the result is a more practical approach to achieving the desired diesel emission reductions while continuing to protect public health.

So we thank ARB staff once again and we respectfully encourage you to adopt these amendments.

CHAIR NICHOLS: Thank you.

Mike Meyer. And then Genevieve Gale.

MR. MEYER: Good morning, Ms. Nichols and the rest of the staff. I'm here on behalf of the California Groundwater Association as its president. I'm not much of a public speaker. Our association is predominantly small water well and/or pump contractors.

A little bit about my history. I was born in the mid-70s, the L.A. Basin, so I get clean air, trust me. I'd like to see the mountains, et cetera. I have lifelong industry involvement in the drilling industry, mostly water well geotechnical. I am actually an undergrad, post graduate. So there is more than rocks in the head, as they say.

I worked for about 15 years for a large California geotech environmental water well contractor. We had about 40 to 50 rigs, probably about 30 going out on a daily basis all over California. The rigs were different makes, manufacturers; so it's not a one-size-fits-all sort of solution here.

And part my job was CARB compliance for the equipment. So I get how frustrating this is. And I think we are taking a step in the right direction, but there are some things that should be addressed.

Currently I'm a technical type, no longer directly involved by the drilling industry. So I've been able to take a step back and get a little perspective here.

I overall -- I guess my takeaways are, just real quickly, we need to look at economics and reliability in vital industries, not just standards statewide. With that said, overall I think I support the PERP ATCM program's goal if it does provide some clarity. The supporting -- increasing the low use to 200 hours is a good step. Clarifying the two-engine exemption, which most two-engine water rigs are in, is a good step.

Not so sure about the removal of the flex engine registrations. I think there's some rig manufacturers who aren't going to redesign a rig to sell two rigs into

California a year.

My goal is to have CARB take a realistic look at the PERP ATCM compliance deadlines and options, as well as try to work with the off-road and on-road regulations. A lot of drilling contractors that have equipment in all three.

I think these rules were fashioned for run-of-the-mill construction equipment that's used a majority of time; the type of equipment that can be rented if the economics of ownership doesn't work out. And that's not the reality in the drilling industry. We have very specific equipment.

And I'd like to have you review C&J Well Services comments. I think they did an excellent job of basically outlining some of the economics of it. And water well companies have less of a profit. So it's even worse for us even though it's very specialized equipment.

The National Groundwater Association found that the average life of an in-service drill rig is 24 years, and the -- that's the economic side of it. The reliability side is I think what Larry Rottman is saying is about Appendix K. There's some real reliability issues there.

Okay. Thank you for your time. Look forward to working with you on this.

VICE CHAIR BERG: Thank you.

MS. GALE: Hello. My name is Genevieve Gale. I'm representing the Central Valley Air Quality Coalition. And we haven't been a part of this proceeding on the rule changes. But I just wanted to say that we appreciate always the interest in protecting public health. And a lot of the diesel fleets and portable equipment used in the San Joaquin Valley do affect our PM issue, especially all of the equipment on the oil fields that are impacting Bakersfield and Kern County, which is the most overburdened area we have. And so I just wanted to thank staff for encouraging the use of zero-emission technology, especially on these oil fields, and allowing additional scenarios for electrification and mechanisms to ensure exposure is limited for public health.

So I'll leave it at that. But thank you.

VICE CHAIR BERG: Thank you very much, and thank you so much for your continued involvement.

So that is our last witness. I will close the record on this agenda item. Any written or oral comments received after the comment period has closed will not be accepted as part of the official record on this agenda item.

So we have before us a Resolution Number 17-44. And before we take a motion on that, are there any

clarifying questions or comments?

Supervisor Roberts will start.

BOARD MEMBER ROBERTS: I was wondering if staff could just comment. Sounds like -- this is largely very well done -- that we kind of had a niche here where there seemed to be concern and then there was the issues that I think Member Riordan raised that was --

VICE CHAIR BERG: Yeah, inserting --

BOARD MEMBER ROBERTS: -- the Appendix K problems --

VICE CHAIR BERG: Yeah, and inserting simultaneously in one of the --

BOARD MEMBER ROBERTS: -- and the simultaneous operation of the -- yeah, I wonder if we could go back through and start with the -- sounds like the people who are -- involve the groundwater have kind of a unique situation. And I'd like to hear if -- how that was considered.

VICE CHAIR BERG: So if it'd be okay, could we give staff a list and then they could report back to us on each one of them? So what I have on the list is the request to insert simultaneously in that section regarding the reporting for the South Coast air quality and the San Joaquin Valley.

And then we did hear from quite a few of the

drillers and to understand how staff is approaching and looking at I think the Tier 4 engines and the cost analysis. Would you say that's fair, Supervisor Roberts?

BOARD MEMBER ROBERTS: Yes.

VICE CHAIR BERG: Okay. And is there anything else on your list, sir?

BOARD MEMBER ROBERTS: Well, they have an issue with can't sell the -- the resell issue.

VICE CHAIR BERG: So it's all the economics that they brought up. So if they'll do the economics and look at the Tier 4 reliability, will that --

BOARD MEMBER ROBERTS: And the estimated cost being low on Tier 4.

VICE CHAIR BERG: Yeah. Okay. So if you put those on.

Mr. Eisenhut.

BOARD MEMBER EISENHUT: Yeah. In the same context, while we're reviewing a simultaneous use in a concentrated environment, can you discuss that in the context of 617.

VICE CHAIR BERG: Thank you.

Ms. Takvorian.

BOARD MEMBER TAKVORIAN: Yes. Thank you.

I had questions -- I want to express my appreciation to staff and to everyone who put a -- what

seems be an amazing amount of work into this effort. And I understand that there's technological challenges, and those have been raised here. They were obviously raised in the public meetings, that were raised by the public, district -- by the air districts as well as by industry.

And when I talked with staff in my briefing, I was discouraged about the options for electrification. And we're hearing more about some of the reliability of some of the engines. So I am -- I'm concerned about that. And I'm always very concerned about any rollback of regulations.

I have a couple questions. And one was, were there worker health and safety representatives that were involved in the stakeholder group, were there occupational health folks that weighed in? Because it seems - and I raised this in my briefing - that there -- that there are those issues that we want to ensure that workers are protected as they're doing this important work.

I also have concerns - and maybe I don't completely understand it - the public health protections related -- are really related to ambient health -- ambient levels and not to worker health standards, and I think that's been already raised. They don't seem very feasible to be monitored. This is a monitoring -- it looks to me like the monitoring's going to come from the actual permit

holder or the operator of the equipment. And so I'm not real confident about how much that's really going to protect public health.

So those are my concerns. I like the incentives, but my understanding is that those incentives aren't going to go very far because the technology isn't there yet for us to actually provide those incentives for zero-emission equipment and electric equipment.

So while I like the intent, it doesn't seem like the reality's very major at this point.

So those are my questions. Thanks.

VICE CHAIR BERG: Thank you very much.

Dr. Sherriffs.

BOARD MEMBER SHERRIFFS: Yeah. And I would also -- I think Mr. Eisenhut put very well the question in terms of the San Joaquin Valley and other kinds of mitigations, protections for the South Coast and Central Valley in terms of some of these issues.

A small item, but we serve the public, we serve the industry. And the whole -- nobody mentioned how long it takes to get a permit, but there was some discussion about trying to shorten that time. And I think it's important to make a real commitment and set that as one of the metrics that we're trying to improve on. Because some of these do seem like they could be pretty

straightforward, and we really ought to be able to streamline that even though some are more complicated. But I think it should be one of our metrics that we measure ourselves by.

VICE CHAIR BERG: Thank you.

Dr. Balmes.

BOARD MEMBER BALMES: I just wanted to echo a comment of Ms. Takvorian.

I realize that our mandate is environmental health and then occupational health. But as an occupational medicine physician, I have to agree with her, the people are being most exposed are the workers. And many of those workers may not be sort of trained in terms of protecting themselves from the potential exposures to diesel exhaust. So I just want to echo and support her concern about that.

That said, I understand the testimony from various members of industry, they're affected by this regulation, and would support, you know, a more careful review of the economic consequences of the technological hurdles.

So on one hand I'd like to see workers protected, on the other hand I realize that there's some economic and technological issues here still.

CHAIR NICHOLS: So I'll start down at the far

end.

Mr. De La Torre.

BOARD MEMBER DE LA TORRE: We've already --

CHAIR NICHOLS: You've all spoken?

BOARD MEMBER MITCHELL: I think we've mentioned all the issues that I care about.

CHAIR NICHOLS: Oh, okay.

BOARD MEMBER MITCHELL: Thank you.

CHAIR NICHOLS: Yeah. Anybody else?

No?

All right. Then I guess it's time for staff to respond to the Board's questions.

ENFORCEMENT DIVISION CHIEF SAX: Okay. So let me start with the large project provision. So under CEQA today a project proponent needs to disclose and mitigate potential project impacts.

And under our proposal, a manager of a large project would need to notify districts if greater than 2500 portable horsepower are potentially to be used at a project. If this has been assessed during CEQA, they would simply provide this information to either the South Coast or San Joaquin Valley, and that would pretty much be the end of it.

If they have not, then the district's staff would have the option of performing an air quality impact

assessment. That assessment is not a monitoring-based assessment; it's a modeling-based assessment. And so there's a procedure that, for example, the South Coast Air Quality Management District has worked out that was included in our discussion in the ISOR as an appendix that describes how that work would be done.

So if it's not authori -- if it's not handled through CEQA, we think those instances will be fairly rare. But we do -- there is going to be a burden on project operators to provide this information, and you heard some pushback from several stakeholders about that; but we think that it's reasonable to require the reporting of these types of things just to make sure that there aren't exposure issues associated with a group of these operating at the same time.

The issue was actually proposed by the South Coast AQMD because of some issues they had seen regarding the operation of portable generators at a hospital. And so in looking at that particular example, we thought that this procedure would be worthwhile.

In terms -- we're doing this in South Coast and San Joaquin Valley because these are extreme ozone attainment areas, and we chose that as a metric because they also contain a lot of our disadvantaged communities across the State.

And so the -- what we're doing is also in furtherance of 617 because of where we would be doing these and covering most of the disadvantaged communities across the state and also in areas where air quality is the worst.

One of the suggestions we had related to the simultaneous operation into that, I'll ask Mike to step in and talk a little bit about what we think that would potentially require. And then we can decide whether or not to pursue that as part of a change.

ED CITATIONS AND REGISTRATION ENFORCEMENT BRANCH CHIEF GUZZETTA: So simultaneous operation of portable engines that account for 2500 brake horsepower at a large project, that's what I believe Mike Lewis was making reference to.

It would amount to a small change in the proposed language that we've brought before you today. In addition, it would need to include the associated recordkeeping requirements so we can enforce that provision, and that that could be documented.

We did talk about that early in the process a bit. And we could look at that going forward. We have one 15-day change now. We could look at that going forward with the stakeholders and CAPCOA to discuss it further.

CHAIR NICHOLS: Okay.

BOARD MEMBER RIORDAN: Good. I think that's a good idea.

Madam Chair, can I ask just one question of Mr. Sax.

I find it interesting on the hospital issue that was raised. Most hospitals have emergency generators which we check I don't know how many times a year, but you run them very infrequently, and you're really only checking to be sure. What was occurring -- where a hospital would have generators -- you know, portable generators running, I assume from their concern in the South Coast, for a long period of time, what was happening?

ENFORCEMENT DIVISION CHIEF SAX: So my understanding is that it was a major construction project that was occurring at the hospital while it was continuing to be open, and that it also affected some of the back-up generators. So these things don't happen all the time, but they do happen. They ought -- those types of things ought to be handled we think through CEQA. But, you know, we've put in the place as just a backstop.

BOARD MEMBER RIORDAN: Okay. I was just curious because that's so out of character in -- and I can't speak to a construction site for a hospital, but you would hope

that some of these generators that are just operating so infrequently would not necessarily be taking a load while there was a -- you know, a construction going forward.

ENFORCEMENT DIVISION CHIEF SAX: Yeah. I mean, what you're saying makes sense.

CHAIR NICHOLS: Ms. Mitchell.

BOARD MEMBER MITCHELL: I agree with staff that I think that issue is best handled through CEQA. You can have fairly extensive negotiation in CEQA on what equipment is going to be there, what is the simultaneous operation, what is the impact of various pieces of equipment; some may have higher horsepower than others. I think rather than include that in the regulation, it would be best to leave it to the CEQA process.

Thank you.

CHAIR NICHOLS: Any additional comments, questions?

I guess I have one. This point about exposure to the particulates from these engines. So this is a toxics measures and we're dealing with a pollutant that is not a regional air pollutant. It is a localized air pollutant. I'm assuming that the risk factors are to the people who are working in and around these sites and that they are the people who are meant to be protected from these emissions primarily, and that the regulation as designed

is sort of the best practical option that the staff felt they could come up with. But if I'm wrong about that or if there's a need for some additional research in this area just further to, you know, understand the problem, I think, you know, we should be pursuing that.

ENFORCEMENT DIVISION CHIEF SAX: So I guess this would be a good time to address the toxic risk issue. You know, obviously nobody likes to amend a regulation. And this regulation was designed originally for the diesel risk reduction plan.

And so our goal originally was to put Tier 4 technology on all engines by 2020. And ideally if we could do that, we would. We're here because we can't.

What we tried to do in designing the amendments was to try to address the dirtiest engines first. And one of the things that's a little bit unique about the PERP program relative to other in-use programs we have is that it also contains like a -- it was -- the registration program enforces the registration or requires the purchase of new engines, not necessarily used engines, so we were able to, for example, remove all of the unregistered Tier 0 -- sorry -- all of the uncertified Tier 0 engines throughout the program already.

And so we've used that same mechanism to try to get at the Tier 1 engines largely by 2020, with 2022 for

the largest engines, and then to remove the Tier 2 engines by 2023, with 2025 for the largest engines. These engines, like we said in the presentation, account for about two-thirds of the reductions we're going to achieve through the program. So we tried to frontload as much as we could the removal of the dirtiest engines, and that's specifically to protect public health and to reduce exposures not just of people who are around these things but also workers who are also people.

But, you know, my point is --

CHAIR NICHOLS: Thank you for that clarification.

ENFORCEMENT DIVISION CHIEF SAX: -- it affects anybody who's around these engines.

The resulting regulation then leaves Tier 3 engines, many of which have been purchased recently, some of which are continuing to be purchased, and gives enough time to realize the usage of these equipment before they are removed from service.

The large project provision is designed to provide a backstop in case the CEQA process fails for whatever reason. And we worked on this issue with the South Coast Air District because they had seen some failures in the CEQA process. And we put that in place as a further backstop to help reduce exposures associated with the groupings of these engines at a given site.

Let me talk a little bit about cost and the oil industry. We throughout this process have attempted to characterize costs as best we can, and so we surveyed industry, we received responses back, we've -- you've heard some comments about the information that we used as part of that assessment wasn't as robust as it could be. I mean, it represents the industry -- the information we were able to get out of industry. And we would like to have more information, but we have what we have and we think it's sufficiently robust to be able to do the analysis.

One of the issues that was raised relates to the residual value of the engines when we're -- and how that's treated in the economic analysis. And we believe it is reasonable to assume residual value. The issue really is how much. And what you're hearing from the oil industry is a combination of they think they'll be able to realize less residual value because they're very specific to the operation. And then they also don't want to sell this equipment to their competitors in other states. And oil is obviously a global commodity. They are competing against people in other states and other countries across the planet really. And so to some extent this rule increases costs that puts them at a global competitive disadvantage. That's one of the -- that's what happens

when we regulate to protect public health is that sometimes there are increased costs on different parts of industry.

We think the assessment we've done meets legal requirements. There are ways if we had additional information it could be improved. And it -- I'll leave it to you to decide whether or not we need to do additional economic analysis. But we feel like what we've done is robust enough. And overall what we were trying to do was provide more time for fleets, including the oil industry, to be able to meet regulatory requirements, because they would have been required to replace all of their engines by 2020 including the roughly -- you know, over 30 percent of Tier 3 engines that are across the industry in all of these fleets. And so the amendments provide additional time. They provide about a 17-year life for equipment that was recently purchased. And we think that's sufficient time.

One of the things you heard from the last gentleman from the Groundwater Association is that their equipment on average operates about 24 years, and we're providing 17. This is a -- an in-use rule that requires early replacement of equipment, not just engines, because of the unique circumstance in this industry. And there are costs associated with achieving the public health

protection that we're trying to achieve.

Let me address the Tier 4 reliability issues for a minute.

So the Groundwater Association claims that Tier 4 engines don't work in drilling applications because they operate at low loads with long idle times and then occasionally jump to pretty high loads for a defined period of time, particularly during well pump tests.

Their claim is that diesel particulate filters will plug, and in doing so preclude proper well development in testing. They're concerned about the potential damage to their drilling equipment, not just to the engines. And then they cite ARB-funded studies that they suggest support their claims.

The Appendix K that was discussed is a documentation of our examination of the Association's concern. And in particular we think they're misunderstanding the Southwest Research Institute study that they are citing. We don't think that study supports their claims. The study is actually about optional -- the development of engines for low NOx standards at a federal level. But there are -- it is true that under low-temperature, low-load operations for engines - and we've seen this in trucks - there can be issues, and we acknowledge that.

We think the issues can be managed through proper equipment design, proper -- proper equipment design, operation and maintenance. We've conducted and are continuing to conduct periodic surveys of Tier 4 users to understand their experience, and we're willing to work with any company that wants assistance on the transition to Tier 4 engines. We are also monitoring manufacturers and are going to follow up with them on issues that we see. I am very concerned about the Volvo Penta engine that was mentioned earlier today. That engine does not have a diesel particulate filter. It's a Tier 4 final engine. And the fact that it's overheating is a serious concern. So we will follow up on that absolutely.

But overall, we believe that continuing to monitoring this, maybe even potentially reporting back to you on what we find, is a sound approach to this and that we don't need to, for example, forego the regulation because of these issues.

The exemption for hazardous location engines we discussed during the presentation actually arose from a comment from the Groundwater Association and others, which we have addressed.

The Groundwater Association claims that in 2014 the U.S. EPA adopted standards exempting portions of the industry including the groundwater industry from having to

convert engines to Tier 4 for 40 years from the original manufacture date of equipment.

In fact, the EPA in 2014 adopted a limited exemption for manufacturers to choose to make replacement engines of the same or lower family emissions limit which could be used to repower an existing piece of equipment only if a manufacturer could demonstrate that no Tier 4 engine could be manufactured to meet the current equipment specifications.

So it's a limited, not a blanket, exemption.

We at the time stated that we would not align with that provision in California because of our in-use rules that require the use of modern emission control technologies to protect public health.

Aside from a desire to be overall exempt from the regulations because of their concerns about the rule, the Groundwater Association like other stakeholders needed more time to replace portable equipment, especially those equipped with Tier 3 engines which they recently purchased; and the proposed amendments provide this additional time. And in doing so, at least partially address what the Association is asking for.

So in summary, the Groundwater Association raised a number of issues. Several like the hazardous location engines and emergency event fairness issue we discussed

have been addressed through the amendments. On a Tier 4 engine performance issue we'll continue to work with industry to assess and address these issues over time.

And finally, we don't believe that providing 40 years of life on this equipment is a reasonable request given our public health protection mandate. However, we have provided the Association more time to meet requirements in a way that we believe partially addresses their request while also assuring public health protection.

CHAIR NICHOLS: Okay.

VICE CHAIR BERG: Madam Chair, I just would like to thank staff. And I do appreciate your suggestion on reporting back on the Tier 4 performance and reliability, and so we'll look forward to that.

I'm not quite sure where we stand on the simultaneous if we...

ED CITATIONS AND REGISTRATION ENFORCEMENT BRANCH CHIEF GUZZETTA: We'll go ahead and take a look at that.

Ms. Berg, we'll take a look at that, talk with stakeholders, interact with CAPCOA about adding the words "simultaneous operation" to the proposed language now. And we'll do that with a 15-day change if we decide to move that direction.

VICE CHAIR BERG: Okay. Is everybody comfortable

with that?

BOARD MEMBER RIORDAN: Yeah.

VICE CHAIR BERG: Ms. Mitchell, everyone --

BOARD MEMBER MITCHELL: Yeah.

VICE CHAIR BERG: Okay, then, Madam Chair.

CHAIR NICHOLS: Well, okay. I think we're at the point now where we need to move on this.

I agree with the suggestion of additional reporting. Because one of the major advantages that we're seeking, and it's hard to quantify, is improved compliance with the regulation as a result of these changes. We always tend to assume that our regulations meet whatever the goal is. And of course, depending on the percentage noncompliance, that isn't always the case.

So this is one that we know has had a history of rather high amount of noncompliance; and hopefully with increased attention as well as a better process, we'll be able to actually offset some of the numerical softening of the rule as a result of actually getting these pieces of equipment to comply. That's a really important issue. And if we can demonstrate it or not, as the case may be, but to have that information I think would be extremely valuable.

So with that, I think we're ready for a motion and a second. The record is closed now.

VICE CHAIR BERG: And I will so move Resolution 17-44.

BOARD MEMBER RIORDAN: Second.

CHAIR NICHOLS: All right. All those in favor please say aye.

(Unanimous aye vote.)

(Ms. Takvorian abstained.)

ASSISTANT CHIEF COUNSEL LIVINGSTON: Chair Nichols?

CHAIR NICHOLS: Yes.

ASSISTANT CHIEF COUNSEL LIVINGSTON: Chair Nichols? This is Aaron in front of you.

CHAIR NICHOLS: I'm sorry. Excuse me.

There you are. Yes.

ASSISTANT CHIEF COUNSEL LIVINGSTON: Just a quick note. Earlier Ms. Riordan closed the record as to the 45-day comment period. But actually it will be open again when there's a 15-day comment period. It wasn't mentioned in your notes, so I thought I'd just bring it up. Sorry.

CHAIR NICHOLS: Thank you. Appreciate that.

All right. So we were just in the process of voting. I believe we had -- I'd already called for the "aye" votes and "no" votes and the abstentions.

All right.

BOARD MEMBER TAKVORIAN: Yes, I'm abstaining.

CHAIR NICHOLS: You're abstaining. Ms. Takvorian abstains.

Okay. There we go.

All right. Thank you.

BOARD MEMBER RIORDAN: Thank you, staff.

CHAIR NICHOLS: Good work. It's a complicated and difficult process whenever you touch on so many different types of equipment and so many different industries and in very specialized applications. That's right.

All right. We have one additional item to deal with at this meeting. And while the staff are changing places, thank you for all of that hard work and for all the people who participated in getting us to that point as well.

This final item is an update, it's a report on the secondary PM2.5 formation in the San Joaquin Valley and some research on potential control measures.

At the September board meeting the Board requested that staff return today with an update to characterize the barriers and opportunities for controlling ammonia. And of course that requires that we at least spend a little time talking about why we deal with ammonia, what its role is. So this is going to be a backdrop kind of report, but it may lead us to some

direction.

And with that I will turn it over to Mr. Corey for the introduction.

EXECUTIVE OFFICER COREY: Yes, thanks, Chair.

So CARB staff has been working closely with the San Joaquin valley Air Pollution Control District staff on the development of an integrated attainment strategy for multiple PM2.5 standards as part of a comprehensive State Implementation Plan that will be brought back to you in the next few months.

And as you noted, when we briefed the Board in September, staff mentioned that while there was a path to meeting the 24-hour PM2.5 standard, additional controls will still be needed for the annual standard. Additionally, based on concerns raised by Valley health advocates, we're requested to return to the Board with an informational update today to update outlining the role of ammonia controls in the SIP that's being developed.

So in today's presentation, you'll hear an update on the role of ammonia in secondary formation of PM2.5 in the valley air, current district controls that reduce ammonia, and co-benefits related to short-lived climate pollutant plan and research related to dairy emission controls.

And with that I'll ask Laura Carr to give the

staff presentation.

Laura.

(Thereupon an overhead presentation was Presented as follows.)

AIR POLLUTION SPECIALIST CARR: Thank you, Mr. Corey.

Good morning, Chair Nichols and members of the Board.

In September the Board requested an update on the issue of ammonia in the context of particulate matter air quality in the Valley and what we need in order to move forward.

To do that I'll first provide a brief background on the role of ammonia in the secondary formation of PM2.5 specific to the atmospheric conditions we find in the Valley and what that means for the attainment strategy in the SIP.

In terms of moving forward, there are some actions underway in the Valley that do reduce ammonia emissions. I'll summarize those and then describe research underway and, in addition, work that is needed in order to move further ahead.

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AIR POLLUTION SPECIALIST CARR: First, here is a quick review of the type of sources that emit ammonia in

the Valley. This pie chart shows that dairies, fertilizer, and non-dairy livestock operations combine to produce over 90 percent of total ammonia emissions, with the remaining small portion coming from landfills, sewage treatment, composting, vehicles, and fuel combustion.

Proportions vary slightly county to county depending on the agricultural activity that predominates, but the major sources remain the same. Valley-wide in 2013, emissions totaled 329 tons of ammonia per day, and these emissions stay constant in the future.

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AIR POLLUTION SPECIALIST CARR: Ammonia from these sources plays a role in forming fine particulate matter. PM2.5 is made up of many constituent particles that are either directly emitted or formed through complex reactions of gases in the atmosphere. This graphic shows a highly simplified rendering of the atmospheric reactions between ammonia and NOx that yields ammonium nitrate. Ammonium nitrate makes up about 40 percent of PM2.5 collected on filters in the Valley.

The graphic illustrates that the amount of ammonium nitrate that conforms is limited by whichever gas molecules, either oxides of nitrogen or ammonia, are in least supply. Research studies in the Valley confirm, as this picture depicts, that there are relatively fewer NOx

molecules in the air than in the Valley than ammonia. This implies that reducing NOx, the limiting precursor in this case, is the more effective strategy for reducing ammonium nitrate and thus improving PM2.5 air quality.

The graphic is, of course, a simplification of highly complex atmospheric chemical reactions, and it is important to note that some previous modeling studies have shown that ammonium nitrate formation in the Valley can, in some circumstances, be sensitive to reductions in ammonia. I will return to this point shortly in the context of the discussion about addressing ammonia in the SIP process, which I will turn to now.

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AIR POLLUTION SPECIALIST CARR: One of the key steps in evaluating how to move ahead on ammonia is a requirement under the Clean Air Act to determine which of the PM2.5 precursors - SO2, NOx, ROG, and ammonia - are significant. If a precursor is determined to be significant, then the SIP must address controls for that precursor. At its simplest, the significance analysis is a modeling exercise to see if predicted PM concentrations are sensitive to changes in emissions.

This is a two-step process, with both technical and policy elements. The first step is to use an air quality model to determine the air quality impact of

ammonia. Emissions reductions are modeled in the base year to determine how sensitive PM2.5 formation is to ammonia. EPA recommends starting with a 30 percent reduction in base year ammonia emissions and comparing the results to suggestive thresholds established in EPA guidance.

In the second step of the analysis, changes in ammonia emissions are considered within the broader context of the attainment strategy, including whether the sensitivity changes as NOx emissions are reduced at the same time.

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AIR POLLUTION SPECIALIST CARR: This slide summarizes the result of this analysis for the Valley. In the first step, modeling the impact of a 30 percent reduction in ammonia emissions in the base year of 2013 results in PM2.5 changes that are above the threshold recommended by EPA.

In the second step, we need to consider additional information that places these findings in the broader context. In this case, the important factor is the 58 percent reduction in NOx emissions achieved from mobile sources between 2013 and 2024.

The modeling analysis shows that when these NOx reductions are taken into consideration, in 2024, PM2.5

changes are below the EPA sensitivity threshold. What this means is that large NOx reductions remain the most effective strategy for attainment.

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AIR POLLUTION SPECIALIST CARR: This significance analysis is supported by data gathered in past research efforts. This slide mentions a few specific findings from past research projects; for instance, that field study measurements indicate ammonia is in excess on high PM2.5 days in the Valley. This is illustrated in the graphs at right which show excess ammonia in the Valley measured by aircraft during two flights as part of the 2013 DISCOVER-AQ study.

It's also important to note that research has found that ammonia concentrations in the San Joaquin Valley and in the South Coast Air Basin have increased. This further confirms that NOx reductions are the most effective path to reducing PM.

Nevertheless, because ammonia is an eye and respiratory irritant at low concentrations, staff believes it is important to continue to look for opportunities to reduce ammonia.

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AIR POLLUTION SPECIALIST CARR: Fortunately, there are some actions in place now that provide ammonia

co-benefits. The District has several rules in place, the regulatory purpose of which is to limit fugitive dust and VOC emissions from dairies and other livestock operations, but which can also serve to control ammonia emissions from those sources. For instance, the items on the right side of the table are a few of the emission reduction measures available for dairy owners and operators to select from that have the potential to provide ammonia reduction benefits.

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AIR POLLUTION SPECIALIST CARR: Looking forward, since methane, a climate pollutant, and ammonia are often emitted from the same sources, this means effective methane mitigation strategies also have the potential to deliver reductions in ammonia.

This pie chart shows sources of methane statewide, and we can see that many are the same as the ammonia sources we saw in the previous pie chart. Dairies in particular stand out as a substantial sources of both gases, here accounting for 45 percent of methane emissions.

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AIR POLLUTION SPECIALIST CARR: With this in mind, and efforts and investments underway to address

methane, one of the critical information gaps we need to close is to improve our understanding of the emissions of ammonia and the potential effectiveness for controlled strategies to reduce both ammonia and methane at the same time.

Listed here are a number of new studies attempting to do this. For example, CARB is developing a mobile measurement platform with advanced instruments for analyzing ammonia, pictured at right. This effort will generate large data sets for the San Joaquin Valley and South Coast Air Basin that will be used to characterize sources of ammonia emissions.

Studies are underway to further understand the dynamics of ammonia in complex urban environments that may not have direct sources of ammonia nearby, and assess the State's existing network of ambient monitoring stations for possible expansion to include ammonia measurement capabilities.

In addition, ongoing efforts to identify methane sources in California using remote sensing technology will help map out co-located methane and ammonia sources.

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AIR POLLUTION SPECIALIST CARR: Looking directly into controlling emissions of both methane and ammonia is three-year project focused on the Valley to explore how

various dairy manure management practices impact methane and co-emitted air pollutants, including ammonia.

The first half of the project will quantify baseline emissions of methane and ammonia at various dairy facilities, while the second half will characterize emissions after the dairies implement alternative manure management practices.

Expected deliverables include a comprehensive report with guidelines for alternative manure management practices that have air emissions advantages as well as some conclusions about how changes in dairy manure management practices affect emissions.

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AIR POLLUTION SPECIALIST CARR: Finally, integrated planning that comprehensively considers methane and ammonia emissions together is essential to meeting the State's climate and air quality goals. The efforts of the Dairy and Livestock Working Group to evaluate methane and ammonia issues, CARB's ongoing research, and monies appropriated for research and deployment of alternative dairy practices and help ensure that strategies being pursued reduce both pollutants. Additionally, successful implementation of the short-lived climate pollutant reduction strategy has the strong potential to yield both climate and air quality co-benefits.

This concludes my presentation. And now we would be happy to entertain any questions you may have.

CHAIR NICHOLS: We have four people who have signed up to testify on this item. So why don't we hear from them first.

Beginning with Brent Newell.

MR. NEWELL: Good morning, members of the Board, Madam Chair. Thank you.

This is a very interesting topic, and I think one that raises a really important principle, a law that I think we all could agree it's a law of physics that matters, neither created nor destroyed. And it's an important principle to consider when looking at changes in processes at dairies. That is, if the biological process for handling manure changes through anaerobic digestion, what happens to the nitrogen as a result, the nitrogen in that process in the pathway as it goes from the cow out to the field?

And as the presentation alluded, you know, changes in methane reduction strategies can have an effect on nitrogen emissions from the dairy process. Important: Nitrogen-based emissions are nitrous oxide, which is a very powerful greenhouse gas, and ammonia.

And a letter that went out to the Board last night, which I hope some of you had the opportunity to

read, raises this important issue, and also flagged how this methane mitigation strategy that the Board is employing in other contexts can also affect air quality through increased emissions of NOx and ammonia.

A study attached to the letter is some research from Wisconsin that looked at a dairy with an anaerobic digester and compared it to a dairy without an anaerobic digester. And there was a very substantial difference in ammonia emissions; that is, a very large increase of the dairy with a digester compared with a dairy without a digester - 81 percent.

So that amount of nitrogen being released in the atmosphere as a result of the methane reduction strategy is very important for this Board to consider at its overall policy and its consideration of this PM SIP itself; because if you start putting anaerobic digesters on dairies all through the Valley, you're going to result -- you're going to cause a lot of NOx emissions increases and ammonia. And how that affects the ambient air is important for you to consider.

It's also very important for nearby residents, because if you're increasing ammonia from dairy processes, that's a toxic gas. And it's already pretty awful to live near a dairy facility. And to have that toxic gas increase as an unintended consequence of your climate

strategies, that's not a good thing either. There are ways to avoid the liquefaction of manure so that you don't need anaerobic digesters. So that is an alternative manure manage in practice. It's being investigated and being deployed. It's part of the Senate Bill 1383 process.

So I hope that you as a board think holistically and view dairies as a very complex biological process that results in significant air pollution. It's the number one volatile organic compound source in the Valley, it's the number one ammonia source in the Valley, and it's the number one methane source in the Valley.

So thank you for putting this item on the agenda. Thank you for looking into this issue and treating it seriously.

CHAIR NICHOLS: Thank you

MR. NEWELL: Do you have any questions?

CHAIR NICHOLS: Genevieve Gale.

MR. NEWELL: Thank you.

MS. GALE: Hello, Board members. This is Genevieve Gale, Central Valley Air Quality Coalition. I wanted to thank the Board for asking for this to be on the agenda and staff for following through and helping facilitate this conversation. I think it's really important to have the technical conversations and the data

that underlies our assumptions brought to light and brought up for public discussion. So I really appreciate this discussion.

And there's two points I'd like to make. The first one is only tangentially it related to this Board. But it is a comparison of the measures the Valley Air District has committed to looking into with the PM2.5 plan, comparing that to what a 30 percent reduction in ammonia would look like.

And while it doesn't reach the EPA recommended threshold, a 30 percent reduction in ammonia would garner five times the benefit than all of the new conservation management practices that the district is committing to. It's also 16 times greater benefit than electrifying the agricultural engines, 26 times the benefit of installing low NOx controls on boilers, is 180 times more effective of reducing PM than putting low NOx controls on flares.

And so while I concur that all of these measures I just noted are really important and we need to move forward with them, they are small improvements compared to what you would get with a 30 percent reduction in ammonia. And as we saw with the pie chart, you could get 10 from dairies, 10 percent from feedlots, 10 percent from feed -- tests from fertilizers, and we could perhaps make a pretty good benefit in Bakersfield.

Obviously this is only tangentially related to the Board because it is a the district -- the Valley Air District that would have to put some regulations on these feedlots; and, you know, it's the Valley Air District who's going to want to accelerate attainment.

But my second point is having to do with the connection between climate policies and air quality; and I really appreciate this conversation and starting the conversation on what those impacts could be, because I feel like those conversations have not been brought to light. And as Brent mentioned, there was research coming from the USDA and the University of Wisconsin that showed that you may get a 300 percent reduction in methane, but that could cause a 330 percent increase in NOx and a 81 percent increase in ammonia.

So obviously there's more research that needs to happen to provide a more comprehensive evaluation of all of these practices. And hopefully we can all move forward together and ensure that we're not having air quality impacts when we're pursuing climate policies, because obviously both need to move forward.

So thank you again for opening this up for discussion. I appreciate the time.

CHAIR NICHOLS: Thank you.

MR. ROSE: Good morning. I'd like to thank the

Board for this opportunity to comment. My name is Mark Rose. I'm the Sierra Nevada field representative for the National Parks Conservation Association. I also live and work in Fresno.

I'm commenting today because Yosemite, Sequoia, and Kings Canyon National Parks are sincerely impacted by particulate pollution emanating from the Central Valley. PM2.5 is a major health concern for park goers and park staff.

Additionally, fine particulates are a predominant source of haze which contributes significantly to diminished views and visibility within our parks. Just for reference:

In Yosemite, under natural conditions average visibility would be around 162 miles. Currently it's around 103.

It's even worse in Sequoia-Kings Canyon. Under natural conditions visibility would be around 149 miles. Currently it's 58.

The District has said that it's left no stones unturned when it comes to the sources of PM2.5. But the current proposal does not control ammonia emissions from sources like dairy farms, CAFOs and fertilizers. Ammonia, as the presentation said, is a key ingredient in the formation of ammonium nitrate and accounts for roughly

around 50 percent of Valley PM pollution.

We urge CARB and the District to work together to regulate, using common-source methods, the sources of ammonia. Even if the impact of ammonia emissions is not significant, as the District's concluded, it's still greater than other sources that they're posing to control, and it's an important piece in helping the District meet their annual and 24-hour PM2.5 standards and avoiding an unnecessary five-year delay.

We would also like to see more workshops and opportunities for public comment on the modeling for ammonia emissions and other sources before the rule is put out.

Finally, I wanted to highlight some of the indirect impacts ammonia and other gases can have on the Sierra forest ecosystem and its national parks.

There's a lot of research out there that shows that in the southern Sierra Nevadas gases like ammonia but also ozone and NOx is found in high enough concentrations can be toxic to plants and trees just like they're toxic to humans.

Ammonia is also an increasing source of harmful excess nitrogen deposition in the Sierras.

Put together, this research concludes that these air pollution impacts could significantly contribute to

factors like tree mortality, which is an going crisis in the Sierras.

In turn, this ongoing tree mortality issue has been leading to massive forest fire events which contribute to -- directly to producing large amounts of PM2.5 in one event.

Thank you very much.

CHAIR NICHOLS: Thank you.

MR. MAGAVERN: Good morning. Bill Magavern with the Coalition for Clean Air. And I thank you for the attention you're devoting to this issue.

As you know, the particulate matter problem in the San Joaquin Valley is the worst in the entire country. And fine particulate matter causes health disease, lung disease, and premature death. And you've heard that CARB and the District are making progress on the PM2.5 plan, and we're somewhat optimistic about that. I think we've come a long way since last fall when you told the District to come back with a better plan.

But we do see a need to do more when it comes to ammonia, because of its contribution to PM2.5, because the fact that it is a toxic gas, an eye and respiratory irritant. And I just learned what we heard about its effect on tree mortality in the Sierra Nevada.

And I want to strongly second Genevieve's and

Brent's comments that as we are going about the very important task of reducing methane emissions, that we choose measures that are also reducing ammonia, and we make sure that we're not in any way increasing ammonia or NOx through those measures.

Thank you.

CHAIR NICHOLS: Thank you.

That concludes the list of witnesses who had signed up.

I think it's important to really underscore that we spent decades studying the atmosphere of the South Coast Air Basin and dealing with unintended consequences of early decisions to approach ozone, of using hydrocarbons or VOCs as the primary tool; and then later had to catch up in a massive way dealing with NOx. So I don't think there's any need to remind this Board of the importance of understanding what you're dealing with as you embark upon a control strategy.

We've also spent, I'm aware of at least since I've been here, many hours in conversations with U.S. EPA about what actually is the controlling set of emissions and what are the strategies that are most likely to achieve overall compliance in the San Joaquin Valley.

So I don't want this to be seen as a research study that's sort of being dropped into the middle of a

vacuum here. It's hopefully an addition to a very robust set of studies that have been done in the past and will continue to be done.

But the interest in ammonia I think is very timely because of the fact that there are now sources of larger amounts of ammonia and because, as people have already said, it's not only toxic; it's also just plain irritating, as anybody who's ever worked with ammonia or near ammonia knows. It's not something you really want to have, you know, in your neighborhood or on your block.

So I think it is important that we proceed pretty expeditiously in this area and with some sensitivity to the -- to the concerns of people in the communities about changes that they experience in their air quality as time is going on.

I -- I guess my only other comment on this - and others may wish to add - is really just a question whether all of the research that we're pursuing is adequate or whether there's other types of studies that would be also useful to be addressing in this context.

And I don't know if anybody wants to comment on that; but knowing of the Board's interest in this area, it would -- might be -- provoke some research proposals from --

(Laughter.)

CHAIR NICHOLS: -- our friends in the academic community or elsewhere.

Yes, Dr. Sherriffs. You were pointing to somebody or --

BOARD MEMBER SHERRIFFS: No, no. I just -- I don't know if staff -- I'd like to hear staff's response.

CHAIR NICHOLS: No one seems to be jumping to a --

BOARD MEMBER SHERRIFFS: I would agree --

CHAIR NICHOLS: -- respond to my comment here.

BOARD MEMBER SHERRIFFS: This highlights everything is hitched together. And sometimes it's lucky. We work on one thing and it helps with other things. And this is an example of it's hitched to other things. And sometimes it's doing exactly the opposite of what we want it to do in other things that we worry about.

I think the discussion also highlights the importance of local effects. And I look at the -- you know, you want to go with the one that's in the least, because that's going to drive the reaction.

Well, what about the local effects, you know? I don't think ammonia -- I know driving down 99 south of Kingsburg, ammonia is not equally distributed throughout the Valley. So, in fact, are controls in -- what's the effect of having controls in one area versus another

potentially? Because that model is looking at the overall, but there are clearly local differences and that may be very important and we are for good reason focusing more on local impacts and how that can help us achieve the more healthful standards we're looking for. So...

DEPUTY EXECUTIVE OFFICER KARPEROS: Chair Nichols, if I can respond both to your question.

We actually very much appreciate Mr. Newell bringing forward the study that he shared with you last night. As he said, it's from a dairy in Wisconsin. So from a research perspective, the first thing we are doing -- we became aware of the study earlier this week as well -- is to ask ourselves the question, what else do we need to know or what do we need to know in more detail about this study and how it can inform the dairy practices that occur here in California.

So that obviously is number one as we look at that.

The efforts are underway. There is a research subcommittee as part of the implementation of 1383 and is mapping out some of the additional leads in terms of research. And the co-benefits or potential co-benefits or, as suggested in this research paper, with a potential co-disbenefits of some of these actions is one of the things that we'll be looking at as part of that.

To the point of these actions increasing criteria pollution within the basin, a short comment on that.

Our absolute preference in terms of looking at dairy digesters is that the methane produced is injected into the pipelines so that it can be used for beneficial purpose for displacing transportation fuel, in particular diesel.

So through that pathway you're actually getting a criteria benefit from the generation of the methane from the dairies.

And it also provides certainly a monetary benefit both to the dairies and underpinning the LCFS program.

But always through that process, before you inject the methane into the pipeline, there has to be a clean-up process. So you're having an opportunity to essentially scrub -- potentially scrub out the ammonia that would be generated. And that is something that we need to be looking forward -- looking as to how to implement those activities as we look at dairy digesters.

And lastly, in terms of a criteria action, by injecting into the pipeline, you're avoiding the combustion on site and the immediate generation of the NOx emissions which we really are working of course hard to reduce in the San Joaquin Valley.

CHAIR NICHOLS: So the point is that they're --

not all digester projects are created equal, that there are projects that involve combustion and that are -- would not be the direction we would like to see things going, yeah.

Yes. Dr. Balmes.

BOARD MEMBER BALMES: Well, I just want to thank both staff for the presentation about ammonia generation in the Valley, and for the four witnesses who provided testimony.

I think it was -- I just want to highlight the point that Dr. Sherriffs and the witnesses have already made about it's tricky in terms of unintended consequences of regulation. I have doctoral students; that's what their dissertations are about, the unintended consequences of regulation -- environmental regulation.

So I always talk about how we look -- try to deal with our -- the health effects of criteria pollutants at the same time we're trying to deal with greenhouse gas reduction. And, you know, as it has been pointed out, this is a sticky wicket we have to be careful about.

But I appreciate the dialogue.

CHAIR NICHOLS: Well, there's been a request to extend the dialogue just briefly. Brent Newell wants to come back to address a point that he didn't I guess get to cover in his original testimony. So considering this is

an informal proceeding, I think we can give him a few more minutes here.

MR. NEWELL: Thank you, Madam Chair.

I just wanted to briefly respond to point Mr. Karperos made about the scrubbing process that goes through with anaerobic digestion. The gas -- the raw biogas comes out and it's captured. The scrubbing process takes out hydrogen sulfide, which is another important toxic gas that we ought to be concerned about.

The process of ammonia release happens after the manure goes through the digester and is then in a -- it's called digestate. So it's this stuff that's been digested, it's out there. It still has 100 percent of the nitrogen that originally came out of the cow.

So what happens after digestion is the important phase of nitrogen release; because, you know, you've got all the nitrogen still in there. What happens to it? Does it go on the field, does it go up into the air, and what biological process manipulates that nitrogen release?

So thank you.

CHAIR NICHOLS: Okay. Thank you for that clarification.

All right. There's -- yes, and down at the end here, Mr. Eisenhut.

BOARD MEMBER EISENHUT: Can we have an agreement

on when we might hear back on this topic?

DEPUTY EXECUTIVE OFFICER KARPEROS: So we will be bringing the Valley PM2.5 PM Plan to you next -- first quarter of next year. That would also be a timely place because of the work of the dairy subgroup under 1383 to merge those two, and we can add that to the topic.

We're expecting to bring the PM2.5 plan to you in March.

BOARD MEMBER EISENHUT: Okay.

CHAIR NICHOLS: Yes. Ms. Takvorian.

BOARD MEMBER TAKVORIAN: Yeah, I just had a question.

I appreciate the staff's information and the witnesses'. This is a learning curve for me, so I appreciate that.

And one of my questions has to do with the investment of GGRF funds in the dairy digesters and what the relationship between that investment and the research that you're doing now and, you know, the discovery that we are having these unintended consequences and how the allocation of those funds might be impacted.

DEPUTY EXECUTIVE OFFICER CHANG: So there are projects that are funded under GGRF that are funding digester projects. There are also -- be also funding that CDFA's administering to look at alternative manure

management projects. As Brent mentioned, there are some possibilities that they're looking at, and they are funding some of those as well.

As Mr. Karperos mentioned, we first learned of this study earlier this week, and we are in the process of taking a look at this. Obviously, as we learn more about it, that will impact how we move forward on our expenditure of funds.

BOARD MEMBER TAKVORIAN: So when would the opportunity be to -- for the Board to actually look at that to make another determination if that were appropriate?

DEPUTY EXECUTIVE OFFICER CHANG: Well, the appropriations are -- you know, they're legislative appropriations, and I would suggest that perhaps on the same timeline with looking at the PM2.5 plan when we come back to the Board and having the subgroups of the 1383 workgroup have an opportunity to discuss and participate. But that probably makes the most sense.

BOARD MEMBER TAKVORIAN: Okay.

CHAIR NICHOLS: Excuse me. Any other Board member comments?

Questions?

All right. If not, thank you for this important update. And we'll be hearing more on this topic at least

within the next few months.

So thank you.

Are there any public commenters?

BOARD CLERK McREYNOLDS: (Shakes head.)

CHAIR NICHOLS: No one has asked to address the Board on any general topics.

So if there is no further business before the Board, I think we can be adjourned.

Happy Thanksgiving to all. Thank you.

(Thereupon the Air Resources Board meeting adjourned at 12:00 p.m)

C E R T I F I C A T E OF R E P O R T E R

I, JAMES F. PETERS, a Certified Shorthand Reporter of the State of California, do hereby certify:

That I am a disinterested person herein; that the foregoing California Air Resources Board meeting was reported in shorthand by me, James F. Peters, a Certified Shorthand Reporter of the State of California, and was thereafter transcribed, under my direction, by computer-assisted transcription;

I further certify that I am not of counsel or attorney for any of the parties to said meeting nor in any way interested in the outcome of said meeting.

IN WITNESS WHEREOF, I have hereunto set my hand this 3rd day of December, 2017.

JAMES F. PETERS, CSR
Certified Shorthand Reporter
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