

1 different transit agencies depending on the vehicles
2 needed to be purchased.

3 Next slide, please.

4 --o0o--

5 MATTHEW JEFFERS: We also conducted a macro
6 economic assessment of the ZEB deployments, building on
7 those initial inputs for the previous model. This was
8 focused more on looking at the economic benefits of the
9 ZEB transition to the entire State economy here in
10 California. And for this model, we used a framework
11 called the IMPLAN Model to estimate the direct, indirect,
12 and induced economic activity in the State.

13 Next slide, please.

14 --o0o--

15 MATTHEW JEFFERS: And once again, just to give a
16 little more information about that modeling framework,
17 this is an accounting system in order to describe the
18 structure of the economy -- the State economy as a network
19 of sectors. The image in the top right helps illustrate
20 that there are direct effects, there are indirect effects,
21 and then induced effects from a particular activity, such
22 as the purchase of zero-emission buses. And this modeling
23 framework was used to estimate those effects on jobs, in
24 terms of total number, the types of jobs, personal income,
25 gross regional product, taxes, as well as the broader

1 industry output. We looked at both the temporary effects
2 and the permanent effects.

3 Next slide, please.

4 --o0o--

5 MATTHEW JEFFERS: Part of our comprehensive
6 review also included a quantitative and qualitative look
7 at the impact of the COVID-19 pandemic and what that did
8 for -- how that affected the ZEB deployment plans for
9 transit agencies. This was done with a -- through a
10 combination of literature review, and data analysis, and
11 interviews with transit agencies to find out how it was
12 affecting their specific plans. As we know, the pandemic
13 had a very dramatic impact on transit ridership and their
14 operations, which heavily impacted the revenue generation,
15 and ultimately impacted many transit agencies' transition
16 plans towards zero-emission buses.

17 Next slide, please.

18 --o0o--

19 MATTHEW JEFFERS: And finally, we had an outreach
20 effort in order to solicit feedback during the course of
21 this comprehensive review, in order to inform up front and
22 also validate our work throughout the process. NREL and
23 UC Berkeley also worked on -- on this aspect very closely
24 and took a multi-pronged approach, which included targeted
25 interviews with a wide variety of key stakeholders in the

1 zero-emission bus industry, a number of briefings with the
2 California Transit Association to keep them updated on our
3 progress and to ask for input, and finally a public
4 comment period and series of reviews of our draft
5 comprehensive review report. This was all in the aim of
6 ensuring that all the stakeholder perspectives and voices
7 were well represented in our findings.

8 Next slide, please.

9 --o0o--

10 MATTHEW JEFFERS: And now I'd like to pass it
11 back to my colleague Ken -- Ken Kelly to provide a brief
12 summary of our key findings.

13 --o0o--

14 KENNETH KELLY: Thanks, Matt.

15 Based on the information that Matt outlined and
16 the methodology that Matt outlined, our takeaways from the
17 comprehensive review at this point for standard buses
18 collected and evaluated under this comprehensive review is
19 that the California transit industry appears to be well
20 poised to proceed with the 2023 requirement of 25 percent
21 of new bus purchases being zero-emission buses for large
22 transit agencies.

23 This -- this statement is supported by the
24 information gathered in the comprehensive review and in
25 the historical progress and knowledge gained by the

1 California transit industry. And it's further supported
2 by large transit agencies' zero-emission bus rollout
3 plans, which include up to 8,000 vehicles by 2040. So in
4 the next 20 years, 8,000 zero-emission vehicles are
5 planned in the rollout plans.

6 Also, momentum developed from over a decade of
7 zero-emission bus demonstrations and deployment. So Matt,
8 and the NREL team, and many, many people in California
9 have been involved in this -- this evolution of
10 zero-emission bus technology, from the early proof of
11 concept that were, you know, developed by the H -- by --
12 working together with the agencies and the bus OEMs, to
13 early demos where getting buses out there, testing them
14 out, figuring out what the requirements are, how they
15 performed, doing unbiased evaluations, collecting data,
16 getting the vehicles in operation, in revenue service, and
17 then commercial market expansion, which is where we are
18 today. So we see a wide number of vehicles being offered
19 and growing availability of those vehicles.

20 Progress made since the 2018 adoption of the ICT
21 Regulation, which I'll cover on another -- on the next
22 slide. And then successful partnerships and
23 collaborations of the California transit agencies, vehicle
24 manufacturers, charging, and fueling equipment suppliers,
25 utilities, and others all working together to figure out

1 what are the key barriers, challenges, and what's it going
2 to take to make this a success.

3 Next slide.

4 --o0o--

5 KENNETH KELLY: So I mentioned significant
6 progress made since the 2018 adoption of the ICT
7 Regulation. And this is covered in detail in the report
8 that has been made available to the Board. In particular,
9 each one of these eight or so bullet points, there's a
10 paragraph in the executive summary that describes these in
11 more detail, but I'll just kind of run through them fairly
12 quickly today in the interests of time.

13 So one of the elements is an increase -- we see
14 an increase in the number of buses tested at the Altoona
15 testing facility, which is a standard national test
16 protocol to approve bus's performance and evaluate the
17 performance, efficiency, reliability of those buses in
18 using standard protocols, and to develop test reports for
19 each bus that's being tested at Altoona. So we've seen
20 over the -- over the first -- I'm trying to remember, it's
21 like 15 years or so, approximately 13 reports have been
22 generated, test reports, from Altoona. Just in the last
23 four years or three years, 15 new test reports have been
24 generated on zero-emission buses.

25 So you're seeing expansion of buses that are

1 being tested at Altoona. We're also seeing, as we
2 mentioned, increased number of commercially available
3 zero-emission buses, expansion of the vehicle
4 manufacturers, the number of manufactures that are
5 often -- offering zero-emission, both battery electric and
6 fuel cell, buses, as well as each one of them providing
7 different models to meet the needs of the trans -- their
8 clients, their transit agency customers.

9 Enhanced policy in the state of California, and
10 increased legislation supporting the zero-emission
11 deployment has been critical. And then increased amount
12 of State funding, also federal funding we're seeing come
13 to support the expansion of zero-emission buses,
14 deployments as well as infrastructure. And an increase in
15 the concept of group procurement opportunities to
16 consolidate procurements among smaller agencies to build
17 momentum. The economic impact and environmental justice
18 aspects have made progress understanding their impact --
19 significant impact on the economy and opportunities for
20 environmental justice.

21 And then increased electric charging and hydrogen
22 fueling standardization. So we're seeing both in the
23 industry and in the certification and agencies, such as
24 the Society of Automotive Engineers and the IEEE.
25 Consolidation, understanding development of what the --

1 what the standardized protocols for both charging
2 equipment and hydrogen fueling stations.

3 And then positive impacts, an increase
4 investments on the job market. So the job market is
5 multi-faceted for electric vehicles, including bus
6 equipment manufacturing coming to the state of California,
7 transit operations and maintenance capabilities, and
8 jobs -- good -- good jobs in those areas, utilities, and
9 people focused on being able to figure out, you know, what
10 the utility infrastructure needs to be to support the
11 electric vehicles. Electrical workers, jobs in that --
12 those areas growing. And energy engineering and site
13 construction jobs and availability.

14 All of these -- we see progress made in all of
15 these areas over the last -- since the adoption of 2018
16 ICT Regulation.

17 Next slide.

18 --o0o--

19 KENNETH KELLY: But the industry is not without
20 challenges. As we look to the future of a 100 percent
21 zero-emission bus transit fleet in the coming years, some
22 of the greatest challenges that we identified through our
23 experience and through our interaction with stakeholders
24 in the state of California is that we need to see
25 sustained progress from the vehicle, and equipment, and

1 infrastructure manufacturing base. You know, that's
2 needed to continue driving down costs, improving
3 reliability, and optimize performance. There has been
4 progress made in all of these areas since the ICT
5 Regulation has been passed, but we believe that there
6 needs to be continued progress in these key areas.

7 Expansion of charging and fueling infrastructure
8 is a fundamental need that will require a coordinated
9 effort and forward-looking planning by transit agencies,
10 utilities, developers, and regulatory interest.

11 Comprehensive and standardized training programs
12 are needed to continue to develop to provide a highly
13 skilled workforce for the state of California to the
14 sort -- support this industry as it grows and as it
15 evolves from transit to commercial vehicles like trucks
16 and buses. So having that is both an opportunity and a
17 challenge to develop that highly skilled workforce.

18 And then continued financial support for
19 purchasing, installing, and operating zero-emission
20 vehicles, and the necessary fueling and charging
21 equipment. Federal and State funding for zero-emission
22 buses and related charging and fueling infrastructure are
23 critical to achieving reasonable payback and up-front
24 costs.

25 So in our VICE model analysis that Matt

1 gathered a lot of information, and have been very
2 cooperative in providing the kind -- kinds of information
3 that we were needing to inform the State on the status of
4 this industry.

5 Thank you.

6 EXECUTIVE OFFICER CLIFF: Thank you, Mr. Kelly.

7 Now, let's invite the California Transit
8 Association and their members. Mr. Michael Pimentel is
9 Executive Director of the California --

10 BOARD MEMBER SPERLING: Dr. Cliff.

11 VICE CHAIR BERG: Just a second.

12 BOARD MEMBER SPERLING: Just one -- I just want
13 to ask one small question while they're still here. And
14 that is that study was only through 2023 and was not
15 forward-looking in terms of the resources of the agencies
16 and so on, is that correct?

17 KENNETH KELLY: The study is focused on the
18 readiness of the industry to meet the 2023 requirements.
19 Many of the issues and topics that are covered in the
20 report discuss like, you know, what's the current state of
21 the industry and how -- how -- you know, what are the
22 needs moving forward.

23 BOARD MEMBER SPERLING: Okay. Thank you.

24 VICE CHAIR BERG: Dr. Cliff, there seems to be
25 some appetite to ask just a couple of questions, please.

1 Dr. Balmes.

2 BOARD MEMBER BALMES: Thank you, Vice Chair. The
3 specific question I had was a -- could you be a little
4 more specific about how jobs would be created in low
5 income communities of color. I'm a little skeptical,
6 because these are skilled jobs and it would require major
7 investment to train these individuals. And I wanted to
8 know if you looked into that.

9 KENNETH KELLY: I'm going to ask Matt my
10 colleague.

11 BOARD MEMBER BALMES: Yeah, sure.

12 MATTHEW JEFFERS: Yeah, I'll just say briefly
13 that the IMPLAN modeling effort was -- the results of it
14 are separated into temporary effects and permanent effects
15 roughly break down into manufacturing and construction
16 related jobs to build up the capacity to manufacture more
17 zero-emission buses and then the permanent effects fall
18 more into the category of operating and maintaining these
19 vehicles into the future at the transit agencies and
20 elsewhere.

21 Unfortunately, I'm not the expert on the IMPLAN
22 modeling. We had a team back at NREL that does this
23 macroeconomic based modeling that perhaps follow up.
24 Yeah, I'm not prepared to answer that real specifically.

25 BOARD MEMBER BALMES: Okay. Thank you.

1 KENNETH KELLY: But we'll take that question as
2 an action item and get back to you to -- on the specifics
3 and how low-income and people of color job opportunities
4 were addressed in that -- in that analysis.

5 BOARD MEMBER BALMES: I would appreciate it.
6 Thank you.

7 VICE CHAIR BERG: So, Dr. Cliff, just to give the
8 Board a sense, all of the presenters now will be staying.
9 And so after our final presentation, we'll be able to
10 bounce back and forth and open up discussion, is that
11 correct?

12 EXECUTIVE OFFICER CLIFF: That is correct.

13 VICE CHAIR BERG: Okay. So with that, we'll
14 continue then with the final presentation. Thank you.

15 EXECUTIVE OFFICER CLIFF: Thank you.

16 Mr. Michael Pimentel is Executive Director at the
17 California Transit Association and has been instrumental
18 in working with us to craft the main structure of the ICT
19 Regulation. Michael, we appreciate all the collaboration
20 and look forward to hearing CTA comments and input from
21 transit agencies.

22 MICHAEL PIMENTEL: Well, thank you. Madam Vice
23 Chair and Board members, thank you for the opportunity to
24 be before you this morning to discuss the status of the
25 zero-emission transit bus deployment in California, the

1 findings of the Innovative Clean Transit Regulation
2 comprehensive review, as well as our recommendations for
3 further facilitating the transition to zero-emission
4 technologies, while ultimately limiting the financial and
5 operational impacts of the transition to California
6 transit agencies.

7 I want to note at the start that it's been a
8 pleasure to work with CARB staff and NREL on development
9 of this comprehensive review throughout 2021 and 2022.
10 And we are excited for the opportunity to once again work
11 with Steve Cliff in his new role as Executive Officer of
12 this agency.

13 I'll just note that he's a wonderful pick to
14 oversee this organization. We've had nothing but strong
15 partnership with him throughout the years. We know that
16 that will continue moving forward.

17 And so as Mr. Cliff noted, I am Michael Pimentel
18 Executive Director of the California Transit Association.
19 And in this joint presentation that's presented to you on
20 behalf of California's transit industry and as reflected
21 on the next slide --

22 --o0o--

23 MICHAEL PIMENTEL: -- I'll be joined by Doran
24 Barnes, Chair of the Association's Zero-Emission Vehicle
25 task force and CEO of Foothill Transit, Felicia Williams,

1 Board member for Foothill Transit, and Michael Hursh,
2 General Manager and CEO of the Alameda Contra Costa
3 Transit District.

4 I will function as your MC for this joint
5 presentation, which begins with background presented by me
6 on my association and role we play for California's
7 transit industry generally and with regards to this
8 regulation specifically.

9 Doran will then discuss the actions we've taken
10 as an association following the adoption of the ICT
11 Regulation to support our industry in deploying
12 zero-emission buses, and to deliver on the goals of
13 converting all transit buses in California to
14 zero-emission technologies by 2040.

15 Felicia Williams and Michael Hursh will then
16 follow and will speak to the status of the transition to
17 zero-emission buses at their respective agencies and the
18 challenges that lie before them. It's worth noting that
19 Foothill Transit and AC Transit are amongst the earliest
20 adopters of zero-emission buses having respectively
21 deployed battery electric and hydrogen fuel cell buses in
22 their pre-commercial phases.

23 Today, both agencies are national leaders in
24 advancing these technologies, not just for the transit
25 industry, but for the medium- and heavy-duty sector as a

1 the transit industry on this critical transition.

2 Our dominant function as an association is to
3 affect State and federal policy and funding sources
4 impacting public transit. And you'll hear a bit more
5 about that in a moment from Mr. Barnes, but we also
6 facilitate information exchange within the industry and
7 oversee a robust program of industry education on topics
8 including -- I should say increasingly including this
9 focus on zero-emission technologies.

10 Next slide, please.

11 --o0o--

12 MICHAEL PIMENTEL: Now, from 2015 to 2018, the
13 Association represented the transit industry in the
14 development of the ICT Regulation, participating in
15 working group meetings, cost modeling discussions,
16 engaging CARB program and executive staff on the
17 regulatory concepts and alternatives, and then ultimately
18 negotiating the final provisions of the regulation, which
19 did include the inclusion from the Board resolution of the
20 comprehensive review.

21 And while at times our pre-adoption positioning
22 as an association was skeptical of the regulation, we have
23 now become a leading advocate at both the State and
24 federal level in ideating, pursuing, and securing
25 legislation and funding sources to make this transition a

1 reality. And here, I do want to acknowledge that at the
2 hearing to adopt the regulation, then CARB Board Chair
3 Mary Nichols had challenged my predecessor to lean in to
4 this transition as an industry. And here, I'm going to
5 acknowledge we have leaned in.

6 And so next slide, please.

7 --o0o--

8 MICHAEL PIMENTEL: Now, one of the ways in which
9 we have done exactly that is by establishing a
10 zero-emission vehicle task force. And this task force,
11 which is now at its second post-adoption term provides me
12 and my staff and our industry with technical guidance to
13 inform my association's ongoing educational programming
14 related to this transition, help steer our engagement on
15 policy matters related to the transition, and finally
16 helps us track and respond to compliance and
17 administrative challenges as they arise.

18 Now, the roster for the current committee is on
19 the next slide. And I do want to dwell on this roster for
20 just a moment. Again, it's on the next slide --

21 --o0o--

22 MICHAEL PIMENTEL: -- because I think that it
23 does capture well the level of expertise that we have
24 cultivated and directed as an association to supporting
25 this transition, and ultimately compliance with ICT

1 Regulation. Now, this task force has met roughly monthly
2 since being established in early 2019 and has guided our
3 ICT-focused advocacy endeavors and educational offerings.
4 And to highlight some of the work that this task force has
5 overseen, I'd now like to invite to the podium Task Force
6 Chair and again CEO of Foothill Transit Doran Barnes.

7 Next slide, please.

8 --o0o--

9 DORAN BARNES: Well, good morning. It's a
10 pleasure to be with you. I have the honor of serving as
11 the Chair of Zero-Emission Vehicle Task Force. And I have
12 to think about that, because we actually changed it from
13 the Zero-Emission Bus Task Force to now include
14 locomotives, rail, and waterborne craft really
15 encompassing the work that we're trying to do as a public
16 transit association in this space.

17 Our work has really been focused on the capital
18 issues, the operating issues, the workforce development
19 issues. And unlike many industries, public
20 transportation, which is purely publicly funded, our
21 funding streams are such that a dollar is not necessarily
22 a dollar. There are some funding sources that can only be
23 used for capital, some that can only be used for
24 operating. For example, if we -- if a transit operator
25 receives a Low-No emission grant from the Federal Transit

1 provide the resources to be able to move all this forward.

2 Moving on to the next slide.

3 --o0o--

4 DORAN BARNES: We've done a -- again a number of
5 things that go even beyond that, supporting the master
6 agreement for zero-emission vehicle purchases, which
7 allows transit operators to buy vehicles more efficiently.
8 That's been key for us. Michael has been working very
9 directly with the California Energy Commission in advising
10 the statewide investment plan that again provides
11 resources. Working with our investor-owned utilities is
12 yet another lane that we've had to focus in on. And as
13 transit operators, understanding how to use electric power
14 as a fuel has been a completely new realm for us. It's
15 something we've never had to do before and it's not as
16 simple as buying a unit of fuel.

17 In the old days, a gallon of diesel was a gallon
18 of diesel. What you paid for it in the morning what you
19 paid for it in the afternoon was pretty much the same on
20 any given day. With electric power, we can see huge
21 adjustments based on time of day, based on demand. All of
22 that has been a big learning curve for us.

23 In terms of the work we've done internally, as
24 Michael indicated, the Transit Association is very much a
25 learning and sharing organization. That's one of the

1 data. If we have sort of two takeaways that we would want
2 here from our experience is, one, collaboration between
3 the various agencies that not only provide funding and do
4 regulations, but also the entities that cover our electric
5 energy sources in the future, our permitting for fuel
6 facilities, all of the various entities working together.
7 And then lastly, I can't say it enough is funding, funding
8 to be able to cost -- cover the capital, the operating,
9 and the facility as well.

10 So thank you so much. And with that, I will turn
11 it to Mike Hursh from AC Transit, who I believe is online.

12 Thank you.

13 --o0o--

14 MICHAEL HURSH: Good morning. Thank you so much.
15 I am Mike Hursh, General Manager, Chief Executive Officer
16 for AC Transit, Alameda-Contra Costa Transit.

17 Next slide, please.

18 --o0o--

19 MICHAEL HURSH: I'm also the Chair of the
20 zero-emission bus resource advocacy group which is a
21 nationwide group of transit agencies that are really
22 fighting for advancing zero-emission and meeting the
23 timelines to meet the 2040 rule in California and in
24 general in the United States. And a lot of the points in
25 my slides have already been made, so I will move fairly

1 can operate the bus on any route we need. The range is
2 the same day, night, hot or cold. And most importantly,
3 they fuel the same as the fueling cycle we are used to.
4 You can fully fuel a hydrogen fuel cell bus in 8 to 12
5 minutes, in line with our regular fueling island.

6 I want to really raise one of the red flags. It
7 was a huge wake-up call for us several weeks ago, which
8 has already been mentioned, for our battery buses when we
9 got the urgent demand to reduce energy demand. Had my
10 600-bus fleet been zero-emission battery buses, we would
11 not have made pull-out. I am very concerned in a
12 resiliency posture of if there's an earthquake, if there's
13 a massive grid-down situation, can we get the fleet out.
14 With hydrogen and diesel generator, I can run my fueling
15 station and keep my buses on the road.

16 Next slide, please.

17 --o0o--

18 MICHAEL HURSH: Again, I have battery electric.
19 We are fairly new in the battery side. Currently, five
20 buses, with more on order. What I would tell you is
21 this -- this comment I have made about the utility. And I
22 won't name the utility in Northern California. I think we
23 all know who it is, but it has been absolutely pulling
24 teeth to get the infrastructure connected, and really to
25 ensure that there's the scalability.

1 My board is grappling with do we go battery, do
2 we go hydrogen? We are currently on both paths. And the
3 downside of hydrogen is the cost of fuel and seeming
4 inability for it to ever come down to be a competitive
5 cost. And the difficulty the board struggles with on the
6 electric side is -- is the grid there and capital funding.

7 And I -- and I want to touch on that real quick.
8 It's not just fleet procurement. I have about a \$500
9 million, \$495 million annual budget. Our capital need for
10 our four bus divisions is \$2.1 billion. And this is not
11 negative. Air Resources Board and California have been
12 leaders in finding money, but the facility money is not
13 there at the fate -- at State or the federal level. We,
14 too, were zero in the Low-No. We are playing lottery when
15 it comes to funding both capital, fleet and facility.
16 Some years you get a grant. There is no dedicated
17 funding.

18 Next slide, please.

19 --o0o--

20 MICHAEL HURSH: This is really the money slide of
21 my presentation. We are doing what's called a 5 by 5
22 study. It is peer reviewed data by our partner Stanford
23 University. We are operating the same manufacturer
24 hydrogen, battery, and comparison to diesel and hybrid
25 buses. We have two manufacturers of -- of fuel cell.

1 We've kept our legacy fuel cell buses in there. And you
2 can see cost per mile on the upper right of this slide for
3 hydrogen is \$2.14, the battery bus is \$1.60, and the
4 diesel is \$1.72.

5 Now, when you apply the fuel standard credits,
6 the battery bus is \$0.57. Clearly the winner here. The
7 hydrogen \$1.42. The issue is since this presentation was
8 prepared, my hydrogen cost has gone from \$9 a diesel
9 gallon equivalent to \$11 a diesel gallon equivalent. We
10 need \$5 a diesel gallon equivalent to break even with what
11 we're paying today.

12 And that's where I really want to wrap-up and
13 touch about the pandemic. My ridership is 61 percent of
14 what it was pre-pandemic. That's about 110,000 riders of
15 what was originally 180,000. Our ridership patterns have
16 completely changed. We believe that hybrid work, or work
17 from home, work remote is here to say, at least two days a
18 week. That's a 40 percent reduction in ridership,
19 permanent we believe. My agency alone, again on \$495
20 million annual budget predicts a \$23 million deficit in 14
21 months, blooming to \$53 million years after that.

22 We're in a very, very real situation where we
23 will have to cut service exactly when we should be
24 expanding service, getting people out of automobiles.
25 Traffic as we know is worse than it was pre-pandemic.

1 ridership patterns are evolving. I encourage you to go to
2 ACTransit.org and look at our ZEB study. It's available
3 for everyone, and that's part of my position on the ZEBRA
4 group as well as with CTE -- CTA. We're making this data
5 available. You -- you heard the report from NREL today.
6 We're giving you real-world, side-by-side comparison, so
7 that's it's easy for various boards to make these agencies
8 on where to go with their -- with their ZEB transition.

9 Next slide, please.

10 --o0o--

11 MICHAEL HURSH: Last thing I want to touch on --
12 again, this is hydrogen costs over time. This -- since
13 this slide was published, we've gone up to \$11 per gallon.

14 Next slide, please.

15 --o0o--

16 MICHAEL HURSH: And that is the workforce
17 development. We're very proud of our ZEB University. We
18 have over 150 mechanics from my agency alone that need to
19 be retrained or trained into the zero-emission technology,
20 whether that be hydrogen or battery dominant bus. We also
21 train our operators on really what does it mean to be a
22 leader in this climate change remarkable opportunity we
23 have transitioning to zero emission.

24 Our intention is to open up our university for
25 workforce development training for our community, but also

1 for other transit agencies. Our number one issue to
2 restoring service, in addition to the economic challenge,
3 is finding candidates that want to come to work. We will
4 take someone with zero experience, as long as they have a
5 clean regular driving -- driver's license record. It's a
6 top wage of \$35 an hour, living wage union job. We will
7 also do the same. If you basic automotive mechanic
8 experience, we will put you through the training. And we
9 intend to -- to expand that, because we see that the
10 availability of trained technician, if you will mechanics,
11 are just not out there, and the high schools and community
12 colleges are not growing them any more.

13 Next slide, please.

14 --o0o--

15 MICHAEL HURSH: That's it. If you have time,
16 scan the QR code, it will take you to the reports that I
17 mentioned. Very proud to be here with you today. I'm
18 sorry I'm not in Sacramento. I appreciate your indulgence
19 for the virtual meeting. Really want to recognize Michael
20 Pimentel and CTA for really getting the transit industry
21 whipped into shape. We support 2023. The canary is
22 coughing. We need to work together the see where we go
23 from here.

24 Thank you very much.

25 MICHAEL PIMENTEL: We could go to the next slide,

1 I'm going to attempt to bring us home and talk more
2 specifically about where we go from here.

3 --o0o--

4 MICHAEL PIMENTEL: So you heard us talk about the
5 work that we've done to facilitate the transition and the
6 challenges that lie before us, and to restate the point
7 that Michael Hursh just made. As an industry, we believe
8 that we are ready for 2023. And largely that is a
9 reflection of the early action that was taken by the
10 industry to get out ahead of the purchase requirement to
11 deploy buses in large numbers and to generate credits
12 under the regulation that will allow them -- allow the
13 agencies to meet their 2023 compliance obligation. But
14 what we're now focused on is 2024 and beyond. And
15 certainly in the years -- the out-years you're going to
16 see an increase in the purchase requirements that are
17 going to apply to the transit agencies.

18 And here, we have offered a series
19 recommendations that have been developed by our
20 Zero-Emission Vehicle Task Force. There are six on the
21 screen. I'm going to focus in on three, because those are
22 the actions that we believe are most operative for CARB to
23 pursue and really do fall within your direct purview.

24 Now, the first one relates to CARB funding
25 sources and CARB policies that govern those funding

1 sources. Now, programs like HVIP were specifically
2 designed to incentivize early action. But as you heard
3 from the transit agencies as they spoke, and agency's
4 ability to have taken early action was highly dependent on
5 the luck in securing competitive funds. And so there are
6 agencies out in the state who have endeavored to secure
7 monies to have taken early action and just unfortunately
8 weren't lucky enough to have been granted those funds to
9 have taken that early action.

10 And I do want to offer one statistic that I think
11 also just underscores this point, both Doran and Mike made
12 reference to the most recent solicitation for federal
13 dollars in the Low-No Grant Program. There were a billion
14 dollars in requests from the state of California from
15 California transit agencies. Ultimately, \$200 million in
16 grant requests were funded. And so that demonstrates
17 again the huge demand in energy for this transition, but
18 also the criticality of funding to facilitate this
19 transition.

20 And so our request here is to simply allow
21 agencies to continue to access HVIP dollars, even after
22 the compliance requirements are imposed on them. In the
23 absence of that type of flexibility, we're actually going
24 to have a -- we're going to see a chilling effect on the
25 transition to these technologies, as agencies are staring

1 down more expensive vehicles, more compromised funding
2 sources due to the pandemic, are now charged with moving
3 forward with this transition, they may elect to instead
4 not purchase vehicles and therefore not have a compliance
5 obligation under this regulation.

6 That is, unfortunately for an environmental
7 perspective, the wrong decision to make. We want to find
8 ways to encourage these agencies to move into cleaner
9 vehicles. Again, HVIP will be a critical component of
10 that.

11 Now, the second recommendation we have relates to
12 our request that CARB establish implementation of working
13 group with your sister agencies, departments, boards, and
14 commissions. We note CEC, CPUC, GO-Biz. That may not be
15 a fully comprehensive list, but we think it's a good start
16 to begin to work through the barriers that we have
17 identified and to troubleshoot challenges as they arise.

18 Now here, I don't want to go into the minutia of
19 the challenges, the barriers, and ways in which all these
20 agencies, departments, boards, and commissions can be
21 commandeered to ultimately break past them. But we would
22 just argue that having this more frequent and tactical
23 conversations with the State will allow us make a more
24 thorough progress on this transition, and so again are
25 requesting the CARB establish this group. And we as an

1 association will love to be part to those conversations,
2 so we can elevate the barriers, elevate the challenges as
3 we see them and commit to supporting you all in breaking
4 past them.

5 And this final recommendation I'll touch on
6 relates to Low Carbon Fuel Standards Program. We
7 understand that the regulations for this program are going
8 to be under review by CARB in the short term. Here, it is
9 a minor request, and that is just to allow agencies to
10 track their electricity usage, and therefore their credit
11 generation at the meter. We have agencies today that have
12 meters that are siloed only to their electric charging
13 infrastructure.

14 Unfortunately, in their regulatory structure
15 today, agencies have to track electricity usage and
16 therefore credit generation at each of the chargers. That
17 may be a satisfactory position to be in in the early years
18 when you have very few chargers, very few depots and
19 divisions that have electric buses in them. As we reach
20 scale from an administrative standpoint, it's going to be
21 a nightmare for agencies to ultimately comply with that
22 type of structure. And we're trying to get ahead of what
23 we know is going to be an administrative nightmare moving
24 forward.

25 And so with all that said, items 4 through 6,

1 work the frankly CARB has been doing, we've seen it, we've
2 been party to the conversations to moving it forward.
3 Just want to encourage you to continue to do that great
4 work to bring funding resources home to the agencies, for
5 the vehicles, for the infrastructure, and then also to
6 continue to work with the CPUC on the collective --
7 commercial electric vehicle tariffs. You heard Mike Hursh
8 talk about some of the cost savings that they're realizing
9 for those battery electric buses relative to their
10 operations.

11 That can be the norm for the agencies.
12 Unfortunately, in just a few years, demand charges are
13 going to be reimposed on the agencies, and we may actually
14 see the economics of the battery electric buses become
15 less economic from an operational perspective than the
16 diesels and CNG counterparts. We do think that it's
17 important for the CARB board to intercept that potential
18 future, provide some guidance to CPUC about the
19 appropriateness, the righteousness of continuing to
20 maintain these beneficial tariff structures that advantage
21 this transition to zero-emission technologies.

22 And so with all this said, I -- I again want to
23 thank you for the opportunity to present to you all.
24 Doran, and I, and Mike are available to take questions as
25 we move forward, and again just appreciate the strong

1 partnership over these past few years.

2 EXECUTIVE OFFICER CLIFF: Thank you, Mr.
3 Pimentel. And thank you to CARB staff, our partner
4 agencies, NREL, and the transit agencies for your
5 presentation today. This concludes all the presentations
6 for this item.

7 VICE CHAIR BERG: Well, thank you very much, Dr.
8 Cliff. I think you set a record for the number of slides
9 right off the bat.

10 (Laughter)

11 VICE CHAIR BERG: And so we do have currently
12 three people signed up for public comments. And we would
13 like -- we have 73 in attendance. So if one -- if you
14 would like to sign up for public comment, if you could
15 please raise your hand or -- or push star nine now, that
16 would be helpful.

17 And do we have some in-person -- okay. Can I
18 just take a quick -- do we just need a five-minute stretch
19 break or shall we jump into public comment?

20 Plow through.

21 Okay. We know our people online they can stand
22 up and stretch. Please feel free too. And I'll call on
23 the Board Clerk to start the public comment. Thank you.

24 BOARD CLERK ESTABROOK: We do have one person
25 in-person and that is Sean Edgar.

1 SEAN EDGAR: Great. Good morning, Vice Chair
2 Berg and Board members. Sean Edgar with Clean Fleets.
3 Happy to be in front of you today. I captured from the
4 Innovative Clean Transit discussion, the very informative
5 federal and State budgets are tight is what I captured.
6 Cuts in service are possible when there's a crisis, I
7 captured that. And just to distinguish that ICT
8 experience as being reported to you in real-time, next
9 month the Board is going to be talking about Advanced
10 Clean Fleets. I'll spend a minute to talk about what
11 we've just learned and how we might think about applying
12 that to the discussion in the following months about
13 Advanced Clean Fleets.

14 There are three aspects of Advanced Clean Fleets.
15 And I think the three parties I guess that we could apply
16 what we just learned. The first we have public agency
17 fleets that are covered under the Advanced Clean Fleets
18 proposal, and they don't currently have a funding source,
19 like the ICT folks to deal with what ACF requirements
20 would be. And those are largely providers of essential
21 public service, sanitation districts, waste collection,
22 and disposal, as an example.

23 We have private fleets that also are still paying
24 for the last round of statewide truck and bus compliance
25 with the deadline at the end of this year. So some of

1 those folks, of course, are obviously concerned about ACF.

2 And -- and then we have a third category, which
3 is not in the provider of essential service category, but
4 is definitely in the realm of critical to society, which
5 is drayage trucks, which we found out from the supply
6 chain crisis that we have to be very concerned about how
7 freight and goods flow.

8 So I guess learning what we just discussed, I
9 guess I have the \$64,000 question, or I guess it would
10 probably be more appropriately a \$64 billion question,
11 because I think the scale of this electrification is in
12 that -- exceeds 64 billion. So if there's no dedicated
13 funding for the public agencies that you just heard from
14 in the transit space, and they're concerned about that, I
15 guess we've got to ask ourselves who would providers of
16 essential public service covered by ACF be in any better
17 position? That would be my first question. And then what
18 aspects of the ICT that we just learned about could we
19 perhaps borrow for the upcoming ACF discussion?

20 And just to touch on, we heard economics and
21 technology are actually going to guide how quick these
22 vehicles get to be rolled out. And we heard from Mr.
23 Hursh pulling teeth, that was one expression. I'm not
24 sure if a public transit agency could pull teeth any
25 better than a private refuse or recycling company or a

1 public agency. I'm not sure how that would work. We
2 heard about less economic. Mr. Pimentel said less
3 economic. That doesn't sound good to me. And I guess the
4 last thing is we heard potentials for reduction in service
5 or stopping service.

6 So I'll just reserve some comments for later, but
7 there are a lot of lessons that we've learned here that
8 will have to be part of the discussion with ACF that are
9 not covered in the staff report that was just released on
10 August the 31st.

11 Thank you.

12 BOARD CLERK GARCIA: And then we also have three
13 remote commenters that we'll hear from at this time.

14 That's Janet Dietzkamei, Carolina Martinez, and
15 Adrian Martinez.

16 So Janet, I have activated your microphone. You
17 can unmute and begin.

18 JANET DIETZKAMEI: Good morning, Vice Chair Berg,
19 Board members, and staff members, and today's presenters.

20 I am speaking for asthmatics regarding ridership.
21 My comments are pertaining to ridership. We are talking
22 about a program to clean air and to address greenhouse
23 gases. But those of us who are asthmatic, we will choose
24 a private vehicle over standing in air that is unsafe for
25 us to breathe waiting for public transit. There are days

1 when in the San Joaquin Valley, PM2.5 and ozone are too
2 high for us to breathe. Another point of ridership is --
3 so in other words, we have to wait till the air is clean.
4 Another point of ridership is the amount of time it takes
5 to wait for a bus and get to Point B from Point A is three
6 times what it would take to go in a private vehicle.

7 And that's another thing that needs to be
8 addressed as far as ridership goes, because one thing I
9 hear from people is I won't take a bus. It takes way too
10 long. City planning, we have a lot of suburban in the San
11 Joaquin Valley. We have land that is ready -- saved
12 for -- for commercial use, but there's nothing being built
13 on that land. The point of this land is for those of us
14 in suburban to keep us in our neighborhoods, so that we
15 will at least take public transit from Point A to Point B
16 within our neighborhood using the commercial buildings
17 that are built in our neighborhood.

18 And this is a new concept, we're trying to get
19 urban, where we have apartments over businesses, so that
20 we could keep people in their neighborhoods rather than
21 commuting as we do now, those of us who are using
22 public -- our own personal vehicles.

23 I am very impressed with the progress here. I
24 am -- I feel we are on the right road to clearing our
25 air. San Joaquin Valley is one of the worst in the United

1 States for PM 2.5. And my comments are on ridership and
2 how we can encourage ridership in at least Fresno City.

3 Thank you.

4 BOARD CLERK GARCIA: Thank you.

5 Next, we'll from Carolina. I have activated your
6 microphone. Please unmute and begin.

7 CAROLINA MARTINEZ: Good morning. I am Caroline
8 Martinez with the Environmental Health Coalition. We're
9 here to speak on the service needs improvements in our
10 mass transit system and the ICT implementation.

11 We support the recommendations for strategic
12 investment in transit to accelerate an urgent and no
13 longer optional transition to affordable, frequent,
14 zero-emission, mass public transit. We clearly know the
15 climate impacts, but there are also economic impacts. For
16 example, in San Diego, 70 percent of the jobs are now
17 reachable by transit. The good news is that we have
18 solutions. Mass public transit is one of the most
19 promising solutions for both the economic and climate
20 crisis.

21 In our communities, we've been working on a
22 campaign. It's called the 10 Transit Lifelines. And our
23 communities -- environmental justice communities in San
24 Diego have identified the acceleration of the electric bus
25 fleet transition to be completed in our region by 2030 as

1 a priority.

2 So first, I wanted to talk about the service
3 priorities. As Supervisor Vargas mentioned, the youth
4 opportunity pass is demonstrating a huge success in our
5 region. Twenty-five percent -- we are seeing a 25 percent
6 increase over -- overall on youth ridership in general and
7 countywide, and a 68 percent increase on Saturdays, 90
8 percent increase ridership on Sundays.

9 So we know that the cost is a -- it's a huge
10 need, and improvement, and opportunity. We also know that
11 frequency is freedom and is something that needs to be in
12 line with the affordability of the transit system. So we
13 want to elevate a need for both affordability and
14 frequency.

15 And then lastly, I want to talk about the bus
16 electrification transition. At this time, our local
17 agency, the MTS is running 12 electric buses, and we have
18 an 800-bus fleet. And so we're asking for support of the
19 acceleration of the transition, both for buses itself and
20 infrastructure. It is an -- it is an urgent, -- it is a
21 priority for our community. And -- and the agency does
22 require support, but we want to make sure that that
23 support is prioritized to deliver solutions to
24 disadvantaged communities first. So we're here to support
25 the staff recommendation for strategic investments in

1 transit with a priority in disadvantaged communities.

2 Thank you.

3 BOARD CLERK GARCIA: Thank you.

4 Next, we'll hear from Adrian Martinez and LaDonna
5 Williams.

6 So Adrian, I have unmuted -- or activated your
7 microphone. Please unmute and begin.

8 ADRIAN MARTINEZ: Hi. Good morning. My name is
9 Adrian Martinez. And I'm a Senior Attorney with
10 Earthjustice.

11 I just wanted to tune in today to congratulate
12 staff, congratulate the Board, and congratulate the
13 California Transit Association. I think it's pretty
14 remarkable. I was looking back at our notes from December
15 2018 when this item was passed, and there was a lot of
16 concern. But I think the comprehensive review that
17 occurred today shows that the regulation is really
18 working.

19 As an anecdote, this morning, I was walking up to
20 school with my daughter who's a seven year old and first
21 grader and we saw two electric buses. Without the
22 regulation that was passed in 2018, I don't think we would
23 have seen those electric buses. When I was talking to
24 daughter Caroline and saying what I was going to attend
25 and listen to this morning, and testify to, she said tell

1 them that the electric buses are working. So she wanted
2 to pass that information on. They seem to be working very
3 well.

4 This is -- this is huge. I think there's a lot
5 of environmental benefits. There's a lot of job benefits.
6 And I'm just very impressed that we are where we are right
7 now. I think it bodes well for future regulations that
8 when they're passed, there might be skeptics and concerns
9 raised from folks who would be subject to those
10 regulations. But I think what this shows is that
11 California is on the right path to pursuing a
12 zero-emission future. I hope this is -- you know, this
13 type of success occurs in all sorts of larger vehicles
14 like trucks, and off-road equipment, and other equipment
15 as we're approaching -- as we're pursuing a zero-emission
16 future. And I look forward to continual progress.

17 And then finally, I support the staff
18 recommendations in increasing transit. I think one of the
19 things that the CTA has done really well is try to gauge
20 support for electrification and other zero-emission
21 technologies for its fleet, all while trying to get more
22 support for expanding transit service.

23 This is really important and we love to continue
24 working with the Board and CTA to make sure that's a
25 reality.

1 Thank you.

2 BOARD CLERK GARCIA: Thank you.

3 LaDonna, I have activated your microphone.
4 Please unmute and begin.

5 LaDONNA WILLIAMS: Yes. Good morning. LaDonna
6 Williams, All Positives Possible.

7 I just wanted to say it was a lot of information
8 to take in this morning and trying to keep the thoughts
9 together. And hopefully in the -- in the future, when you
10 put on a presentations, maybe you could pause and allow
11 the community to comment on the presentations that are at
12 hand, as opposed to just taking in so much information and
13 trying to put it into something that makes sense.

14 But I also wanted to point to the fact that I'm
15 hoping what doesn't get lost in this process is the need
16 to actually put disadvantaged communities as the top
17 priority, particularly those in Black American
18 communities, because we have these continuing increasing
19 blocks and burdens that prevent them from being able to
20 take advantage of these opportunities. Case in point, I
21 believe it was Director -- or Board Member Balmes that
22 asked a question of -- and I apologize if I don't remember
23 the organization he was representing, but Michael
24 Pimmel[SIC] when me mentioned having these opportunities
25 for disadvantaged groups or communities, and when Board

1 Member Balmes questioned him further on it, he was unable
2 to provide any real answer to it.

3 And so again, that just, you know, raises our
4 concerns that our communities continue to be left behind.
5 It's an afterthought. It's a mention in these, you know,
6 voluminous presentations. But when it comes down to
7 implementation, we're lost in that process.

8 And also when -- I believe it was Michael Hursh
9 mentioned the workforce and the university. Absolutely
10 great ideas. However, again when we question what
11 percentage of Black folks are involved or able to take
12 advantage of those opportunities, we see how low those
13 numbers are, again because of systemic racism, being
14 targeted, driver license revocation and suspension, simply
15 because they're black. We have a lot of issues to be able
16 to discuss, which we know couldn't be covered in this
17 short period of time.

18 But we need to keep the disadvantaged,
19 particularly Black American communities issues in the
20 forefront as we move through these processes. And I would
21 like to see more clarity on the outreach funding to be
22 able to engage in these processes. I realize this is
23 transit, but this is also one of those subjects where you
24 really see the least involvement from Black Americans.
25 And so again, thank you for the opportunity to speak and

1 be part of these proceedings or hearings.

2 Thank you.

3 BOARD CLERK GARCIA: Thank you. And then we just
4 had one more hand go up. That's Todd Campbell. So Todd,
5 I have activated your microphone. Please unmute and
6 begin.

7 Todd, are you there?

8 It look like you've muted again. Let me --

9 TODD CAMPBELL: Am I unmuted?

10 BOARD CLERK GARCIA: Yep, there you go. We can
11 hear you.

12 TODD CAMPBELL: Oh, hi. Good morning. Sorry.
13 The button didn't come up. My name is Todd Campbell. I
14 represent Clean Energy as its Vice President of Public
15 Policy and Regulatory Affairs. And I wanted to thank
16 staff and all the transit agencies for providing -- as
17 well as the other agencies as well for providing some
18 great analysis.

19 I just wanted to emphasize what Michael Pimentel
20 mentioned as a concern, in that if we don't get this
21 right, this transition right, there could be a potential
22 chilling effect on a technology transition. And, you
23 know, we cannot afford to allow that to happen, given the
24 state of our air quality here in California. I think
25 what's really important to note is that the transit

1 agencies who are rightfully receiving preferences in
2 funding, collaboration, et cetera, are still
3 understandably struggling to make this transition.

4 And I think there's some very important lessons
5 here to also think about next month with the Advanced
6 Clean Fleet rule. The cost figures from the transit
7 agencies, what I like about them is they're not academic
8 projections. They are really costs for vehicles,
9 infrastructure, fuel, and they are going up, not down,
10 unless they're subsidized, in some cases, by the LCFS,
11 which rightfully they should be. I think the LCFS is a
12 great program, so good work there.

13 I also think that the redundancy concern it's a
14 rightfully clear concern for transit agencies that I think
15 also will be felt by businesses. The need to meet rollout
16 for a public agency or a private ins -- you know, a
17 company is very important. Budgets are also top of mind.
18 Running deficits that keep ballooning due to cost
19 ballooning increases is not sustainable. So we need to
20 think about how do we address those issues. Of course, we
21 haven't even addressed where the power mix come from. And
22 I think the near power shortage in the state earlier --
23 was it earlier this month, or a couple weeks ago, let's
24 just say, is of concern. We need to make sure that we
25 have resiliency.

1 And then, of course, what I think is going to be
2 very critical is for this agency to think about if we are
3 unable to make a full transition in the near term, how are
4 we reducing emissions in the near term? Are we requiring
5 the cleanest technologies that could support this
6 transition to zero?

7 And with that, I'd like to thank you for your
8 time, great presentations, and appreciate the opportunity
9 to speak.

10 BOARD CLERK GARCIA: Thank you. And that
11 concludes the commenters for this item.

12 VICE CHAIR BERG: Thank you so much.

13 Staff, I first want to turn to you to see if
14 there was any issues raised in the comments that you want
15 to address. That said, I do know that there's lots of
16 Board discussion and interaction.

17 EXECUTIVE OFFICER CLIFF: No, I think we're good.
18 We're looking forward to the discussion.

19 VICE CHAIR BERG: Great. Okay. So Board
20 members, if those online wouldn't mind, I'm just going to
21 change my screen here to get you guys on, if you will
22 raise your hands. And as you're doing that, I will start
23 to my right and start with Professor Sperling.

24 BOARD MEMBER SPERLING: Thank you very much. We
25 certainly got a lot of information this morning. I took

1 good notes. I do want to acknowledge that, you know, this
2 is a situation where we have a stakeholder group that is
3 on board with us. This is not one where there's
4 resistance or -- or opposition. And, in fact, you know,
5 some of the presentations we heard, you know, reflect
6 leadership on moving towards electric and hydrogen buses
7 that goes way back. I remember when George Bush was
8 President and he came out here and visited California and
9 highlighted AC Transit's efforts with fuel cell buses.
10 So, you know, that's a lot of years ago, right?

11 And so there's been a lot of leadership. Now, on
12 the other hand, public transportation is in crisis. And I
13 think the transit leaders even underplayed what's going on
14 here. The challenge is that they referred to, they're not
15 exaggerating. In fact, it's -- I think it's even much
16 worse. So you just -- if I -- I'll frame it a little bit
17 broader.

18 Public transportation has been losing -- had been
19 losing ridership starting around 2010 going right into the
20 pandemic, had been losing ridership. Ridership plummeted
21 during the pandemic. And now even after kind of the --
22 we're out of the pandemic now, right, I've been told.
23 Buses are at about 30 percent lower ridership than before
24 the pandemic. BART is down like 60 percent and it ain't
25 coming back. You know, there's -- a lot of people are

1 reluctant to use it for one reason or another. A lot of
2 people are remote -- working remote.

3 So we -- we have a transit agency industry that's
4 in crisis. And they're only existing now and functioning
5 more or less now because they've gotten huge bailouts,
6 mostly from the federal government, but also the State.
7 And when some of that federal money stops coming in a few
8 years, which is almost definite, many of these agencies
9 are just going to go over the cliff. They're not going to
10 even be able to function unless there's a huge amount of
11 new money to bail them out.

12 Another way of putting it is transit ridership is
13 about -- transit accounts for only about two percent of
14 our passenger travel before the pandemic. It's probably
15 down to about one percent now.

16 And what that means is we're doing a horrible job
17 of serving people that have been marginalized by our
18 transportation system, that are physical limitations,
19 economic limitations, and other kinds of discrimination
20 that might exist in some communities.

21 So here we are creating -- we've created a
22 program, which in principle is a great program, but we're
23 asking these transit agencies not only to spend a huge
24 amount of new money, but also to revamp their operations
25 at a time when they're dying. Okay. Maybe that's

1 exaggerating a little bit, but they're in dire -- they're
2 in dire situations.

3 And what do we do about this? So I would -- you
4 know, one of the thing -- you know, we hear -- hear a lot
5 about environment justice and serving disadvantaged
6 communities. You know my own take on it is that the first
7 priority should be service. It's already -- service has
8 been cut back by every one of these operators. And so the
9 first priority should be service. And yes, a high
10 priority is zero-emission buses.

11 So what do we do about this going forward? So,
12 yes, you know, for a variety of reasons, the funding
13 programs and inertia, you know, the situation through 2023
14 is okay. Agencies have the money in place to continue,
15 you know, to comply, but they don't after that.

16 And so I guess a principle that I would
17 suggest -- and so this is not for today. You know, we can
18 put this off till next year, but we can't put it off
19 probably beyond that, is that this regulation more
20 explicitly acknowledge and link funding to compliance.
21 You know, these are public agencies. Let me put it
22 another way -- explain another way how -- how -- how dire
23 it is.

24 So it used to be in the good days, they would get
25 about 25 percent of their funding from the fare box. In

1 other words, passengers paid -- money passengers paid
2 covered 25 percent of their operating costs. None of
3 their capital costs, 25 percent of their operating costs.
4 Now, that's down to 10 or 15 percent. So these are
5 agencies that are not -- these are not profit entities.
6 These are entities that depend totally, almost totally, on
7 public funding.

8 And so this is a really awkward situation for us,
9 I think at CARB, but I think we need a principle -- and
10 I'm not sure how to translate that principle into action,
11 but we need a principle that says compliance is dependent
12 on funding becoming available, whether through federal
13 sources, through State sources, through HVIP, wherever it
14 comes from. And it's coming from a lot of different
15 sources, so it's kind of hard to track it. They're
16 tracking it, but, you know, for us.

17 So I would say, you know, they had a request to
18 form a working group. You know, that seems like a good
19 idea, but it -- it just barely scratches the surface of
20 the challenge here and what to do about it.

21 So on that dire note --

22 (Laughter)

23 BOARD MEMBER SPERLING: -- I'll pass it on to...

24 VICE CHAIR BERG: Thank you.

25 Just for a point of order, Board Member De La

1 Torre, and then Davina Hurt, and then I'll call on
2 Barbara.

3 (Laughter)

4 BOARD MEMBER DE LA TORRE: Thank you. I'm not
5 laughing about Dan's comments. Those were very dire.

6 I want to start by thanking staff and thanking
7 the transit agencies for this very, very, very positive
8 status report. When I was briefed about it, I was very
9 pleasantly surprised, because I remember that discussion a
10 couple years back. So the fact that you've gone out there
11 and making it happen is tremendous, so thank you.

12 Your concerns -- you know, we're all taking a big
13 leap here, not just in your sector, in others as well,
14 so -- as we heard just a minute ago. So we -- we
15 understand. We're monitoring. We're watching. We're
16 being grateful for the support we're getting from the
17 federal government, but, you know, California is all in on
18 this and it is a major market transformation across the
19 Board. We understand that and, you know, we're going to
20 continue to do as much as we can.

21 I also wanted to acknowledge my surprise at how
22 many fuel cell buses there are up and down the state, how
23 many transit agencies are using fuel cell as their
24 solution here. I expected it would be two or three, and
25 it's a lot more than that. And so very impressed that

1 there's -- our policy of all-of-the-above is being
2 reflected out statewide.

3 The ridership question is the thing that I -- and
4 I mentioned it in -- in my meetings with this sector. I'm
5 very concerned about what that is and finding best
6 practices around the country, and trying to implement them
7 here to drive up that traffic. You know, I live in LA
8 County, and I recall I think it was at this -- when we --
9 when we took this action, where they said that they hadn't
10 reviewed their routes in 10 years. You know, we can't
11 help that, right? Times change, our activities change,
12 locations change, and, you know, we want to get people
13 where they want to go, not where they went 10 years ago.
14 So things like that are -- you know, help us out here with
15 that kind of stuff.

16 And then finally, there was one of the points in
17 the presentation about a multi-agency dialogue or
18 discussion as we move forward. I do want to incorporate
19 that into what we're doing and include the transit
20 association as part of those discussions with us, with our
21 other agency partners. I think because of the massiveness
22 of this change, you should be dialoguing with us directly,
23 all of us together, because otherwise it's just, you know,
24 herding chickens and that's not -- that's not fair to you
25 and it's not effective for us.

1 So thank you.

2 VICE CHAIR BERG: Thank you.

3 Board Member hurt.

4 BOARD MEMBER HURT: Thank you, Vice Chair Berg.

5 So from everything you've heard today, there's no
6 doubt that this is going to be a heavy lift for transit
7 agencies. And that's for multiple reasons. I mean, we
8 talked about coming out of the pandemic a reduction in
9 ridership. I know even in the Bay Area, there's been a
10 large push for remote work. And I, like the speakers that
11 have come before me, am really concerned about these
12 agencies moving into the future and meeting some of our
13 ambitious requests.

14 And I'm also -- I've read and I've received
15 direct feedback that, you know, some of these agencies are
16 at a financial cliff, and that's from large to small
17 transit agencies. So no one is immune from the reduction.
18 And so I know that we need to move forward in passing this
19 regulation. It needs to happen for many of the reasons
20 that's already be -- been spoken about as far as
21 communities who are already suffering in very polluted
22 areas, disproportionately impacted. And so to clean their
23 air through the transportation they use is essential. So
24 I think we're all committed to this emission --
25 zero-emission future.

1 But I -- I am really worried about that next leap
2 that next walk up in 2026 as it relates to the 50 percent.
3 That is still a large question mark for me. And I -- and
4 I think we should -- without a doubt, I think it's
5 necessary that we facilitate a transit agency sharing best
6 practices, tips, since we're the agency that's
7 promulgating this rule. So the working group that's even
8 at Caltrans, the transit agencies through CTE -- CTA, we
9 should definitely consider.

10 It's not clear to me one place or one group
11 that's really monitoring and thinking about these things.
12 So again, I hope we, as CARB, can facilitate that.

13 I appreciate that we'll be monitoring
14 implementation annually and do one-time comprehensive
15 review, but I think really to thread the needle on this
16 and to make sure that we don't crush our transit agencies,
17 that they're talking more often and then we're gathering
18 either quarterly or whatever time is best -- best to
19 collaborate especially for small transit agencies.

20 And then I just want to uplift another area that
21 is really concerning for me and it's around
22 infrastructure. And I'm thinking as the cost and the ease
23 of purchasing buses is increasingly getting better, we saw
24 that in the purchase readiness summary statement, you
25 know, that we're on good footing.

1 I've heard the real difficulty on the ground is
2 building new or upgrading energy connections for battery
3 electric and hydrogen buses. In fact, I've heard someone
4 say quote/unquote, it has been a nightmare. So CARB, with
5 its sister agencies, I hope we can intervene and help
6 support, and bring balance, and focus alongside the
7 agencies like PG&E in Northern California just to
8 streamline this processes -- process -- processes for --
9 to seamless permitting, building, and service. Because if
10 this piece isn't supported, this conversion will be more
11 painful and more costly. And I don't think we want that
12 for our public transit agencies.

13 So I -- I will probably move forward in passing
14 this, but I really think that we have to walk a fine line,
15 because our public transit agencies are struggling with
16 low ridership. And while I think that there might be a
17 marketing piece or, you know, a media campaign in saving
18 the environment, ride this electric bus or a zero-emission
19 bus, I just don't know if we can get folks pivoted and
20 turned to that space by 2026 with this 50 percent and
21 helping transit agencies pay for what's going to be a
22 really heavy lift.

23 I'll stop there. Thanks.

24 VICE CHAIR BERG: Thank you, Davina.

25 Okay. A couple of things. One, I did not

1 mention, and I just want to make sure to welcome Chair
2 Randolph. She is online and really appreciate her ability
3 to multi-task and to join us. So welcome, Chair Randolph.
4 Great to have you here.

5 Second, I do want to clarify for Board Member
6 Hurt, we are not voting on this regulation. This
7 regulation was adopted in 2018. Today, we are getting --
8 as part of the regulation, the Board required this
9 comprehensive update. So this is kind of an opportunity
10 for the -- it isn't kind of. This is an opportunity for
11 the Board to give direction to staff as we're all on the
12 precipice of the go, no-go for 2023. So I think your
13 comments were terrific and spot on. And I know that our
14 staff is taking copious notes. And obviously, we are
15 going to be walking through this very carefully, but there
16 will not be a vote. There isn't a resolution. This is --
17 this is just an opportunity for us to check-in at this
18 time.

19 So with that, I'm going to turn the mic over to
20 Ms. Riordan.

21 BOARD MEMBER RIORDAN: Thank you, Madam Chair.
22 Let me express, first, my appreciation for what I believe
23 is a most comprehensive and understandable report that
24 we've had in a long time. And thanks to those of you who
25 have come to share your real-time experiences with us,

1 because that is vital to I think the success of this
2 program.

3 I want to make very quickly some suggestions.
4 One is to Elizabeth John. I hope she's still on with us.
5 I don't know. But if she's not, staff, if I could ask you
6 to communicate with her. It is on the future study that
7 she mentioned for chargers and how many -- I assume, where
8 they might be. I would hope that they would also put a
9 price on that, because I think it's going to tell us what
10 we need to do and by way of providing infrastructure. And
11 there's got to be somebody who finally comes up with a
12 number. I know it's going to be difficult, because there
13 are different requirements in different areas and
14 different problems. But I can tell you that if we don't
15 understand that, we will never have then the evidence and
16 the wherewithal to make the request of the governmental
17 agencies that I think are going to need to support this.
18 So that's number one.

19 Number two, to the point of the recommendations
20 that came from our transit agencies, I'm going to support
21 all six of them. I think they're good. I think we need
22 to look seriously at them. And I recognize we're not
23 taking a vote today, but what I would suggest is, staff,
24 that you really work on these in a very serious way,
25 because I think they would help to make this program more

1 reasonable and more successful in the long run.

2 And finally, I want to talk a little bit about
3 training for the future of those folks who are going to be
4 working on these new vehicles that are coming into us, and
5 it -- included in that is those requirements that we have
6 made on others, whether it's automotive, or light trucks,
7 or the new very large transit trucks that we have asked
8 for. And different areas may be different. I heard AC
9 say that they would be willing to train, that they would
10 take people and give them that training that's necessary.

11 Where I am from, which is Southern California
12 area, there are junior colleges that would love to do
13 this. And now here's my request to staff, not in this
14 conversation right now. I need to have somebody contact
15 me, because I know of one junior college that tried to
16 access the charging companies and got the door just closed
17 on them, because -- I don't know why. I don't know the
18 reason, but I know what the result was.

19 And you've got to be able to work with these
20 automotive people at the junior college level to be able
21 to know what is required and how to establish their
22 curriculum, because this is something new for them too.
23 So this -- this particular professor wanted to establish a
24 curriculum. Well, how is he going to do it? He needs to
25 talk to the people that are manufacturing those chargers.

1 So please contact me and I'll give you the name of this
2 particular professor and maybe we can make something
3 happen.

4 But I think, given the reasonableness of transit
5 agencies training, junior college -- and I believe junior
6 college is very affordable, so we can get into some of the
7 low- and moderate-income areas and potential students, and
8 then potential mechanics. I don't even know if you call
9 them mechanics now, but these -- these jobs are going to
10 be really needed and pay very well. So, with that, I'm
11 going to conclude and say thank you to everybody who made
12 the presentations today.

13 VICE CHAIR BERG: Thank you.

14 Dr. Balmes.

15 BOARD MEMBER BALMES: Thank you, Vice Chair Berg.
16 And even though I wanted to go after Professor Sperling.

17 (Laughter)

18 VICE CHAIR BERG: Well, when they make you Vice
19 Chair, you can do that.

20 (Laughter)

21 BOARD MEMBER BALMES: No. No. Only because --

22 (Laughter)

23 BOARD MEMBER BALMES: -- I wanted to echo his
24 concern about the dire straits of the public transit
25 sector. And by the way, I agree wholeheartedly with Mr.

1 De La Torre that it's really refreshing to see how the CTA
2 and its members had stepped up to try to work with us, and
3 to make the Innovative Clean Transit Rule a reality.

4 But there's a lot that's intervened since that
5 rule was passed. I'm glad we're having this review. I
6 usually like reviews -- mid-term reviews, if you will, of
7 our important regulations. And I think that Dr.
8 Sperling's idea of trying to come up with a way to require
9 compliance as funding is available is, I think, a very key
10 issue here.

11 Jus a shout-out to AC Transit. You know, there's
12 a bus stop right in front of my house. Right now, it's
13 just a -- there's no hydrogen fuel cell vehicles,
14 because -- as Dr. Sperling knows, he used to live near
15 there -- Spruce Street isn't a main thoroughfare. But the
16 people I see on those buses often, especially at the start
17 or the end of the day, are low-income people of color, who
18 are gardeners, housekeepers, et cetera. And how are
19 they -- you know, they need service. And, you know, AC
20 Transit, Mr. Hursh said, is better off than many of the
21 transit agencies in the state.

22 I'm -- as most people know, environmental justice
23 is sort of number one in terms of my priorities with our
24 regulatory actions, but is it environmental justice to
25 have the -- no service or limited service for low-income

1 people of color to get to their jobs? You know, I think
2 that, you know, I'm all for the goals of the Innovative
3 Clean Transit Regulation that we passed, but I think the
4 reality of the pandemic and the decreased ridership is, as
5 Dr. Sperling eloquently stated, it's dire. So I think we
6 need to consider a course correction. I don't -- I
7 think -- I'm -- if conditions change and there's a lot
8 more money available for the transit agencies, I think
9 that's great, we can keep going full blast. And I --
10 again, I appreciate the positive attitude that I'm hearing
11 from CTA and I'm totally supportive of the interagency
12 work group to try to bring the reality of the transit
13 agencies into State policies, but basically echo Dr.
14 Sperling's concerns and his suggestion for compliance
15 based on funding.

16 I also am glad that Ms. Riordan brought up
17 training. You know, I -- I was the one who asked Mr.
18 Kelly and Mr. Jeffers about the jobs in low-income
19 communities of color. Glad that LaDonna Williams brought
20 that up as well.

21 We really have to work hard to make that a
22 reality. I think that it's not to say that we're going to
23 create all these jobs. I mean, the jobs will be created.
24 There's no -- I think there's no question about that,
25 because the new vehicles, and their maintenance, and the

1 infrastructure will require a lot of work. But, you know,
2 the infrastructure is going to be put in by union
3 electricians. I'm all supportive of that, but maybe there
4 should be some incentives for an apprentice program, so
5 that low-income, you know, workers of color can
6 participate in that infrastructure buildout.

7 But we have to have more than words about the
8 just transition, in terms of jobs. We have to make it a
9 reality. And that -- you know, that takes more money,
10 which is going to come from probably mostly State sources,
11 maybe public -- there could be public-private partnerships
12 in that regard. So I'll stop there.

13 Oh, one more thing. I really do appreciate --
14 (Laughter)

15 BOARD MEMBER BALMES: I wanted to say despite the
16 fact that LaDonna Williams I think was correct in that
17 we -- it was just a lot of presentations in a row, it was
18 really good and I appreciate all the presentations, and
19 was following along. And, you know, I think staff has
20 done a great job, especially coordinating with the other
21 presenting agencies in CTA and the NREL. Did I say that
22 right? Good. Good.

23 VICE CHAIR BERG: Thank you very much. Those are
24 all really great points. Really appreciate that.

25 Supervisor Serna.

1 BOARD MEMBER SERNA: Thank you.

2 VICE CHAIR BERG: Oh, and can I just let my two
3 people online, so Board Member Takvorkian[SIC] and
4 Supervisor Vargas we'll -- we'll be getting to you next.

5 Thank you.

6 BOARD MEMBER SERNA: Thank you, Vice Chair Berg.

7 I'll start by thanking staff and certainly the
8 multitude of presenters here that I think really gave us a
9 lot to think about, in terms of the opportunities, and
10 especially the challenges that are involved with what I
11 think all of us want to see happen, which is an expansion
12 of zero-emission transit fleets in the state of
13 California.

14 But as Professor Sperling clearly alluded to, you
15 know, those challenges aren't -- aren't fleeting. They're
16 very serious. And as a member of a local transit district
17 board of directors for over a decade now, I can tell you
18 that, especially during questionable or challenging
19 economic circumstances, they are that much deeper.

20 But what I would like to do is kind of preface my
21 comments for here with the fact that I'm speaking really
22 to the particular challenges that medium and large transit
23 agencies in the state have in particular. And it's
24 because those -- those size transit agencies more often
25 than not do not just have bus fleets. Many of them also

1 have kind of the first zero-emission vehicle components of
2 their -- of their districts and that is light rail. And
3 that goes for the Sacramento Regional Transit District
4 here. In fact, many of you I'm sure probably have used
5 the light rail system here in Sacramento.

6 One of the additional things that I think we need
7 to consider here, in terms of the interests of our transit
8 districts with light rail systems is that while we want to
9 increase the zero-emission bus fleets, we also have, at
10 least I believe, we have an obligation to make sure that
11 existing light rail systems continue to operate
12 efficiently, effectively. Many of the systems -- I know
13 for a fact here in Sacramento, our system is compromised
14 right now, because we are kind of well past our useful
15 life for our rail cars. We're actually still using the
16 original light rail cars that were commissioned back in
17 1987.

18 In many of those transit districts that do
19 operate light rail, and are using rolling stock that is --
20 has aged, many of them are not kind of state-of-the-art,
21 they're not the low floor cars, for instance, that you
22 might see in other parts of the country. Here in
23 Sacramento, we are intent on bringing low -- low floor
24 cars into the system is very near. In fact, we'll be
25 retrofitting our train platforms to accommodate the low

1 floor cars in the very near future.

2 But I guess the gist of what I'm trying to convey
3 here is that when we consider how we get to where we all
4 want to be in terms of the zero-emission transition, let's
5 not forget about those systems that actually do continue
6 to rely upon the -- kind of the original zero-emission
7 vehicle in those fleets, and those are the light rail
8 trains.

9 And, of course, for the districts with the aging
10 stock, you know, we're looking here at -- in Sacramento at
11 a -- the cost of over \$150 million to replace those aged
12 light rail vehicles. So that on top of bring in new zero
13 emission, whether it's fuel cell or battery electric
14 buses, is that much more challenging. And that really I
15 think speaks to Professor Sperling's earlier points.

16 So thank you.

17 VICE CHAIR BERG: Thank you.

18 Board Member Takvorian.

19 BOARD MEMBER TAKVORIAN: Thank you, Vice Chair.
20 And thanks to all of the CARB staff, Caltrans, the Energy
21 Commission, the transit agencies. These were a lot of
22 reports, very comprehensive, and honestly, in many ways,
23 really inspiring. I think what a difference four years
24 makes. There's remarkable technology advancements and a
25 very high level -- high level of collaboration with the

1 transit agencies, which I think is very much appreciated.
2 And we're all on the same team at this point, so that that
3 feels pretty good.

4 I think CARB is really leaning in to transit
5 support, not only with the ICT, but also with the
6 significant proposed targets in the Scoping Plan for
7 reduction in VMT and support for transit expansion. But
8 that said, I, too, am very concerned about the ridership
9 and there's lots of reasons for it. But putting it in
10 context is that in many places like in San Diego, we're
11 working to build an effective, accessible, affordable, and
12 equitable transit system at the same time as we're working
13 to create a clean transit system.

14 So I think in many places, we've haven't had a
15 very functional or effective transit system. And CARB's
16 work and that of the transportation advocates have shined
17 a light on not just the air quality and climate issues,
18 but on the inequities that have been inherent in our
19 transit systems.

20 So we're doing all of this at once. I just want
21 to say that I think we need to appreciate the fact that
22 the transit agencies are stepping up in many ways. And we
23 have a distance to go, because we have decade of
24 inequities to make up for.

25 I think a good example is the MTS in San Diego --

1 the Metropolitan Transit System in San Diego put out a
2 report in August, just last month, that they've been able
3 to recover approximately 75 percent of pre-pandemic
4 levels. So we're actually moving in the -- in the right
5 direction in that case. And some of the largest increases
6 in ridership were along the routes that served major
7 school and employment centers, so getting people where
8 they need to go in an efficient, affordable, and effective
9 way is -- is critical.

10 MTS has also experienced a very significant
11 ridership with the launch of free transit opportunities
12 especially for youth, a 38 percent increase for youth. So
13 there's things that can be done. And that's not saying
14 that we don't need more funding. We do. I would agree
15 with that. And incentives for transit ridership I think
16 should really exceed the incentives provided for passenger
17 vehicles. And, you know, that will be a conversation I'm
18 sure, but we have to address the discriminatory practices
19 in BIPOC communities, which is included a lack of
20 accessible transportation. So that's a way that we can
21 make sure that we're benefiting the most -- benefiting
22 disadvantaged communities the most.

23 And I just wanted to -- to say on the jobs point,
24 I really agree with all of the comments that have been
25 made. And I had the opportunity yesterday to represent

1 CARB at the Grossmont Union High School District, where
2 they just purchased 17 new zero-emission buses. I
3 understand those aren't transit buses, but they are also
4 launching or have launched the job training program and
5 have a beautiful new facility for training students to
6 be -- to work on these new high tech buses.

7 So that's part of the new world I think that
8 we're creating. So it's not the whole answer, but it's an
9 exciting thing that CARB is part of. And I think -- I
10 think there's some positive news in that regard as well.

11 So thank you.

12 VICE CHAIR BERG: Thank you.

13 And Supervisor Vargas.

14 BOARD MEMBER VARGAS: Thank you so much and thank
15 you, Diane, and everyone else for all your comments. I
16 think, you know, I absolutely support all the comments
17 that a lot of my colleagues have made already. I think
18 the -- the couple things that I want to make sure that we
19 don't lose -- that I want to make sure we continue to
20 emphasize, as part of these regulations, you know, there
21 really -- when these regulations were created, there
22 really wasn't like an equity statement created, as part of
23 what this component would be. And I think as -- as Member
24 Takvorian has said, things have changed a lot in the last
25 four years due to leadership of the Governor, this Board,

1 and -- and so many transportation advocates that have made
2 this so -- such an important issue as it's connected to
3 being able to meet our -- our goals.

4 But, you know, and I'm extremely sympathetic to
5 the challenges that our transit agencies have and have
6 been navigated. But I would challenge them to really
7 think about this as an opportunity to really look at this
8 from a very different lens and really, you know -- I
9 really appreciated those that were able to call in today
10 and provide feedback. I mean, when you're talking about
11 workforce -- I served on the community college board for
12 about seven years. Southwestern College, which was the
13 only public institution in -- in south county and in San
14 Diego. And we were do -- making a lot of investments, but
15 I think this part about working together maybe with the
16 Chancellor's office in making those connections I think
17 are -- I highly think that there's opportunities for that
18 in terms of investment.

19 There's also I think an opportunity for us as
20 we're looking at how we support public transit in our
21 local -- in our lower income communities, I think it's
22 really important that we really think about as -- as
23 Member Takvorian said is how do we invest beyond the
24 vehicle component or the transportation component, and how
25 do we make sure we have incentives for essential workers,

1 home health workers, hospital workers, grassroots workers
2 to be able to -- to use transit.

3 I think one of the biggest challenges that we,
4 and I can speak to San Diego specifically, you know,
5 trying to get on a bus from San Ysidro was -- is right by
6 the border to Chula Vista, which is, you know, about --
7 via car about 20 minutes, it takes about three hours to
8 get Point A to Point B.

9 And so I think that part of the reason why
10 ridership continues to be a challenge for so many is not
11 only, you know, the affordability piece, but also how
12 transit doesn't go where people -- where people need to
13 go. And so as we're looking at this work and we're trying
14 to really think about making sure that people are
15 getting -- you know, are using our bus systems and our
16 rail systems, we need to make sure that they're -- that
17 they're working for people as well, because we can -- we
18 can make a lot of requests and changes, but the
19 opportunity I think right now for all of us is to
20 reimagine not only what these agencies look like as we're
21 moving forward -- and I appreciate that there are so many
22 committees that people are participating, and so on and so
23 forth, but I want to make sure that we don't forget that,
24 you know, ours of operation, access to infrastructure,
25 investing in our communities is really, really important.

1 And I am really, really concerned about the fact
2 that we keep saying that cutting services is something
3 that may happen, because a lot of people don't have any
4 other options, right? And we're creating regulations that
5 I think in the end, important, critical, and what we need
6 to be able to meet our goals, but let's not forget about
7 the regular folks, you know, our community members, and
8 folks who may not be able to access cars that need to be
9 able to get from Point A to Point B.

10 And so I just wanted to reemphasize that. And
11 again, thank you for the very thorough presentation and
12 for providing this all -- with all of this as well.

13 Thank you.

14 VICE CHAIR BERG: Thank you, Supervisor Vargas.

15 Just checking my notes here, I think my next
16 given -- so I'd like just to do a quick wrap-up. I think,
17 you know, there's -- let's start with -- thank you. There
18 is really -- this is great news. We asked you in 2018 to
19 come to the table and lead the way and transit truly has
20 done that. The leadership has stepped up. The technology
21 has stepped up. Anytime you have a huge transition like
22 this, there is going to be all sorts of implementation
23 challenges and we all know those.

24 But in 2018, we were shuttering at the fact of
25 could we even approach the implementation issues. And so

1 what transit has done, and you have heard from my fellow
2 Board members, great job. And Dr. Cliff, you're
3 Absolutely right, this is a terrific update. It gives us
4 a total foundation that zero-emission vehicles of all
5 sorts are right on the horizon, if not here today. And
6 now it has to be the will to overcome the barriers. And
7 today has also demonstrated that that is going to be a
8 mount, you know, Olympus climb. It is going to be huge
9 and we have to have a leadership, a coalition of the
10 willing, because it's going to be tough.

11 So what I heard from my fellow Board members,
12 including congratulations and job well done. Thank you
13 for the tremendous update, the heavy lift on doing this
14 project and rail. You guys are great partners. Of
15 course, so is UC Berkeley. We really appreciate that.

16 But now focusing on transit, I think you heard
17 very loud and clear we acknowledge that transit is at a
18 precipice of what could be described as a cliff or a
19 soaring into something totally different. We've heard
20 that ridership is crucial, but you also have a constituent
21 out there that desperately needs public transit. And so
22 you've done such an amazing job. And you know that the --
23 for sure when you do a great job, you're only asked to do
24 more. You know how that works, Mr. Barnes.

25 And so it does appear from my personal

1 perspective certainly could be a really interesting
2 challenge to look into the future and meet with our
3 communities, our equity communities, and really look into
4 the future of transit, because we keep tripping over the
5 real missteps in equity, the real missteps, and maybe this
6 is a real opportunity and that's one avenue.

7 Sticking back to what we're here for today, there
8 was absolutely, staff, a huge concern across the board on
9 truly making transit our partners. And as partners this
10 is not a regulated industry that we need to push, prod,
11 cajole, finally say, okay, if you want to go do business
12 in another state, sobeit. These are partners. And so we
13 heard a principle of looking into regulation linked to
14 funding and compliance. So I'm just putting that out
15 there.

16 Very much support for the multiple -- multiple
17 agency dialogue and including transit at the table. And
18 there was also a request for the working group, but I
19 think those two go together.

20 We've definitely heard a concern about 2026 at 50
21 percent. And that's when we add our small agencies, and
22 quite frankly we didn't hear from them at all, probably
23 because they could be apoplectic, but also they're putting
24 together their plan and those are due to us next year, is
25 that correct timing, Dr. Vergis, on the small agencies?

1 MSCD DIVISION CHIEF VERGIS: (Nods head.)

2 VICE CHAIR BERG: And so we heard a concern about
3 that. We also heard a support of the six recommendations
4 by the California Transit Association. And I think that
5 that would all be part of that interagency dialogue.

6 And I really did -- do appreciate all the
7 discussion led by Dr. Balmes around job creation, and
8 specifically how we're tracking that within our equity
9 communities. We do know that jobs are going to be
10 created. We saw an opportunity here for all boats to
11 rise. That hasn't happened in past transformations like
12 this. And I do think that Dr. Balmes saying we need to do
13 more than words, have it look good on paper, we really
14 need to be able not only to track it, but how fabulous
15 would it be to hear from our equity communities that
16 they're starting to see those differences within their
17 communities.

18 We also heard advanced training through the
19 community colleges, which I know we are doing, but a
20 greater effort to that, as well as congratulations to the
21 transit agencies that are doing a lot.

22 We would appreciate even more information about
23 how you're interacting with some of our equity
24 communities, and that also would be very helpful.

25 I also heard don't forget that we have some

1 zero-emission leaders in here like light rail. And those
2 are going to need to be upgraded. Yet, there's no credits
3 for those. And yet, funding that's going to be needed.

4 And at the end of the day, both Board Member
5 Takvorian and Board Member Vargas really did a wonderful
6 job in pointing out the investment that's truly needed to
7 make the transit of the future work and truly reducing
8 vehicle miles driven. And there has been skepticism about
9 whether that's possible or not, but I think it is. But
10 it's going to take a considered effort to leave behind
11 what we've done and look at it in the future of -- of what
12 you can create.

13 And so I really, really appreciate. It was a lot
14 of presentations, but I found them very well organized,
15 very well presented. And I really thank you for all of
16 your efforts. I want to turn very quickly to my fellow
17 Board members to see if I missed anything.

18 And looking online, Board Member Hurt or Board
19 Pacheco-Werner, I see your hands up. Do you have a last
20 minute comment?

21 BOARD MEMBER HURT: I have a last minute question
22 and I'll make it really quick.

23 VICE CHAIR BERG: Thank you.

24 BOARD MEMBER HURT: Sure. So I apologize. I was
25 not as clear earlier about voting to do something

1 different. And so maybe this is a procedural question
2 that I'll just clarify a little bit on. What is the
3 process if we do want to pivot on these timelines or alter
4 the regulation to a funding available clause? Can staff
5 just speak to that, because I think transit agencies will
6 continue to push forward. But breathing a little easier
7 in something more concrete in regulation seems
8 appropriate. So just curious.

9 VICE CHAIR BERG: Thank you so much, Board Member
10 Hurt. Can I just find out what Dr. Pacheco-Werner is also
11 asking. We might be able to combine some answers.

12 Thank you. Stay tuned.

13 Dr. Pacheco-Werner.

14 BOARD MEMBER PACHECO-WERNER: Yeah, definitely.
15 I think that speaking to the main challenge, which was
16 brought up about ridership, and kind I segueing into our
17 segueing into our next item, but not so much, how can we,
18 as an agency, really start envisioning how public transit
19 is something that's for everyone that we really need to,
20 in order to meet our climate goals, change the way that we
21 all transit and not just thinking it's something for those
22 that are low income. And to that effect then, is there
23 anything on our end in terms of commitments or from the
24 local air districts that -- that we can start thinking
25 about in terms of incentivizing ridership, again not --

1 not even from a land-use perspective, but just really from
2 incentivizing public transit over single car ridership.

3 Thank you.

4 VICE CHAIR BERG: Thank you, Dr. Pacheco-Werner.

5 I think that truly is the question. And -- and I
6 am going to ask Dr. Cliff to respond. But two things,
7 Steve, we've got what is the process if we wanted to amend
8 the rule. And so if you could just inform us of that and
9 give us some closing thoughts on Dr. Pacheco-Werner's
10 question of total ridership for everyone looking at -- in
11 conjunction with our climate goals that we do need to look
12 at the mono-car a lot differently.

13 EXECUTIVE OFFICER CLIFF: Thank you, Vice Chair
14 Berg and really appreciate all the comments. I'm going to
15 turn to others in just a minute, but wanted to just say
16 with regard to amending a regulation, that would be, of
17 course, a full new regulatory process. The goal, when the
18 original regulation was adopted in 2018, was to do a
19 check-in prior to the onset of requirements. And that
20 check-in is -- is today.

21 And I think -- I think what you see is that we're
22 ahead of the schedule and staying ahead of what's required
23 of transit agencies as part of that regulation.

24 Going forward, we'll continue to update and
25 monitor to ensure that we're staying on track. And to the

1 extent that modifications are necessary, we can evaluate
2 that based on those future evaluations.

3 At this point, we're not seeing a need to change
4 the regulation, based on what we're seeing in the
5 pipeline, from what's been ordered, as well as those
6 transit buses that are on the ground.

7 The advantage of keeping ahead of the
8 requirements is that the funding can help still
9 incentivize early action, rather than paying for
10 compliance with a regulation. So I'd like to turn it over
11 to Dr. Vergis quickly to talk a little bit more and put
12 that -- put the funding into context, if I could.

13 MSCD DIVISION CHIEF VERGIS: Thank you, Dr.
14 Cliff.

15 So we've talked a lot about HVIP today, but I
16 think what we'll see is our core -- our funding portfolio
17 is a big commitment to support the sales of zero-emission
18 transit buses in California, Carl Moyer, there's the AB
19 617 CAPP program, there's VW, but, of course, there's also
20 HVIP. As Dr. Cliff mentioned, transits are out way ahead
21 of the regulatory requirements, which allow us the
22 flexibility to continue to support them through the HVIP
23 Program.

24 I'll also note that this is really great news,
25 given the Legislature has committed to a 520 million

1 multi-year zero-emission transit carve-out over the next
2 several years. So those opportunities to continue to
3 support transit will remain going forward.

4 And then, of course, also look forward to, as we
5 committed to in the 2018 resolution for this item, we are
6 committed to tracking what we're seeing in terms of the
7 zero-emission transit market and reporting back to you all
8 on a regular basis.

9 VICE CHAIR BERG: Thank you very much.

10 Dr. Cliff.

11 EXECUTIVE OFFICER CLIFF: I just wanted to ask
12 Craig Segall if he could respond a bit to Dr.
13 Pacheco-Werner's question and comment.

14 VICE CHAIR BERG: Thank you.

15 DEPUTY EXECUTIVE OFFICER SEGALL: Certainly.

16 So I think fundamentally what we're talking about
17 here is a shifting transportation system, right? And
18 something that many of the Board members mentioned,
19 including Board Member De La Torre, about needing to look
20 at routes, needing to look at service. It's fundamental,
21 because what we don't want to do, what's it's
22 fundamentally I think not something anyone is advocating
23 is to pit service against electrification, right? We need
24 both. You never want to be in a place where you're
25 consigning people to dirty buses, especially in the

1 context where the industry is actually well ahead, where
2 our partners are charging forward.

3 But you also want to see continued innovation and
4 support with a real eye toward our systematic underfunding
5 and lack of support from many neighborhoods for good
6 transit. So what we're hoping for is shared design. And
7 there's a lot of elements. You know, advances on pricing,
8 not just pricing on roadways but on fares, thinking about
9 how we serve folks in an environment where people are
10 doing errands during the day, or in the first and they're
11 just commuting during commute hours to doing new and
12 better things.

13 So what I've always experienced from the transit,
14 and what I'm sure we keep well is innovation, really
15 thinking about how to provide a vital public service that
16 makes everything better, whether it's making how it would
17 seem more reachable and more affordable or getting people
18 to work. So I think that combined focus to especially
19 reduce VMT is just critical.

20 VICE CHAIR BERG: Well, thank you very much. I
21 think that there's no question we have our work cut out
22 for us. I am hearing from staff that we are in agreement
23 that close monitoring, including supporting the
24 interagency dialogue will continue.

25 EXECUTIVE OFFICER CLIFF: Yes, absolutely. Thank

1 you.

2 VICE CHAIR BERG: Thank you very much.

3 So with that, I think we will bring this to a
4 close. Please know that you have a Board that is very
5 attuned and is really paying attention. We heard that
6 2023 we're going to be okay. We do expect to hear from
7 you towards the end of that year. So let us be a partner.

8 Thank you.

9 So, Board members, we're going to take a lunch
10 break. And so we will take a -- think we could do it in
11 30 minutes? Let's do a 30-minute lunch break. Let's be
12 back at 20 after. So that gives you a couple of more
13 minutes.

14 And then Chair Randolph will be here and kick-off
15 our third SIP item. Thank you. Thyme time

16 (Off record: 12:46 p.m.)

17 (Thereupon a lunch break was taken.)

18

19

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25

1 happy to be with you here today.

2 And really excited -- I know Vice Chair Berg had
3 a chance to welcome Steve Cliff back to CARB, but I wanted
4 to express my welcome as well. We're really excited to
5 have your expertise and your experience in State and
6 federal government, and really happy to do a lot of great
7 work together.

8 So I'm going to introduce our last item on the
9 agenda, which is Item number 22-12-3, consideration of the
10 proposed 2022 State SIP Strategy. If you are there in
11 the room and wish to comment on the item, please fill out
12 the request-to-speak card as soon as possible and submit
13 it to a Board assistant -- assistant. If you are joining
14 us remotely and wish to comment on this item, please click
15 the raise hand button or dial star nine now and we will be
16 first calling on the in-person commenters followed by the
17 remote commenters when we get to the public comment
18 portion of this item.

19 In 2015, U.S. EPA set a new more health
20 protective 8-hour ozone standard of 70 parts per billion.
21 Over the next 15 years, California will need to build upon
22 its successful mobile source strategy control program and
23 drive down emissions even further in order to meet this
24 standard and other air quality standards and provide
25 healthy air for all California residents. Mobile sources

1 are the largest contributor for ozone formation in
2 California and contribute substantial air pollution in low
3 income communities of color.

4 In February, staff presented the draft 2022 State
5 SIP Strategy, which expanded on the concepts from the 2020
6 Mobile Source Strategy and acknowledged that more
7 reductions still needed to be identified for the South
8 Coast. The State SIP strategy also included measures
9 targeting consumer products and space and water heaters.
10 After consultation with the public and additional work
11 with the South Coast Air District, the updated strategy
12 being presented today includes additional measures
13 suggested by the public and now identifies all of the
14 emissions reductions needed to reach attainment in the
15 South Coast. The strategy also specifies actions the
16 federal government needs to take to provide healthy air
17 for all Californians.

18 These programs will not only reduce emissions
19 toward attainment of the ozone standard, but will also
20 significantly reduce toxic diesel particulate in
21 communities and reduce greenhouse gas emissions, thus
22 contributing towards the State's carbon neutrality goal.

23 Today, staff is presenting the proposed 2022
24 State SIP Strategy for public comment and Board
25 consideration to support attainment of the 70 ppb ozone

1 standard across California and the Final Environmental
2 Analysis.

3 Dr. Cliff, will you please introduce the item.

4 EXECUTIVE OFFICER CLIFF: The 2022 State SIP
5 strategy is a critical element of California's State
6 Implementation Plan, or SIP, especially considering the
7 significant contribution of mobile sources to statewide
8 emissions.

9 SIPs consist of a combination of state and local
10 air quality planning documents that must demonstrate how
11 California will meet federal air quality standards.

12 Given the severity of the challenge in the south
13 coast and the San Joaquin Valley, substantial reductions
14 from both mobile and stationary sources are necessary to
15 meet ozone standards in these regions. And there are an
16 additional five nonattainment areas that also need SIP
17 measures and reductions to attain the standard.

18 BOARD MEMBER KRACOV: Chair, I believe we're
19 having trouble hearing Dr. Cliff online.

20 CHAIR RANDOLPH: I was just wondering the same
21 thing. I couldn't hear either.

22 I thought it was just me.

23 EXECUTIVE OFFICER CLIFF: All right. We'll
24 try --

25 CHAIR RANDOLPH: Are you close enough to the

1 microphone?

2 EXECUTIVE OFFICER CLIFF: We'll try a different
3 mic.

4 Okay. Any better online?

5 CHAIR RANDOLPH: Really close to the mic and
6 really loud, because I can hear you but you're a little
7 faint.

8 EXECUTIVE OFFICER CLIFF: In the room it's loud,
9 believe me.

10 (Laughter.)

11 EXECUTIVE OFFICER CLIFF: We're going to try
12 something here. Hold please.

13 Any better?

14 CHAIR RANDOLPH: Yes.

15 EXECUTIVE OFFICER CLIFF: Okay. Great. Thank
16 you.

17 Over the last 15 months, staff has held public
18 workshops and meetings, released multiple draft documents,
19 and actively engaged with communities and organizations to
20 solicit feedback and ideas, many of which were
21 incorporated into SIP measures and the strategy before you
22 today. With the 2022 State SIP Strategy, CARB is
23 proposing an unprecedented variety of new measures to
24 reduce emissions from the sources under our authority
25 using all mechanisms available.

1 This level of action is needed to ensure federal
2 air quality standards are attained and to deliver on our
3 commitments to protect public health, particularly in
4 light of the growing body of evidence on the adverse
5 impacts of air pollution.

6 Meeting the air quality standards in California
7 will greatly reduce negative health impacts associated
8 with air pollution. We know that low-income communities
9 of color and disadvantaged communities experience
10 disproportionate levels of air pollution and the measures
11 in this strategy will help to address these long-standing
12 environmental justice challenges.

13 Today staff will present for the Board's
14 consideration, the 2022 State SIP Strategy and Final
15 Environmental Analysis.

16 I will now ask Austin Hicks of the Air Quality
17 Planning and Science Division to begin the staff
18 presentation.

19 Mr. Hicks

20 (Thereupon a slide presentation.)

21 AQPSD AIR POLLUTION SPECIALIST HICKS: Thank you,
22 Dr. Cliff.

23 Hello Chair Randolph and members of the Board. I
24 last updated you in February and I'm happy to I have this
25 opportunity to present to you today the proposed 2022

1 State Strategy for the State Implementation Plan,
2 otherwise known as the State SIP Strategy.

3 --o0o--

4 AQPSD AIR POLLUTION SPECIALIST HICKS: Before we
5 dive into the materials and measures in the 2022 strategy,
6 I'm going to provide some quick background on federal
7 standards that is a genesis of this planning effort. In
8 2015, U.S. EPA revised the 8-hour ozone standard from 75
9 parts per billion, or ppb, to the more stringent and
10 health protective level of 70 ppb. Then, U.S. EPA
11 designated and classified 19 areas in California as
12 nonattainment areas for this standard in 2018.

13 The map to the right shows all 19 nonattainment
14 area boundaries and current classifications. These areas
15 are required to attain the standard between 2020 and 2037,
16 depending on their classification. Together, local air
17 districts and CARB developed these attainment plans, which
18 must identify both the magnitude of emission reductions
19 needed to provide for attainment and the actions necessary
20 to achieve those emission reductions.

21 South Coast and San Joaquin Valley are the only
22 two nonattainment areas in the country currently
23 classified as extreme for the 70 ppb standard, with the
24 most critical challenge towards attainment. That being
25 said, the 70 ppb standard is going to be a challenge for

1 many areas across the state. While historically, most
2 nonattainment areas have been able to demonstrate
3 attainment of ozone standards based on reductions from
4 existing regulations, seven nonattainment areas will need
5 emission reduction commitments from this Strategy to meet
6 the 70 ppb standard.

7 --o0o--

8 AQPSD AIR POLLUTION SPECIALIST HICKS:

9 Collaborating with our partners is key to
10 developing the control strategy that is included in each
11 SIP. Each of our partners has a role over resources they
12 control. The SIP can and will include emission reductions
13 from CARB and the local air districts as needed to attain.
14 CARB's emissions reduction measures and commitments are
15 developed through the State SIP Strategy. The Strategy
16 builds upon previous strategies and CARB's regulatory
17 efforts by including additional measures and commitments
18 to reduce emissions from our sources to support attainment
19 across the state.

20 While the local air districts are responsible for
21 developing and adopting their measures, the State SIP
22 Strategy identifies CARB measures and is also identifying
23 action at the federal level for primarily
24 federally-regulated sources and ways to better facilitate
25 and support transportation planning agency's action to

1 reduce vehicle miles traveled for VMT. Collectively,
2 District and CARB measures, along with federal and
3 transportation planning agency measures provide the
4 pathway towards meeting the standard.

5 --o0o--

6 AQPSD AIR POLLUTION SPECIALIST HICKS: Staff
7 released the Draft State SIP Strategy on January 31st and
8 the proposal before you today was released on August 12th.
9 The Strategy describes the State's proposed measures and
10 commitments to reduce emissions needed to meet the 70 ppb
11 ozone standard as part of the SIPs due this year. In this
12 document, we identify the proposed measures, associated
13 emission reductions, and other elements needed to support
14 attainment of the 70 ppb ozone standard.

15 With this Strategy, CARB is proposing an
16 unprecedented variety of new measures to reduce emissions
17 from sources under our authority using all available
18 mechanisms. This level of action is needed to ensure all
19 air quality standards are attained and deliver on our
20 commitments to protect public health, particularly in the
21 light of the growing body of evidence on the adverse
22 impacts of air pollution. The Strategy is aggressive and
23 drives the pace and scale of CARB's rulemakings due to
24 California's air quality challenges.

25 And finally, the Strategy identifies the specific

1 federal actions needed and associated emission reductions
2 needed to attain the 70 ppb ozone standard in the South
3 Coast.

4 --o0o--

5 AQPSD AIR POLLUTION SPECIALIST HICKS: To put it
6 simply, the measures in our proposed Strategy target the
7 continued transition away from combustion and towards
8 zero-emission technologies. Moving to zero everywhere
9 feasible is what is needed to reduce emissions to the
10 levels needed to support attainment of the 70 ppb ozone
11 standard for all nonattainment areas in California. The
12 Strategy discusses the pathway to zero for measures under
13 State control through regulations, incentives, and
14 voluntary programs. That said, regulations continue to be
15 the core and bulk of CARB's strategy to provide for
16 attainment of the 70 ppb ozone standard and other federal
17 air quality standards.

18 --o0o--

19 AQPSD AIR POLLUTION SPECIALIST HICKS: Since the
20 release of the draft in January throughout -- and
21 throughout the public process, we have been working hard
22 to identify new SIP measures and flesh out the additional
23 details needed for existing measures.

24 In the proposed Strategy that we released on
25 August 12th, we have added a pesticide measure from our

1 sister agency, California Department of Pesticide
2 Regulation, or DPR. DPR is developing a regulation to
3 address both the cancer and acute risk to non-occupational
4 bystanders from the use of 1,3-dichloropropene, or 1,3-D,
5 which will provide volatile organic compound, or VOC,
6 benefits.

7 In the proposal, the federal actions needed in
8 the airport sector was expanded by adding a measure called
9 the, "Airport Aviation Emissions Cap." Including this new
10 airport aviation cap, the proposed Strategy now provides
11 all the measures and emission reductions to support
12 attainment in the South Coast. Further, the emission
13 reduction estimates that were published in the draft
14 Strategy have been updated and include estimates for
15 additional nonattainment areas.

16 Specific to the transportation conformity
17 budgets, the proposal includes a sub-commitment to
18 emission reductions specifically from on-road mobile
19 sources as part of our aggregate emission reduction
20 commitment for each nonattainment area. This
21 sub-commitment involves reflecting measures that are
22 recently adopted or under development that are needed for
23 the attainment and will more closely align transportation
24 conformity budgets with the on-road emissions used in
25 attainment demonstrations.

1 And finally, we incorporated the most recent
2 regulatory adoption and implementation schedules.

3 --o0o--

4 AQPSD AIR POLLUTION SPECIALIST HICKS: As we
5 discuss the updates and evolution of our proposed
6 Strategy, it's important to note that a robust public
7 process has been critical in the development of an
8 effective strategy.

9 We kicked off the public stra -- process with a
10 workshop in July 2021 that provided staff's initial ideas
11 for measures to be pursued in the 2022 State SIP Strategy.
12 Specifically, staff presented the status of measures from
13 the 2016 State SIP Strategy and how concepts from the 2020
14 Mobile Source Strategy would transition into measures for
15 the 2022 State SIP Strategy.

16 After the kickoff, staff also held stakeholder
17 meetings where many shared suggestions, opportunities and
18 ideas staff should be pursing in the Strategy.

19 Last October, staff released the 2022 State SIP
20 Strategy Draft Measures document, which included measures
21 developed by staff, some of which area already undergoing
22 independent public processes, potential federal actions,
23 and these potential measures suggested by the public.
24 Staff then walked through the potential measures
25 identified in the Draft Measures document in a second

1 disproportionate impact on disadvantaged communities and
2 people of color, for example, many of whom live adjacent
3 to transportation corridors and industrial operations.

4 The measures in the proposed Strategy will
5 benefit low-income and disadvantaged communities by
6 providing opportunities to significantly reduce emissions
7 and exposure in communities of concern. Such
8 opportunities include the rapid transition to
9 zero-emission technologies.

10 The Strategy measures strive to complement AB 617
11 strategies while being consistent with CARB equity goals.
12 Staff solicited public input and met with community-based
13 organizations early in the process to discuss the best
14 ways to support community-level emission reductions as
15 part of the 2022 State SIP Strategy. And as we know, we
16 must do more to provide benefits to the low-income and
17 disadvantaged communities for -- who for generations have
18 been bearing the brunt of combustion emissions.

19 Throughout this process, the public ideas and
20 suggestions from community-based organizations have helped
21 inform the measure development process.

22 --o0o--

23 AQPSD AIR POLLUTION SPECIALIST HICKS: As a
24 result of this outreach and engagement, CARB received
25 suggestions from the public for State measures to be

1 included in the 2022 Strategy, which we refer to as the
2 public measure suggestions. Many of the items in the
3 table have been included or discussed as a part of the
4 various community emission reduction programs developed by
5 select communities, together with their air district
6 partners under CARB's AB 617 Community Air Protection
7 Program.

8 CARB has incorporated five of the public measure
9 suggestions into proposed Strategy measures. CARB
10 incorporated the on-road heavy-duty vehicle useful life
11 concept, as well as the option to use additional incentive
12 programs for zero-emission trucks, and Indirect Source
13 Rules in the Zero-Emissions Trucks Measure.

14 For appliances, CARB is proposing to set
15 zero-emission standards for space and water heaters and
16 are including in the measure as a possibility to expand to
17 other types of appliances.

18 And finally, CARB and DPR are proposing a
19 pesticide measure from D -- from DPR for 1,3-D. I will
20 discuss these measures more in the coming slides.

21 CARB will continue to explore the remaining
22 public measures, including how these can meet federal
23 Clean Air Act requirements for SIP measure approvability,
24 and research any new concepts as we move forward

25 --o0o--

1 AQPSD AIR POLLUTION SPECIALIST HICKS: The items
2 listed here are the proposed measures that CARB staff have
3 included in the Proposed Strategy. On August 12th, we
4 released the proposal, which included a description of
5 many of these measures, and for many of them, the
6 associated emission reductions. These measures are
7 categorized into on- and off-road mobile sources,
8 primarily federally-regulated sources, and other sources
9 for consumer products and appliances.

10 I will describe these measures more in the next
11 few slides.

12 --o0o--

13 AQPSD AIR POLLUTION SPECIALIST HICKS: Again,
14 here is the list of CARB measures in the Strategy and the
15 proposed schedule for Board consideration and
16 implementation for each item. This schedule is important,
17 because this is one of the elements that the Board will be
18 considering today to be submitted to EPA. For future SIP
19 commitments, EPA requires a commitment to the timelines
20 and this schedule fulfills that requirement.

21 The gold stars represent the year the measures
22 are scheduled to be brought to the Board for
23 consideration. And as you can see, most of these measures
24 will be brought to you in the next few years.

25 Following adoption, the dark blue squares

1 represent the years planned for implementation to begin
2 for each measure.

3 Let's now turn to spec -- to the specifics of the
4 measures.

5 --o0o--

6 AQPSD AIR POLLUTION SPECIALIST HICKS: For
7 on-road mobile sources, the Strategy includes the Clean
8 Miles Standard Regulation, Advanced Clean Fleets
9 Regulation, and On-Road Motorcycles New Emissions
10 Standards. The Advanced Clean Fleets Regulation is well
11 under development and will accelerate zero-emission
12 vehicle adoption by setting zero-emission requirements for
13 heavy-duty fleets, specifically target -- targeting the
14 larger fleets first. The Board will have the first
15 hearing for this measure next month.

16 The Zero-Emissions Trucks Measure is an
17 innovative new approach that will build -- that builds on
18 the public measure suggestion for a Heavy-Duty Vehicle
19 Useful Life Regulation. The Zero-Emissions Trucks Measure
20 targets the replacement of older trucks in order to
21 increase the number of heavy-duty ZEVs as soon as possible
22 and reduces emissions from fleets not affected by the
23 Advanced Clean Fleets Measure.

24 The Measure includes the possibility of doing a
25 regulation to directly force retirement of trucks when

1 they reach the end of their useful lives. Because this
2 kind of regulation could be especially hard on small
3 businesses and single owner-operators, we also discuss in
4 this measure new methods and tools that could be used to
5 replace older trucks if CARB were to be given additional
6 legislative authorities, including using market signal
7 tools that would not unduly burden low-income truckers,
8 provide flexibility and target reductions in areas that
9 need it most.

10 With the On-Road Motorcycle New Emissions
11 Standards, CARB would develop new exhaust emissions
12 standards that achieve harmonization with more aggressive
13 current European motorcycle emission standards. The Clean
14 Miles Standard Regulation was adopted by the Board in 2021
15 and reduces emissions from ride-hailing services. While
16 it has been already adopted, this was not included as a
17 measure in CARB's previous 2016 State SIP Strategy and
18 thus it is being included as a measure here for inclusion
19 in the SIP.

20 Finally, the Enhanced Regional Emission Analysis
21 in SIPs Measure primary goal is to reduce on-road mobile
22 vehicle emissions through VMT reductions. CARB is
23 considering the following options to support reductions in
24 VMT: a change to motor vehicle emission budgets
25 development process, reasonably available control measures

1 analysis for transportation control measures, and updated
2 guidance for the Congestion Mitigation and Air Quality
3 Improvement Program and the expenditure of motor vehicle
4 fees. These measures will provide additional on-road
5 mobile source emission reductions to support attainment of
6 the 70 ppb ozone standard.

7 --o0o--

8 AQPSD AIR POLLUTION SPECIALIST HICKS: Next, I'll
9 cover the proposed measures for off-road vehicles and
10 equipment. Our list of potential measures to control
11 emissions from off-road vehicles and equipment includes a
12 broad range of programs that go far beyond those in
13 previous SIP strategies. Emissions from off-road vehicles
14 and equipment are significant and contribute about 35
15 percent of total statewide oxides of nitrogen, or NOx,
16 emissions in 2017, with that contribution expected to
17 continue to grow into the future.

18 The Tier 5 Off-Road New Compression-Ignition
19 Standards would require more stringent exhaust standards
20 for all power categories. Amendments to the In-Use
21 Off-Road Diesel Fueled Fleets Regulation would target the
22 oldest and dirtiest equipment allowed to operate under the
23 current regulation structure by adding an operational
24 backstop to the current regulation for the dirtiest
25 engines between 2024 and 2036.

1 The Transport Refrigeration Unit Regulation part
2 2 would require zero-emission for trailer and other TRUs.
3 This would be the second phase of a TRU rulemaking that
4 the Board passed earlier this year. Amendments to the
5 Commercial Harbor Craft Regulation were also adopted by
6 the Board a few months ago. This action requires the
7 vessels to meet the cleanest possible standard and
8 retrofits based on compliance schedule.

9 The Cargo Handling Equipment Regulation proposes
10 to start transitioning to fully electric in 2026 to
11 achieve over 90 percent penetration of electrical
12 equipment -- of electric equipment by 2037.

13 The Off-Road Zero-Emission Targeted Manufacturer
14 Rule would propose to require manufacturers to produce for
15 sale zero-emission equipment as a percentage of their
16 annual sales volume. This would increase availability of
17 zero-emission options in the off-road sector and support
18 other potential measures that promote or require the
19 purchase and use of such options.

20 The Clean Off-Road Fleet Recognition Program
21 would create a voluntary program encouraging fleets to
22 incorporate advanced technologies into their fleets.

23 And finally, the Spark-Ignition Marine Engine
24 Standards proposes to adopt more stringent exhaust
25 standards and evaluate zero-emission technologies.

1 --o0o--

2 AQPSD AIR POLLUTION SPECIALIST HICKS: Along with
3 on-road sources and off-road equipment, the Strategy
4 proposes measures for consumer products, appliances, and
5 now pesticides as well. CARB is proposing to amend the
6 Consumer Products Regulation to achieve additional
7 reductions in VOCs beyond those achieved through the 2020
8 and prior amendments.

9 The proposed Strategy is also proposing a new
10 zero-emission standard for space and water heaters sold in
11 California that would go into effect in 2030. For this
12 measure, staff is considering that it could expand --
13 could be expanded to include other end uses consistent
14 with suggestions received from the public for additional
15 building and appliance emission standards.

16 During the public process, we have received many
17 comments concerning pesticides. Pesticides are used for
18 urman -- urban and agricultural pest management across the
19 state and are a source of VOC emissions. Pesticides are
20 regulated under both federal and State law. As part of
21 the public measure suggestions in the draft Strategy,
22 staff included a potential pesticide measure. CARB staff
23 have been collaborating closely with staff at our sister
24 agency, DPR, to work towards identifying actions to reduce
25 pesticide emissions that could be pursued in the SIP. As

1 a result of these efforts, the proposed Strategy now
2 includes a measure to be included in the SIP, the
3 regulation that DPR is developing to address both the
4 cancer and acute risk to non-occupational bystanders from
5 the use of 1,3-D by shifting to application methods with
6 lower 1,3-D emissions or that use other measures to reduce
7 their exposure. The regulation will be developed in
8 consultation with CARB, the county agricultural
9 commissioners, and other relevant State and local
10 agencies.

11 --o0o--

12 AQPSD AIR POLLUTION SPECIALIST HICKS: As I
13 mentioned early, CARB staff is exploring all mechanisms to
14 control emissions in order to improve air quality and
15 better protect public health. It is important to mention
16 that some mobile sources are primar -- are primarily
17 regulated at the federal and international level. Even
18 so, CARB will pursue measures as shown on this slide for
19 locomotives, aviation, and ocean-going vessels to the
20 extent available under our authority.

21 CARB is currently undergoing a public rulemaking
22 process to propose an In-Use Locomotive Regulation, which
23 would accelerate the adoption of advanced, cleaner
24 technologies, including zero-emission technologies, for
25 locomotive operations. The associated emission reductions

1 from this proposed measure are significant.

2 For aviation and ocean-going vessels, CARB is
3 evaluating relevant authorities and exploring potential
4 approaches to reduce emissions from these sources to
5 support attainment of air quality standards and to provide
6 reductions in toxics and other emissions to the
7 communities near airports, ports, and other freight
8 facilities.

9 --o0o--

10 AQPSD AIR POLLUTION SPECIALIST HICKS: While CARB
11 and the districts are working to identify all actions
12 within our jurisdiction to reduce emissions from primarily
13 federally-regulated sources, I want to highlight that we
14 cannot achieve the air quality standards without action at
15 the federal level. The graph here shows statewide mobile
16 source NOx emissions from 2000 to 2040, with the blue line
17 representing California regulated mobile sources with
18 adopted rules, and the gold line representing the
19 primarily federally-regulated sources, such as interstate
20 trucks, planes, trains, and ships.

21 Emissions from primarily federal-regulated
22 sources surpassed California sources in 2020, and without
23 more stringent federal requirements, emissions will be
24 doubled to California sources by 2030 -- by 2031. Given
25 the contribution from these sources, federal action is

1 critical to attain the 70 ppb ozone standard, as well as
2 to support attainment of other federal standards and
3 protect public health.

4 --o0o--

5 AQPSD AIR POLLUTION SPECIALIST HICKS: In the
6 proposed Strategy, we identify the regulatory actions
7 needed from federal and international entities for
8 interstate on-road, heavy-duty vehicles, preempted
9 off-road equipment, locomotives, aviation, and ocean-going
10 vessels. These are shown on the slide here. For on-road
11 heavy-duty vehicles, CARB outlined a petition in the 2016
12 State SIP Strategy for a federal low-NOx standard. Since
13 that time, a petition was sent and EPA is now moving
14 forward with the federal Clean Trucks Plan.

15 Beyond this though, CARB would petition or
16 advocate to EPA for federal zero-emission, on-road,
17 heavy-duty vehicle requirements. For preempted off-road
18 equipment, CARB would petition or advocate EPA to require
19 off-road equipment Tier 5 compression-ignition standards,
20 new spark-ignition standards, and zero-emission standards
21 where the technology is feasible.

22 For locomotives, CARB included in the 2016
23 Strategy a measure to petition for more stringent national
24 locomotive emission standards. CARB submitted this --
25 this petition and is waiting for EPA to respond or act.

1 Beyond cleaner combustion standards, CARB would petition
2 or advocate to EPA to promulgate national zero-emission
3 standards for locomotives and to address remanufacturing.

4 For ocean-going vessels, CARB would petition or
5 advocate to adopt more stringent Tier 4 marine standards
6 and require visits made by Tier 3 or cleaner vessels.

7 And finally, for aviation, CARB would petition or
8 advocate to EPA, and the International Civil Aviation
9 Organization, and other regulating agencies for more
10 stringent standards for aircraft engines to require the
11 use of cleaner fuels and engines when traveling through
12 California, and to require zero-emission, on-ground
13 operations at California airports.

14 As I mentioned earlier, our new addition to the
15 proposed Strategy for the aviation sector is for an
16 airport aviation emissions cap. This emissions cap would
17 set an emissions level for all aircraft activities related
18 to each airport preventing emissions to increase with
19 airport growth and reduce existing emissions by replacing
20 airport activities with cleaner combustion and
21 zero-emission technologies.

22 Emission reductions from these federal and
23 international actions are necessary for California, and
24 more specifically the South Coast, to attain the 70 ppb
25 ozone standard. Nonetheless, when EPA acts on CARB's

1 commitments to support South Coast's attainment
2 demonstration, they will have to classify these measures
3 as Clean Air Act 182(e)(5), or black box measures, because
4 these measures are action at the federal level.

5 That said, this is very different -- this is very
6 different than the use of black box measures in the past,
7 due to the fact that these federal actions are identified
8 in detail with emission reductions as needed to achieve
9 attainment in the South Coast.

10 --o0o--

11 AQPSD AIR POLLUTION SPECIALIST HICKS: The new
12 measures contained in the proposed Strategy reflect a
13 combination of State actions, and petitions, and advocacy
14 for federal and/or international action. Listed here on
15 this slide are the potential NOx emission reductions from
16 the measures in the 2022 Strategy, along with a small
17 portion from the remaining 2016 State SIP Strategy
18 measures that are not yet accounted for in the baseline
19 emissions inventory. Even with the substantial emission
20 reductions associated with ongoing implementation of the
21 existing control program, these reductions from new
22 measures are needed to provide for attainment of the 70
23 ppb ozone standard in these areas as shown in the table.

24 Similar to the schedule mentioned above,
25 aggregate emission reductions from the measures identified

1 in the Strategy are a required element for attainment
2 demonstrations. Because the district plans are still
3 under development, emission reduction estimates could
4 change slightly as the attainment demonstrations are
5 finalized. For this reason, these aggregate emission
6 commitments will be proposed by CARB staff alongside each
7 70 ppb ozone SIP in the coming months.

8 --o0o--

9 AQPSD AIR POLLUTION SPECIALIST HICKS: As I
10 stated earlier, South Coast remains the biggest challenge
11 when it comes to attaining ozone standards, but the
12 proposed Strategy now includes measures and reductions
13 needed from state sources to show a pathway for attainment
14 in the South Coast. At the February Board hearing, staff
15 provided a similar bar chart that had yet -- that had not
16 yet identified all of the measures and reductions needed.
17 Since then, staff has been working closely with South
18 Coast District to identify additional measures and
19 quantify benefits from certain measures that were still in
20 development. The chart here shows South Coast NOx
21 emissions.

22 From the left to right, the bar charts shows the
23 emissions starting point in 2037 for the South Coast by
24 category. The line going across the chart at 60 tons per
25 day represents the emissions levels need to meet 70 ppb

1 through 2037, the Strategy will lead to an average annual
2 decrease of 53,000 jobs compared to the projected baseline
3 levels. It is important to note that this is not a
4 decrease in 53,000 jobs every year, but an average over
5 the 15-year period when compared to the baseline. The
6 cost effectiveness is \$92,000 per ton of NOx, which is the
7 ratio of the total amortized cost divided by the
8 cumulative NOx reductions through 2037.

9 In contrast to most of the economic analysis
10 brought before the Board for regulations in other items,
11 this analysis is purely based on cost at this time. It
12 does not factor in it -- in any monetization of the
13 substantial public health benefits that will result.
14 Because this Strategy is focused on ozone attainment,
15 staff felt it appropriate that quantified health benefits
16 include benefits from reduced ozone levels.

17 Staff in our Research Division is currently
18 working and undergoing a public process to refine and
19 further establish the methodology by which CARB will
20 quantify ozone health benefits into the future, and we
21 look forward to being able to share these results with the
22 Board and the public through the future planning efforts.

23 --o0o--

24 AQPSD AIR POLLUTION SPECIALIST HICKS: As I
25 mentioned early, staff held the fourth workshop in

1 conjunction with the release of the proposed Strategy in
2 August. Staff presented a high-level overview of the
3 Strategy with the new measures and economic analysis, and
4 has -- and also heard significant input and feedback from
5 stakeholders and answered questions. The staff -- the
6 workshop was well attended and CARB staff received
7 significant feedback.

8 --o0o--

9 AQPSD AIR POLLUTION SPECIALIST HICKS: We wanted
10 to highlight the main feedback we received at the
11 workshop, most of which was consistent with -- with what
12 we had received through recent comment letters in other
13 venues over the last few months.

14 First, it is important to note that stakeholders
15 and the public were very thankful for the inclusion of the
16 Zero-Emissions Trucks Measure and for the significant
17 emission reductions the proposed In-Use Locomotive
18 Regulation is anticipated to achieve. Stakeholders also
19 provided significant input on more opportunities for a
20 stronger pesticides commitment, accelerated Zero-Emission
21 Truck Measure schedule, BACT/BARCT determinations, and
22 equitable transition to a zero-emission future.

23 On the next slides, I will discuss each of these
24 in more detail.

25 --o0o--

1 AQPSD AIR POLLUTION SPECIALIST HICKS: CARB added
2 DPR's 1,3-D regulation to the proposed Strategy, which was
3 released on August 12th. This regulation is currently
4 under development by DPR and will address cancer and acute
5 risk from the use of 1,3-D by shifting to application
6 methods with lower 1,3-D emissions or use other measures
7 to reduce exposure.

8 At the August workshop, advocates continue to
9 recommend a stronger pesticide measure beyond on the 1,3-D
10 me -- beyond the 1,3-D measure in the proposal. They
11 provided several rec -- recommendations including DPR
12 committing to a broader measure that addresses more
13 pesticides and CARB pursuing a pesticide measure under our
14 authority.

15 Finally, advocates want a targeted percent VOC
16 emission reduction commitment by specific years.

17 --o0o--

18 AQPSD AIR POLLUTION SPECIALIST HICKS: Over the
19 last month since our workshop, CARB has been working
20 closely with DPR to consider options for additional
21 measures or emission reduction commitments. DPR is now
22 working to estimate potential emission reductions for
23 their 1,3-D measure and will be including these measures
24 in our aggregate emission reduction commitments that we
25 will be considering by the Board in January for the San

1 Joaquin Valley and for other areas alongside their
2 respective ozone SIPs.

3 Moving forward, CARB will be partnering with DPR
4 to proactively assess ways to reduce VOC emissions and
5 also greenhouse gas impacts throughout DPR's programs.

6 --o0o--

7 AQPSD AIR POLLUTION SPECIALIST HICKS: At the
8 August workshop, stakeholders expressed appreciation for
9 developing and adding the Zero-Emissions Trucks Measure in
10 the Strategy. This measure is currently proposed for the
11 Board consideration in 2028 and implementation would begin
12 in 2030. Stakeholders are advocating to accelerate this
13 measure by two years, so adoption would be in 2026 and
14 implementation would begin in 2028.

15 Across CARB, staff continues to pursue an
16 aggressive regulatory schedule that prioritizes measures
17 to achieve the greatest emission reductions and most
18 benefit to public health, while also continuing to work
19 with stakeholders to ensure we're developing programs with
20 deadlines that can be met and that place the least burden
21 on small businesses.

22 The schedule for the Zero-Emissions Truck Measure
23 in the proposed Strategy was designed to allow
24 implementation of the Advanced Clean Fleets regulation to
25 begin, starting the first wave of our zero-emission truck

1 requirements with large fleets. It has always been CARB's
2 intention to go further, so this new measure is that
3 second wave which will be pushing the transition to zero
4 in the smaller fleets.

5 Staff strives to approach this in a flexible way
6 that does not overburden small businesses and single
7 owner-operators. And the time laid out in the proposed
8 schedule is what staff anticipated is needed to have the
9 best chance at accomplishing this goal while also
10 continuing to drastically reduce emissions from heavy-duty
11 trucks.

12 --o0o--

13 AQPSD AIR POLLUTION SPECIALIST HICKS: Also,
14 during the August workshop, advocates voiced the need for
15 CARB to develop best available control technology or best
16 available retrofit control technology, BARCT -- BACT and
17 BARCT, determinations for stationary sources as a SIP
18 measure. While this is not included as a SIP measure at
19 this time in the proposed Strategy, CARB is still
20 evaluating BACT/BARCT determinations and how actions such
21 as these at the State level could potentially meet Clean
22 Air Act requirements for SIP measure approvability in the
23 future.

24 As local air districts have primary regulatory
25 authority over stationary sources, submittal into the SIP

1 of district attainment plans and adopted district rules
2 that require controls at BACT and BARCT levels are the
3 mechanism by which these demon -- determinations are able
4 to be included in the SIP and made federally enforceable.

5 That said, CARB staff is working closely with the
6 local air districts to identify existing BACT
7 determinations and BACT guidelines across the state in
8 order to better support statewide consistency and
9 collaboration.

10 --o0o--

11 AQPSD AIR POLLUTION SPECIALIST HICKS: And
12 finally, at the public workshop and throughout the
13 process, staff has heard from the public about the
14 importance of ensuring equity in CARB's programs as we
15 drive forward toward zero emissions everywhere feasible.
16 While there is a broad support for zero-emission measures
17 in the Strategy, advocates have expressed that equity and
18 incentives for low-income populations need to be a focus
19 as these zero-emission measures are developed.

20 Specifically, we've heard from advocates a need
21 to ensure that the Zero-Emission Standards for Space and
22 Water Heater Measure in the Strategy is designed as
23 equitably as possible and through a process that involves
24 thorough engagement with communities and community-based
25 organizations. CARB has been in regular communication

1 with advocates on these issues and staff will continue to
2 coordinate with them and others during the formal
3 regulatory process. Staff also continues to hear comments
4 on the ongoing need for targeted incentives to support
5 low-income and disadvantaged communities in the transition
6 to zero-emission vehicles.

7 Staff is committed to continuing to work to
8 identify and develop programs that will provide additional
9 targeted incentive funding, as you will hear more about
10 when the funding plan is brought to the Board in a few
11 months.

12 --o0o--

13 AQPSD AIR POLLUTION SPECIALIST HICKS: To
14 summarize, the proposed 2022 State SIP Strategy identifies
15 the pathway to attain the 70 ppb ozone standard across the
16 State. The measures as outlined in the Strategy meet
17 EPA's SIP approvability requirements and are needed to
18 support the attainment SIPs that the districts across the
19 state are releasing. These SIPs are due to EPA and will
20 be adopted by each district and brought to this Board for
21 consideration in the coming months.

22 Looking forward, staff will continue to work with
23 the public to potentially incorporate additional measure
24 suggestions through the upcoming Board actions.

25 --o0o--

1 AQPSD AIR POLLUTION SPECIALIST HICKS: Based on
2 everything I've covered in this presentation, CARB staff
3 recommends that the Board adopt the Proposed 2022 State
4 SIP Strategy and the commitments to pursue measures
5 according to the defined schedule. We also recommend that
6 the Board certify the Final Environmental Analysis and
7 response to environmental comments, and direct the
8 Executive Officer to submit the 2022 State SIP Strategy to
9 EPA for inclusion in the California SIP alongside the
10 relevant district SIPs.

11 --o0o--

12 AQPSD AIR POLLUTION SPECIALIST HICKS: So what
13 are the next steps?

14 Today, the Board will be considering the proposed
15 Strategy along with the federal environmental analysis.
16 The districts are currently developing the nonattainment
17 area SIPs. For the seven areas needing emission
18 reductions beyond adopted programs, the plans will include
19 the measures and reductions from the State SIP Strategy to
20 demonstrate attainment. These district SIPs will come to
21 the Board for consideration over the next several months,
22 after they are approved by their respective District
23 Boards.

24 Once adopted by this Board, these district SIPs
25 will be submitted to EPA for inclusion in the SIP. And

1 finally, over the next 15 years, CARB will be developing
2 and implementing the ambitious suite of measures
3 identified in the Strategy, thereby ensuring that all
4 nonattainment areas in the state can meet the 70 ppb ozone
5 standard and bringing healthier air to all Californians.

6 Thank you, Chair Randolph and members of the
7 Board.

8 CHAIR RANDOLPH: Thank you so much for that
9 presentation. And it is now time to hear from the public
10 who signed up to speak on this item either by submitting a
11 request-to-speak card or a raised hand in Zoom. And is --
12 as is our practice, we will close the Zoom queue after a
13 certain point in time. So I'm going to go ahead and
14 suggest that that happen at 2:30. So the Board Clerk will
15 close the Zoom queue at 2:30.

16 All right. So I will now ask the Board clerks to
17 begin calling the public commenters.

18 BOARD CLERK ESTABROOK: Thank you, Chair. We
19 have five people in person. And the first is Bill
20 Magavern.

21 BILL MAGAVERN: Got it. Thanks. Good afternoon,
22 Madam Chair, and Board members. And Dr. Cliff,
23 congratulations on moving up from the federal government.

24 (Laughter)

25 BILL MAGAVERN: Good to have you back.

1 I really, really admire the staff presentation.
2 And we support so many of these measures, and look forward
3 to working with all of you over the next many years to
4 implement them for the good of the people of California.

5 I do have to point out though that I do not think
6 that these measures will add up to reaching attainment,
7 which is unfortunate, because, you know, that's really
8 what the mission of this agency is and the mission of my
9 group is, is to deliver healthy air to the people of
10 California who have been denied for a long time. And as
11 this presentation pointed out, that's particularly true of
12 people in disadvantaged communities.

13 And while we strongly agree that the federal
14 government should be doing much more in the areas where it
15 has primary jurisdiction. I cannot confidently say that I
16 expect the federal government to do that. And so it's I
17 think very telling that the two biggest items in this plan
18 from a perspective reducing NOx are locomotives and
19 ocean-going vessels, both areas where we really need the
20 federal government to step up and we've seen very, very
21 little action.

22 So what I take from that, for purposes of today,
23 is that, you know, we need to do more, as I think many of
24 you have indicated. We need to find all of the emission
25 reductions we can. And you will be seeing the locomotive

