



JOHN J. AGUILERA
DEPUTY MAYOR

**45-Day
Docket No. 2
Table IV.1
45-Day Comment Period**

August 13, 2018

Chair Nichols
California Air Resources Board
1001 I Street
Sacramento, California 95814

Submitted via email to: Evan Kersnar, Evan.Kersnar@arb.ca.gov

RE: Proposed Innovative Clean Transit (ICT) Regulation

Dear Chair Nichols and Members of the Board:

On behalf of the City of Vista, I write to provide feedback regarding the proposed Innovative Clean Transit (ICT) regulation, which amends the existing Fleet Rule for Transit Agencies. The City of Vista supports efforts that reflect a positive, collective, and cohesive approach to regional solutions, as long as local control is maintained.

The North County Transit District (NCTD) is the public transit operator for north San Diego County. NCTD operates a multimodal transit system that includes: fixed route buses, demand response, complementary ADA paratransit, commuter rail, and hybrid rail. NCTD's fixed route revenue fleet is composed of one hundred thirty-three (133) full-size compressed natural gas buses, nine (9) diesel buses and ten (10) smaller buses powered by unleaded gas.

Over the last two years, NCTD has made significant strides toward adding zero emission technology to its fleet. Key actions include: the execution of a non-binding agreement with San Diego Gas and Electric to provide electric bus charging infrastructure, programming low carbon transit operations funds to support the purchase of zero emission buses, successfully receiving a Federal Transit Administration grant award to support the purchase of zero emission buses, and procuring a consultant to develop a capital improvement plan to convert its facilities to support zero emission bus operations. These efforts clearly demonstrate NCTD's commitment to exploring this new technology.

Chair Nichols
California Air Resources Board
August 13, 2018
Page 2

Submitted via email to: Evan Kersnar, Evan.Kersnar@arb.ca.gov

RE: Proposed Innovative Clean Transit (ICT) Regulation

H-8-6 However, NCTD, like most transit systems, have significantly under-funded capital programs. For example, NCTD has 98 revenue vehicles that support its rubber wheel operations that have reached the end of their useful life and require replacement. The estimated cost to replace these 98 buses with compressed natural gas and gasoline technology is over \$51 million. Additionally, NCTD has critical unfunded safety project needs of \$171 million for rail bridge replacements and \$82 million for bluff stabilization in Del Mar. The cost to procure electric buses and convert NCTD facilities will significantly add to the capital improvement program deficit that already exists.

For these reasons, we oppose the adoption of any strict regulatory mandate. Instead, we believe that agencies, such as NCTD, should be allowed to conduct pilot tests of zero emission technology over the next 5 to 10 years. Based on the success of these pilot tests, NCTD will be able to develop capital plans that support a phased implementation of zero implementation technology that will allow us to succeed. This approach also assumes that the State of California allocates additional funding to support increased capital and operating costs until such time that the costs approximate current costs for operating using compressed natural gas. Our proposed approach supports our shared interests of improving transportation efficiency while supporting the financial health of our transit operator.

Thank you for considering our feedback prior to creating new mandates that would impact our local transportation provider, NCTD.

Sincerely,


John J. Agujera
Deputy Mayor



MORONGO BASIN TRANSIT AUTHORITY

**45-Day
Docket No. 5
Table IV.1
45-Day Comment Period**

July 20, 2018

Mary Nichols
Chair, California Air Resources Board
1001 I Street
Sacramento, California 95814

Dear Ms. Chair Nichols and CARB Board Members,

The Morongo Basin Transit Authority (MBTA) is a Joint Powers Authority providing transit service in the high desert area of San Bernardino County. Operating just under 30 buses, we are a truly rural small operation that meets the challenge of providing lifeline services for the cities of Twentynine Palms, Yucca Valley and the outlying areas surrounding the Joshua Tree National Park.

MBTA has engaged ARB staff expressing our concerns about the potential adverse effects of the proposed implementation of the Innovative Clean Transit (ICT) regulation on small operators such as MBTA.

H-1-5

Specifically-we have noted that while the currently proposed regulation excludes “cutaway” type vehicles until 2026, its scope refers to all buses with a Gross Vehicle Weight rating of over 14,000 lbs., except for trolley buses. For greater clarity, we propose that ARB be explicit in similarly exempting all “body and frame” type buses (cutaways) regardless of weight class. Rural agencies such as MBTA rely heavily on larger cutaway buses as a cost effective solution for providing fixed route services in our communities, not just for providing door to door services. In particular, the F-550 based cutaways weighing 19,500 lbs. are the backbone of our fleet. The 14,000 lb. threshold, if implemented, would place the type of vehicles we utilize under the scope of the regulation. Cutaways should not be counted towards fleet size due to lack of availability, field testing and the unknown performance of these type of shuttles for agencies like ours serving vulnerable populations.

H-1-3

We look forward to continued discussions with ARB on these matters going forward.

Sincerely,

Mark Goodale
General Manager



August 30, 2018

Mary Nichols, Chair
California Air Resources Board
1001 I Street, P.O. Box 2815
Sacramento, CA 95812-2815

Re: Support for a Strong Innovative Clean Transit Rule

Submitted online via CARB’s Web Comment Submittal Form

Dear Chair Nichols:

We, the undersigned members of the Advanced Clean Transit (ACT) Coalition Partners, appreciate the opportunity to provide comments on the Innovative Clean Transit (ICT) Proposed Rule. We view the adoption of a strong ICT Rule as a key component of California’s overall drive to zero emission transportation technologies to protect public health while achieving our clean air and climate standards and creating good-paying jobs in the state. We appreciate the work of the board and staff to move this proposal forward.

We offer our support for approval of this rule at the upcoming CARB Board meeting on September 27th and 28th. However, in order to more fully achieve the states objectives for reducing criteria pollutants and green-house gases, we urge you to make the following three improvements to the rule.

H-5-2

1. **Achievement of 100% Zero Emissions Bus (Bus) 2040 Goal** – In the Proposed Regulation Summary, the first listed “Key element of the proposal...” is that “Transit agencies develop individual plans to transition to a zero-emission bus fleet by 2040.” We fully support this goal and it means that by 2040, all transit agency buses will be zero emission. And yet the rule does not explicitly codify the 2040 requirement. Twenty- two

years from now provides more than ample time for agencies to plan their fleet turnover to meet this goal.

We recommend that the rule contain specific language that requires that all buses must be zero emissions by 2040 and thereafter.

H-4-3

2. **Cutaway, Over-The-Road, Double Decker, and Articulated Buses** - The proposed rule states that cutaway, over-the-road (motor coaches), double decker and articulated buses are excluded from the ZEB purchase requirements until January 1, 2026. These four classes of buses make up almost one-third of all buses. There currently is at least one bus in each of these four bus types that is CARB HVIP eligible.

We agree that these bus types may be excluded from this rule initially but recommend that transit agencies be required to purchase buses according to the rule requirements for other transit buses two years after at least two commercial buses have been Altoona tested and become HVIP eligible in a bus class.

H-5-5

3. **Transit Agency Plan Creation For Small Agencies** – The proposed rule calls for large agencies to complete their ZEB rollout plans by July 1, 2020 and July 1, 2023 for small agencies. For the small agencies, this is an unnecessary and deleterious three-year delay. Planning is the first step for an agency in transitioning to ZEBs and its delay will delay deployment for small agencies and ultimately impair their ability to transition their fleets by 2040. Further, they may miss the opportunity to take full advantage of the many currently available financial incentive and support programs. By giving the small agencies another six months, they can learn from the large agency plans and will have a total of two years for planning. Preparing a plan for a smaller agency should be far less complex than for a large agency, making this eminently doable.

We recommend that small agencies should complete their plans by January 1, 2021.

H-3-3

Adoption of the three improvements we recommend will help California realize the benefits of this rule sooner while maintaining the cautious and prudent nature of the proposal. In addition, the rule should create more ambitious near-term targets to meet for the waiver of requirements for the first two years. Pushing transit agencies to deploy more buses now will only amplify the benefits of this regulation.

The single best incentive California can pursue to push electric buses is a clear direction that the state is moving to zero emissions buses. This will send a strong market signal, and as transit agencies continue their transition at an accelerating rate, bus costs will continue to come down, range and utility will continue to increase, and transit agencies will experience the cost-effective operation inherent in ZEBs. California will once again demonstrate to other states how new emission-reduction programs can help clean up our air and atmosphere while also enhancing our economies.

Sincerely,

Sierra Club

Kathryn Phillips, Director
Ray Pingle, Co-lead, CARB ZEB Rulemaking Project

Earthjustice

Adriano Martinez
Staff Attorney

Union of Concerned Scientists

Jimmy O'Dea
Vehicles Analyst

Environment California / Environment California Research & Policy Center

Dan Jacobson
State Director

American Lung Association in California

Will Barrett
Clean Air Advocacy Director

IBEW-NECA California & Nevada

Bernie Kotler Executive Director, Sustainable Energy Solutions; Labor Management Cooperation Committee

International Brotherhood of Electrical Workers (IBEW) Local 11, Los Angeles NECA; Labor Management Cooperation Committee

Jennifer Kropke
Director of Workforce and Environmental Engagement,

IBEW Local 569

Nicholas J. Segura, Jr.
Business Manager/Financial Secretary

Jobs to Move America

Abhilasha Bhola
Senior Policy Coordinator

Coalition for Clean Air

Bill Magavern
Policy Director

BlueGreen Alliance

JB Tengco
West Coast Director

CALPIRG

Emily Rusch
Executive Director



Alameda-Contra Costa Transit District

Mike Hursh, General Manager

September 6, 2018

Mary D. Nichols, Chair
California Air Resource Board
1001 I Street
Sacramento, CA 95814

RE: Innovative Clean Transit Draft Discussion Proposal

Dear Chair Nichols:

On behalf of the Alameda-Contra Costa Transit District (AC Transit), I want to start by expressing our appreciation to the California Air Resources Board (CARB) staff for the significant time and attention spent on the development of the Innovative Clean Transit (ICT) rule. The proposed rule reflects considerable strides in addressing the real world constraints faced by AC Transit and all transit operators. Unfortunately, there remain critical elements that need to be addressed in order to implement a rule that recognizes the state of technology readiness and the financial balance between maintaining service levels while transitioning to a zero emission fleet.

C-1

In 2002, AC Transit began operating a hydrogen fuel cell electric bus. We now operate 13 hydrogen fuel cell electric buses and have two (2) hydrogen fueling stations at our Oakland and Emeryville bus yards – the latter having a dispenser accessible to the public for fueling passenger cars. An additional 10 hydrogen fuel cell zero emission buses are on order, which were sponsored by an \$8.5 million grant from the Air Resourced Board. While vehicle and fuel costs remain a concern, the reliability of these vehicles has exceeded expectations. In addition, AC Transit will be receiving five (5) battery electric buses, and has been awarded funds to purchase an additional 45 zero emission buses. This will enable AC Transit to compare battery and fuel cell vehicles in real world side-by-side conditions, and generate the valuable data AC Transit needs to find the most cost effective balance in vehicle technologies.

AC Transit's leadership in the development of zero emission bus technology underscores its commitment to transitioning to 100% zero emission buses. However, AC Transit continues to have concerns regarding the uncertainty with the scalability, the uncertainty with the technology, and, the uncertainty with the financial ability to implement this rule. For AC Transit to maintain service levels while addressing this uncertainty, we urge you to amend the draft rule to include the following:

C-1,C-9

B-2

- The biggest risks to our transit service lies in projecting the cost and technological capabilities of zero emission buses (ZEB) 5, 10, or 20 years out. Consistent with the Transit Fleet Rule, we ask that the rule be amended to include cost and performance benchmarks that would be reviewed prior to the commencement of the purchase mandate, and periodically thereafter and that such benchmarks be used to determine how the

regulation proceeds. In particular, establishing these benchmarks must be based on an independent review of the vehicle technology and the fueling/charging demands for large scale deployments.

E-8, E-10

- The Hybrid and Zero Emission Truck & Bus Voucher (HVIP) provides a simplified and successful process for offsetting the cost of a zero emission bus. However, given the scale of the proposed transition, the strict timeline, and unknown delays in vehicle production and infrastructure implementation, the HVIP funds must be available as an incentive and compliance program. In addition, CARB must clearly request that the Legislature create an infrastructure funding program. Without a secure source for infrastructure investments in fueling/charging facilities, maintenance facilities, and storage capacity, the ability to meet the goals of this rule is questionable at best.

H-10

- We appreciate the inclusion of “off ramps” in the proposed rule that allow extensions or exemptions if specified conditions occur. This includes an exemption from ZEB purchases based on financial hardships. A financial hardship exemption should also extend to the purchase of alternative diesel fuel. While CARB is working toward the commercialization of alternative diesel fuel, it is unknown if there will be a stable supply and reasonable price for alternative diesel fuel. It is also uncertain if engine warranties allow the use of alternative fuels.

AC Transit took the first step toward zero emission buses with the development of its prototype fuel cell vehicles. Much has changed since that first vehicle went into service, but there remains considerable uncertainty as we scale up the use of zero emission buses. AC Transit supports moving toward a zero emission fleet, but this must be carefully balanced with our limited financial resources, and not undercut our highest priority of providing public transit service to all.

Therefore, on behalf of AC Transit, thank you for your time invested in this issue, and I urge your favorable consideration of these amendments. If you have any questions or require more information, please do not hesitate to contact me at (510) 891-4753.

Sincerely,



Michael Hursh
General Manager

Cc: Senator Nancy Skinner
Senator Bob Wieckowski
Assemblyman Tony Thurmond
Assemblyman Rob Bonta
Assemblyman Bill Quirk
Assemblyman Kansen Chu
AC Transit Board of Directors
Beverly Greene, Executive Director of External Affairs, Marketing & Communications
Sal Llamas, Chief Operating Officer

Comment Log Display

BELOW IS THE COMMENT YOU SELECTED TO DISPLAY.

COMMENT 334 FOR INNOVATIVE CLEAN TRANSIT 2018 (ICT2018) - 45 DAY.

First Name: Tenley
 Last Name: Borchman
 Email Address: tenley.borchman@gmail.com
 Affiliation:

Subject: NO ON ICT

Comment:
 Hello Ms. Nichols et al:

**45-Day
 Docket No. 334
 Table IV.1
 45-Day Comment Period**

In its current form, the Innovative Clean Transit rule, divests in critical public goods and services by mandating a technology that is not viable for its intended use:

-Electric buses cost nearly 3.5 times that of a CNG bus with ranges that far exceed that of their electric counterpart. Some systems in rural California received as little as \$34,000 from FTA and limited financial support from State and local governments: this mandate has the potential to limit and/or stop services in less affluent areas.

C-5

-The rule provides limited-term incentive funding but no dedicated funding to offset the cost of a much more expensive technology.

E-14

-Current mandates by the federal government specifically bar purchases of Chinese-manufactured buses (i.e. - electric buses).

E-9

-The acceptability of ZEB as an alternative to less clean vehicles has been postured by lobbyists from electric bus manufacturers: actual data provided from ZEB-implemented agencies in Oregon and BAY-area, CA show that actual range is generally 1/3-2/3 of estimates posited by ZEB-manufacturers and highly dependent on terrains. These vehicles simply do not travel on one charge to complete an average route.

I-10

C-5

-This regulation would require rural agencies to cut life line services (such as Plumas Transit's service to the nearest major medical center) as the distance traveled could not be provided by ANY known electric vehicle as of today.

H-8-2

-This regulation highly favors affluent urban areas and their public transit systems with no acknowledgement of funding differences/FO and DAR miles traveled in rural areas.

E-13

-The added weight of battery packs could limit the amount of passengers allowed on a vehicle and MORE IMPORTANTLY: the amount of ADA wheelchair-passengers on a vehicle.

C-6

-This regulation does not address caveats presented that could potentially cause agencies to fall out of compliance with both federal and state law and the Americans with Disabilities Act.

H-8-5

-The impact of this regulation on a public good that seeks to limit road congestion and single-occupancy vehicle reliance could lead to services cut - having the opposite, intended consequence.

E-14

For all these reasons, I request the Board and esteemed staff take into consideration both the nuances of the proposed regulation and of a spurious technology - both the mandated technology and the regulation in its current form are incredibly harmful to public transit, HOV infrastructure, and the head way California has just started to make on coordinating transit and mobility services in the state. I respectfully ask you to consider a reinvestment in mass transportation rather than a divestiture; our state needs less reliance on SOV's and more mobility options.

B-3

Regards,
 Tenley C. Borchman

Attachment:

Original File Name:

Date and Time Comment Was Submitted: 2018-09-13 14:47:51

If you have any questions or comments please contact [Clerk of the Board](#) at (916) 322-5594.

[Board Comments Home](#)

CONTACT US

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**45-Day
Docket No 354
Table IV. 1
45-Day Comment Period**

September 14, 2018
California Air Resources Board
1001 I Street
Sacramento, CA 95812

RE: Innovative Clean Transit Proposed Regulation

Dear Chairwoman Nichols and Members of the California Air Resources Board,

We appreciate the opportunity to provide comments on the Innovative Clean Transit (ICT) proposed regulation. We strongly support adoption and implementation of a robust ICT rule and applaud the actions of the California Air Resources Board to meet California's important air quality goals and the state's leadership to address climate change. We further support efforts to deploy zero-emission vehicles that are accessible to all Californians and that eliminate toxic emissions and associated exposures from diesel and conventional natural gas buses.

Proterra is a leading U.S. manufacturer of one of the world's most fuel-efficient battery-electric buses for public transit. Our industry leading CATALYST™ bus can achieve 22+ MPGe performance, 500%+ better than diesel and CNG buses, eliminating toxic diesel particulate matter and NOx emissions from American cities. Proterra manufactures its own battery modules and packs in Burlingame, CA, and builds transit buses from the ground up in two U.S. factories, including in the City of Industry, CA. Proterra moved its Corporate Headquarters to Burlingame from the East Coast and expanded manufacturing to LA County - allowing future zero-emission buses deployed in California to be designed and manufactured by Californians and supported by California supply chains. To date, Proterra buses have logged over 5.5 million miles in revenue service, providing transit agencies reliable and improved performance.

Proterra strongly supports the draft Innovative Clean Transit proposed regulation. The proposed rule is a balanced approach that will allow transit agencies sufficient time to plan and procure zero-emission transit buses, while maintaining the goal of transitioning to 100% zero-emission by 2040. We are thankful to ARB staff who have overseen the development of the plan and their efforts to work with many stakeholders to create a reasonable regulation.

Proterra will continue to innovate and implement strategies to make battery-electric buses the most cost competitive and fuel-efficient choice for transit agencies and improve our technology to make battery-electric transit options the preferred choice of transit agencies, bus drivers, maintenance staff, and public transit riders alike. Since 2010, Proterra has decreased the up-front cost of battery-electric transit buses by approximately 41% (from \$1.2M to \$700K) and increased range by approximately 800% (from a nominal range of 30-50 miles to 250-350 miles). To remain competitive both in California and throughout the United States, we will

www.proterra.com

continue to be cost competitive and improve our technology to accelerate the deployment of zero-emission buses in California and beyond.

Our comments on the draft Innovative Clean Transit proposed regulation include:

- H-8-2 • We recognize that some transit agencies have a few very long duty cycles that current technology cannot service. In our experience, these bus routes remain an outlier to the vast majority of routes that can be serviced today by electric transit. We support the ability to defer zero-emission bus purchase requirements due to the inability to meet isolated mileage needs, but this should be limited strictly to vehicles serving those duty-cycles. We strongly recommend that exemptions or deferrals do not apply to an entire agency, if only a few duty cycles cannot be serviced by zero-emission technology.
- E-8 • We strongly support continued funding of incentive programs as available through the life of the regulation. Programs such as HVIP are essential to assist the transition to 100% zero-emission.

Thank you for the opportunity to provide comments and we look forward to working with ARB and other stakeholders during implementation.

Sincerely,

Kent Leacock

Kent Leacock
Sr. Director Government Relations & Public Policy
Proterra Inc.



**45-Day
Docket No. 360
Table IV.1
45-Day Comment Period**

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730 Peachtree Street, Suite 760
Atlanta, GA 30308
P :: 678-244-4150 • F :: 678-244-4151

California Office
1960A University Avenue
Berkeley, CA 94704-1238
P :: 510-851-0625 • F :: 510-525-2231

September 17, 2018

Mary D. Nichols, Chair
California Air Resource Board
1001 I Street
Sacramento, CA 95814

RE: Proposed Innovative Clean Transit Rule

Dear Chair Nichols:

On behalf of the Center for Transportation and the Environment (CTE), we are writing to express CTE's overall support for the proposed Innovative Clean Transit Rule. In addition, CTE would like to express our appreciation to you and CARB staff for the significant time and attention on producing a plan that attempts to address the hurdles that transit operators will face in transitioning to a zero-emission fleet. However, there remain a few critical areas that the Board should consider amending in order to level the playing field for vehicle technology and to bridge the critical gap for infrastructure funding.

CTE is a member-based non-profit organization that fosters a collaborative process to advance clean, sustainable transportation and energy technologies. Our members include a coalition of industry leaders working toward the commercialization of zero-emission transit buses and trucks. We represent vehicle manufacturers, technology companies, fuel cell manufacturers, energy suppliers, research centers, universities, transit agencies, and non-profit organizations.

CTE has partnered with transit operators in developing zero emission transition plans, which the proposed ICT rule recognizes as a critical element in the transition process. In developing these plans, CTE builds a model using real-world route data and simulates bus performance in order to aid operational decisions, and vehicle technology decisions. In addition, CTE works with the transit agency and local utility providers to determine utility rate schedules that would be the most appropriate for the type of charging that the transit agency will use in their deployment, as well as the feasibility of using hydrogen as the energy source. We are presently under contract with the Alameda-Contra Costa Transit District, the San Diego Metropolitan Transit System, and the Shasta Regional Transportation Agency to assist these agencies in developing their plans. We were recently selected by LA Metro to partner with WSP consulting to develop a zero-emission roadmap for Metro and expect to be under contract within the next 30 to 60 days.

The development of these transition plans has highlighted a few areas that CTE urges CARB to address in the ICT rulemaking process.

E-10

- While the reliance on the Hybrid and Zero-Emission Truck & Bus Voucher (HVIP) as incentive funding for vehicle purchases is a viable option, CTE's experience in developing rollout plans has highlighted the need for infrastructure funding. Developing scalable infrastructure to charge/fuel a large fleet of zero-emission buses is a daunting technological challenge, but an even bigger fiscal challenge. This is particularly the case as it relates to building hydrogen fueling stations, which typically are more expensive for small-scale deployments, but prove to be very scalable and cost effective in support of 25 or more buses. Regardless of the technology, funding to address fueling and maintenance facility needs will grow as operators

transition to zero-emission technologies. The lack of a funding source will impede transit operators' ability to adhere to the purchase mandate timelines.

- C-9 • Scalability of zero-emission bus technology is also a concern. The ICT Rule proposes a fairly aggressive transition based on mandating the purchase of zero-emission vehicles. CTE strongly believes that the transition process should incorporate large-scale pilot projects. Pilot projects would not only drive down vehicle costs, particularly for hydrogen fuel cell buses, but provide valuable data on the scalability of battery-electric and fuel cell electric fleets.
- D-3 • There is a steep learning curve for transit agency staff, who may be unfamiliar with high-voltage and high-pressure systems and advanced electric-drive propulsion systems. Integrating new and complex technologies seamlessly and successfully in order to ensure the compatibility of buses, fueling stations, and where necessary, safety upgrades to maintenance facilities, is critically important. Funding for Project Management and training activities associated with pilot projects is essential.
- E-7 • While there continues to be a need for pilot projects in order to accelerate the transition to zero-emission buses, the use of the HVIP voucher program includes restrictions that should be addressed. CTE urges CARB to allow multiple operators to submit a single application for vehicle vouchers. These consortium purchases would provide greater volumes and certainty to bus manufacturers that would result in lower vehicle prices.
- E-11 • The HVIP program as presently configured, also needs to maintain additional incentives associated with fuel cell electric and hydrogen fueling technologies until sufficient volumes of production enable price parity with battery-electric buses. We will need **both** electric-drive technologies to meet the state's emission and carbon reduction goals, while also ensuring that transit agencies will be able to fulfill their operating and service requirements.

CTE supports the goal of transitioning to zero-emission bus fleets. The advancements made in zero-emission bus technology have demonstrated that this goal is possible, but we must proceed with caution since questions remain on scalability, funding, and technology readiness. In addition, the regulation should not result in a transit operator having to decide between service to the public and compliance with a regulation. On behalf of CTE members, thank you for your favorable consideration of our comments.

Sincerely,



Dan Raudebaugh
Executive Director



Jaimie Levin
Director of West Coast Office



**45-Day
Docket No. 364
Table IV.1
45-Day Comment Period**

London Breed, Mayor

Cheryl Brinkman, Chairman

Malcolm Heinicke, Vice Chairman

Gwyneth Borden, Director

Lee Hsu, Director

Cristina Rubke, Director

Art Torres, Director

Edward D. Reiskin, Director of Transportation

September 18, 2018

**Mary D. Nichols, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814**

Subject: Comments to the Innovative Clean Transit Staff Report: Initial Statement of Reasons

Dear Chair Nichols and Members of the Air Resources Board:

On behalf of the San Francisco Municipal Transportation Agency (SFMTA), we hereby submit comments in response to the Innovative Clean Transit (ICT) Regulation staff report, dated August 7, 2018.

SFMTA has been one of the national leaders in supporting sustainable, reduced and zero emission revenue transit vehicles. SFMTA currently operates the largest fleet of zero emission electric trolley buses, running on 100 percent greenhouse gas (GHG) free electricity, in North America. Environmental stewardship and mitigating the effects of climate change are core agency priorities. In fact, zero emission transit service is just one strategy among a suite of program areas the agency has identified in the Transportation Climate Action Strategy, which establishes a framework for

1) Reducing GHG emissions from the San Francisco transportation sector, and 2) Increasing the resilience of the San Francisco transportation system to future climate impacts.

At the SFMTA Board of Directors meeting on May 15, 2018, SFMTA adopted a Zero Emission Vehicle Policy. The policy outlines numerous steps SFMTA has taken and will take to ensure it continues to support sustainable, zero emission revenue transit vehicles. Per the adopted policy, SFMTA will begin procuring zero emission buses in 2025, with a goal of achieving a 100 percent battery electric vehicle fleet by 2035. This commitment exceeds the California Air Resource Board's (CARB) goal of achieving a statewide zero-emission fleet by 2040. Below are the steps SFMTA is currently taking in advance of 2025 to achieve the 2035 goal:

- In September 2018, SFMTA procured new electric hybrid buses with higher capacity on-board battery systems in order to initiate a "Green Zone" program. SFMTA will operate these select buses in a zero emission, all-electric battery mode in designated geofenced "Green Zones" along several electric hybrid routes. SFMTA will be the first agency in North America to utilize this "Green Zone" concept and by January 2019, this technology will be implemented on all 68 buses.
- Establishing a battery electric bus pilot program and purchasing a limited number of zero-emission battery electric buses from various manufacturers. SFMTA will test the ZEB all-



electric battery buses in revenue service throughout San Francisco to evaluate the performance, reliability, operability and maintainability of the ZEB all-electric battery buses that are currently available on the market. SFMTA is expected to release the RFP for the battery bus pilot program in September 2018.

- Partnering with a vehicle charger manufacturer to procure and adopt a state-of-the-art modular charging system that would take up a smaller footprint in the bus yards promises to address the space constraints in the current bus yards. SFMTA is also working with the San Francisco Public Utilities Commission, as well as Pacific Gas and Electric, to establish a new service that will be necessary to charge the pilot battery electric vehicles.
- Initiating a pilot program to explore the possibility of converting one of SFMTA's existing electric hybrid vehicles into a plug-in battery electric bus by replacing the series-hybrid diesel powertrains with larger battery packs and charging provision. If successful, this pilot will pave the way for SFMTA to convert some hybrid electric buses to battery electric buses during mid-life overhauls, allowing SFMTA to accelerate its zero emission goals.

We appreciate the efforts of CARB staff to provide a more flexible framework for transit agencies to meet the zero-emission fleet goal in the ICT Staff Report. To effectively meet that goal, SFMTA strongly urges CARB to address the following issues in the final ICT regulation:

- H-7-4
1. **Zero Emission Bus Bonus Credit:** SFMTA strongly believes that its use of electric trolley buses clearly and unequivocally advances CARB's goal of reducing GHG emissions and improving air quality. SFMTA is in the midst of the largest procurement of Zero Emission Buses (185 40' Zero Emission Trolley Buses) in North America. Trolley coaches should be counted as Zero Emission Buses and qualify for Bonus Credit for early adoption for the following reasons:
 - SFMTA's newest trolley coaches can be converted to full battery electric buses simply by removing the trolley poles and associated equipment and replacing these with a larger battery pack(s) and charging provision. We plan to conduct a pilot program to convert trolley coaches to battery electric buses to learn the feasibility of such conversion.
 - SFMTA's trolley coaches are truly zero-emission and are even more efficient and greener than electric buses. They use overhead wire infrastructure and much of the regenerated energy is fed back to the overhead line, making them more energy efficient. Our trolleys are greener than conventional battery electric buses as the electricity powering them is sourced from the hydroelectric Hetch Hetchy power plant.
 - SFMTA's next generation New Flyer trolleys contain state of the art propulsion/battery technology and support technological advances. In fact, the breakthrough in electric bus technology was made possible due to the New Flyer trolley coaches, which currently operate as short-range battery electric buses, using identical technology when running off of battery power. As battery technology improves, SFMTA plans to extend the range of operation on battery power.



H-8-4 2. **Deferral from Zero-Emission Bus Purchase Requirements:** SFMTA operates buses in one of the most challenging topographical urban environments and requires buses that can operate on up to 23 percent grade with Gross Vehicle Weight Rating, which current battery electric buses cannot do. SFMTA recommends modification of the following language to include a provision for gradeability under Section 9, titled “Deferral from Zero-Emission Bus Purchase Requirements:”

- “When available ZEBs cannot meet a transit agency’s daily mileage needs **and/or gradeability requirement** for the buses replaced per that purchase.

SFMTA looks forward to continuing to work in partnership with CARB to advance the goal of achieving zero emissions in our transit fleet and continuing to improve service for our more than 700,000 daily rides. Should you have any questions about our comments, please feel free to reach out to me at 415.701.4720 or Kathleen Sakelaris, Regulatory Affairs Manager, at 415.701.4339. Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'Edward D. Reiskin'.

Edward D. Reiskin
Director of Transportation

cc: Mayor London Breed, City & County of San Francisco
SFMTA Board of Directors
Josh Shaw, Executive Director of the California Transit Association



CARB Innovative Clean Transit Proposed Regulation

September 2018

Background

On August 7th, California Air Resources Board (CARB) staff released its proposed Innovative Clean Transit (ICT) regulation for public comment before it will be considered by the CARB Board at their September 27-28 meeting.

Key Components of the Proposed ICT Regulation

Zero Emission Bus (ZEB) Rollout Plan – Transit agencies are required to submit a Plan approved by their governing board for how the agency plans for ZEB purchases, infrastructure buildout, associated financial planning and workforce training.

ZEB Purchase Requirements – For large transit agencies (100 or more buses), the following schedule must be followed for annual new ZEB bus purchases:

- 25 percent by 2023
- 50 percent by 2026
- 100 percent by 2029

ZEB Bonus Credits for Early Placement of ZEBs including extra credits for early Fuel Cell Electric Buses (FCEBs) – As currently drafted, ZEBs include Battery electric buses and Fuel Cell Electric buses, but do not include Trolley Electric Buses.

Recommendations for Proposed ICT Regulation

SFMTA urges CARB to address the following outstanding issues in the final ICT regulation:

1. Zero Emission Bus Bonus Credit – As currently drafted, procurement of electric trolleys by SFMTA would not count towards the purchase requirement. SFMTA believes its use of electric trolley buses clearly and unequivocally advances CARB's goal of reducing GHG emissions and improving air quality. SFMTA is in the midst of the largest procurement of Zero Emission Buses (185 40' Zero Emission Trolley Buses) in North America. Trolley coaches should be counted as Zero Emission Buses and qualify for Bonus Credit for early adoption for the following reasons:

- SFMTA's newest trolley coaches can be converted to full battery electric buses simply by removing the trolley poles and associated equipment and replacing these with a larger battery pack(s) and charging provisions.
- SFMTA's trolley coaches are truly zero-emission and more energy efficient than electric buses as they use overhead infrastructure and much of the regen is fed back to the overhead line. They are also "greener" as the electricity powering them is



sourced from the hydroelectric Hetch Hetchy power plant.

- SFMTA’s next generation New Flyer trolleys contain state of the art propulsion/battery technology and support technological advances. In fact, the breakthrough in electric bus technology was made possible due to the New Flyer trolley coaches, which currently operate as short-range battery electric buses, utilizing identical technology when running off of battery power. As battery technology improves, SFMTA plans to extend the range of operation on battery power.

2. Deferral from Zero-Emission Bus Purchase Requirements – SFMTA operates buses in one of the most challenging topographical urban environment and requires buses that can operate on up to 23% grade with Gross Vehicle Weight Rating (GVWR). SFMTA recommends modification of the following language to include a provision for gradeability under Section 9, titled “Deferral from Zero-Emission Bus Purchase Requirements:”

- “When available ZEBs cannot meet a transit agency’s daily mileage needs **and/or gradeability requirement** for the buses replaced per that purchase.

SFMTA’s Sustainability Commitments

SFMTA is a national leader in supporting sustainable, reduced and zero emission revenue transit vehicles. SFMTA currently operates the largest fleet of zero emission electric trolley buses, running on 100% greenhouse gas (GHG) free electricity, in North America. Zero emission transit service is just one strategy among a suite of program areas the agency has identified in its **Transportation Climate Action Strategy**, which establishes a framework for 1) Reducing Greenhouse gas (GHG) emissions from the San Francisco transportation sector and 2) Increasing the resilience of the San Francisco transportation system to future climate impacts.

SFMTA’s Zero Emission Vehicle Policy

In May 2018, SFMTA’s Board of Directors adopted a Zero Emission Vehicle Policy, which includes initial procurement of zero emission buses in 2025, with a goal of achieving a 100% battery electric vehicle fleet by 2035. This commitment exceeds the California Air Resource Board’s (CARB) goal of achieving a statewide zero-emission fleet by 2040. To help accomplish this accelerated goal, SFMTA is taking the following steps:

- **Green Zones** – Procuring 68 electric hybrid buses with higher capacity on-board battery to initiate a “Green Zone” program. Beginning September 2019, SFMTA will be the first agency in North America to utilize “Green Zone” technology – reverting to full battery electric in designated zones – with full implementation by January 2019.
- **Battery Electric Bus Pilot Program** – Establishing a battery electric bus pilot program and purchasing a limited number of zero-emission battery electric buses from various manufacturers. RFP anticipated for release in September 2018.
- **Hybrid Bus Conversion Pilot Program** – Initiating a pilot program to explore the possibility of converting an existing SFMTA electric hybrid vehicle into a plug-in battery electric bus by replacing the series-hybrid diesel powertrains with larger battery packs and charging provision.



September 24, 2018

California Air Resources Board, Members
1001 I Street, Suite
Sacramento, CA 95814

RE: Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation

Chair Nichols and Members of the California Air Resources Board:

On behalf of the Monterey Salinas Transit District (MST) I want to acknowledge – and thank you for – the considerable progress that has been made on the proposed Innovative Clean Transit (ICT) regulation.

MST remains committed to reducing greenhouse gas emissions by providing frequent, affordable, and accessible public mobility services throughout the Monterey Bay region. Over several decades our district has been an innovator in experimenting with a wide variety of alternative technologies, including lead-acid battery electric, compressed natural gas, locally grown and processed bio-diesel, hybrid-electric and most recently the latest in zero emission battery-electric buses including the first-of-its-kind inductive charged battery electric trolley vehicle. We believe that reducing carbon emissions and greenhouse gases is important to the health of our residents and environment in which we live and support the goal of eventually eliminating fossil fuel as a primary source of fuel to power our mobility.

H-2-1 MST continues to believe that facilitating a transition to cleaner transit buses is best done by allowing transit agencies to craft individualized zero emission bus (ZEB) deployment plans that are consistent with their unique financial and operational requirements; however, we also recognize the value in providing ARB staff with constructive feedback on the proposed regulation as currently drafted. We believe this feedback better ensures that if you proceed with a purchase mandate, the worst impacts to transit service will be minimized.

Costs and Incentives

E-1 MST remains concerned with the specifics of what is now in print as well as the impact the associated price tag will have on local agencies like MST. You should be aware that according to ARB staff's own estimates, which include some significant assumptions we would strongly dispute, the regulation will cost transit agencies \$1.1 billion between 2020 and 2040. If you remove the Low Carbon Fuel Standards (LCFS) funding, which does not even have statutory authorization through 2040, that price tag climbs to \$2.1 billion over the same time frame.

Advocating and delivering quality public transportation as a leader within our community and industry.

Transit District Members Monterey County • Carmel-by-the-Sea • Del Rey Oaks • Gonzales • Greenfield • King City • Marina • Monterey
Pacific Grove • Salinas • Sand City • Seaside • Soledad **Administrative Offices** 19 Upper Ragsdale Drive, Suite 200 Monterey, CA 93940

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This is meaningful because at various junctures your Board has communicated to ARB staff its preference to preserve and expand transit service as we continue to make progress on cleaner bus fleets. We fail to see how this is possible without adequate funding to absorb the cost of the regulation and without more robust safeguards being built into the regulation. **We fully understand that ARB cannot make commitments for future funding because you do not control the State's purse strings; the Legislature does. That said, our industry has long argued that accessing the incentive funding that ARB does have should be made much simpler and more useful to transit agencies.**

E-8

Under the proposed regulation, transit agencies would only be able to access ARB's incentive funding – primarily Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project dollars – if they take early action to procure ZEBs before the purchase mandates kick in or if they procure more ZEBs than is required. Unfortunately, this will mean that transit agencies that cannot procure ZEBs early because their fleets have not reached their useful life when the purchase mandate goes into effect, or because their financial positions won't allow it, would be barred from accessing incentive funding for future ZEB procurements.

If transit agencies lose access to this incentive funding, which is being offered because ARB acknowledges that the technology is currently more expensive and underperforms, they will need to redirect resources from some other purposes. Should it be reducing the state of good repair for our current fleets? Reducing Transit service to some of the most vulnerable people in our community? Or should we pass costs onto our riders by way of higher fares, which would most likely push choice riders back into their single occupancy, fossil fuel-powered vehicles?

You should know that we are not alone in making this request. CalZEV, comprised of Proterra, GreenPower, CalETC, and BYD, among others, has expressed their support for freeing up incentive funding to support the proposed regulation.

E-10

We also ask you to consider that if incentive funding isn't available to transit agencies when they need it, an agency might have no alternative but to keep an older, higher pollution/emissions vehicle in service because they lack the resources to move forward with a zero-emission bus purchase and its attendant electric charging or hydrogen storage/fueling infrastructure costs. In that regard, we feel that ARB must express its support for creating an infrastructure funding program. This program should also be available to small operators to finance their roll-out plans. Without a secure source for infrastructure investments in fueling/charging facilities, maintenance facilities, and storage capacity, the ability to meet the goals of this rule is doubtful.

Performance Benchmarks

B-2

While the availability of incentive funding is critical for smoothing the introduction of ZEBs and limiting financial risk to transit agencies, we'd argue that the greater risk to our transit service would be in projecting the cost and technological capabilities of ZEBs five, ten, or twenty years out. To limit these risks, we've asked ARB staff to establish **within the regulation itself cost and performance benchmarks that would be reviewed periodically, likely before the imposition of a purchase requirement, and used to determine how the regulation proceeds. This is consistent with the approach taken in the original Transit Fleet Rule.**

Under this scheme, ARB would review the real-world cost and performance of zero-emission buses and their supporting infrastructure at some future date and, if they do not align with ARB staff's projections

– which are built into the cost model and used to estimate the proposed regulation’s economic and environmental impact – **then the regulation would put on a temporary hold.**

Currently, ARB staff has included language within the staff report that commits to reviewing the real-world cost and performance of ZEBs one year prior to the imposition of a purchase requirement, but there is no indication of how the data gathered would be used. We are thankful for this inclusion, but it doesn’t go far enough to ensure that transit agencies will not be saddled with untenable costs or inadequate performance. We encourage you to work with ARB staff to have our preferred provisions added to the regulation itself.

Small Agencies and Non-Standard Buses

While we make these requests, we also want to communicate the dangers of ARB staff moving the regulation, particularly its purchase requirement, in a more aggressive direction. This, as you may already know, is being advocated for by a coalition of environmental groups, and these groups advocate for:

- Accelerating the purchase requirement, particularly for small agencies
- Accelerating the creation of ZEB roll-out plans, particularly for small agencies
- Accelerating the inclusion of cutaway and non-standard buses in the regulation

Referring to our points about cost and performance, these changes would require transit agencies to purchase more ZEBs while costs are higher and performance is lower. This would require smaller transit agencies to experiment with new technologies – even though these agencies can least afford to do so – and would require that the industry, all at once, troubleshoot the transition rather than allow for an information transfer between early adopters and other agencies.

H-1-2 MST urges the Board to reconsider the definition of a “small operator” and instead use a definition that transit operators are familiar with and which is currently used in federal and state programs. The proposed regulations define a small operator as any operator with fewer than 100 buses. MST urges the Board to rely on the current federal definition that specifies a small operator as having less than 100 buses during peak operations.

H-5-5 MST strongly supports the delayed compliance for small operators to adopt the rollout plans and purchase mandates. MST and other small operators in the state agree that additional time will be needed to secure funding for developing and adopting the plans. In some cases operators will need to locate, purchase, and build new storage facilities because of inadequate space or because they currently rent space from another public entity. The additional time needed to develop the roll-out plans support the need for the later purchase mandate timeline. The later purchase mandate should also benefit small

H-2-4 operators, allowing them to take advantage of lower vehicle prices as demand increases and supply chains mature.

Finally, in recent years California has been beset by increasingly frequent wildfires, floods, and mudslides, for which local transit operators are called upon to make mass movements of public safety personnel and evacuees over distances that are beyond the range of ZEB vehicles. To this end, MST advocates that public transit operators continue to be allowed to operate some number of traditional fossil fuel fleets in the event of an emergency evacuation response, due to a local civil emergency or

natural disaster, until such time that the range of zero emission buses ensures they are reliably operational for a period of days or until power supplies are restored after such disasters occur.

Once again, I would like to commend your staff on their openness in listening to the comments and concerns of myself and my peers within the California transit industry.

If you have any questions or comments, please feel free to contact me at 831-264-5002.

Sincerely,

A handwritten signature in black ink, appearing to read "Carl Sedoryk". The signature is fluid and cursive, with the first name "Carl" and last name "Sedoryk" clearly distinguishable.

Carl Sedoryk
General Manager / CEO

cc: Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
Shirin Barfjani, Mobile Source Control Division, California Air Resources Board

**45-Day
Docket No. 369
Table IV.1
45-Day Comment Period**

*Santa Cruz Metropolitan
Transit District*



September 20, 2018

California Air Resources Board, Members
100 I I Street, Suite
Sacramento, CA 95 814

RE: Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation
Chair Nichols and Members of the California Air Resources Board:

On behalf of Santa Cruz Metropolitan Transit District (METRO) I submit the following comments in response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit (ICT) Regulation. METRO provides service to urban and rural areas of Santa Cruz County with a transit fleet comprised of ninety-eight 35' and 40' fixed-route buses and thirty-one paratransit vehicles, composed of cutaways, raised top vans and transit vans.

On May 19, 2017 METRO's Board of Directors adopted a policy to attempt to have the fixed-route fleet 100% zero emissions by 2040. Of course this position is subject to both funding and significant improvement in battery energy density and/or bus range. METRO's bus electrification model is one of charging all night and running all day, which is comparable to the current model in which METRO fuels CNG buses at night and runs them all day without additional refueling. METRO does not plan to construct in-route opportunity recharging stations. Buses operating on the METRO system must be able to be placed in service on runs that go up to 300 miles/day. Therefore, buses purchased must have a range of at least 300 miles end of life (including battery degradation). The current zero emissions Buses (ZEBs) available on the market today fall significantly short of this reasonable operating range.

C-5

As currently drafted, the proposed regulation improves on the Draft Regulatory Concept for the Proposed Innovative Clean Transit Regulation, released December 2017. Improvements to the proposed regulation reflect ongoing discussions between California Air Resources Board staff and the leadership of the California Transit Association. While the progress made on the proposed regulation is substantial, we remain concerned that the imposition of the zero-emission bus (ZEB) purchase requirement is not tied to benchmarks for ZEB cost and performance, infrastructure buildout costs, and funding availability. Moreover, we see significant risks in assuming, as CARB staff has, that data gathered from limited, short-term ZEB deployments will accurately reflect the realities of ZEB deployments at-scale. We assert that, despite the claims of some interest groups, ZEB cost and performance, infrastructure buildout, and the cost of electricity as fuel, are still issues.

B-2

Santa Cruz Metropolitan District's current concerns are as follows:

Large vs. Small Transit Agency

METRO adamantly opposes an interpretation that includes paratransit cutaways for the following reasons:

- I. As explained in #2 below, an agency's vehicle count should not be a determining factor in establishing the size of a transit property. However, if such is ultimately the case, the count to 99 should not include an agency's paratransit fleet, that is, paratransit vehicles that exceed 14,000 GVWR. That be due, in part, there are no zero emissions paratransit vehicles available on the market today that will meet the paratransit operational needs.

Santa Cruz Metropolitan Transit District



2. The FTA divides transit agencies into two categories; agencies operating in Primary Urbanized Areas (Old UZA and new UA) of <200,000 population and transit agencies operating in UAs of >200,000 population. METRO serves two separate UAs, both of which are under 200,000 population. UAs are established by the census of urbanized areas for 2012, as published in the Federal Register February 27, 2012.

This is important to METRO since Chapter 53 of title 49 U.S.C. 5307 allows transit agencies receiving federal Section 5307 dollars to use 100% of those formula dollars for operations if they operate in Primary UAs <200,000 population. There has been a longstanding acknowledgement by the FTA that it is difficult for small transit agencies to fund operations. This is also an acknowledgment by the FTA that small transit agencies are generally found in Primary UAs of <200,000 population.

49 U.S.C 5307 goes on to acknowledge that properties in UAs of >200,000 population must use their 5307 dollars for capital, unless they qualify under the "Special Rule." The Special Rule allows transit agencies in UAs of >200,000 to use some of their formula 5307 for operations, depending on the number of buses they operate in the peak hour, excluding paratransit, but including Demand Response vehicles. Included in the Special Rule is the so-called "100 bus rule" which was modified in the FAST Act to include the Demand Response vehicles in the count. Paratransit vehicles remain excluded from the count. This is also an acknowledgment by the FTA that there can be smaller transit agencies in UAs of >200,000 population, and therefore provides those properties some relief to use some of their Section 5307 formula dollars for operations.

Conclusion: Small properties can be distinguished by one of two factors, transit agencies operating in Primary UAs of <200,000, and, small transit agencies operating in UAs of >200,000 population, but operating 100 or fewer buses, including Demand Response vehicles, and excluding paratransit vehicles.

H-1-2

METRO's Recommendation: For the purpose of the CARB Regulation, and for determining a large transit agency versus a small transit agency, change the CARB interpretation of small transit agencies to match the FTA interpretation:

- a. All transit agencies operating in Primary UAs of <200,000 population, and
- b. All transit agencies operating in UAs of >200,000 population that operate 100 or fewer buses, including Demand Response vehicles, and excluding paratransit vehicles.

H-3-2

Wavier for Early Compliance

Still requires more discussion about the 1,000 and 1,150 targets. These targets seem too high. Keep in mind, transit agencies have twenty years to get to a 100% purchase. Assuming a statewide fleet of 10,000 buses, and assuming a relative straight-line basis, agencies will need to purchase over 500 buses a year between 2020 and 2040. Considering that bus battery technology (range) needs to improve substantially, CARB should assume fewer ZEB purchases in the earlier years and larger ZEB purchases in the out-years, as bus range improvements are made by the ZEB manufacturers.

H-4-2

Excluded Buses

Recommendation: Instead of setting a date certain of January 1, 2026, subject to vehicles passing Altoona testing, consider making January 1, 2026 the date at which CARB, the Board, will review the state of the market for cutaways, over-the-road coaches and articulated buses and then set a date for possible inclusion, subject to the findings.

Such findings should include "real world" testing of ZEBs in the working environments of various transit properties, not Altoona data, and an evaluation of the data based on yet to be developed performance expectations. Such findings should also include a minimum of two vehicle manufacturers in each category and a discussion about reasonable vehicle pricing.

Deferral from ZEB Purchase Requirements

H-8-3 The definition of "daily mileage" needs to be further developed. It is not a standard industry term.

- (a) The term "block" might be the best term to use. In the case of METRO, this term covers buses that pull out and run until they return to the yard at the end of the day or night. A bus pulls out of the yard and operates on a particular route and continues in service, without returning to the yard, and may "interline" to another bus route that uses the same size bus. Further, when a bus operator reaches the end of his/her shift, a new bus operator will meet the bus on-route and continue with the bus in service. Metro operates bus blocks that range up to nearly 300 miles/day. Current ZEB bus range will limit operating ZEBs on about 1/3 of METRO's blocks. This is based on an overnight charge and without mid-day or opportunity recharging. METRO does not plan to have mid-day/opportunity recharging.
- (b) Avoid oversimplifying and generalizing the interpretation of bus range and please don't accept any Altoona testing numbers or the Orange County Bus Cycle. Bus ranges posted to-date by the manufacturers are far and away an overstatement of real life operational experiences. Variables such as the use of HVA and the operating terrain and driver characteristics all impact the range of a bus, including stopping at bus stops.
- (c) A reasonable method of determining and monitoring improvements in bus range, inclusive of the variables noted above, needs to be established. Further, there needs to be a point somewhere in the timeframe of 2025 - 2027 in which the CARB Board reviews the state of technology and any advancement in battery energy density and bus range. In the METRO example, once METRO purchases sufficient low range ZEBs to cover the 1/3 of our bus blocks that the buses can be used, METRO should only have to continue purchasing ZEBs if the technology has advanced sufficient to schedule the ZEBs on the next group of longer range bus blocks.

Since federal grants are used to purchase buses, buses purchased today, with their limited range, are buses the transit agencies are stuck with for at least fourteen years. It is in the best interest of the public trust that we properly invest the public's funds.

Other Issues

H-5-2 **100% zero emissions bus fleets by 2040**
Make it clear that CARB does not intend to force transit agencies to retire non -ZEB vehicles in 2040 and that CARB understands that transit agencies may continue to perform engine overhauls on CNG buses as 2040 approaches, which may result in CNG buses continuing to run in service beyond 2040. Depending on funding, transit agencies may not be able to retire CNG buses purchased, for example in 2028, and instead, due to resource limitations, they may spend far less money by performing an engine overhaul on the buses. CARB stated at the workshop that the intent of the language was to ensure that transit agencies do not purchase anything but ZEBs from 2040 on. However, this statement is inconsistent with the draft Regulation, which as



currently drafted, ensures that all buses purchased from 2029 forward are to be 100% ZEB. Therefore, what does zero emissions by 2040 mean?

B-2 Benchmarking and Regulatory Assessment

This provision would require the California Air Resources Board to conduct a regulatory assessment - *before* a ZEB purchase requirement goes into effect - that evaluates real-world ZEB cost and performance with benchmarks for ZEB cost and performance established at the time of rule adoption. This regulatory assessment should allow the Board to issue an across-the-board suspension of the ZEB purchase requirement, much like the original Transit Fleet Rule did, if real-world ZEB cost and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses. This provision would have no impact on the ZEB purchase requirement, if benchmarks for ZEB cost and performance are being met, as anticipated by CARB staff and interest groups.

HVIP

E-8 CARB must change their interpretation of the availability of HVIP to transit agencies. Currently, CARB insists that HVIP is only available to transit agencies that purchase ZEBs ahead of the Purchase Schedule/mandate. CARB needs to change the HVIP program to allow HVIP dollars to be available to any transit agency that purchases ZEBs and at any time between now and 2040, and beyond.

In closing, thank you again for your willingness to receive feedback from transit properties on the draft Regulation. I respectfully request that you consider incorporating the revisions suggested in this letter in CARB's final Regulation.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Alex Clifford", with a long horizontal line extending to the right.

Alex Clifford
CEO
Santa Cruz Metropolitan Transit District

cc: Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
Shirin Barfjani, Mobile Source Control Division, California Air Resources Board



Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101-7490
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**45-Day
Docket No. 371
Table IV.1
45-Day Comment Period**

September 21, 2018

California Air Resources Board, Members
1001 I Street
Sacramento, CA 95814

RE: Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation

Dear Chair Nichols and Members of the California Air Resources Board:

The San Diego Metropolitan Transit System (MTS) submits these comments in regards to the California Air Resources Board (CARB) proposed Innovative Clean Transit Regulation (ICT Rule). MTS supports the State's efforts to develop and implement a comprehensive strategy to continue to meet air quality standards, reduce emissions, and meet Climate Action goals. We appreciate the CARB staff's efforts to work with all stakeholders and create a rule that would accomplish those goals without degrading transit service in the State. However, as we believe the proposed ICT Rule would have a profound impact on MTS's operations and ability to provide transit to the growing San Diego urban area, we respectfully submit these comments and ask that the Board consider postponing action on the ICT Rule.

MTS's Commitment to Clean Transit

MTS operates transit services over 3240 total square miles in San Diego County, and provides an environmentally-friendly transportation option to ten cities, the unincorporated County, and the international border. Along with its extensive light rail network, MTS operates 602 heavy duty buses, 96 percent of which have been replaced with Compressed Natural Gas (CNG) buses in keeping with our commitment to cleaner fuel technology. Our agency has long been a partner with CARB in meeting and exceeding its goals, having been one of the first systems to select the alternative clean fuels path and CNG in the early 2000's. MTS has aggressively invested over \$70 million in transforming our bus fleet to CNG. MTS now purchases 100% renewable natural gas (RNG), deploys low-NOx near-zero engines, and is even transitioning our entire smaller mini-bus and paratransit bus fleets (over 200 additional buses) to the clean alternative fuel of propane. More recently, MTS's Board of Directors signaled its commitment to zero emission technology and launched a Zero Emission Bus (ZEB) pilot to test the technology and to help overcome some of its shortcomings prior to system wide deployment. Combining these efforts with our electric light rail system, MTS is a proud leader in providing a transit system for San Diego that is already at near-zero emissions.



Comments Regarding the ICT Rule

MTS appreciates the opportunity to work with CARB staff, the California Transit Association (CTA), and other stakeholders on this proposed rule. However, MTS has significant concerns with the proposed ICT Rule and the potentially devastating effect its implementation in its current form could have on public transit for San Diego.

E-1 **The most significant concern with the proposed ICT Rule is the cost impact. The increase in capital and operating costs due to the proposed rule would have potentially devastating consequences for our system, as well as for transit across the state.** We fear that this additional cost burden will significantly reduce and limit our ability to provide needed transportation to the disadvantaged and low-income, transit dependent communities that we serve. MTS has a rich history of being one of the most efficient, cost effective transit systems in the country, maximizing the amount of transit service we can provide within limited, existing resources. Significantly increasing MTS's costs will result in service reductions. MTS will be forced to trade service for proposed ICT Rule compliance and implementation costs. Reducing service will subsequently have negative effects in achieving emissions reduction goals, as less available transit will lead to increases in personal vehicle miles traveled.

We believe that the proposed rule is based on overly aggressive projections and assumptions. We believe that almost every component used in the proposed ICT's Attachment I, Cost Updates, is understated and/or overly optimistic and not consistent with the "real world" data that has consistently been provided to CARB staff by CTA, its member transit systems, and MTS. This includes everything from bus prices, daily operating ranges of ZEBs, resulting bus replacement ratios, infrastructure costs and impacts, and the cost of electricity as a fuel. In addition to the significant underestimation of the costs of the proposed rule, the supporting cost analysis also includes extremely aggressive, speculative assumptions with regard to Low Carbon Fuel Standard (LCFS) revenue in the latter years of the analysis.

Attachment I, Cost Updates, section E Statewide Costs states that adoption of the proposed rule will result in \$1.5 billion in savings by 2050 for transit systems. However, a more detailed view of CARB staff's estimate shows that the projected costs to transit, from 2020 to 2040 (the full implementation date of the proposed rule), is actually over \$2 billion (with just under \$1 billion offset by projected, estimated LCFS revenue). Using "real world" actual data from transit systems, CTA and MTS have completed a comprehensive analysis of the costs and estimate that the proposed rule will actually cost transit systems between \$2 to 4 billion in additional costs between 2020 and 2040. Specifically for MTS, we project our incremental, additional costs between 2020 and 2040 to be in the range of \$300 - \$450 million, in today's dollars.

Here are just a few of the major cost components that MTS is experiencing with our pilot that support our concern for the cost of this proposed rule. These costs are based on costs we have incurred and existing contracts:

E-2 - Bus purchase prices. MTS purchases forty foot CNG / RNG buses for \$525,000. The forty foot, battery electric pilot buses have a price of \$890,000, a difference of \$365,000,

69% additional cost per bus. This comes from the competitively procured Commonwealth of Virginia contract.

- E-3 - Infrastructure. MTS's costs to install six depot chargers at our bus facility is almost \$600,000, almost \$100,000 per bus, which does not include any large scale upgrades to transformers, the grid service, or other utility based pieces that a full deployment will require.
- Electricity vs RNG costs. MTS is a large consumer of both RNG for the bus fleet and electricity as a result of our light rail system. Not including LCFS for either RNG or electricity, MTS's cost for RNG is about \$0.16 per mile. MTS pays about \$0.225 for a kilowatt of electricity, pushing the projected cost per mile for electricity using GARB staff's calculations to about \$0.5175 per mile. The annualized increase in fuel costs for a 100% deployment of ZEB's would be \$8.6 million additional operating / fuel costs.

This fundamental concern about cost is exacerbated by the inclusion of \$1.6 billion in LCFS credits/revenue from 2041 to 2050 (note that the current LCFS statutory authority expires in 2030). We believe that including this LCFS revenue twenty-five to thirty years into the future is both risky, and inappropriate.

- E-15 As MTS considers the magnitude of the costs to full ZEB deployment within this proposed rule, the cost benefits to achieving zero emissions for MTS are even more diminished based upon the already near-zero emissions footprint of MTS. Given this, for MTS the actual cost per pound of Green House Gas (GHG) that would be reduced with the implementation of this proposed ICT Rule is disproportionate and exorbitant.

MTS's additional concerns with the proposed rule include the following, which are being detailed within the CTA's communication:

- H-8-6 - The inclusion of smaller, cutaway buses by 2026. This will increase costs for these already expensive transit services and further erode our ability to provide existing levels of transit service to San Diego.
- B-2 - The omission of benchmark provisions from the proposed rule. Benchmarking would allow for analysis and a reset if the aggressive, speculative assumptions on cost factors do not materialize over the next few years.
- C-10 - The ability to design, implement and pay for the massive infrastructure to support 100% ZEB deployment is not adequately considered. In fact, today there is no urban transit facility with infrastructure to meet the needs of a 100% ZEB fleet.
- E-8 - Transit agencies are concerned that once a rulemaking occurs we will no longer be eligible for the funding incentives that we currently use to offset the higher cost of ZEB purchases.

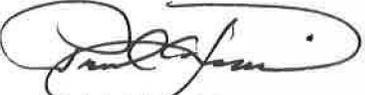
E-4

- The ICT Rule does not address the extremely high cost of electricity, especially in Southern California, as well as potential shortages of availability in heavily urbanized areas. In addition to calling for a new ratemaking to provide lower rates to transit agencies operating ZEBs, we believe that the ICT Rule should include a strategy for addressing such things as availability and time of use pricing to minimize financial and operational impacts of moving toward 100 percent electrification.

Conclusion

MTS supports the comments submitted by the CTA and other transit systems. Consistent with these comments, we request that the Board delay a decision on the proposed ICT Rule, and instead direct CARB staff to continue to work with the transit industry in developing a more effective and realistic strategy that will further the emissions reduction goals, while also protecting the ability of transit systems to continue to meet the demands of our communities by providing effective, efficient public transit. MTS is committed to continuing to work with the ARB staff and the CTA to create a strategy and ICT Rule that will achieve the CARB and State goals, but will also support and further the deployment of public transit in our communities, and avoid the unintentional consequences of devastating transit service to our most vulnerable riders and citizens.

Respectfully Submitted,



Paul W. Winski
Chief Executive Officer

- cc: Richard Corey, Executive Officer, California Air Resources Board
- Steve Cliff, Deputy Executive Officer, California Air Resources Board
- Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
- Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
- Shirin Barfjani, Mobile Source Control Division, California Air Resources Board



September 21, 2018

Ms. Mary D. Nichols, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Initial Statement of Reason for the Proposed Innovative Clean Transit Regulation

Dear Chair Nichols and Members of the California Air Resources Board:

On behalf of the San Mateo County Transit District (District), I submit the following comments in response to the "Initial Statement of Reason for the Proposed Innovative Clean Transit Regulation." The District operates SamTrans, San Mateo County's bus and paratransit service, and strongly supports policies that will shift the California bus fleets to zero-emission buses (ZEBs). We appreciate that, following the release of the "Update on Innovative Clean Transit Discussion Document," the California Air Resources Board (ARB) staff amended the proposed regulation to better address the very real challenges of zero-emission bus operations. New provisions, which require the development of a ZEB rollout plan, postpone the imposition of the ZEB purchase requirement, and exempt non-standard buses from the regulation until 2026, align with several of the recommendations we made to you in our May 29, 2018 letter. While this progress is substantial, the proposed regulation requires the inclusion several safeguard provisions that will better ensure this ambitious endeavor does not compromise essential transit service.

The District is in the initial stages of converting our bus fleet from diesel to 100% battery-electric. We have received grant funding for a pilot of 10 battery-electric buses and associated infrastructure, and are beginning the lengthy process of developing a fleet transition plan that will not impair our service or create undue financial hardship for our agency. As we develop this plan, we are confronted with the reality that, despite our reliance on the best available information, we cannot eliminate all risks associated with our transition. The reasons for this are simple: not a single transit agency in the country has expanded their battery-electric fleet beyond the pilot phase; and, the development of battery-electric technology and associated infrastructure are subject to forces outside the control of our agency, and even, the state. This means that we do not yet know what battery-electric buses will cost to procure and operate, or how they will perform, at scale.

C-9

We cannot overstate the infrastructure hurdles we, and other transit agencies, face in the process of converting out fleet to 100% electric. Before we are able to undertake large scale vehicle replacements we must both plan for and install a different infrastructure to support and operate ZEBs. This process will be time consuming. Not only will the District need time for vehicle purchase and manufacturing, but we will also need time to process contracts for engineering, construction, and the bus infrastructure.

E-10

As this process develops we do not yet know how environmental approvals, engineering advances, construction and funding sources overseen by external stakeholders, will unfold over the long-term. To manage these risks, the District will use the data collected from our pilot, observe other transit agencies to update our assumptions, modify our plan, and ultimately deliver on our commitment to a 100% battery-electric bus fleet. It is critical that our investment in cleaner vehicle technology does not inadvertently harm the transit service we provide to our community. Of particular concern are the inadequate funding sources for infrastructure development available and our Agency's own limited funds. In order to achieve the goal of conversion in a fiscally responsible way we must be methodical and thoughtful, especially as it relates to the infrastructure we install.

B-3, E-9

In communicating these risks and our approach to managing them, we align ourselves with the comments submitted to you by the California Transit Association at various points in this regulatory proceeding. The Association has voiced concerns about the cost and performance of ZEBs, the uncertainty surrounding funding availability, and the challenges of infrastructure buildout. We, therefore, support several of their long-standing recommendations, which are not yet reflected in the proposed regulation.

B-2

First, we support including language in the proposed regulation itself, which requires ARB to establish benchmarks for ZEB cost and performance and to institute a technology assessment, based on real world data, that guarantees that transit agencies are only charged with accelerating their adoption of these technologies, if they meet the benchmarks set by the state. Currently, the staff report that accompanies the proposed regulation commits ARB to collecting real world data on ZEB cost and performance, but it does not reveal how this data will be evaluated or what steps ARB would take if this data contradicts the dominant narrative that ZEB cost and performance will reach parity with conventional technologies.

E-8

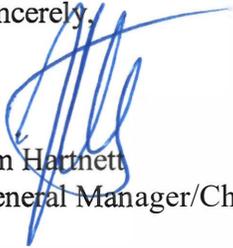
We also fully support the Association's recommendation to relax limitations on incentive funding, which currently require these dollars to be used for ZEB purchases that exceed regulatory requirements. Given the complicated nature of converting to a fully electrified fleet, it is essential that incentive funding is available to transit agencies whenever they are ready to purchase a ZEB or make investments in infrastructure.

Together, these recommendations allow transit agencies to manage the risk of the transition to zero-emission bus technologies while providing encouragement to the original equipment manufacturers to continue to innovate.

Our Agency operates in the real world replete with both unanticipated problems and opportunities. We are extremely optimistic about our plan to convert our fleet to 100% ZEBs but we are realistic about our need to be flexible as we go. In that vein, we hope to see language in the regulations that allow ARB to temporarily halt and reassess requirements placed on agencies if those requirements are not working from a practical perspective. We ask that ARB have the ability to halt the process on a macro level but also for an individual agency, creating both off-ramps and on-ramps, if that agency faces significant issues such as funding not being available or inadequate.

The District thanks you for this opportunity to weigh in on this rule. Please feel free to contact Casey Fromson, Director of Government and Community Affairs at (650) 508-6493 or via email at fromsonc@samtrans.com if you need any additional information.

Sincerely,



Jim Hatnett
General Manager/Chief Executive Officer

cc: San Mateo County Transit District Board of Directors
San Mateo County Transit District State Legislative Delegation

**45-Day
Docket No. 373
Table IV.1
45-Day Comment Period**



Riverside Transit Agency
1825 Third Street
P.O. Box 59968
Riverside, CA 92517-1968
Phone: (951) 565-5000
Fax: (951) 565-5001

September 21, 2018

Ms. Mary Nichols, Chair
California Air Resources Board
P.O. Box 2815 1001 "I" Street
Sacramento, CA 95814

cc: Clerk of the Board - For Board Distribution

Re: Innovative Clean Transit Regulation Public Hearing

Dear Chair Nichols:

On behalf of the Riverside Transit Agency (RTA), we hereby submit comments in response to the Innovative Clean Transit (ICT) Regulation staff report, dated August 7, 2018.

RTA has a fleet comprised of 334 buses, 163 of which are Compressed Natural Gas (CNG), which traveled 16.2 million miles and provided 8.6 million rides in 2017. Our goal is to provide our customers safe, reliable, courteous, accessible, and user-friendly services. We are also increasingly aware that we must all do our part to address the local air quality issues our state has set as public priority. While the ICT is clear in its objective to address the state's goals, we submit the following concerns which highlight that the program must be balanced with our local operational realities and constraints.

Cost

E-8 The enactment of the ICT regulation would force RTA to incur millions of dollars of unexpected costs to buy zero-emission buses (ZEBs), retrofit and upgrade our facilities, train our workforce on a new and unfamiliar technology, and install charging infrastructure. While there are incentives that might help defray some or those costs, RTA would undoubtedly be responsible for significant costs to provide an acceptable level of service. Further, the proposed ICT would remove certain incentives that would help RTA achieve a level of compliance once the rule is determined.

E-14 Without an existing source of money to make these purchases, our agency would be forced to redirect existing funding currently used for revenue service. This would most likely result in reduced service levels in Riverside County, taking buses off the roads and providing less incentive for residents to leave their cars at home and take public transit. The net result could mean more cars on the roads emitting additional pollutants into our air. This is in direct conflict with one of the main goals CARB has identified for the ICT, which is to "support the near-term deployment of zero-emission buses where the economics are viable and where transit service can be maintained or expanded."

E-6 In addition, RTA has experienced significant savings by operating a CNG fleet. We have been able to take advantage of various programs that reward transit agencies for the use of alternative fuels. In fact, to date, RTA has received over \$9 million in revenue from the federal government's Alternative Fuels Excise Tax Credit, over \$1.9 million from California's Low Carbon Fuel Standards program, and over \$1.5 million in Renewable Identification Numbers (RINs) revenue under the federal Renewable Fuel Standard Program.

These revenues are reinvested into RTA's system and allow us to put more buses on more roads more frequently. Losing these revenues because of a shift in fuels sources would again result in less bus service, more car usage and more air pollution.

Technology Mandate

F-2 If the goal of the ICT is to address environmental goals, CARB should identify a "clean" target of emissions and allow each transit agency the flexibility to achieve that target as quickly and as efficiently as possible. Directing all agencies to move to ZEBs without attention to the wide variety of services we each provide misses the point. All agencies have specific characteristics that make our service areas unique. Given the different terrain of each service area - in distance, service frequency, and geography - presenting a "one technology fits all" approach is neither practical nor likely to yield maximum emission savings.

Instead, we believe a rule based on a performance standard is optimal, allowing transit fleets to deploy advanced clean technologies that address state environmental needs while providing transit agencies operational flexibility and choice. That flexibility not only allows multiple technologies to move toward cleaner transit services, but it also avoids the over-dependence on one technology which could prove problematic.

Cutaway buses

H-8-5 An especially problematic clause of the ICT regulation would implement a purchase mandate on smaller, cutaway buses beginning in 2026. Battery-electric cutaway buses are an emerging technology and, to the best of our knowledge, have not yet been approved for purchase with federal funding. Cutaway buses are critical to RTA for providing service in low-density rural areas and to persons who qualify for paratransit service under the Americans with Disabilities Act. Additionally, unlike fixed route operations, the Federal Transit Administration regulates the paratransit operating environment providing explicit requirements for pick up windows, denial of service as well as acceptable travel times. In the dynamic operating environment of paratransit services these unproven new buses could result in unintended violations of ADA law.

Overall, RTA is supportive of the environmental goals CARB seeks to achieve. We are also focused on providing our customers with the best transit service at an affordable price. We are constantly reviewing data, assessing possibilities and pursuing opportunities to achieve both state and local goals. We urge CARB to adjust the ICT rule to allow local transit agencies the flexibility to achieve both and look forward to working with you to reach that balance.

Sincerely,



Larry Rubio
Chief Executive Officer

LR/tf



September 21, 2018

Mary Nichols, Chair
California Air Resources Board
1001 I Street, Suite
Sacramento, CA 95814

RE: Requested Changes to the “Proposed Innovative Clean Transit Regulation”

Chair Nichols and Members of the California Air Resources Board:

On behalf of the Transportation Agency for Monterey County, I submit the following comments in response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation. The Transportation Agency for Monterey County is the Regional Transportation Planning Agency that oversees the distribution of State Transit Assistance and Transportation Development Act and Federal Section 5311 funding totaling nearly \$20 million per year to the Monterey-Salinas Transit District (MST).

It is in the interest of the passengers who take over 4.5 million bus rides from San Jose to Templeton, Monterey to Big Sur, Salinas to King City, and all destinations in between, that this regulation maximize the clean air benefits of transit without resulting in cuts to service. It does not improve air quality or reduce vehicle miles traveled if regulations are so costly that our transit agencies are required to reduce bus service to implement them.

B-2, C-5

Specifically, we are concerned that the requirement to purchase zero-emission buses is not tied to benchmarks for cost, performance, electrical infrastructure costs and funding available. For instance, electric vehicles cannot handle the mileage requirements for the vast majority of MST’s routes, in a county that is 1.5 times the size of the State of Delaware. In addition, the excessive cost of adding

E-3

charging infrastructure for a fleet of 80 vehicles -when it cost us over \$1 million to install power systems to serve our current 4 electric buses - will take funding away from other vital projects. We would hate to have our transit operator lose funding for the King City maintenance facility that will eliminate the deadheading 120 miles round trip to the central maintenance and operations facility in Monterey.

F-3

Furthermore, we are concerned that the regulation leaves natural gas buses out of the zero emission vehicle options, particularly because Monterey County is now installing a waste to energy facility that will make such vehicles carbon-negative – a net positive impact on air quality because they take methane gas out of the atmosphere.

As such, we support the California Transit Association in requesting several changes to the regulation, with emphasis on conducting a benchmarking and regulatory assessment, maintaining financial incentives for ZEB purchases, and providing technological flexibility in meeting emissions goals, as detailed below:

- B-2** • **Conduct a Benchmarking and Regulatory Assessment:** Require the California Air Resources Board to conduct a regulatory assessment – *before* a ZEB purchase requirement goes into effect. This assessment should evaluate real-world ZEB cost and performance with benchmarks for ZEB cost and performance in various regions. This regulatory assessment should allow the Board to issue an across-the-board suspension of the ZEB purchase requirement, much like the original Transit Fleet Rule did, if real-world ZEB cost and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses.

- E-9** • **Maintain Financial Incentives:** Ongoing incentive funding is needed to assist transit agencies in transitioning to the new ZEB requirements. An unfunded mandate will only take money away from other transit projects that are aimed at the ARB’s objective of reducing emissions by reducing vehicle miles traveled in single-occupant vehicles. The last thing this ZEB regulation should do is lead to a reduction in bus services that puts our low-income riders back into older and high-polluting cars.

- F-2** • **Provide Technological Flexibility:** It is impossible to know what technological advancements will arise within the next five years, much less the next 10 years. ARB should set a performance-based goal rather than a technology-based goal, one that allows natural gas vehicles (particularly those that are *carbon negative*) or other vehicles that meet the emissions goals, rather than hang its hat on the technology of today.

By amending the proposed regulation to include these and the other California Transit Association’s recommendations, will you protect California’s transit agencies and the riders who rely on our service from the risks associated with this transition. We greatly appreciate your continued commitment to working with the California Transit Association to get this proposed regulation right.

If you have any questions or comments, please feel free to contact me at 831-775-4410.

Sincerely,



Debra L. Hale
Executive Director

cc: Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
Shirin Barfjani, Mobile Source Control Division, California Air Resources Board



**45-Day
Docket No. 378
Table IV.1
45-Day Comment Period**

DEPARTMENT OF TRANSPORTATION

July 23, 2018

Shirin Barfjani
Lead Staff, Innovative Clean Transit
Air Resources Board
shirin.barfjani@arb.ca.gov

Yachun Chow
Manager, Zero Emission Truck and Bus Section
Air Resources Board
yachun.chow@arb.ca.gov

Via Email

RE: Oppose - Innovative Clean Transit (ICT) Proposed Rule

Dear Madams,

Pasadena recognizes the crucial role the California Air Resources Board has in reducing air pollution and protecting the public's health. The City of Pasadena consistently has been and continues to be a steward of improving air quality and decreasing greenhouse gas emissions in the region, as evidenced by the City's numerous programs and efforts it has invested in support of these goals.

One of the City's guiding principles is that Pasadena will be a City where individuals can circulate without a car. Pasadena has heavily invested its local funds to operate as robust a transit system as its funding will support. Furthermore, Pasadena Transit's fixed route fleet is 100% CNG; any new fixed route bus purchases include near zero emission CNG engines; and the City supports converting to zero emission CNG engines when they become commercially available.

H-2-5 Pasadena opposes the Innovative Clean Transit (ICT) rule as currently proposed for small transit agencies. Further, Pasadena requests that the rule not apply at all to small

agencies until after the Zero Emission Bus (ZEV) technology, particularly battery electric buses, has advanced to a point where charging between manufacturers is universal; the miles provided from a single charge is exponentially higher than what is currently documented; the reliability has improved significantly, such that additional spare buses will not be required to be able to support the use of ZEBs; and the technology has been proven to be as, if not more, reliable than CNG buses when used in revenue service in the variety of geographic settings and climates in California.

Other than the designation of large or small fleet and the related timing for implementation, the proposed rule assumes that all transit agencies are otherwise the same. This is not the case for Pasadena's local transit system, the resources for which are so limited that the deployment of ZEB technology as currently proposed is not possible without having to fundamentally alter and significantly reduce the level of transit service currently provided to the public.

Pasadena's specific concerns regarding the proposed rule are the following:

- E-9
1. Potential ICT creates an unfunded mandate, including the incremental increase in the cost of ZEB versus a CNG bus and cost to provide the charging infrastructure.
 - Pasadena is a locally funded transit system for which there are limited financial resources.
 - Pasadena is not eligible for most grant or dedicated funding available to other transit agencies due to its "local" funding category in Los Angeles County.
 - o Pasadena is precluded from receiving formula allocation of Federal 5307 capital funds.
 - o Pasadena is precluded from receiving transit allocations of State TOA, STA, or SB1 funds.
 - o Pasadena is precluded from obtain certain funds as a disadvantaged community (e.g., LCTOP) unless it also receives certain of the other state funding identified above.

 2. Significant investments of public funds have been made to provide and support existing CNG infrastructure to meet current CARB rules.
 - Pasadena has invested heavily in developing its existing CNG fueling infrastructure; including a recent expansion of its CNG facility.
 - Pasadena would need to reimburse the cost of this transit asset back to its original fund source, less the depreciation, for this newly expanded facility.

 3. Unintended consequence will be a reduction in transit service.
 - Current funding for Pasadena's transit operations is static with no new funding sources identified for future transit expansion.
- E-5
- E-14

- Any increase in unfunded capital cost and additional operating cost for ZEB deployment will directly reduce the current level of transit services due to the need to reduce hours of operation and potentially eliminate routes. Not only is the increase in capital costs unfunded, Pasadena is not eligible for most grant or dedicated funding available to other transit agencies due to its "local" funding category in Los Angeles County.

C-5

4. ZEB ranges and reliability promised by manufacturers have not been achieved in day-to-day operations.
 - Current ranges would require additional infrastructure to perform in-route charging adding considerable unfunded capital cost.
 - In-route charging locations would be difficult to site and require cooperation and approval of other agencies.
 - Strong potential to incur additional unfunded capital costs for additional buses to meet existing service requirements.

E-4

5. Increased "fueling" costs
 - There is an unknown cost to assess the local utilities' current power grid to accommodate powering the transit fleet.
 - There is significant potential unfunded capital costs to revamp the existing power grid to support BEB infrastructure; not only is the cost unfunded, Pasadena is not eligible for most grant or dedicated funding available to other transit agencies due to its "local" funding category in Los Angeles County.
 - Pasadena would be paying the regular commercial tariff rate for electricity; its current CNG fuel rate is only \$1.72/GGE.

I-9

6. For Pasadena's transit services, ZEB deployment will reduce operational flexibility and violate longstanding FTA regulations.
 - Currently, if a bus needs maintenance it is able to be exchanged with any other bus in the fleet. However, a ZEB vehicle will only be able to be deployed to a ZEB enabled route.
 - Restrictions to ZEB deployment may violate FTA regulations by requiring increased spare ratio of vehicles and create service inequity due to the resulting inability to deploy vehicles among all routes.

C-8

7. Lack of standards among ZEB manufacturers
 - There is no common vehicle design for ZEBs among manufacturers which prevents competitive bidding which significantly constrains the need for cost containment and affordability.
 - Lack of charging design standards means that once a vehicle manufacturer is chosen the agency is committed having to purchase future vehicles from the same manufacturer, regardless of cost or performance.

- There is no common/universal design yet for charging infrastructure to support the bus deployment, which means that transit agencies have no ability to share charging infrastructure.
- A truly open, competitive bid process is thereby precluded.

H-2-5 Some small transit agencies such as Pasadena limit their risk and expense by depending on and learning from the large transit agencies that have had ample opportunity to test new technology. It is too soon to implement the regulation statewide for all size or types of transit agencies, such that CARB is unable to obtain an accurate and complete picture of transit agencies' current experience with ZEBs and initial review of technology readiness. Currently, large agencies that are attempting to deploy ZEBs are experiencing difficulty in having operable and reliable vehicles delivered, have experienced high costs of charging infrastructure in very limited applications, and have far exceeded estimated operating expenses for utility costs. Pasadena does not have the capacity to experiment with this technology.

Local and small transit agencies such as Pasadena should be exempt from any ZEB-based CARB regulation until the requirement is proven to be technologically and economically feasible, when funding programs are available to fully fund the cost to make the transition from CNG to ZEB, and/or when all transit agencies regardless of designation are eligible for these funds.

Sincerely,



Valerie Gibson
Transit Manager



September 20, 2018

Mary D. Nichols, Chair
Attn: Shirin Barjani
California Air Resources Board
10011 Street
Sacramento, CA 95814

Dear Ms. Nichols:

The Napa Valley Transportation Authority (NVTA) appreciates the opportunity to comment on the proposed Innovative Clean Transit (ICT) Regulation. NVTA is a joint powers authority comprised of the cities of American Canyon, Napa, St. Helena, Calistoga, the Town of Yountville, and County of Napa serving as the congestion management agency and operator the Vine public transit system in the Napa Valley. NVTA supports the California Air Resource Board's efforts to pursue innovative strategies to meet the State's greenhouse gas (GHG) reduction targets and improve air quality.

While NVTA fully understands the importance of reducing harmful emissions, the agency is also familiar with some of the pitfalls associated with procuring and deploying new, unproven technologies. In 2009 NVTA purchased eight (8) New Flyer gas electric hybrid buses for its fixed route system. Shortly after delivery, the manufacturer of the drivetrain went bankrupt and the performance and reliability of these vehicles was a miserable failure forcing NVTA to spend hundreds of thousands of dollars to keep the vehicles running - dollars that could have been better spent on expanding transit service. This experience has made NVTA more cautious pursuing new vehicle technologies.

Nevertheless, NVTA continues to acquire clean technology vehicles both because the organization is anxious to green its fleet, but also because the communities where the Vine operates embrace the agency's efforts to reduce emissions. In that vein, NVTA pursued and was awarded Federal Transit Administration (FTA) Low and No Emission 5339c Grant Program funds to purchase five (5) Zero Emission Battery (ZEB) electric buses. The buses will be deployed into shuttle service in the smaller jurisdictions within Napa County as well as in fixed route service within the City of Napa. NVTA has partnered with the Center for Technology and the Environment (CTE) to determine the best way to integrate and deploy the vehicles so as not to disrupt current service levels. CTE further has helped with mitigating risk so that some of challenges that occurred with the gasoline-electric hybrid vehicles can be avoided. While this model of procuring and deploying ZEBs has helped immensely navigating towards a cleaner fleet, it is costly and limits the services that NVTA can deploy to serve the many diverse communities in the Napa Valley.

H-2-2

Technology Performance Concerns:

NVTA is concerned with the requirement that zero emission buses must be retained for at least five (5) years from the date of being placed in active service. From NVTA's experience with the New Flyer gas electric hybrids there could very well be an instance where a bus performs in such a poor manner as to require retirement earlier than five (5) years. NVTA would like to see a provision allowing for a waiver of the five (5) year requirement on zero emission buses.

Cost and Funding Concerns:

The ICT Regulation proposal requires NVTA to begin purchasing ZEB at a rate of 25% of bus procurements beginning in 2026 and this would increase to 100% of all procurements in 2029. Based on NVTA's current fleet size and replacement cycle, the regulation would result in the purchase of fifty-six (56) heavy duty ZEBs through 2040.

E-9 NVTA's main concern is funding. Based on the Vine's existing replacement schedule and the current cost differential of Battery Electric Buses compared to standard diesel buses, the projected cost to NVTA would be an additional \$16.8 million through 2040. That is equal to approximately two times the agency's current fixed route annual operations. Additionally, NVTA would need to spend approximately \$2.8 million on charging stations and other EV enhancements over the same time period.

E-8 Further, under the proposed ICT Regulation, HVIP and LCTOP funding would not be an eligible fund source for buses mandated under the regulation. Given the current near and long-term capital needs of NVTA the agency already plans on delaying the purchase of replacement diesel buses, with the additional cost of ZEBs with no dedicated funding NVTA would likely have to delay purchases further. The only way that NVTA would be able to meet the currently proposed ZEB procurement schedule is if CARB relaxed ZEB bus eligibility rules for all the grant funding that it currently administers - at least until the cost and performance of ZEBs, (inclusive of factoring the cost of building new compatible infrastructure cost) are on par with traditional transit vehicles.

H-7-2 Bonus Credits:
NVTA would like to see the provision allowing bonus credits expanded to include battery electric buses ordered before the ICT regulation goes into effect for small transit systems in 2026. The change to include only battery electric buses purchased before December 31, 2017 poses significant financial challenges for agencies that are the size of NVTA. NVTA several years applying for zero emission bus grants, another year planning for their deployment of the new fuel technology, and will place an order in fall 2018. Under the current ICT regulation as it is written NVTA will not receive any bonus credit for early adoption of zero emission technology.

H-4-1 Safety and Federal Regulations:
NVTA is pleased to see CARB address our and other transit agencies' concerns to exclude cutaways and other vehicles that cannot meet the requirement from the draft rule. ARB's proposal to exclude these vehicles from the rule until such time OEMs can make Altoona-tested zero emission versions available on the market, ensures that implementation of the ICT Regulation will not impair service to our community's most vulnerable populations.

Again, NVTA appreciates this opportunity to comment on the proposed ICT Regulation. The agency is committed to working with CARB staff to create an Innovative Clean Transit Regulation that will achieve reduced GHGs and other harmful emissions, but also ensures adequate safety for riders and minimal operational and financial risks to the agency.

Please contact me at kmiller@nvta.ca.gov or 707-259-8634 or NVTA Policy Analyst, Justin Paniagua at jpaniagua@nvta.ca.gov or 707-259-8781 should you have any questions or require additional information.

Sincerely,



Kate Miller
Executive Director



**45-Day
Docket No. 381
Table IV.1
45-Day Comment Period**

September 21, 2018

California Air Resources Board
1001 I Street
Sacramento, CA 95812

RE: Innovative Clean Transit Proposed Regulation

Dear Chairwoman Nichols and Members of the California Air Resources Board,

Motiv Power Systems appreciates the opportunity to provide comments on the Innovative Clean Transit (ICT) proposed regulation. We strongly support the adoption and implementation of the ICT rule, as well as the goals of this regulation. Adoption of the ICT Rule as a key component of California’s policy portfolio of solutions enabling a transition to zero emission vehicles to protect public health, our air quality, climate goals, and local jobs.

As a California based small business and manufacturer developing zero-emission all-electric chassis for medium- and heavy-duty vehicles, we know firsthand how essential good policy has been to supporting sustainable solutions and the advance technology ecosystem here in California. Motiv’s all-electric chassis are presently used in vehicles ranging from school and shuttle buses to delivery trucks and work trucks, and even book mobiles and medical outreach vehicles, allowing fleets zero-emission solutions that improve the local air quality, help meet the state’s climate goals, and eliminate the need for fossil fuels.

We strongly support adoption and implementation of a robust ICT rule, and the goal to have a 100% zero-emission fleet by 2040. These targets are reasonable, feasible, and appropriate to ensure transit riders see the opportunities to enjoy zero-emission vehicles in their communities. We would like to align ourselves with the analysis in the letter submitted to the docket by the Sierra Club in collaboration with Earthjustice, The Union of Concerned Scientists, Environment California / Environment California Research & Policy Center, The American Lung Association in California, IBEW-NECA California & Nevada, International Brotherhood of Electrical Workers (IBEW) Local 11, Los Angeles NECA, IBEW Local 569, Jobs to Move America, The Coalition for Clean Air, BlueGreen Alliance, and CALPIRG. This letter and it’s analysis contain three recommendations we strongly support and agree with:

- H-5-2** 1. This rule should contain specific language that requires that all buses must be zero emissions by 2040 and thereafter.
- H-4-3** 2. Cutaways and other bus types not presently included should be added to the requirement two years after two commercial offerings have completed Altoona testing.
- H-5-5** 3. Small transit agencies should complete their planning by 2021.

These recommendations when coupled with the framework staff has already proposed will ensure the smoothest transition to only zero-emissions solutions, on all vehicle platforms, and for all Californians no matter where in our great state they reside.

As a manufacturer of zero-emission chassis that can be used in cutaway applications and have been in use for the last three years, we know first-hand the timelines for procurement and contracts with



transit agencies are longer than with private fleets. If this rule is passed including transit agency planning as well including more vehicle applications when there are multiple validated commercial solutions, it will increase the incentive to complete additional testing to sell into those markets. And in doing so it accelerating the deployment of zero-emission shuttle bus solutions into transit fleets.

Furthermore, there is a difference in the amount of planning that will be needed for a fleet transformation when compared to selling a single vehicle. While selling a single bus for vehicle validation, a deployment can often be done without major infrastructure investments. However, a total agency transition will involve the need for power upgrades and service planning with utilities – and actively planning will make the transition smoother and more successful. This will also help utilities ensure their planning to meet renewable targets aligns with the power needs of the buses being put into service.

E-9

Motiv also strongly supports the continued access and funding of incentive programs through the length of this transition. Programs like HVIP and the LCFS credits are key for transit agencies and enabling them to use these tools for the length of the transition will allow smoother planning and faster transition to 100% zero-emission solutions.

As a company, Motiv's mission is to **Free Fleets From Fossil Fuels**. This regulation supports that mission, so while we do not currently sell to these fleets, we support the policies that allow them to take actions that align with our mission. Historically California's gains in clean transit technology have set the stage for transformations that impact other fleets, and this leadership and California's ongoing commitment to being a climate leader, investing in advanced technologies, and supporting communities are key to what has made California the hub of technological leadership in automotive technology. As a company part of this ecosystem we recognize the integrated nature of the policy portfolio and its successes to date and encourage the CARB board to pass this regulation to continue that leadership.

Thank you for the opportunity to provide feedback and we look forward to continuing to work with staff and stakeholders in support of California's clean air and climate goals.

Sincerely,

A handwritten signature in black ink, appearing to read "Urvi Nagrani". The signature is fluid and cursive, written over a white background.

Urvi Nagrani
Director of Business Development
Motiv Power Systems

County Connection

2477 Arnold Industrial Way Concord, CA 94520-5326 (925) 676-1976 countyconnection.com

September 24, 2018

**45-Day
Docket No. 382
Table IV.1
45-Day Comment Period**

California Air Resources Board Members
1001 I Street, Suite
Sacramento, CA 95814

RE: Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation

Chair Nichols and Members of the California Air Resources Board (ARB):

On behalf of the Central Contra Costa Transit Authority (County Connection), I submit the following comments in response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit (ICT) Regulation. County Connection provides service to the 10 cities as well unincorporated areas of the central and southern parts of Contra Costa County – the areas adjacent to the I-680 and SR24 corridors. Our service area population is just over 500,000 and we operate a fleet of 121 fixed route buses (30 and 40 ft) and a fleet of 63 paratransit vehicles (small cutaways, mini vans, etc) that serve primarily seniors and folks with disabilities that cannot use the fixed route service.

As of the end of 2018, eight of our 121 buses will be battery electric buses (BEB). In fact, these will be the very first BEBs that the bus manufacture, GILLIG has ever built. We are very proud of that fact. We have successfully introduced inductive charging on route to assist in extending battery life and operational range. While it is not yet official board policy at County Connection, we are intending to continue purchasing inductively charged BEBs as our bus procurement opportunities arise. I will speak more to our experiences later in this letter.

As currently drafted, the proposed regulation improves on the Draft Regulatory Concept for the Proposed Innovative Clean Transit Regulation, released December 2017. Improvements to the proposed regulation reflect ongoing discussions between California Air Resources Board staff and the leadership of the California Transit Association (CTA). As a member of that CTA group that has met regularly with the staff of ARB, I greatly appreciate the progress we have made on making the proposed regulation much more workable in the real world where public transit is delivered and used. It is my opinion that the ARB staff have worked extremely hard to develop a draft regulation that meets the many needs and interests of the affected parties.

While the progress made on the proposed regulation is substantial, a few concerns remain that I would urge ARB to further address. **To identify my first concern, I reiterate the CTA stated concern that the imposition of the zero-emission bus (ZEB) purchase requirement is not tied to benchmarks for ZEB cost and performance, infrastructure buildout costs, and funding availability. There are significant risks in assuming, that data gathered from limited, short-term ZEB deployments will accurately reflect the realities of ZEB deployments at-scale. County Connection strongly believes that, despite the claims of some interest groups, ZEB cost and performance, infrastructure buildout, and the cost of electricity as fuel, are still issues.**

As I noted above, we will have eight BEBs in service by the end of the year. We put the first four BEBs into service in late 2016. At this point we have learned a number of things about our project that serve as things all of us need to be very mindful of moving forward. Our project has been documented and studied by the National Renewable Energy Laboratory (NREL). In June of 2018, NREL provided us with a draft of the Preliminary Project Results. A final Preliminary Project

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CENTRAL CONTRA COSTA TRANSIT AUTHORITY

Results document has yet to be released. Without going into a review of this draft document, two things stand out as long term concerns.

C-4 The first is that our BEBs have been available for service 71.6% of the time in comparison to 88.5% of the time for a comparable diesel powered bus. If we cannot significantly decrease the availability difference over time, we will need to have more BEBs than diesel buses to cover the same level of service to the public. That in turn becomes a significant capital cost when applied over a larger number of buses in service.

E-4 The second significant concern that NREL's work documents relative to our BEB project is related to how much it is costing us to charge our BEBs with electricity.

County Connection purchases electricity for its BEBs from PG&E. Currently, PG&E does not offer us a "transit rate" for purchasing electricity for our BEBs. Moreover, to date they have indicated a plan to do so as they implement SB350. Therefore, we are currently paying standard rate payer rates. This – according to NREL – is resulting in County Connection paying – on average - \$8.75 per diesel/gallon/equivalent (dge) for the electricity from PG&E that we sue to charge our eight BEBs! During the same period of time, NREL documented that County Connection paid \$1.86 per gallon for diesel fuel. It should be noted that County Connection has been using renewable diesel for its diesel powered buses since mid 2017.

While overall, we are pleased with the operation of our BEBs, if these two concerns cannot be overcome over time, we will not be able to sustain an operation that increases the reliance on BEBs without cuts to service and/or undue increases in passenger fares. This is particularly acute when it comes to the costs of electricity. If the cost electricity does not come down substantially from \$8.75.dge, there is no way can sustain our present levels of service – let alone improve services that would reduce Greenhouse gases – and transition further to BEBs.

In short, while we at County Connection desire to put more BEBs into service in the future, we cannot do so if the price of electricity remains at a cost where we have to cut service to pay for the price differential between electricity and renewable diesel.

As you move to consider adopting an update to the ICT, County Connection strongly believes you should be guided by this question posed by CTA: "*What will happen to transit service, if the assertions made by ARB staff and interest groups are wrong, and the cost and difficulty of the transition to fully electrified bus fleets more closely align with the warnings of California's public transit agencies?*" To help ensure that this question is addressed in manner that minimizes the risk to transit service and the transit using public, County Connection offers you a few recommendations designed to manage the risks associated with this ambitious transition and minimize adverse impacts to transit service. These are very consistent with those you are seeing from CTA, the California Association for Coordinated Transportation (CalACT), as well as many other public transit providers and users.

Benchmarking and Regulatory Assessment

B-2 This provision would require the California Air Resources Board to conduct a regulatory assessment – before a ZEB purchase requirement goes into effect – that evaluates real-world ZEB cost and performance with benchmarks for ZEB cost and performance established at the time of rule adoption. This regulatory assessment should allow the Board to issue an across-the-board suspension of the ZEB purchase requirement, much like the original Transit Fleet Rule did, if real-world ZEB cost and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses. This provision would have no impact on the ZEB purchase requirement, if benchmarks for ZEB cost and performance are being met, as anticipated by ARB staff and interest groups.

Incentive Funding

The staff report supporting the proposed regulation emphasizes the importance of incentive funding to minimizing adverse impacts to transit service (see Initial Statement of Reasons, pages ES-8, III-8, VIII-26). However, this proposed regulation is aimed at public transit operators who by definition are local or regional government services supported by California state tax payers. As such, most of them use federal transportation funds to purchase buses and paratransit vehicles. Thus,

they are beholden to strict federal rules and regulations regarding how buses are procured and how long they must remain in service before they can be retired.

E-8 The various individual transit operators are all on different bus replacement cycles based on when they receive the necessary federal funding to pay for replacement buses. Some of these federally defined bus replacement schedules will not allow an operator(s) to purchase “early” in terms of meeting the proposed regulation when they are replacing existing non-zero emission buses. In those cases, present policies on the use of incentive funding won’t allow those transit operators to use the incentive funds. Thus, some operators are going to be financially penalized for simply adhering to federal transit vehicle procurement rules.

Given the stated importance of this funding and our shared goal of protecting vital transit service, and at the same time move forward together towards full ZEB implementation within public transit by 2040, ARB should revise its current policy disallowing the use of incentive funding to meet regulatory compliance to explicitly allow transit agencies to use incentive funding whenever they are prepared to purchase a ZEB at least through 2029.

Cutaway Vehicles

These vehicles are either used to transport the most vulnerable of our fellow constituents – frail senior and folks with disabilities (many who rely on wheelchairs or other similar type mobility devices), or used in small urban or rural areas of the state – often for lifeline services to the transit dependent. Furthermore, these vehicles have been used in each of the last four years to evacuate vulnerable populations from wildfires in Lake, Mendocino, and Shasta counties.

H 4-1 Currently, there are no viable electric or fuel cell powered cutaway vehicles available. Thus, at this time it would not be prudent to include cutaways in the initial timeframe of proposed regulation. Therefore, County Connection strongly supports the ARB staff recommendation to defer the regulation on to cutaway vehicles until 2026. Similarly, we support the ARB staff definition of a cutaway as put forward on page 37 of Article 4.3 in Appendix B-2 of the proposed regulation.

Thus, County Connection urges ARB to retain these two staff recommendations despite some reservations expressed by a number of advocates in the environmental community.

Applying the Regulation Small Transit Operators and Defining Small Operators

Larger and more urban transit operators tend to have access to better and more diverse funds sources than smaller transit operators. This is especially true with respect to federal transit funds. Because of that, the federal government, through the Federal Transit Administration (FTA) defines large and small operators based on both the number of vehicles and operator has in service in their peak periods of service as well if they serve a large urban area, a small urban area, or a rural area. Among the three areas, the operators that serve the large urban areas as federally define, have much great access to federal funds.

Furthermore, larger systems have greater depths of staff in terms of number and knowledge and generally have an easier time implementing new technologies. Operators from small urban areas or rural areas tend to watch and learn from the larger urban systems when new technologies – like ZEBs enter the transportation market place.

In order to increase the chances that transit operators in small urban areas or rural areas have at succeeding without major service disruptions in transitioning to ZEBs, County Connection believes that ARB staff are right to delay much of the proposed regulation applying to small operator until 2023. We urge the ARB to keep this in the final regulation.

H-1-2 Just as important is the definition of a small operators within the proposed regulation. County Connection urges ARB to use a definition that is used consistently throughout transit regulation and funding. That definition is the current federal definition that specifies that small operator is one that has less than 100 buses in peak service. Under the proposed regulation, ARB staff have used a different definition of a small operator that is unique and not used anywhere else for transit regulation or funding. If this unique definition is used, there will be California transit operators that are defined as small operators by the federal government and Caltrans, but defined as a large operator by ARB.

This potential conflict in small vs large definition will be confusing at best and likely counter-productive. It should be noted that even if ARB uses a traditional definition of a small operator which is what we ask, all California transit operators are getting to full ZEB fleets by 2040 under the proposed regulation.

County Connection respectfully submits these comments. We appreciate your consideration of them. Please know that County Connection shares your goal of reducing deadly emissions from all mobile sources include public transit vehicles. We only ask that you consider our concerns about how we get to fully ZEB transit fleets by 2040. Our concerns are only driven by our desire to make sure we can provide public transit service to our shared constituents as we continue to work together on our common goals.

I close by saying thank you to the ARB staff for working very hard with our industry through CTA on getting to this point. With just little more work and attention, I think we can a good update to the ICT that we can all live with and will move forward the goals of the State of California.

If you have any questions or comments, please feel free to contact me at 925-680-2050.

Sincerely,



Rick Ramacier

General Manager

cc: Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
Shirin Barfjani, Mobile Source Control Division, California Air Resources Board

September 21, 2018

Clerk of the Board
California Air Resources Board
1001 I Street, P.O. Box 2815
Sacramento, CA 95812-2815

Re: proposed Innovative Clean Transit (ICT) Regulation and a Draft Environmental Analysis (Draft EA)

Submitted online via CARB's Web Comment Submittal Form

Olivine supports CARB's efforts to propel California's public transit agencies towards zero emissions fleets. We also appreciate CARB's efforts to engage diverse stakeholders in the process of formulating the Innovative Clean Transit Regulation. In reviewing the INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW (GOV. CODE, § 11346.5, subd. (a)(3)), it appears that the proposed actions do not contemplate Vehicle to Grid Interaction, electricity rates, and grid infrastructure. Olivine believes that a strong ZEB proposal needs to consider and provide prudent guidance around VGI deployment to ensure that ZEB charging impacts to the electrical grid are mitigated and/or positive. Without VGI, ZEB charging may induce additional stress to the electrical grid, which could negatively impact air quality in California.

Olivine also reinforces its earlier feedback provided both at the June 13, 2018 workshop and via public comment.

- H-2-6** • Vehicle to Grid Integration (VGI) is crucial to manage electricity (fuel) costs. Several transit districts expressed concern over or shared their experience with high electricity costs. Olivine's analysis has shown that electricity costs can be managed via intelligent charge control algorithms and/or bi-directional power flow. These strategies enable a variety of grid engagement opportunities, including direct wholesale electricity market participation and joining virtual power plant aggregations like the Olivine Green Community. VGI functionality needs to be a default component of all Battery Electric Bus (BEB) deployments.
- VGI functionality should be required in BEB and/or charging infrastructure procurements. The costs associated with enabling VGI functionality are small compared with the large capital required for both buses and infrastructure. The marginal increase associated with VGI functionality will have a quick pay back period from electricity (fuel) cost savings.
- H-8-7** • Transit-specific utility rates are needed to address the concerns of demand charges associated with fleet electrification. CARB should coordinate efforts with the CPUC and the Energy Commission in order to incent transit districts to electrify their fleets with targeted rate design, as opposed to chilling their investment due to problematic rate design which imposes burdensome electricity (fuel) costs.
- H-2-7** • Department of General Services procurement efforts should require VGI and V2G functionality in the selection of battery electric buses and charging infrastructure by the State.
- H-8-8** • Olivine recommends a technical workshop be held on these issues; the opportunity to explore and debate them would be valuable to all stakeholders. Olivine believes that such a workshop will help shed light on many of the uncertainties around deploying infrastructure and concerns around fuel costs.

Sincerely,
Hitesh Soneji
Sr. Solutions Design Engineer, Olivine Inc.

September 24, 2018

California Air Resources Board, Members
1001 I Street, Suite
Sacramento, CA 95814

RE: Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation

Chair Nichols and Members of the California Air Resources Board:

On behalf of ARBOC Specialty Vehicles, LLC, I submit the following comments in response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit (ICT) Regulation. ARBOC Specialty Vehicles, LLC is a low floor cutaway & medium duty transit bus manufacturer that provides innovative products to transit agencies across North America in an effort to improve efficiencies and aid in mobility for all users of public transit, including many in California.

As currently drafted, the proposed regulation improves on the Draft Regulatory Concept for the Proposed Innovative Clean Transit Regulation, released December 2017. Improvements to the proposed regulation reflect ongoing discussions between California Air Resources Board staff and the leadership of the California Transit Association. While the progress made on the proposed regulation is substantial, we remain concerned that the imposition of the zero-emission bus (ZEB) purchase requirement is not tied to benchmarks for ZEB cost and performance, infrastructure buildout costs, and funding availability. Moreover, we see significant risks in assuming, as ARB staff has, that data gathered from limited, short-term ZEB deployments will accurately reflect the realities of ZEB deployments at-scale. We assert that, despite the claims of some interest groups, ZEB cost and performance, infrastructure buildout, and the cost of electricity as fuel, are still issues.

B-2

As you move to finalize the proposed regulation, ARBOC Specialty Vehicles, LLC believes you should be guided by one question: “*What will happen to transit service, if the assertions made by ARB staff and interest groups are wrong, and the cost and difficulty of the transition to fully electrified bus fleets more closely align with the warnings of California’s public transit agencies?*” To help navigate this question, we urge the Air Resources Board to review current range and cost-specific data obtained and provided by both large and smaller operator’s experience as well as unbiased consultants when estimating the actual impact of Innovative Clean Transit on public transit service delivery and review the following considerations:

B-2

- **Benchmarking and Regulatory Assessment:** This provision would require the California Air Resources Board to conduct a regulatory assessment – *before* a ZEB purchase requirement goes into effect – that evaluates real-world ZEB cost and performance with benchmarks for ZEB cost and performance established at the time of rule adoption. This regulatory assessment should allow the Board to issue an across-the-board suspension of the ZEB purchase requirement, much like the original Transit Fleet Rule did, if real-world ZEB cost and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses. This provision would have no impact on the ZEB purchase requirement, if benchmarks for ZEB cost and performance are being met, as anticipated by ARB staff and interest groups.

E-8

- **Incentives:** The staff report supporting the proposed regulation emphasizes the importance of incentive funding to minimizing adverse impacts to transit service (see Initial Statement of Reasons, pages ES-8, III-8, VIII-26). Given the stated importance of this funding and our shared goal of protecting vital transit

service, this provision would require ARB to revise its current policy disallowing the use of incentive funding to meet regulatory compliance to explicitly allow transit agencies to use incentive funding whenever they are prepared to purchase a ZEB.

E-10, E-13

In addition, the HVIP is an equitable and efficient process for offsetting the cost of a zero emission bus. However, CARB must express its support for creating an infrastructure funding program. This program should also be available to small operators to finance the rollout plans. Without a secure source for infrastructure investments in fueling/charging facilities, maintenance facilities, and storage capacity, the ability to meet the goals of this rule is doubtful.

E-9

We urge the Air Resources Board to review and compare purchase orders and actual costs associated with the purchase of CNG/Clean Diesel vehicles and Battery-electric vehicles. Battery-electric buses are more than double the cost of CNG/Clean Diesel Buses *after* HVIP vouchers. The HVIP program and PG&E transit budgeting are non-dedicated, temporary funding sources available to implement a costly and sometimes unreliable form of technology. Dedicated and reliable funding and incentive programs will allow for continuity of services when implementing the technology.

H-5-5

- **Delayed Compliance:** ARBOC Specialty Vehicles, LLC strongly supports the delayed compliance for small operators with adopting the rollout plans and purchase mandates. For a small operator, additional time will be needed to secure funding for developing and adopting the rollout plans. The additional time needed to develop the rollout plans support the need for the later purchase mandate timeline. The later purchase mandate should also benefit agencies to take advantage of lower vehicle prices as demand increases and supply chains mature. Delayed compliance will allow many agencies to begin purchasing Electric Buses as the technology advances and begins to meet range requirements for their standard routes. Earlier compliance may force agencies to otherwise cut services, some of which provide lifeline services to individuals with limited mobility options.

H-1-5

- **Cutaway Definition:** ARBOC Specialty Vehicles, LLC also supports the proposed definition of a cutaway bus. These vehicles are the workhorse of small transit systems due to their lower capital and operating costs. These vehicles are produced in a wide variety of sizes, and the proposed definition specifying vehicles weight of 14,000 pounds to 26,000 pounds is appropriate. In addition, the rule recognizes that a commercially available zero emission cutaway bus is currently not available.

H-1-2

- **Small Operator Definition:** Additionally, we urge the Board to reconsider the definition of a “small operator” and use the definition employed by federal and state programs for compliance purposes. The proposed regulations define a small operator as any operator with less than 100 buses. ARBOC Specialty Vehicles, LLC urges the Board to rely on the current federal definition that specifies a small operator as having less than 100 buses during peak operations. The number “100” is nominal and does accurately portray the size of an operator as a whole. Many vehicles in a fleet may not be regularly used: some may only be used during emergencies or during fleet maintenance, may be retired, or may be vehicles that have met their useful life. We urge CARB not to rely solely on NTD data for the total number of buses because these numbers can represent total buses on the lot including buses being sold or disposed that have met their useful life and back up vehicles used for emergencies.

E-13

- **Funding Considerations:** We urge the Air Resources Board to consider the vast difference between agencies considered small to both the Federal Transit Administration and California Department of Transportation but not the Air Resources Board. These agencies are traditionally rural or non-profit/ADA providers with inequitable funding in comparison to “other” large operators pooled into the same definition by the Air Resources Board. These agencies have much smaller staffing capacities and current transit employment trends, such as driver and maintenance staff shortages are exacerbated in smaller communities. These agencies often have much larger routes and service areas. Rural transit systems and ADA/non-profit providers face unique challenges that are not considered in the regulation as it exists today due to vague definitional standards.

We respectfully ask that you consider the comments we have provided in addition to those provided by the California Transit Association and the California Association for Coordinated Transportation (CALACT.) Our company is committed to alleviating providing mobility options to communities and

transit agencies as well as reducing the dependence on single use vehicles. We support efforts to reduce pollution in communities in California but ask that you consider our comments as to protect California's transit agencies, and the riders who rely on their service, from the risks associated with this transition. We greatly appreciate your continued commitment to working with the California Transit Association to get this proposed regulation right.

If you have any questions or comments, please feel free to contact me at 574-825-6476.

Sincerely,

Kim Yoder
Vice President of Sales & Marketing
ARBOC Specialty Vehicles, LLC

cc: Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
Shirin Barfjani, Mobile Source Control Division, California Air Resources Board



**45-Day
Docket No. 386
Table IV.1
45-Day Comment Period**

2035 Tulare Street, Suite 201
Fresno, CA 93721
Phone: (559) 233-6789
Fax: (559) 233-9645
www.ruraltransit.org

September 24, 2018

California Air Resources Board, Members
1001 I Street, Suite
Sacramento, CA 95814

RE: Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation
Chair Nichols and Members of the California Air Resources Board:

On behalf of Fresno County Rural Transit Agency (FCRTA), I submit the following comments in response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit (ICT) Regulation. FCRTA provides service to the 13 rural incorporated cities and 29 unincorporated communities in Fresno County with a transit fleet over 100 vehicles comprised of 10% electric, 45% CNG and 45% gasoline. FCRTA is committed to transition to electrification and has a goal of a 100% electric fleet by 2025 based on available capital funding.

As currently drafted, the proposed regulation improves on the Draft Regulatory Concept for the Proposed Innovative Clean Transit Regulation, released December 2017. Improvements to the proposed regulation reflect ongoing discussions between California Air Resources Board staff and the leadership of the California Transit Association. **While the progress made on the proposed regulation is substantial, we remain concerned that the imposition of the zero-emission bus (ZEB) purchase requirement is not tied to benchmarks for ZEB cost and performance, infrastructure buildout costs, and funding availability.** Moreover, we see significant risks in assuming, as ARB staff has, that data gathered from limited, short-term ZEB deployments will accurately reflect the realities of ZEB deployments at-scale. We assert that, despite the claims of some interest groups, ZEB cost and performance, infrastructure buildout, and the cost of electricity as fuel, are still issues that must be worked through. Due to the higher purchase costs of the ZEB's, FCRTA has purchased ZEB's based on availability of funding and incentives. **FCRTA is a rural transit operator with high mileage routes and with varying performance of ZEB's, implementation has been affected by the "in-service" range of the vehicle and the extra driver training required in order to maximize the range.** Grid capacity and charging infrastructure is also an existing challenge associated with transitioning and deploying an electric fleet in the rural communities of Fresno County. Infrastructure is lacking and aging in many areas and the utility rates remains a concern as FCRTA transitions to a 100% zero emission fleet.

As you move to finalize the proposed regulation, FCRTA believes you should be guided by one question: *"What will happen to transit agencies facing a ZEB purchase requirement, and the riders who rely on our service, if the assertions made by ARB staff and interest groups are wrong, and the cost and difficulty of the transition more closely align with the warnings of California's public transit agencies?"* To help navigate this question, the California Transit Association has offered you a series of recommendations designed to manage the risks associated with pursuing the laudable goal of cleaner air for all Californians.

We urge you to adopt these recommendations in full, and emphasize the importance of the following two provisions:

B-2

- **Benchmarking and Regulatory Assessment:** This provision would require the California Air Resources Board to conduct a regulatory assessment – *before* a ZEB purchase requirement goes into effect – that evaluates real-world ZEB cost and performance with benchmarks for ZEB cost and performance established at the time of rule adoption. This regulatory assessment should allow the Board to issue an across-the-board suspension of the ZEB purchase requirement, much like the original Transit Fleet Rule did, if real-world ZEB cost and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses. This provision would have no impact on the ZEB purchase requirement, if benchmarks for ZEB cost and performance are being met, as anticipated by ARB staff and interest groups.

E-8

- **Incentives:** The staff report supporting the proposed regulation emphasizes the importance of incentive funding to minimizing adverse impacts to transit service (see Initial Statement of Reasons, pages ES-8, III-8, VIII-26). Given the stated importance of this funding and our shared goal of protecting vital transit service, this provision would require ARB to revise its current policy disallowing the use of incentive funding to meet regulatory compliance to explicitly allow transit agencies to use incentive funding whenever they are prepared to purchase a ZEB.

Only by amending the proposed regulation to include the California Transit Association's recommendations, will you protect California's transit agencies and the riders who rely on our service from the risks associated with this transition. We greatly appreciate your continued commitment to working with the California Transit Association to get this proposed regulation right.

If you have any questions or comments, please feel free to contact me at (559) 233-6789 Ext.244.

Sincerely,



Moses Stites
General Manager

cc: Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
Shirin Barfjani, Mobile Source Control Division, California Air Resources Board



BYD America
1800 S Figueroa St.
Los Angeles, CA 90015

September 24, 2018

California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Comments on the Proposed Innovative Clean Transit Regulation

Dear Chair Nichols and Members of the Board:

Thank you for this opportunity to comment on the update to the Innovative Clean Transit (ICT) process. BYD is a manufacturer of zero emission light-duty and heavy-duty vehicles here in California. Our North American headquarters is based in Los Angeles and manufacturing facilities are located in Lancaster. We are a proud union company that has invested in a diverse workforce of nearly 1,000 employees.

With the ICT rulemaking, California has the opportunity to significantly reinforce its role as a leader in the fight against climate change, especially in the wake of the Global Climate Action Summit, while simultaneously improving the lives of many of the state's most disadvantaged populations. BYD strongly supports the rule's goal of transitioning California's transit fleets to zero-emission by 2040 and stands ready to do its part to make that transition a reality.

As a stakeholder engaged since the early days of the rulemaking, BYD is pleased to see the process entering its final phases. The environmental benefits that will be derived from the rule cannot be underestimated, nor can the health benefits that will be realized with the reductions in criteria air pollutant emissions. The rule will also send a critical signal to the market that zero-emission buses are here to stay, which will in turn drive technology transfer and investment in the truck sector, as was the case for BYD's vehicles.

With this background in mind, BYD would like to offer the following comments in support of the rule.

Reliable Funding for Transit Agencies

E-9 To ensure that the rule succeeds, BYD would like to reiterate the need for CARB and other state agencies to identify dedicated and reliable funding streams to help offset the incremental cost between ZEBs and conventional buses, especially in the form of voucher programs such as HVIP. The strength of voucher programs is their convenience and agency staff should make it a priority to keep the redemption process as streamlined as possible.

E-8 Importantly, the funding should be accessible to transit agencies for funding regulatory compliance. Although CARB policy has historically adhered to a "polluter pays" principle to put guardrails between funding programs and regulatory compliance, the ICT rule's narrow application to solely transit agencies calls for a more nuanced analysis. Previous regulations prevented access to subsidies for compliance because doing so would require the use of public state funds to bring private fleets into compliance.

As the ICT rule only applies to *public* transit agencies, which rely solely on fares and funding from federal, state and local sources, the concern about public funds going to private fleets is not applicable in this case. Additionally, transit agencies provide an essential public service to the state's most disadvantaged communities, which argues strongly for the ability to continue to access state incentives to ensure that these services operate smoothly. A dedicated and reliable funding stream will ensure that funds meant to ensure service reliability and state of good repair and not diverted. For these reasons, BYD strongly urges the Board to allow transit agencies to continue to access vouchers even after the rule

The ICT Rule Will Drive Technology Transfer and Investment

Accelerating the deployment of zero-emission trucks is critical to California's air quality goals, especially with respect to PM and NOx mitigation and control. Heavy-duty vehicles – especially buses and trucks – represent a significant source of these emissions. The Union of Concerned Scientists released a report showing that heavy-duty vehicles, including trucks and buses, emit 33% of California's oxides of nitrogen and 40% of the state's particulate matter¹.

The ICT rule will catalyze the large-scale deployment of zero-emission trucks, both on- and off-road, and combat the emission of NOx and PM. This is because battery electric buses and trucks share the same drive train and power source technologies. It is important to note that the most expensive components of battery electric buses, like battery cells, electric motors and inverters, are the same components used to power battery electric trucks—only the chassis changes. This means that as bus manufacturing scales up, truck manufacturing will scale up, as well. Finally, it is important to note that increased demand for, and manufacturing of, both battery electric buses and trucks will allow BYD to significantly increase its California employee base. Adoption of the ICT means that these economies of scale will become a reality in a shorter timeframe, allowing California to enjoy the air quality and economic benefits even faster.

Conclusion

The ICT rule is a critical component of California's effort to meet the challenges of climate change. The time to adopt the rule is now. BYD thanks the CARB Board Members and staff for their efforts in developing this plan as well as for the opportunity to provide comments. We look forward to the opportunity to discuss these concepts with you in more detail soon. For questions or more information, please contact myself, Zach Kahn (zach.kahn@byd.com), Sam Jammal (sam.jammal@byd.com) or Mark Weideman (mark@weidemangroup.com).

Sincerely,



Zachary S. Kahn
Director of Government Relations
BYD America

¹ <https://www.ucsusa.org/sites/default/files/attach/2016/10/UCS-Electric-Buses-Report.pdf>



2929 Allen Parkway, Suite 4100, Houston, TX 77019

September 24, 2018

Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Via E-Submittal: https://www.arb.ca.gov/lispub/comm/bcsubform.php?listname=ict2018&comm_period=A

RE: Innovative Clean Transit Proposed Regulation

Trillium appreciates the opportunity to continue engaging in the Innovative Clean Transit (ICT) rulemaking process. We are committed to building the infrastructure needed to help the state achieve its decarbonization and clean air quality goals, including the deployment of zero and near-zero emission buses. We are technology agnostic and support all forms of clean (low-carbon) transportation solutions including: hydrogen fuel cell, battery electric and renewable natural gas (RNG).

California will need to deploy a balanced mix of strategies that spur innovation in both the electrification and renewable energy sectors in order to achieve the State's ambitious climate and criteria pollutant reduction goals. These strategies will require a fundamental shift in the way we think about transportation, including public transit. We support a clean transit future, including zero emission technologies, and we want to work with you to ensure the long-term success of this regulation. Trillium welcomes the opportunity to provide CARB technical assistance and collaboratively participate in both this regulatory process and its eventual implementation, including any potential infrastructure technical working groups.

B-3

We believe the Proposed Regulation (Regulation) takes the earlier proposals in the right direction, allowing for the potential to lower the costs of implementation, and provide additional stakeholder flexibility. There are a number of compliance options spelled out in the rule, along with a few alternative compliance options on a case-by-case basis. What the regulation itself is missing is an opportunity for the CARB Board to review and re-evaluate the status of the important underlying cost and technology assumptions along the Rule's implementation. Trillium requests that these assumptions be revisited such that a course correction can be made, if desired or necessary.

The Initial Statement of Reason (ISOR) commits to conducting a "Performance Review"¹ at least one year prior to the start of the purchase mandate, specifically to:

"identify the status of ZEB technology and would help the State design policies to further advance zero-emission technologies, and inform funding strategies related to zero-emission vehicles and infrastructure."

B-3

The commitment includes a review of Costs, Battery Performance, Operating Range, and Performance and Reliability. Trillium is supportive of such review, but believe that the ICT regulation itself should require such a review. As currently drafted the regulation does not. This commitment is only provided in the staff report, and there is no requirement to revisit the standards in the ICT based on this new information. Such a review could show that additional opportunities exist, or likewise identify areas that need adjustment. The ISOR quote above specifically states that the review is to help set the policies moving forward. Such policy setting cannot occur if the Performance Review is only presented as an informational item.

¹ <https://www.arb.ca.gov/regact/2018/ict2018/isor.pdf>



2929 Allen Parkway, Suite 4100, Houston, TX 77019

B-3

The Performance Review is really a reality check on staff's 2018 assumptions in the future. History has shown that two scenarios are likely moving forward—1) California innovation provides lower cost, better performing Zero Emission Busses, or 2) Initial aggressive assumptions need to be revisited and adjusted based on unforeseen market conditions, such as tariffs. There are numerous examples of both outcomes in CARB's history. Having the Performance Review presented to the Board, with the ability to react, provides future policy makers an opportunity to adjust the rule to ensure the state achieves its clean air goals and objectives.

California is leading the country and providing a platform for the successful deployment of Zero Emission Vehicles ("ZEV"). The technology for both battery electric and hydrogen will continue to improve as the major automotive manufacturers continue to allocate more resources into ZEV research and development. CARB will continue to dedicate considerable time and resources to this effort over the next few years, and it makes a lot of sense to revisit the foundation as new technologies and solutions or unforeseen challenges emerge. We welcome the opportunity to work with CARB and staff as we navigate this road together with the mutual goal end game in mind: Clean air for all Californians. If you have any questions, please contact me directly: bill.cashmareck@loves.com

Sincerely,

/s/

Bill Cashmareck
Director, Trillium



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Ex-Officio Member

September 24, 2018

Ms. Mary Nichols
Chairman
California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

Subject: **Comments on Innovative Clean Transit Regulation Discussion Document**

Dear Chairman Nichols:

The Orange County Transportation Authority (OCTA) appreciates the opportunity to offer comments on the California Air Resources Board's (ARB) Proposed Innovative Clean Transit Regulation (Proposed ICT), dated August 7, 2018. Since the release of the ICT Discussion Document in December 2017, work has been done by transit agencies across the state, including OCTA, and ARB staff to find a path forward which would allow for further adoption of zero-emission transit technologies, while also recognizing each transit agency's service requirements, and any technological or financial limitations. Progress has been made since the ICT Discussion Document was released, including the inclusion of provisions which provide additional deference to an individual agency as to the path the agency will take to transition to a zero-emission fleet by 2040, and more explicit recognition of areas where an extension or an exemption from fleet transition requirements may be necessary.

However, there are continued concerns about the Proposed ICT's focus on mandatory purchase requirements, insufficient identification of funding to meet the requirements, lack of regulatory language requiring a regular assessment of technology and cost benchmarks to ensure the new buses are meeting their stated goals, and an emphasis on uniform standards statewide, rather than flexibility to consider an agency's specific technology and cost dynamics. These concerns, plus the insufficiencies in the correlating economic and environmental analysis, may lead to the implementation of a regulation with significant unintended impacts to transit agencies.

B-3, E-9

Many of the continued concerns can be addressed through further refinements to the proposed regulatory language, and more expansive analysis that reflects the fiscal impacts and identification of funding sources to meet expected cost increases. Attached to this letter are details on specific issues that OCTA encourages the ARB to address if the Proposed ICT is to move forward for eventual adoption. Furthermore, OCTA is also supportive of the comments

B-3

CHIEF EXECUTIVE OFFICE

Darrell E. Johnson
Chief Executive Officer

Ms. Mary Nichols
September 24, 2018
Page 2

submitted by the California Transit Association. Without addressing these issues, as currently drafted, the Proposed ICT could jeopardize not only existing transit service levels, but present challenges in meeting fleet operating needs. These implications directly contradict the ARB's goals in pursuing the ICT, namely improving transit service and reducing emissions.

OCTA appreciates the time and effort ARB staff has taken to meet with transit agencies statewide to discuss the Proposed ICT, and hopes to continue to build on existing efforts by transit agencies to expand zero-emission technology in an economically sustainable manner. This includes OCTA's actions to obtain over ten hydrogen fuel cell buses, exclusive use of renewable natural gas for the existing fleet, and integration of low nitrogen oxide engines. With these efforts in mind, OCTA hopes to continue discussions with the ARB and develop collaborative solutions that will help reduce emissions and improve transit service statewide. If you or your staff have any questions regarding OCTA's comments, please contact Kristin Essner, Manager of State and Federal Relations, at (714) 560-5754 or kessner@octa.net.

Sincerely,



Darrell E. Johnson
Chief Executive Officer

DJ:ke
Attachment

c: Members, California Air Resources Board
Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Office, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Shirin Barfjani, Air Pollution Specialist, Mobile Source Control Division, California Air Resources Board
Yachun Chow, Manager, Zero Emission Bus Truck and Bus Section, California Air Resources Board
Platinum Advisors

Orange County Transportation Authority Comments on the California Air Resources Board's Proposed Innovative Clean Transit Regulation

E-9

1. Funding is not identified to bridge the gap between existing technology and zero-emission buses, which could directly impact existing transit service.

The Proposed Innovative Clean Transit Regulation (Proposed ICT) would create a new unfunded mandate for transit agencies, without the identification of sufficient resources to compensate for the increased costs needed to implement the proposed purchase requirement. For the Orange County Transportation Authority (OCTA), it is estimated that it would cost an additional \$442 million, at current cost estimates, to convert its fleet to zero-emission technology. This is more than double what it would cost to replace the fleet with traditional fuel vehicles. In addition, it is estimated that to replace OCTA's fixed route buses, it would cost as much as \$39 million in infrastructure costs based on the estimates provided by ARB in the Proposed ICT. This cost could be more for hydrogen fueling infrastructure. These estimates do not include other costs including those associated with training, increased fuel costs, and right-of-way needs. The bus replacement estimate assumes the cost differential between existing compressed natural gas (CNG) buses, and the need to increase the fleet size to integrate zero-emission buses (ZEB). OCTA's buses must meet a 300 mile range. Replacing a CNG bus with a ZEB, powered by current electric battery technology, is not a straight one-to-one comparison. Instead, because ZEBs cannot meet existing fleet range requirements, transit agencies will have to expand their fleet to comply with the purchase requirement and maintain existing service.

Already, OCTA has budgeted funding from existing sources, including the Low Carbon Fuel Standard, Transportation Development Act, State Transit Assistance, cap-and-trade, SB 1 (Chapter 5, Statutes of 2017) and federal transit sources, to maintain existing service levels. These funding sources are the only funding identified in the regulation to help transit agencies meet the requirements of the ICT Proposal, beyond state grant sources which transit agencies cannot access after regulatory requirements are in force and/or are subject to annual appropriations by the Legislature.

Thus, the Proposed ICT assumes that transit agencies will have to divert existing funds used for operations purposes to meet the purchase requirements. In this scenario, transit agencies like OCTA would have to analyze potential service reductions. In order to meet the \$442 million funding gap, OCTA would have to reduce service by more than 20 percent; a level surpassing what was done during the last recession. This would not only immediately impact the most transit dependent areas of the state, but may also lead to an increase in vehicle miles travelled, which is counter-productive to other California Air Resources Board (ARB) environmental initiatives. These secondary impacts are not analyzed in the environmental analysis done for the Proposed ICT or in the economic analysis.

There also is no discussion about electricity costs and how that will vary based on time of day, and based on various fleet fueling requirements. Currently there is no certainty

about the future of these costs, or what rates will be imposed for transit agencies. Many of the previous demonstrations of this technology were operating under special rate provisions which should not be held as the standard to determine costs for this regulation.

The ICT Proposal should therefore be updated to do the following:

- E-9 • Identify funding sources beyond existing sources already being used for transit operations purposes, to close the cost gap between the requirements of the Proposed ICT and current technology.
 - E-8 • Explicitly ensure that all ARB grant funding programs where ICT activities are eligible can continue to be used by transit agencies to meet the requirements put in place by the ICT Proposal.
 - Update the economic and environmental analysis to account for secondary ramifications from the implementation of the Proposed ICT, including potential service reductions impacting emission reduction efforts and economic impacts to transit riders.
 - E-1 • Update the economic analysis so it is focused on the actual implementation period, and does not include out years beyond the Proposed ICT requirements. This otherwise unfairly includes potential cost decreases in those years.
 - Include analysis of alternative regulatory frameworks to achieve the 2040 goal, which may be less burdensome, including CTA's initial counterproposal.
 - Include updated analysis related to electricity and fueling costs, without consideration of existing agreements with transit agencies that have provided for a temporary reduction in rates.
- B-2 2. The regulatory timeline for implementation does provide for an assessment of economic or technological benchmarks to ensure that the technology is meeting its stated goals prior to enforcement of purchase requirements

While the Proposed ICT includes language in its justification stating that a benchmark analysis will be done of various cost and technology factors, there is nothing in the regulation that ensures that this analysis will be done prior to a purchase requirement being put in place. This could present significant hardship for agencies which abide by the purchase requirement and are forced to integrate a significant number of zero-emission buses, which may not be meeting that fleet's service needs. For instance, under OCTA's existing procurement process, OCTA will potentially be looking at replacing 58 percent of its fleet by 2023. Under the Proposed ICT, potentially 25 percent of this purchase would have to be zero-emission technology. If the new technology cannot meet OCTA's requirements related to such things as range and reliability, this could put future federal funding into jeopardy.

- B-5 The ICT proposal should ensure that technology and economic assessments are done before any requirement is enforced, including prior to 2023. In addition, if at any time a requirement is found to be technologically or economically infeasible, a grace period

should be applied to all transit agencies, including agencies with a procurement in process.

- H-4-2 3. The Proposed ICT should only include cutaways, articulated buses, and over-the-road coaches into the regulation after a complete cost and technology assessment is completed.

OCTA appreciates efforts by the ARB to defer the inclusion of various bus types under the purchase requirement until those buses have undergone more rigorous testing. However, under the current Proposed ICT, these buses are automatically included under the purchase requirement in 2026, or once they complete Altoona testing, whichever is later. While none have been Altoona-tested, and therefore are not eligible for federal funding, more substantive analysis is still needed to ensure that these buses can meet various agencies' operational needs. This is of heightened concern with cutaway buses, which are used to fulfill critical American with Disabilities Act (ADA) paratransit services, if the buses are not able to meet an agency's operational requirements, this may not only lead to impacts to paratransit service, but could impact a transit agency's compliance with ADA.

- H-3-4 4. The Proposed ICT should the extend the "waiver of purchase requirement" framework into future years.

Currently, the Proposed ICT only allows for a waiver of the purchase requirement if a statewide target is met in the years of 2020 and 2021. This concept should continue into future years, aligned with each agency's rollout plan. This would prevent a transit agency from being subject to an arbitrary purchase requirement, and allow additional flexibility for an agency to purchase a bus when necessary. In either case, a transit agency would still have to submit a rollout plan for transitioning its fleet to zero-emission by 2040, maintaining that statewide target. The ARB would also have an opportunity to set statewide targets each year based on actual data and need, rather than simply implementing a one-size fits all requirement. This concept should at least be considered in the years leading up to the 2029 100 percent purchase requirement mandate.

- H-5-1 5. The individual agency rollout plan required under the Proposed ICT should include a section for a transit agency to outline anticipated challenges in meeting its 2040 goal.

While the rollout plan would require a transit agency to include a wealth of information related to how it plans to meet a fleet transition to zero-emission buses by 2040, including planned procurement dates, funding, and technology choice, it does not include a section that allows an agency to communicate where it foresees potential challenges or where flexibility may be needed. For instance, the rollout plan would currently require each agency to identify funding to meet the fleet transition, even when the agency does not know where that funding may come from. While new sources of grant funding may eventually become available, no agency can presuppose that taking place. The requirements related to the rollout plan should therefore be clarified to ensure that the plan is not meant to be financially constrained, and that agencies may deviate from their

original plan. Furthermore, it would help inform the regulation's implementation going forward for agencies to communicate their specific technology requirements and where they foresee challenges. This could include fuel prices, electricity demand, range needs, and reliability. This would provide an opportunity for ARB to know where monitoring may be necessary as the regulation is implemented.

H-7-1

6. Early action credits should be granted in a manner that takes into account all transit agency actions taken prior to any new requirement taking effect.

OCTA supports ARB efforts to recognize those agencies that have taken steps to implement advanced technologies prior to any new regulatory requirements. Currently, the ICT Proposal provides for different credit levels depending on whether the bus was put into service before or after January 1, 2018 for hydrogen buses. It is unclear why that differentiation is made. Instead, the two credits should be awarded for all hydrogen buses procured prior to the regulation taking effect, regardless of when that bus was put into service.

H-8-2

7. The proposed extensions and exemptions in the Proposed ICT need clarification, and should include automatic statewide regulatory exemptions in emergency situations.

OCTA appreciates efforts to include scenarios where the ARB Executive Director may approve extensions or exemptions for compliance with the requirements when certain conditions are present. While each of the scenarios presented are valid, clarification is needed in the following areas:

- For the scenarios related to bus delivery or range, these should be complete exemptions if the situation cannot be resolved within the one-year extension.
- Any extension or exemption for a bus being unable to meet a transit agency's requirement should be based on that agency's highest mileage routes. Currently, the Proposed ICT states that as long as a bus is able to meet the range requirements for at least one route within that agency's system, no extension will be given. However, when transit agencies purchase significant quantities of buses at one time, those buses will have to be used systemwide, including the higher range routes, which could be 300 plus miles. In order to prevent any disruption in service, or the creation of several sub-fleets, a transit bus will therefore have to meet a transit agency's longest ranges.

D-2

8. Personnel training will be required for any technology transition, which is not currently addressed in the Proposed ICT.

Traditionally, the work-force found in the transit industry includes a high degree of expertise with diesel engines, with transition now occurring because of the introduction of natural gas engines. With high demand for this knowledge in fields outside of transit, there are also numerous existing issues in attracting talent to fill maintenance and operations

roles. ARB's Proposed ICT will create an added level of difficulty, by requiring a completely new type of staff knowledge, without any identified training opportunities.

A transition to ZEBs would require complete retraining on the technological operating elements of a bus, and the safety aspects. Without any existing large operation of ZEBs at existing transit facilities, many of the implications of the technology change are unknown. Gradual implementation of the technology would allow transit agencies to mitigate these risks and prepare and protect their staff. There should be a discussion within the Proposed ICT of resources available, including expansion of eligibility for existing resources to be spent for training programs, and plans for training not only the existing workforce, but also those wishing to enter the workforce, on this new technology.

H-1-4 9. The definitions included in the Proposed ICT must account for fleet differences.

The Proposed ICT includes several common definitions which set the basis for the regulation. However, a number of these definitions may differ based on the agency. For instance, while the definition of "useful life" is based on what is needed to meet federal requirements (12 years), many transit agencies, including OCTA, have extended out their useful life to allow the agency to maximize the funding dedicated for operations purposes. The Proposed ICT should be amended in this case, to account for any agency-specific differences that may exist.

H-1-1 10. A bus should still count towards an agency's purchase requirement, even when the bus fails through no fault of the transit agency.

H-2-2 The Proposed ICT currently states that a bus only counts towards an agency's purchase requirement if it remains in service for at least five years. However, the only reason an agency would remove a bus from service prior to the bus meeting its useful life is if the bus was unable to safely be operated along an agency's routes, or if the bus was in an accident which prevented further operation. This could be due to a multitude of factors beyond the transit agency's control. If the bus is removed from service, this would also create challenges in a transit agency's ability to replace the bus using federal funding since the bus was unable to meet the federal standards related to useful life. The Proposed ICT should recognize the original intent of the transit agency in complying with the regulation, and count these buses towards a Proposed ICT purchase requirement.

September 24, 2018

Mary Nichols, Chair

California Air Resources Board
1001 I Street, P.O. Box 2815
Sacramento, CA 95812-2815

Re: Support for a Strong Innovative Clean Transit Standard

Submitted online via CARB's Web Comment Submittal Form

Dear Chair Nichols and Board:

The Union of Concerned Scientists (UCS) and the Greenling Institute (GLI) are pleased to have this opportunity to comment on the Innovative Clean (ICT) Proposed Standard. We came together in 2016 to analyze the growing electric truck and bus industry and produced the report "*Delivering Opportunity: How Electric Buses and Trucks Can Create Jobs and Improve Public Health in California*," which assessed the technology, public health, and job benefits of these technologies.¹

We believe the adoption of a strong ICT Standard is critical for meeting California's greenhouse gas and air pollution reduction goals; to ensure all can utilize and access the cleanest transportation technologies; and to create inclusive, high-quality job opportunities for California's neediest workers.

We appreciate the hard work of the CARB staff and Board in creating and advancing this important standard.

H-11 **First and foremost, we support approving this standard or as soon as possible, and recommend a final approval take place no later than December 2018. We cannot afford to wait any longer to begin our committed transition to 100 percent zero-emission buses.**

We would also like to offer additional improvements to the standard to further accelerate the transition to zero-emission buses in an achievable way that promotes an inclusive and equitable transportation electrification workforce.

I. ADVANCED CLEAN TRANSIT COALITION RECOMMENDATIONS

First, we want to underscore the previously mentioned comments by the Advanced Clean Transit coalition, which UCS is a part of:

¹ Union of Concerned Scientists, The Greenlining Institute, *Delivering Opportunity: How Electric Trucks and Buses Can Create Jobs and Improve Public Health*, at <https://www.ucsusa.org/clean-vehicles/electric-vehicles/freight-electrification#.W6PZolJRfOQ>.

H-5-2

1. **The standard should clearly state that all buses must be zero-emission by 2040.** Since CARB began workshops in May 2015, the goal of this standard has been achieving a full transition to zero-emission buses by 2040, yet the actual language of the standard doesn't explicitly say this. In fact, it could be several years past 2040 when the full transition is achieved based on how the standard is currently written.

The standard's proposed standard of 100 percent zero-emission buses purchases beginning in 2029 would guarantee a transition by the end of 2040 only for buses on the road for 12 years. But many buses in California are on the road for 14 years or longer, and there is up to a two-year lag between when a bus is purchased and when it hits the road. So, a 2029 purchase standard would likely not achieve the goal of all zero-emission buses by 2040. Anything past 2040 ignores the state of technology and how quickly other jurisdictions are making this transition, namely in China.

H-4-3

2. **The standard should apply to shuttle, articulated, coach, and double-decker buses sooner.** Under the proposed standard, these buses are not subject to the purchase standard for eight years despite comprising one-third of transit buses.

Waiting until 2026, as currently proposed, would miss an opportunity to reduce emissions from these buses. Several models of these buses are on the road today and becoming increasingly available across manufacturers. We recommend these buses fall under the purchase standard two years after at least two models of a given type of bus have completed testing by the Federal Transit Administration. There are currently 14 companies that make over 30 different models of buses ranging from standard transit buses to shuttle buses, coach buses, double-decker buses, and long, articulated buses. Ten of these manufacturers are based or have operations in California.

H-5-5

3. **Small transit agencies should submit transition plans by 2021 to take advantage of current incentive funding.** Under the draft plan, transit agencies with less than 100 buses have until 2023 to submit plans for transitioning their fleets to zero-emission buses by 2040. If these transit agencies wait five years to come up with a plan, they could miss taking advantage of the significant amount of incentive funding currently available across the state for the bus itself as well as electric vehicle charging infrastructure. And due to the gaps between agencies' purchases, a delay in planning could result in a several years delay in deploying zero-emission buses.

H-3-2

Additionally, we believe the **2021 Waiver for Early Compliance that would waive the 2024 purchase requirement should be greater than 1,150 buses.** We recommend this number increased to at least 1,250 zero-emission buses. The California Air Resources Board's numbers show there are already 787 buses on the road, on order, or awarded. There are also several financial opportunities agencies can utilize in the next few years to purchase hundreds of additional zero-emission buses. For example, \$35M of the \$180M in HVIP funding for FY17/18 was designated for zero-emission buses. At these funding levels, with an incentive of \$165,000 per bus (including the additional incentive funding for buses in disadvantaged communities), this program would fund more than 200 zero-emission bus purchases. Similar total HVIP funding has been appropriated for next year.

Before the 2nd Waiver for Early Compliance targets in 2021, we will see 3 years of HVIP funding. If HVIP funding remains consistent, this funding source alone could bring in 600 buses, greatly exceeding the 1,150 bus target.

Additional sources of funding include the Volkswagen mitigation money, \$130M of which has been allocated for school, transit, and shuttle buses. If, for example, the allocation is awarded evenly between the three categories, \$43M could be allocated to fund over 250 zero-emission buses (assuming similar HVIP incentive values).

II. MAXIMIZING WORKFORCE OPPORTUNITIES FOR THOSE MOST IN NEED

D-1

We take this opportunity to highlight some of the workforce recommendations from our “*Delivering Opportunity*” report that reinforce many recommendations made by Jobs to Move America and others related to transit agencies’ procurement, maintenance, and operation of zero-emission buses:

- Support the development of and place a high priority on projects that have robust recruiting and hiring policies targeting underserved communities, provide high-quality jobs, have robust minority-owned business procurement goals (i.e., supplier diversity), and partner with or provide support to workforce development programs aimed at underserved communities.
- Invest in skills-development programs aimed at training members of underserved communities (particularly those with barriers to employment) to fill emerging employment needs in the heavy-duty electric vehicle industry and related transportation-electrification fields.
- Track and report individual level data on the progress of efforts to train and employ members of underserved communities.
- Reference and use the US Employment Plan to evaluate and score procurement proposals with the aim of encouraging commitments to creating good jobs and improving access for people historically excluded from manufacturing jobs.

The ICT Standard can help create equitable and inclusive economic opportunities generated by zero-emission bus deployment by requiring transit agencies to prioritize the procurement of buses and related services from contractors that demonstrate how they will leverage, support, and/or create training programs to recruit, train, and hire workers from disadvantaged communities and low-income households. One way to do this is for transit agencies to assign preference points to bidders/contractors that demonstrate workforce equity efforts (including but not limited to):

- Hiring of low-income workers and other individuals with barriers to employment (through targeted or local hiring policies, or others);
- Diverse workforce demographics;
- Partnerships with skills development programs (or its own training programs) targeted at low-income workers and people with barriers to employment, such as job training and pre-apprenticeship programs; especially those that provide support services to participants (e.g. child care, transportation assistance, financial stability, etc.); and/or

- Paying of prevailing wages; providing benefits for hires, partners, and dependents (medical and dental coverage, paid vacation and sick leave, retirement savings, transportation reimbursement, childcare assistance, paid training opportunities); predictable scheduling; and opportunities for advancement for entry-level workers

BYD’s community benefit agreement is a model for how to create equitable economic outcomes (like the ones listed above) in the emerging transportation electrification sector.² The ICT Standard must ensure more people like Danny Alvarez—who is formerly incarcerated and now works at BYD—can access high-quality opportunities in the clean energy economy.³ By incorporating these recommendations, the ICT Standard would be aligning with the Transformative Climate Communities program—which is quickly becoming a social equity “gold standard”—and would be implementing key recommendations from CARB’s SB 350 “Low-Income Barriers Study: Overcoming Barriers to Zero-Emission and Near Zero-Emission Transportation and Mobility Options.”

III. CONCLUSION

Adoption of these improvements will help California realize the benefits of this standard sooner while maintaining the achievable transition CARB has created.

Staff have smartly crafted appropriate offramps to accommodate specific transit agency’s unique situations, and for delays outside of transit agencies’ control, such as manufacturing delays or infrastructure setbacks. We expect staff will provide updates to the Board on the status of this standard as they do with other measures implemented by the Board, however, attempts to establish regulatory performance benchmarks ignore the three years’ worth of work and technical evaluation that has already gone into this standard. Such a measure would ignore the rapid technology development we’ve seen to date, and would delay roll-out of zero-emission buses when they are already well-suited for use in many cases. With only voluntary commitments from transit agencies, the statewide transition to zero-emission buses would be unlikely and transit agencies could miss out on significant near-term incentive funding.

This standard is necessary to provide transit agencies a clear path for transitioning their fleets, manufacturers the market signal needed to continue developing and improving this technology, and to illustrate to communities and cities California’s commitment to achieving our clean air goals. Additionally, incorporating the workforce equity recommendations above into the standard will ensure that workers with barriers to employment can access the economic opportunities generated by this effort, thus putting California’s clean energy economy on an equitable and inclusive path.

² Jobs to Move America, *Labor and Community Groups Sign Landmark Agreement with Electric Bus Manufacturer BYD in Los Angeles*, at <https://jobstomoveamerica.org/labor-community-groups-sign-landmark-agreement-electric-bus-manufacturer-byd-los-angeles/>.

³ Uplift California, *Electric Bus Company Helps the Formerly Incarcerated Build New Dreams*, at <http://upliftca.org/portfolio/danny-alvarez/>.

Sincerely,

Alvaro Sanchez
Environmental Equity Director
The Greenlining Institute

Don Anair
Deputy Director & Research Director
Clean Vehicles Program
The Union of Concerned Scientists



Western Contra Costa
Transit Authority

45-Day
Docket No. 397
Table IV.1
45-Day Comment Period

September 24, 2018

California Air Resources Board, Members
1001 I Street, Suite
Sacramento, CA 95814

RE: Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation

Chair Nichols and Members of the California Air Resources Board:

On behalf of **Western Contra Costa Transit Authority** I submit the following comments in response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit (ICT) Regulation. **Western contra Costa Transit Authority** provides service to **Western Contra Costa** with a transit fleet comprised of **43 buses for fixed route service and 12 ADA paratransit vehicles**.

As currently drafted, the proposed regulation improves on the Draft Regulatory Concept for the Proposed Innovative Clean Transit Regulation, released December 2017. Improvements to the proposed regulation reflect ongoing discussions between California Air Resources Board staff and the leadership of the California Transit Association. **While the progress made on the proposed regulation is substantial, we remain concerned that the imposition of the zero-emission bus (ZEB) purchase requirement is not tied to benchmarks for ZEB cost and performance, infrastructure buildout costs, and funding availability. Moreover, we see significant risks in assuming, as ARB staff has, that data gathered from limited, short-term ZEB deployments will accurately reflect the realities of ZEB deployments at-scale. We assert that, despite the claims of some interest groups, ZEB cost and performance, infrastructure buildout, and the cost of electricity as fuel, are still issues.**

As you move to finalize the proposed regulation, **Western Contra Costa Transit Authority** believes you should be guided by one question: *“What will happen to transit service, if the assertions made by ARB staff and interest groups are wrong, and the cost and difficulty of the transition to fully electrified bus fleets more closely align with the warnings of California’s public transit agencies?”* To help navigate this question, we urge the Air Resources Board to review current range and cost-specific data obtained and provided by both large and smaller operator’s experience as well as unbiased consultants when estimating the actual impact of Innovative Clean Transit on public transit service delivery and review the following considerations:

- **Benchmarking and Regulatory Assessment:** This provision would require the California Air Resources Board to conduct a regulatory assessment – *before* a ZEB purchase requirement goes into effect – that evaluates real-world ZEB cost and performance with benchmarks for ZEB cost

and performance established at the time of rule adoption. This regulatory assessment should allow the Board to issue an across-the-board suspension of the ZEB purchase requirement, much like the original Transit Fleet Rule did, if real-world ZEB cost and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses. This provision would have no impact on the ZEB purchase requirement, if benchmarks for ZEB cost and performance are being met, as anticipated by ARB staff and interest groups.

E-8

- **Incentives:** The staff report supporting the proposed regulation emphasizes the importance of incentive funding to minimizing adverse impacts to transit service (see Initial Statement of Reasons, pages ES-8, III-8, VIII-26). Given the stated importance of this funding and our shared goal of protecting vital transit service, this provision would require ARB to revise its current policy disallowing the use of incentive funding to meet regulatory compliance to explicitly allow transit agencies to use incentive funding whenever they are prepared to purchase a ZEB.

E-10, E-13

In addition, the HVIP is an equitable and efficient process for offsetting the cost of a zero emission bus. However, CARB must express its support for creating an infrastructure funding program. This program should also be available to small operators to finance the rollout plans. Without a secure source for infrastructure investments in fueling/charging facilities, maintenance facilities, and storage capacity, the ability to meet the goals of this rule is doubtful.

E-9

We urge the Air Resources Board to review and compare purchase orders and actual costs associated with the purchase of CNG/Clean Diesel vehicles and Battery-electric vehicles. Battery-electric buses are more than double the cost of CNG/Clean Diesel Buses *after* HVIP vouchers. The HVIP program and PG&E transit budgeting are non-dedicated, temporary funding sources available to implement a costly and sometimes unreliable form of technology. Dedicated and reliable funding and incentive programs will allow for continuity of services when implementing the technology.

H-5-5

- **Delayed Compliance: Western Contra Costa Transit Authority** strongly supports the delayed compliance for small operators with adopting the rollout plans and purchase mandates. As a small operator, additional time will be needed to secure funding for developing and adopting the rollout plans. Implementation of Innovative Clean Transit may require our agency to purchase and build new storage facilities to meet infrastructure requirements of electric charging stations. The additional time needed to develop the rollout plans support the need for the later purchase mandate timeline. The later purchase mandate should also benefit our agency to take advantage of lower vehicle prices as demand increases and supply chains mature. **Western Contra Costa Transit Authority's** operation service area is 20 square miles with routes that average approximately 11 miles and a largest of being 23 miles and service provided in less ideal ZEB-driving conditions, such as inclement weather and steep grades. Delayed compliance allows our agency to begin purchasing Electric Buses as the technology advances and begins to meet range requirements for our standard routes. Earlier compliance may force our agency to otherwise cut services, some of which provide lifeline services to individuals with limited mobility options.

H-1-5

- **Cutaway Definition: Western Contra Costa Transit Authority** also supports the proposed definition of a cutaway bus. These vehicles are the workhorse of small transit systems due to their lower capital and operating costs. These vehicles are produced in a wide variety of sizes, and the proposed definition specifying vehicles weight of 14,000 pounds to 26,000 pounds is appropriate. In addition, the rule recognizes that a commercially available zero emission cutaway bus is currently not available.
- **Small Operator Definition:** As an agency that operates 38 vehicles during peak operations but has 43 vehicles total, we urge the Board to reconsider the definition of a "small operator" and use the definition employed by federal and state programs for compliance purposes. The proposed regulations define a small

H-1-2

operator as any operator with less than 100 buses. Western Contra Costa Transit Authority urges the Board to rely on the current federal definition that specifies a small operator as having less than 100 buses during peak operations. The number "100" is nominal and does accurately portray the size of an operator as a whole. Many vehicles in a fleet may not be regularly used: some may only be used during emergencies or during fleet maintenance, may be retired, or may be vehicles that have met their useful life. We urge CARB not to rely solely on NTD data for the total number of buses because these numbers can represent total buses on the lot including buses being sold or disposed that have met their useful life and back up vehicles used for emergencies.

E-13

- **Funding Considerations:** We urge the Air Resources Board to consider the vast difference between agencies considered small to both the Federal Transit Administration and California Department of Transportation but not the Air Resources Board. These agencies are traditionally rural or non-profit/ADA providers with inequitable funding in comparison to "other" large operators pooled into the same definition by the Air Resources Board. These agencies have much smaller staffing capacities and current transit employment trends, such as driver and maintenance staff shortages are exacerbated in smaller communities. These agencies often have much larger routes and service areas. Rural transit systems and ADA/non-profit providers face unique challenges that are not considered in the regulation as it exists today due to vague definitional standards.

We respectfully ask that you consider the comments we have provided in addition to those provided by the California Transit Association and the California Association for Coordinated Transportation (CALACT.) Our agency is committed to alleviating providing mobility options to our community and reducing the dependence on single use vehicles. We support efforts to reduce pollution in our community but ask that you consider our comments as to protect California's transit agencies, and the riders who rely on our service, from the risks associated with this transition. We greatly appreciate your continued commitment to working with the California Transit Association to get this proposed regulation right.

If you have any questions or comments, please feel free to contact me at **510-724-3331**

Sincerely,



Robert Thompson
Assistant General Manager

cc: Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
Shirin Barfjani, Mobile Source Control Division, California Air Resources Board



September 18, 2018

Mary D. Nichols, Chair
California Air Resource Board
1001 I Street
Sacramento, CA 95814

RE: Proposed Innovative Clean Transit Rule

Dear Chair Nichols:

On behalf of the California Association for Coordinated Transportation (CALACT), I want to express our appreciation for the extensive time and attention California Air Resources Board staff spent in working with CalACT members on the development of the proposed Innovative Clean Transit Rule. CALACT supports the goal of transitioning to zero emission fleets and the proposed rule recognizes the unique obstacles small transit operators face in achieving this goal. However, there remain areas where CALACT urges further refinement with respect to the small operator definition, funding for compliance and infrastructure.

The California Association for Coordinated Transportation (CALACT) is a statewide association with over 330 member agencies. CALACT is a non-profit organization that has represented the interests of small, rural, and specialized transportation providers since 1984. Our membership is comprised of individuals and agencies from diverse facets of transportation, including operators of small and large systems, planning and government agencies, social service agencies, suppliers and consultants.

The following outlines areas where CALACT believes are critical to developing a rule that will enable small operators to achieve the goal while maintaining safety net service.

H-1-2

- *CALACT urges the Board to reconsider the definition of a "small operator" and use a definition that transit operators are familiar with, and is currently used in federal and state programs. The current federal and state definition specifies a small operator as having less than 100 buses during peak operations or deployment. The definition as proposed in this regulation inevitably includes vehicles with marginal to no usage. Many vehicles in a fleet reported in the National Transit Database (NTD) may not be regularly used: some may only be used during emergencies or during fleet maintenance, may be retired, or may be vehicles that have met their useful life. The definition in the current ICT regulation relies on NTD data that includes the aforementioned vehicles not normally used in operations. This inconsistency may force agencies, who are defined as small operators in terms of federal and state funding and regulatory compliance, to be subject to the same implementation deadlines as operators with much more solid and substantial funding and resources. As such, historically small operators would face a much more onerous and inequitable implementation deadline which may have unintended consequences on operators and services within an agency.*

H-5-5

- *CALACT strongly supports the delayed compliance for small operators with adopting the rollout plans and purchase mandates.* CalACT's members are predominantly small operators and additional time will be needed to secure funding for developing and adopting the rollout plans. In some cases operators will need to locate, purchase and build new storage facilities because of inadequate space, or the operators currently rents space from another public entity. The additional time needed to develop the rollout plans support the need for the later purchase mandate timeline. The later purchase mandate should also benefit small operators to take advantage of lower vehicle prices as demand increases and supply chains mature.

H-1-5

- *CALACT also supports the proposed definition of a cutaway bus.* These vehicles are the workhorse of small transit systems due to their lower capital and operating costs. These vehicles are produced in a wide variety of sizes, and the proposed definition specifying vehicles weight of 14,000 pounds to 26,000 pounds is appropriate. In addition, the rule recognizes that a commercially available zero emission cutaway bus is currently not available.

E-8

- *Given the significant fiscal constraints this rule will place on small and large operators, the Hybrid and Zero Emission Truck & Bus Voucher (HVIP) funds must be available for compliance with the rule, not just an incentive program.* In addition, the HVIP is an equitable and efficient process for offsetting the cost of a zero emission bus. However, CARB must express its support for creating an infrastructure funding program. This program should also be available to small operators to finance the rollout plans. Without a secure source for infrastructure investments in fueling/charging facilities, maintenance facilities, and storage capacity, the ability to meet the goals of this rule is doubtful.

E-10, E-13

- *The proposed rule also includes several off-ramps for when technology constraints, manufacturing delays, or fiscal hardship warrant additional time for compliance. Without these off-ramps, and your favorable consideration of the changes proposed above, the ICT Rule would interfere with CalACT member's ability to maintain service levels and provide critical safety net transportation options. Therefore, on behalf of CalACT thank you for your favorable consideration of these comments.*

Sincerely,



Jacklyn Montgomery
Executive Director

September 24, 2018

California Air Resources Board
1001 I St.
Sacramento, CA 95814

Submitted via CARB's "ict2018" online comment submittal form

Re: Proposed Innovative Clean Transit Regulation, a Replacement of the Fleet Rule for Transit Agencies

The California Electric Transportation Coalition (CalETC) appreciates the opportunity to provide our support and recommendations for the California Air Resources Board (CARB) Proposed Innovative Clean Transit Regulation.¹ CalETC appreciates staff's efforts to convene stakeholders, consider feedback during the development of this proposal, and thoroughly analyze regulatory options.

CalETC supports and advocates for the transition to a zero-emission transportation future as a means to spur economic growth, fuel diversity and energy independence, ensure clean air, and combat climate change. CalETC is a non-profit association committed to the successful introduction and large-scale deployment of all forms of electric transportation including plug-in electric vehicles of all weight classes, transit buses, port electrification, off-road electric vehicles and equipment, and rail. Our board of directors includes: Los Angeles Department of Water and Power, Pacific Gas and Electric, Sacramento Municipal Utility District, San Diego Gas and Electric, Southern California Edison, and the Southern California Public Power Authority. Our membership also includes major automakers, manufacturers of zero-emission trucks and buses, and other industry leaders supporting transportation electrification.

Although California is leading the nation in zero-emission vehicle (ZEV) adoption, our state still has a long way to go to reach the goals in the Governor's Executive Order B-48-18: 5 million ZEVs on California roads by 2030 and specified levels of zero-emission vehicle infrastructure by 2025 to support the transition to these vehicles. In addition, the state must implement SB 1275 (De León) [Chapter 530, Statutes of 2014] and SB 1204 (Lara) [Chapter 524, Statutes of 2014], which set targets for the deployment of 1 million zero- and near-zero-emission vehicles by 2023, access to these vehicles by disadvantaged and low- and moderate-income communities, and deployment of zero- and near-zero-emission medium- and heavy-duty vehicle technologies.

Transitioning the medium- and heavy-duty sectors to zero-emission technologies is and will continue to be a difficult task, requiring appropriate regulatory direction and incentives. The

¹ Available at: <https://www.arb.ca.gov/regact/2018/ict2018/ict2018.htm>.

adoption of this proposed regulation is a key component of California's overall shift to zero-emission transportation to protect public health, achieve our clean air and climate targets, and spur economic growth in the state. Transforming California's transit fleet to a zero-emission fleet will also help accelerate the transition to zero-emission technologies in other segments of the medium- and heavy-duty transportation sectors to meet air-quality, climate, and public-health goals.

CalETC supports the Proposed Innovative Clean Transit Regulation with a few suggested improvements, summarized below.

H-5-2 I. **CalETC supports the Proposed Regulation's Zero-Emission Bus Rollout Plan concept and 2040 zero-emission deadline.**

It is imperative the Innovative Clean Transit regulation achieves a zero-emission transit system by 2040. We support the key element of the Proposed Regulation to require transit agencies to develop plans to transition to zero-emission bus (ZEB) fleets by 2040. The transition to ZEBs by 2040 is consistent with purchase schedules of transit agencies and is necessary for the state to meet its clean air and climate targets.

II. **CalETC recommends moving up the date by which small transit agencies must submit their ZEB Rollout Plans.**

H-5-5 In the Proposed Regulation, transit agencies are required to submit transit-board approved ZEB Rollout Plans. Large transit agencies are required to submit their ZEB Rollout Plans by July 1, 2020 and small transit agencies are required to submit their ZEB Rollout Plans by July 1, 2023. CalETC supports the submission date for large transit agencies and recommends that small transit agencies be required to submit their ZEB Rollout Plans sooner than 2023. An earlier submission date of January 1, 2021 will allow small transit agencies to plan for their ZEB transition sooner and will allow for small transit agencies to apply for and access ZEB funding in the near-term. Many California transit agencies have already established and are implementing ZEB plans, providing helpful guidance and lessons-learned to other transit agencies.

H-5-1 We also support the Rollout Plan components, especially consideration of how the transit agencies plan to deploy ZEVs in disadvantaged communities. CalETC supports ensuring that the transition to zero-emissions will benefit disadvantaged communities early-on as transit agencies replace conventional buses with ZEBs.

III. **CalETC recommends the Innovative Clean Transit regulation require cutaway and non-standard buses to transition to zero-emission technologies two years after at least two commercially-available vehicles have completed Altoona testing.**

CalETC supports the Proposed Regulation initially excluding purchase requirements for cutaway buses, over-the-road buses (motor coaches) and articulated buses until there are commercially-

available zero-emission options in these categories that have completed Altoona testing. We are not opposed to including provisions incentivizing replacement of these vehicles with zero-emission options, such as through crediting, but agree it is not appropriate to institute purchase requirements at this time.

H-4-2

CalETC recommends cutaways and non-standard buses be included in the Proposed Regulation, with purchase requirements beginning for these buses two years after at least two commercially-available vehicles have completed Altoona testing. This will encourage vehicle manufacturers to manufacture and test the vehicles because they know there will be demand from transit agencies once the vehicles are commercially available; and will also give transit agencies time to plan for transitioning non-standard buses to zero-emissions.

IV. The proposed ZEB purchase requirement timeline is reasonable.

We recognize the financial constraints of transit agencies and value the important services transit agencies provide. In our previous comments, we supported allowing transit agencies additional time to plan and access public funding. We find the proposed purchase requirement timeline reasonable, but defer to our transit agency and environmental partners to determine whether the purchase requirement timeline appropriately considers transit agency planning, bus purchasing, infrastructure procurement and installation, and what is needed to meet the 2040 deadline of zero-emissions.

E-8

CalETC continues to support allowing transit agencies to access public funding, to the extent allowed by law, throughout their transition to a zero-emission fleet, so long as the 2040 deadline for a zero-emission transit system is not delayed. Transit agencies face unique operational and economic difficulties, and they provide an extremely important service for our communities. Regulatory and incentive programs should account for this unique situation. Should there be a viable option to allow for transit agencies to access incentive funding as they transition to ZEBs, even after purchase-requirement deadlines commence—such as modifying the criteria of the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)—we would support that option.

V. CalETC recommends all zero-emission buses receive the same amount of bonus credits for early compliance.

H-7-1

The proposed bonus credit structure for zero-emission buses differs for battery-electric and hydrogen fuel-cell buses. CalETC recommends that all zero-emission buses receive the same amount of bonus credits for the same early-compliance period.

VI. Conclusion

Overall, CalETC supports the Proposed Innovative Clean Transit Regulation. The Innovative Clean Transit regulation is a necessary component of the state's clean-transportation plan. Transitioning

California's transit fleets to zero-emission technologies will help the state meet its air-quality, climate, public-health, and economic goals. Zero-emission transportation powered by clean electricity will yield the greatest benefits for the state, whether on today's grid or on the future's even-cleaner grid.

CalETC thanks CARB staff for their commitment to involve stakeholders throughout the development of the Proposed Regulation. CalETC supports staff's recommendations to continue to work with transit agencies and other stakeholders to assess and adjust the regulation if necessary.

Thank you for your consideration of our comments. Please do not hesitate to contact me if you have any questions via phone at (916) 551-1943 or via email at hannah@caletc.com.

Sincerely,

A handwritten signature in blue ink that reads "Hannah Goldsmith". The signature is written in a cursive style with a large initial "H" and "G".

Hannah Goldsmith
Deputy Executive Director
California Electric Transportation Coalition

**45-Day
Docket No. 402
Table IV.1
45-Day Comment Period**



September 24, 2018

California Air Resources Board
Chair Nichols and Members of the Board
1001 I Street, Suite
Sacramento, CA 95814

RE: **Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation**

Chair Nichols and Members of the California Air Resources Board:

On behalf of Golden Gate Bridge, Highway and Transportation District (GGBHTD/ "District"), I submit the following comments in response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit (ICT) Regulation. As the District has stated in an earlier letter to California Air Resources Board (CARB) staff, dated May 29, 2018, we respect and appreciate your Agency's efforts to achieve its goal of a "long-term attainment of a zero-emission transit fleet in California." This is a very important goal, and Golden Gate Transit (GGT), which is the bus transit division of the GGBHTD, would like to start taking measured steps to support it.

GGT provides regional transit service in four counties, which include Sonoma, Marin, San Francisco, and Contra Costa Counties. Our primary charge is to connect citizens along the Highway 101 corridor to key, regional employment, transportation, medical and educational centers throughout the North Bay and San Francisco, as well as to BART in Contra Costa County. To cover this extensive service area, our buses can travel up to 400 miles on one fueling.

Given that most of our riders are Marin and Sonoma residents, who have the resources to drive to work, but choose to take GGT because of its reliability, convenience and comfort, it is critical that we utilize vehicles, which can reliably deliver the services they demand at a comfort level that meets their requirements. To address these demands half of GGT's fleet of nearly 200 vehicles consists of over-the-road coaches produced by MCI. These vehicles seat up to 57 passengers and meet our operational requirement of 400 miles on a single fueling. They are also much smoother and more comfortable than our standard 40-foot urban buses, which seat up to 41 passengers, during long freeway trips between counties.

As currently drafted, the proposed regulation improves on the Draft Regulatory Concept for the Proposed Innovative Clean Transit Regulation, released December 2017. Improvements to the proposed regulation reflect ongoing discussions between CARB staff and the leadership of the California Transit Association. While the progress made on the proposed regulation is substantial, we remain concerned that the imposition of the zero-emission bus (ZEB) purchase requirement is not tied to benchmarks for ZEB cost and performance, infrastructure buildout costs, and funding availability. Moreover, we see significant risks in assuming, as CARB staff has, that data gathered from limited, short-term ZEB deployments will accurately reflect the realities of ZEB deployments at-scale. We assert that, despite the claims of some interest groups, ZEB cost and performance, infrastructure buildout, and the cost of electricity as fuel, are still issues that must be worked through.

B-2

As you move to finalize the proposed regulation, the GGBHTD believes that you should be guided by one question: “What will happen to transit agencies facing a ZEB purchase requirement, and the riders who rely on our service, if the assertions made by CARB staff and interest groups are wrong, and the cost and difficulty of the transition more closely align with the warnings of California’s public transit agencies?” To help navigate this question, the California Transit Association has offered you a series of recommendations designed to manage the risks associated with pursuing the laudable goal of cleaner air for all Californians.

We urge you to adopt these recommendations in full, and emphasize the importance of the following two provisions:

- B-2 • **Benchmarking and Regulatory Assessment:** This provision would require the California Air Resources Board to conduct a regulatory assessment – *before* a ZEB purchase requirement goes into effect – that evaluates real-world ZEB cost and performance with benchmarks for ZEB cost and performance established at the time of rule adoption. This regulatory assessment should allow the Board to issue an across-the-board suspension of the ZEB purchase requirement, much like the original Transit Fleet Rule did, if real-world ZEB cost and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses. This provision would have no impact on the ZEB purchase requirement, if benchmarks for ZEB cost and performance are being met, as anticipated by ARB staff and interest groups.

- E-8 • **Incentives:** The staff report supporting the proposed regulation emphasizes the importance of incentive funding to minimizing adverse impacts to transit service (see Initial Statement of Reasons, pages ES-8, III-8, VIII-26). Given the stated importance of this funding and our shared goal of protecting vital transit service, this provision would require ARB to revise its current policy disallowing the use of incentive funding to meet regulatory compliance to explicitly allow transit agencies to use incentive funding whenever they are prepared to purchase a ZEB.

Only by amending the proposed regulation to include the California Transit Association’s recommendations, will you protect California’s transit agencies and the riders who rely on our service from the risks associated with this transition. We greatly appreciate your continued commitment to working with the California Transit Association to get this proposed regulation right.

If you have any questions or comments, please feel free to contact me at 415-923-2203, or contact Mona Babauta, Deputy General Manager, Bus Division (Golden Gate Transit), at 415-257-4467 or Mbabauta@goldengate.org.

Sincerely,



Denis J. Mulligan
General Manager

cc: Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
Shirin Barfjani, Mobile Source Control Division, California Air Resources Board



Ventura County Transportation Commission

**45-Day
Docket No. 403
Table IV.1
45-Day Comment Period**

September 24, 2018

Mary D. Nichols, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Innovative Clean Transit Regulation

Dear Chair Nichols:

On behalf of the Ventura County Transportation Commission (VCTC), I am writing to request your agency exercise caution in applying the proposed Innovative Clean Transit Regulation to over-the-road motor coaches. VCTC operates a transit system consisting of 32 over-the-road coaches providing key transit connections between the cities of Ventura County and to locations in neighboring Santa Barbara and Los Angeles Counties. **The attractiveness of this system to continue attracting ridership is dependent upon the continued ability to obtain over-the-road coaches that can reliably operate in the Ventura County environment including negotiation of significant grades at freeway speeds. In addition, due to the large number of bicycles used to access the service, it is routinely necessary to utilize both front-mounted bicycle racks as well as the lower cargo area found on motor coaches.** In the event that use of electric bus technology precludes the availability of the cargo compartments, the result would be a reduction in the number of riders who can use bicycles to access VCTC's system, thus creating a negative air quality impact.

E-14

Although the current version of the Innovative Clean Transit Regulation provides that the regulation not become effective until there is an electric over-the-road motor coach approved by the FTA Altoona Test Center, a more substantive analysis is needed to ensure the motor coaches can meet the various agencies' operational needs including those mentioned above. Therefore, VCTC requests that the over-the-road coaches not be included in the regulation until a more thorough technology assessment can be completed.

H-4-2

Sincerely,

Darren M. Kettle
Executive Director



45-Day
Docket No. 410
Table IV.1
45-Day Comment Period

September 24, 2018

Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, California 95814

Re: Innovative Clean Transit (ICT) Regulation and Draft Environmental Analysis

Dear Sir/Madame:

Please accept the attached comments from Allison Transmission, Inc. (“Allison”) with regard to the above-referenced rulemaking concerning zero emission bus (“ZEB”) purchase requirements and the California Air Resources Board (“CARB”) consideration of amendments to California Code of Regulations (“CCR”) §2023.

Allison is the world’s largest manufacturer of fully automatic transmissions for medium- and heavy-duty commercial vehicles and is a leader in hybrid propulsion systems for city buses. Allison also supplies the vast majority of transmissions for the school bus market. Allison is headquartered in Indianapolis, Indiana and has a broad global presence, including over 1,000 dealer and distributor locations in the United States.

Allison appreciates that CARB has several important goals in mind in proposing to make changes to its current ZEB program, including efforts to meet strict air quality standards and addressing greenhouse gas (“GHG”) emissions from the transportation sector. Allison, however, would request that CARB carefully consider whether its proposed regulatory order is sufficiently supported by its accompanying technical and economic analysis, provides sufficient near-term and longer-term cost-effective options for local agencies and maintains adequate flexibility in implementation. Allison would also ask that CARB clarify new definitions proposed as part of 13 CCR §2023 with respect to hybrid systems and to take into account the overall performance characteristics of hybrid engine/powertrain combinations with reference to required NOx emission performance.

B-3

H-1-6

As a major supplier to bus-manufacturing companies, Allison has historically strived to meet the needs of customers, including transit agencies across the country, through developing a diverse product line that allows customers to select the type of transmission best suited to their needs. Allison similarly seeks to work with CARB, within the structure of the pending regulation, to make improvements to the final rule that will reflect market realities and improve the opportunity for overall success of the program.

Allison Transmission Inc. | One Allison Way | Indianapolis, IN 46222-3271

In this regard, Allison is available to assist CARB with respect to automatic transmissions and hybrid systems, as well with regard to specific transit and school bus applications as the final regulation is considered. We appreciate your consideration of our comments and would be happy to provide any additional or follow-on information that may be beneficial to your deliberations.

Sincerely,

A handwritten signature in black ink, appearing to read 'Greg Mann', with a long, sweeping horizontal stroke extending to the right.

Greg Mann, Director
Mobile Source Emissions Regulatory Activities
Allison Transmission, Inc.

Allison Transmission Inc. | One Allison Way | Indianapolis, IN 46222-3271

Comments of Allison Transmission, Inc.
Innovative Clean Transit Regulation
Proposed Regulation Order
September 27, 2018

1-7

As the Initial Statement of Reasons (“ISOR”) for the proposed regulation notes, a 15 percent ZEB purchase requirement for larger transit agencies has existed in California since 2006, but this requirement has not, to date, been met. The ISOR indicates that there were 132 ZEBs in operation by transit agencies in May 2018. While the ISOR does not provide an explicit percentage of the number of ZEBs in the current fleet, such can be calculated by reference to other data and text provided in the ISOR. Using this information, it would appear that ZEBs (as a percentage of all transit buses in California) currently represent a little over 1% of the fleet.¹

Thus, despite long-standing ZEB purchase requirements there have been a number of substantial barriers to the deployment of this technology within transit fleets. As a result, Allison believes that CARB must consider the full range of factors that have resulted in the inability of past “zero emission” mandates to meet regulatory targets. Central to this analysis is a “year-over-year” estimation of ZEB mandate costs and the availability of resources to meet the mandate. While Allison recognizes that the ZEB program is integral to important policy goals being pursued by California and CARB, the opportunity for successful implementation of the program would be enhanced by more robust regulatory analysis. One outcome of such an effort could be the identification of other alternatives to obtaining the desired policy goals.

In any final rule that results from the pending process, CARB should maintain proposed flexibility options and explore whether other compliance flexibility is feasible. CARB should also clarify the scope of its regulations, which include multiple new regulatory definitions that could cause confusion in the existing hybrid market.

I. CARB Should Improve the Supporting Analysis for its Proposed Regulation

CARB has already responded to comments that transit bus fleets face competition from other resources, including private companies, and that the increased cost of ZEBs could undercut estimated benefits or result in changes in service or fare increases.² CARB indicates, however, that the State is committed to providing incentives for the purchase of ZEBs and cites the existence of the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (“HVIP”) as being sufficient to “reduce or eliminate most of the initial incremental capital costs of the proposed regulation.”³

¹ The ISOR indicates that 5,200 buses amount to about 40 percent of “all buses in California.” ISOR at 1-15. Thus, from this figure a total number of buses in California would be approximately 13,000. $132/13,000 = 1.01\%$. Table VII-7 indicates that total fleet size in 2016 was 12,664 (ISOR at Table VIII-7), yielding a percentage of 1.04%.

² Appendix B-2, DOF Comments to the ICT SRIA and CARB Responses at 5-6.

³ *Id.*

These initial capital costs of BEBs in the early years of the expanded purchase mandate, however, appear to be very substantial for local transit agencies (with increased costs of over \$300,000 per unit when compared with a conventional diesel).⁴ And while CARB projects that the price differential as between BEB vehicles and conventional diesel buses will narrow as between the present and the year 2030, this substantial cost difference does not disappear altogether, but remains at about \$200,000 per unit through 2030.⁵ On an aggregate level, CARB analysis indicates that the ZEB mandate will cost about \$8.48 million in 2021 before rapidly rising to an annual cost of \$142.7 million in 2026 and \$229.6 million in 2030.⁶

E-9

It is notable, then, that the existing set-aside for ZEBs is \$35 million in FY 2017-2018, an amount that by itself would appear to be wholly insufficient to address the scope of the mandate, depending on the level of vehicle turnover.⁷ CARB cites other possible sources of funding for ZEB purchases, but the availability of such amounts is less clear and is not projected on a yearly basis to conform to the annual implementation of the mandate. For example, resources contained in the HVIP that are not specifically directed towards ZEB purchases are described as being available on a “first-come, first-served basis for all eligible technologies.”⁸

The ISOR describes other possible funding sources as the “Low or No Emission Vehicle Program” funded by the Federal Transit Administration. But this is a competitive, discretionary program.⁹ The California Low-Carbon Transit Operations Program and the Transit and Intercity Rail Capital Program are also cited as possible funding sources, but these programs do not appear to have a dedicated funding stream for ZEB purchases from 2023 onward when the mandate phases-in.¹⁰ Finally, CARB points to Volkswagen Environmental Mitigation Trust funding of \$423 million, along with other existing California programs targeted on transportation and air quality.¹¹ But while California has indicated that it will allocate funding from these sources towards ZEB acquisition,¹² we did not uncover a more refined analysis of whether a “gap” could occur as between such funding and actual projected needs during the years that California projects that costs will be incurred (2021 to 2038).

In sum, the ISOR does not provide an overall projection where funding for the proposed zero-emission bus requirements will come from – and what funding gaps may reasonably be projected -- especially within the first years of the program. ZEB purchase requirements begin in January

⁴ Appendix F-2, Bus Price Projections, Figure 2 at 3.

⁵ *Id.*

⁶ Statewide cost analysis spreadsheet.

⁷ ISOR at III-8.

⁸ *Id.* at III-9.

⁹ *Id.* at III-10-15.

¹⁰ *Id.* at III-11-13.

¹¹ *Id.*

¹² California has indicated that it will allocate \$130 million to replace eligible Class 4-8 school, transit, and shuttle buses with zero-emission technology. The maximum incentive would be up to \$400,000 for a battery electric school bus, up to \$180,000 for a new battery electric transit bus and up to \$400,000 for a new fuel cell electric transit bus. CARB estimates that this will amount to 95% of cost of a qualified school bus and that these funds will supplement FTA funding for a “large portion” of incremental costs for shuttle buses. Beneficiary Mitigation Plan, CARB, June 2018 at 20. This source of funding, however, is transitory; funds will be available over three years and expenditures can occur over ten years. *Id.* at 8-9.

2023 for large transit agencies (with a requirement for 25% of the total number of new bus purchases) rising to a 100% purchase requirement in just six years.¹³ And while CARB has calculated projected costs versus both “baseline” and “current conditions” there is not an attempt to align projected costs of both fleet acquisition and related infrastructure with resources on a year-over-year basis to better inform the public discourse as to how the program will be implemented over time.

This is not a simple matter of regulatory cost accounting. As CARB notes – and as Allison has experienced multiple times in the marketplace – the issue of incremental cost is a major barrier to the adoption of new technologies. Thus, we believe it would be beneficial to the consideration of the final requirements if an estimate of the amount of new bus purchases (and projected costs) could be aligned with a projection of reasonably available resources on a year-by-year basis, starting with initial implementation in 2023. This would better reveal the extent of available resources with the timeframe in which transit agencies will need to make actual purchasing decisions, as well as any inherent “trade-offs” that will be necessary when the ZEB mandate is funded in lieu of other transportation projects. Apart from any benefit to the transit agencies themselves in planning future operations, this information would also be valuable to equipment manufacturers and vendors who will need to assess and plan for the new requirements.

We recognize that this task may not be entirely straightforward. Some resources (such as the Volkswagen Environmental Mitigation Trust) are transitory and finite while other resources (such as state programs) are subject to legislative approval and funding. Thus, some level of uncertainty would be inherent in developing such a year-over-year analysis. But simply citing a net cost savings of \$1.5 billion from 2020 to 2050 in the ISOR¹⁴ provides little direction to either the public or private sector in assessing near-term economic feasibility and investment incentives.

II. CARB Should Maintain Flexibility Options and Consider Additional Options

F-1

The proposed regulation would allow waiver of 2023 and 2024 purchase requirements if large numbers of ZEBs are purchased early (*i.e.*, 1,000 or more ZEBs by December 31, 2020; 1,150 or more ZEBs by December 31, 2021).¹⁵ The proposed regulation also provides an option to implement zero-emission mobility programs in lieu of purchasing ZEBs.¹⁶ Under this option, bicycles, zero-emission cars or other zero-emission vehicles less than 14,000 GVWR (operated directly or through contract with a transit agency) can offset ZEB purchase requirements using a zero-emission passenger mile metric.¹⁷ Requests for delays and extensions may also be available.¹⁸

Allison encourages CARB to retain these flexibilities in the final rule and to consider whether additional options may be available to ZEB purchase mandates. While CARB did consider

¹³ Proposed §2023.1(a).

¹⁴ ISOR at ES-6, VIII-24

¹⁵ Bus Price Projections at 24.

¹⁶ Proposed §2023.3.

¹⁷ III-3; 2023.5.

¹⁸ Proposed §2023.4.

alternative concepts to the ZEB mandate, including less-stringent ZEB purchase requirements and performance targets,¹⁹ the proposed regulation does not include these concepts or provide for additional discretion in local transit agency purchasing decisions.

Specifically, with reference to a less-stringent zero-emission bus purchase requirement, staff indicated that “it is expected that large-scale ZEB deployments can accelerate the cost reductions in ZEBs due to the economies of scale and the maturity of the ZEB supply chain.”²⁰ But while such an observation could be correct on a macro-economic level, there does not appear to be anything within the supporting record which documents the extent and timing of these cost reductions. Instead, the discussion of alternative concepts is largely conclusory and non-specific.

CARB’s rulemaking process would be assisted by a more fulsome discussion of its underlying rationale for rejecting regulatory alternatives and solicitation of additional comment. Realizing that CARB may want to proceed in the near-term on the proposed regulation, additional comment could be solicited after CARB moves to a final order, allowing for subsequent reopening of the final regulation. Alternatively, CARB could provide for a future review of the program occurring prior to imposition of the “second phase” of the ZEB purchase mandate in 2026.

III. Additional Analysis of Overall Program Costs and Market Response is Necessary

As referenced above, it is evident that a major factor in the transition to ZEBs (or other new technologies) is the overall cost of moving from “conventionally-fueled” vehicle to a ZEB. The ISOR indicates that incremental costs for a battery electric bus (“BEB”) at \$205,000 (versus a conventionally-fueled bus) in 2026. Capital costs alone for a FCEB are projected to be \$900,000 per bus in 2020, or over two times the cost of a comparable diesel-fueled vehicle.²¹

Added to capital costs of ZEBs are the cost to deploy related infrastructure, with charger installations estimated at \$25,000 each.²² Midlife costs for battery or fuel cell system replacement are also considerably higher when compared with conventional engine rebuilds, costing \$75,000 to \$200,000 versus \$35,000.²³ “Cost per mile” related to fuel efficiency also favors conventional diesel buses.²⁴

E-1

Altogether, the ISOR projects that total costs of the program will increase each year through 2030 before starting to decline in the years thereafter (while still representing costs that are additional to current conditions).²⁵ Any cost “savings” from the ZEB mandate will not be experienced until 2038. At that point in time, the relative reduction in cost from the ZEB mandate steadily increases from 2039 through 2050 when a total savings of \$1.5 billion is projected to be achieved over 30 years of program implementation (2020 to 2050).

¹⁹ ISOR at IX-1-IX-8

²⁰ *Id.* at IX-2.

²¹ ISOR at VIII-6.

²² *Id.* at VIII-8.

²³ *Id.* at Table VIII-1. Related maintenance costs, however, are estimated to roughly comparable or perhaps less for some technologies. *Id.* at VII-9-10, Table VIII-2.

²⁴ *Id.* at Table VIII-4.

²⁵ *Id.* at Table VIII-2.

Allison's long experience in the commercial truck market indicates that private companies and governmental fleets are willing to expend resources if there is a palpable benefit through enhanced operation and utilization of a vehicle. Our automatic transmissions may initially cost more when compared with other technologies, but savings can be achieved through greater productivity of the vehicle. Within the private sector, the market values "payback" in much shorter timeframes than contemplated by the ZEB mandate.

Allison realizes that the ZEB mandate is in the area of governmental policy versus the competitive marketplace and thus, the "willingness to pay" issue is addressed differently. However, CARB should more fully consider the implications of a mandate which carries with it negative costs for the first 15 years of implementation and whether additional flexibilities could assist in mitigating such costs and improving the opportunities for long-term success.

IV. CARB Should Further Clarify Regulatory Definitions Regarding Hybrid Technology

H-9-1

The proposed regulation makes a number of definitional changes to 13 CCR §2023, specifically with reference to bus types. Previously, CARB regulations utilized the terms "transit fleet," "transit fleet vehicle"²⁶ and "urban bus."²⁷ These definitions were inherently broad. An "urban bus" was defined as a "passenger carrying vehicle powered by a heavy duty diesel engine *or of a type normally powered by a heavy heavy duty engine.*"²⁸ CARB has interpreted this definition to include hybrid vehicles, specifically those powered by Allison H 40 EP and H 50 EP hybrid transmissions.

In addition, the proposed regulatory text concerning Low-NOx engines (proposed §2023.6) imposes a requirement for transit agencies to purchase buses with "Lox-NOx engines" if certain criteria are met. Among the criteria is a requirement that the engine "be certified to the lowest level of NOx emissions at the time of purchase that is suitable for the bus and fuel type for the engine being purchased." *Id.* at §2023.6(a)(1).

It would be helpful for CARB to further clarify the effect of these changes with respect to current hybrid vehicles and affirm that either standing alone, or in combination with each other, the definitions continue to encompass hybrid vehicles utilizing Allison H 40 EP and H 50 EP hybrid transmissions. Such an interpretation is fully consistent with the regulatory language that has been proposed, but further elucidation by CARB could help avoid any uncertainty.

Specifically, the Proposed Regulation Order includes a new term "conventional internal combustion engine bus" to mean "a bus with an internal combustion engine (ICE) propulsion system or a combination of an internal combustion engine with an electric propulsion system commonly referred to as a hybrid powertrain."²⁹ A plain reading of this definition is that it is more encompassing of the types of vehicles that can currently be considered to be an "urban

²⁶ Transit fleets included both "urban buses" and "transit fleet vehicles," defined to include on-road vehicles greater than 8,500 GVWR. 13 CCR §2023(a)(11)-(13).

²⁷ 13 CCR §2023(a)(13).

²⁸ *Id.* at (a)(11). (emphasis added).

²⁹ Proposed 13 CCR §2023(a)(12).

bus.”³⁰ This is largely due to the fact that the criteria of a “heavy duty diesel engine” or a “heavy heavy duty engine” in the current definition is absent in the new definition. Therefore, utilization of this inherently broader definition would not preclude H 40 EP and H 50 EP transmissions that have been allowable under the previous definition.³¹ Moreover, under the new definition, systems “commonly referred to as a hybrid powertrain” are included (and thus would encompass Allison H 40/50 series transmissions).³²

H-9-1

With regard to requirements to utilize Low-NOx engines, hybrid vehicles may require that certain types of engines be used (due to the integrated nature of the engines used in these vehicles and the hybrid powertrain). Engines that are compatible with different hybrid technologies may not be fully compatible or available on a “drop in” basis with other vehicles even in a similar weight category or use.

It appears that CARB has recognized this issue and developed a regulation that will allow continuation of existing practices in this area. Specifically, CARB’s use of the word “suitable” in proposed 2023.6(a)(3) recognizes that use of engines certified to the “lowest level of NOx emissions” is contingent on whether such engines can reasonably be used in a specific vehicle application, like hybrids. In the final rule or accompanying explanation, it would be helpful for CARB to recognize that engine selection for hybrid vehicles is not the same as in the conventional vehicle sector and thus such needs are encompassed by the “suitable” criterion. Since certain engine types were “suitable” with Allison H 40 HP and H 50 HP transmissions, they would continue to remain so under the revised definitions.

³⁰ A “bus” is defined with respect to a “rubber-tire vehicle designed to transport passengers by road with a gross vehicle weight rating (GVWR) greater than 14,000 pounds [excepting trolleybuses].” A “bus” is defined with respect to a “rubber-tire vehicle designed to transport passengers by road with a gross vehicle weight rating (GVWR) greater than 14,000 pounds [excepting trolleybuses].” *Id.* at (a)(5).

³¹ The proposed definition would encompass vehicles utilizing Allison 40/50 series transmissions in different vehicle applications regardless of whether a heavy duty or heavy heavy duty engine were utilized.

³² CARB’s stated “purpose and rationale” for the change does not indicate any different intent or purpose for the new definitions versus the previous definitions that would exclude “incumbent” hybrid systems. Appendix X, The Specific Purpose and Rationale of Each Adoption, Amendment or Repeal. CARB only indicates that it “defines terms with particular meaning under the ICT regulations in order to provide clarity.” *Id.* at X-2.

45-Day
Docket No. 414
Table IV.1
45-Day Comment Period



**BLUEGREEN
ALLIANCE**



**CALIFORNIA
ENVIRONMENTAL
JUSTICE ALLIANCE**



**COALITION FOR
CLEAN AIR**



**JOBS TO MOVE
AMERICA**



**LABOR NETWORK
FOR SUSTAINABILITY**



EARTHJUSTICE
BECAUSE THE EARTH NEEDS A GOOD LAWYER

**CALIFORNIA & NEVADA
IBEW & NECA**
LABOR MANAGEMENT COOPERATION COMMITTEE



**WESTERN STATES COUNCIL
SHEET METAL | AIR | RAIL | TRANSPORTATION
SMART**
California - Arizona - Nevada - Hawaii

International Association of
SMART
SHEET METAL | AIR | RAIL | TRANSPORTATION
Local Union 105

**UNITED STEELWORKERS
USW**
UNITY AND STRENGTH FOR WORKERS
LOCAL 675

Shirin Barfjani
Air Pollution Specialist
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Comments on Innovative Clean Transit Rule Initial Statement of Reason and Job Creation

Dear Ms Barfjani,

D-1

On behalf of the organizations listed below, we urge the California Air Resources Board ("CARB") to highlight the value of high quality job creation associated with the Innovative Clean Transit Rule ("ICT"). While we strongly support the Rule's movement toward 100 percent zero emission buses, the Rule should also acknowledge the need for a 'holistic approach' to meet all of the community needs, including access to quality jobs in addition to air quality standards and combatting climate change.

CARB can and should encourage transit agencies to use policy tools that have a proven track record of delivering on high quality job creation, access to these jobs for disadvantaged communities and apprenticeship and pre apprenticeship programs. We recommend that CARB encourage transit agencies to use workforce policies, such as the US Employment Plan, as part of California's transition to zero emission buses through CARB's Statement of Reasons. We propose sample language in the statement of reason as seen in the attached document.

Currently, the Initial Statement of Reason discusses how the ICT can help address the disproportionate barriers that low-income and disadvantaged communities face. We applaud CARB's efforts to both achieve equitable access to clean transportation and overcome barriers that are "magnified for those with limited financial resources." We also appreciate that CARB highlights the potential job creation benefits of the ICT and even cites Jobs to Move America's Community Benefit Agreement with BYD as a potential outcome.

However, we believe that the Initial Statement of Reasons does not recognize the link between intentional workforce policies and the job quality / job access outcomes identified in the BYD example. We are concerned that without intentional policies, the co-benefits of "high quality job opportunities" and "employment in disadvantaged communities" described by the Statement of Reason are less likely to materialize.

LA Metro is the best example of an agency that leverages its zero emission bus efforts in ways that create economic benefits for low-income Californians. Of the seven listed electric bus manufacturers, only BYD has signed a Community Benefits Agreement (CBA). The CBA was spurred by LA Metro's commitment to proactive policies that create good jobs for communities facing significant barriers to employment.

LA Metro also has a Construction Careers Policy that ensures that all construction projects are done via skilled trades that utilize apprenticeship programs and pay family-sustaining wages. These workforce policies continue to lift barriers to employment to underserved workers and meet the intended goals of the SB350 Barrier Study. CARB has upcoming opportunities to require the use of such workforce policies for the zero emission transit fleets' infrastructural build out. This will ensure zero emission infrastructure is performed by a skilled workforce and result in optimum performance and protect public safety. As well, these kind of intentional workforce policies provide access to communities that have been previously underrepresented in the skilled trades.

D-1 We recognize CARB's leadership in helping develop recommendations and policies that can deliver co-benefits for all communities. CARB's "Low-Income Barriers Study, Part B: Overcoming

Barriers to Clean Transportation Access for Low-Income Residents,¹ UC Berkeley's "Methods to Assess Co-Benefits of California Climate Investments²" developed for CARB, and CARB's "Clean Vehicle Rebates, Reporting Document³" have all pointed to ways that ARB can assert proactive leadership to assist disadvantaged communities.

CARB can continue its leadership by laying the groundwork to maximize economic opportunities for low income residents. CARB should recommend transit agencies (and CARB itself) link incentives to those projects that demonstrate "economic benefits for low income residents" and by connecting these residents to good quality clean transportation jobs and the associated training and workforce development opportunities.

CARB and transit agencies across the state have the power to signal the importance of job access and job quality to electric bus manufacturers by encouraging the adoption of policies such as the US Employment Plan and the Construction Careers Policy. We believe that the Statement of Reason is the next logical step demonstrating the importance of investing in a clean economy that works for every Californian.

Sincerely,

John E Harriel Jr.
Founder
Big John Cares

JB Tengco
West Coast Director
Blue Green Alliance

Stephanie Tsai
Climate Justice Program Associate
California Environmental Justice Alliance

¹ California Air Resources Board. "Low-Income Barriers Study, Part B: Overcoming Barriers to Clean Transportation Access for Low-Income Residents." https://ww2.arb.ca.gov/sites/default/files/2018-08/sb350_final_guidance_document_022118.pdf. (Feb. 2018), p. 16.

² Roland-Holst, et al; Center for Resource Efficient Communities, UC-Berkeley. "Methods to Assess Co-Benefits of California Climate Investments." https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ucb_lit_rev_on_jobs.pdf?_ga=2.236175171.399163388.1536262243-1971758094.1469233960. (Nov. 2017), p. 2.

³ California Air Resources Board. "Clean Vehicle Rebates, Reporting Document." <https://ww2.arb.ca.gov/resources/documents/cci-quantification-benefits-and-reporting-materials>. Data Dictionary p. 8.

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Executive Administrator
Western States Council SMART

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President/Business Manager
SMART Local 105

David Campbell
Secretary-Treasurer
United Steelworkers (USW) Local 675

Proposed Additions to the *ICT Initial Statement of Reasons*
(Additions are in Bold)

D-1 We commend ARB for highlighting job creation, especially as exemplified at BYD as a potential co-benefit of the Rule especially for communities facing significant barriers to employment. To strengthen language around job creation co-benefits, ARB should specify the characteristics of good jobs, as defined by previous ARB studies. Furthermore, ARB should also include examples of policies such as the US Employment Plan that have led to the types of co-benefits ARB has identified in the SB350 Barrier Report.

Section ES-8

“Third, ZEB manufacturers can bring high quality jobs, ***as defined in previous ARB studies and reporting standards on co-benefits***, to California, including in disadvantaged and low-income communities, which is a unique opportunity for these communities for workforce expansion and training.”

Section V-4

“E. Benefits in Disadvantaged Community and Job Creation

The proposed ICT regulation is anticipated to deliver environmental benefits that include GHG and criteria pollutant emission reductions in the DAC areas where there are more transit dependent riders. In addition to reducing emissions, the ZEB industry is bringing high quality employment opportunities to California. There are several ZEB manufacturers with plants located in California, such as BYD Motors Inc., Complete Coach Works, Ebus, El Dorado National California, GILLIG, GreenPower, and Proterra. As the production of ZEBs increases, so would the number of manufacturing and related jobs for DAC areas. Electricians, construction companies (such as infrastructure installers), some bus manufacturers, fuel V-5 cell and battery producers, and electric drivetrain parts and components suppliers can fall into the small business category. ***To ensure that California maximizes the job creation opportunity, CARB and transit agencies should leverage high quality jobs through the promotion of proactive policies such as the US Employment Plan and Construction Careers that provide family sustaining wages, benefits, apprenticeship and pre apprenticeship training, targeted hire in disadvantaged communities, safe working conditions, job retention, and leave policies.***”

Section VII-3

“In addition to reducing emissions, the proposed ICT regulation is expected to attract ZEB industries to bring high quality job opportunities to California and to support employment in disadvantaged communities. As the demand and production of ZEBs increases, so would the number of ZEB manufacturing, operation and maintenance related jobs in California. For example, BYD, located in Lancaster, California, has a community benefits agreement (CBA) with Jobs to Move America (JMA), which will support the creation of a robust U.S. jobs program through deep investments in pre-apprenticeship and training programs. This CBA has a goal of recruiting and hiring 40 percent of its workers from populations facing significant barriers to employment, such as veterans and returning citizens. 97 In addition, populations that have historically been excluded from the manufacturing industry, such as women and African Americans are also expected to be recruited and placed. The agreement also includes commitments from BYD to work with the JMA coalition to provide support systems for these workers to strengthen retention efforts, such as providing transportation for workers who may not have access to a car. ***Considering previous missed opportunities in workforce policy, CARB should incentivize high quality job creation within evolving zero-emission transportation industries. ARB has defined high quality jobs as those with family sustaining wages, benefits, apprenticeship and pre apprenticeship training, targeted hire in disadvantaged communities, safe working conditions, job retention, and adequate leave.***

September 24, 2018

California Air Resources Board, Members
1001 I Street, Suite
Sacramento, CA 95814

RE: Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation

Chair Nichols and Members of the California Air Resources Board:

On behalf of the California Transit Association, I write to you today in response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit (ICT) Regulation, released August 7, 2018. The Association and its more than 200 transit-affiliated members support the goal of converting California's transit bus fleet to 100% zero-emission by 2040. We greatly appreciate that the proposed regulation to achieve that goal takes a major step forward from the regulatory concept first released in December 2017 by improving on several central provisions that we have long-deemed onerous or problematic. While there are several changes to the proposed regulation we continue to seek – two in particular we believe are necessary to protect California's transit riders from the service cuts or fare increases that could result from pursuing widespread transit bus electrification too hastily – we thank you and your staff for your demonstrated commitment to working with us to deliver a progressive regulation that will achieve our shared goal.

H-11

To reiterate, we believe a regulation should be completed this year to facilitate the conversion to ZEB technology by 2040. Having said that, we are again calling your attention – and offering solutions – to several issues with the proposed regulation and challenges on the horizon that could force unfortunate trade-offs between capital and operational expenditures. These trade-offs, if not acknowledged and addressed head-on in the proposed regulation, would harm the very communities that should and deserve to benefit most from clean air investments.

Part 1 of these comments include technical suggestions and recommendations that we believe would enhance the proposed regulation and further the California Air Resources Board's (ARB) objectives while further limiting adverse impacts to California's public transit agencies and the riders who rely on our service. As you will see, building upon these suggestions, we are formally presenting these suggestions as an "alternative" to the regulation for consideration by ARB (the "Association's Alternative"). The recommendations that comprise this alternative were previously shared with you in our letter, dated July 19, 2018, and have since been formalized by our Executive Committee in the 45-day comment period.

Part 2 of these comments addresses ARB’s obligations under the California Administrative Procedure Act, Govt. Code, § 11350, *et seq.* (the “APA”), and other statutes. This portion of the comments addresses ARB’s duty to analyze regulatory alternatives under the APA; the Standardized Regulatory Impact Assessment (or “SRIA”) prepared for the Proposed ICT Regulation; and, the external peer review process required under Section 57004 of the Health & Safety Code. Part 3 of these comments addresses ARB’s duties under the California Environmental Quality Act, Pub. Resources Code, § 21000, *et seq.* (“CEQA”).

We hope you will strongly consider this feedback, and direct ARB staff to address the deficiencies we identify and to incorporate our recommendations in the final regulation order by adopting the Association’s Alternative. We thank you for this opportunity to comment and we look forward to participating in the public meeting on the proposed regulation, scheduled for September 28, 2018.

I. **Part I: Technical Suggestions and Recommendations to Improve the Proposed ICT Regulation**

A. **ARB Can Enhance the Proposed ICT Regulation by Adopting Several Technical Amendments**

B-1

Benchmarking and Regulatory Assessment (ISOR, pp. I-13-I-14): In our letter dated July 19, 2018, we recommended that, given the aggressive electrification goals sought in the proposed regulation and the continued uncertainty around, among other things, ZEB cost and performance, and funding availability, the regulation establish benchmarks for ZEB cost and performance and include a regulatory assessment to evaluate real-world cost and performance against these benchmarks. We argued that the regulatory assessment should take place before the ZEB purchase requirement goes into effect and should require the Board to issue an across-the-board suspension of the ZEB purchase requirement, much like the original Transit Fleet Rule did, if real-world ZEB cost and performance is underwhelming, or adequate funding to support the transition to a fully electrified transit fleet is unavailable.

The proposed regulation meets us halfway by incorporating aspects of our recommendations in the ISOR. More specifically, the ISOR states ARB staff’s commitment to providing the Board with a *“comprehensive update on costs, performance, and reliability of ZEBs and corresponding infrastructure...at least one year prior to the initiation of any purchase requirement. The review would look at bus categories, such as cutaway buses and standard buses individually, to ensure categorical needs and characteristics are considered.”*

The review would comprise the following components:

- **“Costs:** Costs include infrastructure and vehicle capital, operating and maintenance costs. Infrastructure capital costs include charging/refueling equipment, installation, and utility upgrade costs.
- **Battery Performance:** Batteries used in the ZEBs will degrade over time. The assessment will help identify how battery degradation may affect daily operating range as vehicles age, and whether transit buses would require mid-life battery replacement. The assessment can help to estimate the remaining battery capacity after the end of their useful life in buses.

- **Operating Range:** The maximum operating range of a vehicle after it is fully charged or refueled. Range assessment will take into consideration various factors, such as energy storage capacity, battery degradation, HVAC, passenger loading, and grades. Understanding real world operating range is essential for a transit agency to plan for its routes and schedule using ZEB technologies.
- **Performance and Reliability:** Different from small pilot or demonstration projects, a successful system-wide transition to the ZEB technologies must demonstrate the reliability and viability of the technologies. Measurements could include bus availability, road call frequency, and other performance metrics, such as fuel efficiency and factors affecting fuel efficiency, refueling or charging time and frequency, and parts availability.”

We greatly appreciate the inclusion of this language in the ISOR as it is an honest assessment by ARB staff that ZEB technology is still maturing and must be closely monitored to ensure operational viability at-scale. Unfortunately, we believe relegating the language to the ISOR is inadequate, because it does not: carry the same force of law as language included in the regulation order; or, outline the steps the Board would take, or even the options they would consider, if they determined that the ZEB purchase requirement would negatively impact transit service.

We recommend that ARB strengthen the performance review identified in the ISOR by:

- **Codifying its language in the proposed regulation; then,**
- **Adding language in the proposed regulation that would establish benchmarks for ZEB cost and performance and funding availability – these should be sourced from the inputs and assumptions used by ARB staff in the Original SRIA, Draft Environmental Analysis and Cost Update;**
- **Adding language in the proposed regulation that would require the Board to temporarily halt the ZEB purchase requirement, if real-world ZEB cost and performance and funding availability are misaligned with the benchmarks established in the proposed regulation.**

H-2-1 **ZEB Purchase Requirements (Section 2023.1 (a)(1)):** The proposed regulation maintains a ZEB purchase requirement as the primary mechanism for facilitating widespread transit electrification. We continue to believe that a ZEB purchase requirement is inappropriate, because it fails to take into consideration the diverse financial positions and operational needs of transit agencies. Nevertheless, ARB staff should be commended for acknowledging that the

H-2-3 once-2020 purchase requirement start date was too soon to be practical for agencies, given the current state of ZEB technology and the reality of 18- to 24-month procurement cycles. We appreciate that ARB staff has also recognized that there are unique financial and administrative challenges faced by small agencies that justify delaying the purchase requirement for these agencies until 2026. Importantly, this delay will also allow small transit agencies to learn from the experiences of large agencies on effective ZEB deployment.

B-1 If combined with a strong benchmarking and regulatory assessment provision that allow for an across-the-board suspension of the ZEB purchase mandate, as discussed above; a realistic waiver for early compliance; and, case-by-case, agency-by-agency, ARB Executive Officer approved, off-ramps from the ZEB purchase mandate, the ZEB purchase requirement

schedule offered in the proposed regulation may be implementable. Together, these provisions would institute important safeguards that better ensure that agencies are not charged with purchasing ZEBs, if their cost and/or performance would jeopardize transit service.

H-2-3 We are aware that various stakeholder groups, comprising the Advanced Clean Transit Coalition, support accelerating the ZEB purchase requirement schedule to claim ZEB deployments at more transit agencies sooner. **We recommend that ARB resist calls to accelerate the ZEB purchase requirement schedule and, instead, maintain the ZEB purchase requirement schedule in the proposed regulation.**

B-3 We assert that transformation of our state's public transit network will not come about from all transit agencies fumbling through new requirements and new technologies at once, but rather through targeted investments and successful ZEB demonstrations led by key agencies, which allow best practices to be developed and shared throughout the industry.

H-3-2 **Waiver of Initial Zero-Emission Bus Purchase Requirements (Section 2023.1 (b)(1) and 2023.1 (b)(2)):** The proposed regulation provides an opportunity to delay the start date for the ZEB purchase requirement faced by large transit agencies, if the number of ZEBs in operation and/or on order at the end of 2020 and 2021 reach 1,000 and 1,150, respectively. We appreciate the inclusion of this provision, as it represents a creative approach by ARB staff to permitting the leaders in transit electrification to continue to lead, while also encouraging other agencies to explore deploying ZEBs early.

We support this provision and recommend that ARB replace Section 2023.1 (b)(1) and 2023.1 (b)(2) in the proposed regulation with the following:

- ***The zero-emission bus purchase requirements for calendar year ending December 31, 2023, are waived if California transit agencies collectively have at least eight hundred (800) zero-emission buses purchased or in active bus fleets by December 31, 2020, as determined by the Executive Officer based on the reporting data for calendar year 2020 required by section 2023.8.***
- ***If the 2023 zero-emission bus purchase requirement is waived as a result of the implementation of section 2023.1(b)(1), then the zero-emission bus purchase requirements for calendar year ending December 31, 2024, are waived if California transit agencies collectively have at least one-thousand and two hundred (1,200) zero-emission buses purchased or in active bus fleets by December 31, 2021, as determined by the Executive Officer based on the reporting data for calendar year 2021 required by section 2023.8.***

These recommendations reflect the Association's best estimates for realistic ZEB purchase thresholds, based on the self-reported procurement schedules of our members and expected funding availability as of summer 2018. Without these adjustments, the ZEB threshold number for 2020 is too high and would translate into a *de facto* ZEB purchase requirement in 2023.

H 1-2 **Large vs. Small Transit Agencies (Sections 2023 (b)(29) and 2023 (b)(49)):** The proposed regulation defines a large transit agency as "a transit agency with a fleet size of one-hundred (100) or more buses" and a small transit agency as "a transit agency with a fleet size of fewer than one-hundred (100) buses." The proposed regulation defines a bus as "a rubber-tire vehicle designed to transport passengers by road with gross vehicle weight (GVWR) greater

than 14,000 pounds, but does not include a trolley bus..." The practical impact of the definition of a bus is that it counts both standard transit buses and cutaway vehicles toward fleet totals.

These definitions appear to have been promulgated by ARB staff for simplicity, but they are ultimately problematic, because they are misaligned with the definitions for small and large agencies used by the Federal Transit Administration (FTA) to determine the eligible uses of critical federal funding sources, like Chapter 53 of Title 49 U.S.C. 5307 funding (FTA 5307).

For background, FTA defines large agencies as those operating in Primary Urbanized Areas (UZAs) with populations greater than 200,000 and at least 100 vehicles in annual maximum service; and, defines small agencies as those operating in UZAs with populations less than 200,000 or those with fewer than 100 vehicles in annual maximum service. Understanding this is critical, because small agencies have long-been afforded, and have taken advantage of, the opportunity to use FTA 5307 funding to fund operations. FTA has deliberately provided this flexibility to these agencies in recognition that many of them operate in rural and/or suburban areas, and lack access to local funds and ancillary revenue that supports basic service needs. Should the regulation maintain the current definitions for small and large transit agencies, several agencies recognized as small by FTA would become large agencies for ARB's purposes and would be forced to comply with the more aggressive ZEB purchase requirement schedule. This more aggressive schedule would likely require these small agencies to redirect their FTA 5307 funding from operations to meeting the ZEB purchase requirement, possibly undermining lifeline transit service.

To avoid conflicts with federal funding programs that could jeopardize the provision of transit service, particularly for small agencies, we urge ARB to defer to the Association and its members on the appropriate definition of large and small transit agencies.

We recommend that ARB replace Section 2023 (b)(29) in the proposed regulation with the following:

- ***"Large Transit Agency" means a transit agency operating in an UZA with population of at least 200,000 with at least 100 vehicles in annual maximum service***

We recommend that ARB replace Section 2023 (b)(49) in the proposed regulation with the following:

- ***"Small Transit Agency" means a transit agency that satisfies either of the following conditions:***
 - ***The transit agency operates in an UZA with population less than 200,000***
 - ***The transit agency operates fewer than 100 vehicles in annual maximum service***
- ***For the purposes of this section, a transit agency that is otherwise defined as a small transit agency shall be considered a large transit agency, if the following conditions are met:***
 - ***The agency operates in either the South Coast and San Joaquin Valley air basins***

- o ***The agency operates more than 65 vehicles in annual maximum service***

E-8

Role of Incentives (N/A): The proposed regulation would limit access to incentive funding to transit agencies that exceed their baseline ZEB purchase requirements.

We continue to assert that the state’s experience with ZEB deployments – i.e. 450 ZEBs now operating, or on order, all purchased with the help of state and/or federal incentives – the high cost of the proposed regulation between 2020 and 2040, and the role that robust transit service must play in reducing emissions from the transportation sector requires that the state remove all barriers to transit agencies accessing incentive funding. **We recommend that ARB fund the transition to ZEBs, even if that requires directly funding regulatory compliance.** We note that we are not alone in making this request: Californians for Zero-Emission Vehicles, an advocacy group representing ZEB manufacturers and interest groups, and BYD Motors, Inc., recently filed similar comments with you. Like the Association, these groups recognize the devastating impact that an unfunded ZEB purchase requirement could have on the vital public service our members provide.

H-1-1

Purchase Definition (Section 2023.1 (a)(5)): The proposed regulation requires ZEBs to be “delivered within two years from the initial date of a Notice to Proceed” (NTP) to count as purchases under the ZEB purchase requirement. From discussions with ARB staff, we understand that the two-year delivery requirement was added to prevent a transit agency from attempting to count as purchases, options that would not be manufactured and delivered to the agency for many years. Having consulted with the leading Original Equipment Manufacturer (OEM), we believe this provision offers a solution to a problem that does not exist. That is, an OEM would not agree to manufacture an option (codified in an NTP) far in advance of delivery, because the price of components and raw materials could change, leading to an uncertain profit margin for the bus.

Additionally, it is common knowledge among transit agencies nationwide that deliveries of ZEBs and associated infrastructure are routinely – sometimes, chronically – late, a problem that can only be addressed by the OEMs, not transit agencies.

We recommend that ARB replace Section 2023.1 (a)(5) in the proposed regulation with the following:

- ***A new bus is considered purchased when a Notice to Proceed or Purchase Order is issued to the manufacturer and a transit agency’s funds are identified, committed and encumbered.***

H-5-5

ZEB Rollout Plan (Section 2023.1 (d)): The proposed regulation requires transit agencies to submit ZEB rollout plans, approved by their governing boards, detailing their commitment to fully transition to ZEB technology by 2040 or earlier as well as their schedule and needs for realizing that transition. The proposed regulation requires large and small agencies to submit these plans to ARB by July 1, 2020 and July 1, 2023, respectively.

We support and appreciate the inclusion of this new provision, which recognizes the strength of our past request for individualized ZEB deployment plans. This provision will encourage transit agencies to think through the steps necessary for full fleet conversion to ZEB technology, but will also provide the state with useful information on costs, funding needs and

other barriers to electrification, which will help justify future state investment in ZEBs and support future legislative actions.

We recommend that ARB resist calls to accelerate the submission date for ZEB roll-out plans by small agencies and, instead, maintain the submission date in the proposed regulation. As we have communicated to you across many forums, even the transit agencies most bullish about ZEB technology are operating small ZEB fleets. These same agencies acknowledge that it will take time and resources for our industry to learn what it will take to successfully convert an entire fleet to ZEB technology, and to promulgate best practices. The lag in the submission date is useful, because it allows these early adopters and large agencies, many of which are better-capitalized, to uncover key insights into widespread ZEB deployment, which can be shared with small agencies and incorporated into their ZEB rollout plans.

H-7-1 **ZEB Bonus Credit (Section 2023.3):** The proposed regulation outlines a schedule of ZEB bonus credits, which allows early adopters to collect additional credits for ZEBs already in service. These ZEB bonus credits can be used to satisfy future ZEB purchase requirements. We believe the proposed schedule is appropriate, because it recognizes that transit agencies that have already deployed ZEBs assumed additional costs and risks to support the commercialization of ZEB technology. **We recommend that ARB maintain the proposed schedule, including the higher level of bonus credit for fuel-cell electric buses, which recognizes their higher upfront and operational costs; and, expand the schedule to include one bonus credit for conversions to battery-electric placed in service on or before December 31, 2017 and which remained in service as of January 1, 2018.**

H-7-3,
H-7-4 **Additionally, we recommend that ARB, in crediting ZEB deployments that exceed ZEB purchase requirements, provide the same level of credit for conversions to battery-electric as purchases of standard battery-electric buses, and one-half credit for electric trolley buses placed into service between January 1, 2018 and December 31, 2020.**

H-4-2 **Excluded Buses (Section 2023.1 (c)):** The proposed regulation excludes cutaway buses, over-the-road buses and articulated buses from the ZEB purchase requirement until January 1, 2026 and until the applicable ZEB type has passed and obtained an Altoona bus testing report as required by Title 49 of the Code of Federal Regulations (CFR) Section 665.13. We appreciate and support this provision, which acknowledges that electric technology for these bus types is still nascent and, if included under the ZEB purchase requirement too soon, would have devastating impacts on transit services serving the disabled, the elderly as well as commuters. We also appreciate that the performance review discussed under “*Benchmarking and Regulatory Assessment*” offers ARB staff’s commitment to assessing the state of the technology for these non-standard buses before they are included under the purchase mandate.

Our support for this provision notwithstanding, we recommend that ARB look beyond the Altoona bus testing report as proof that a vehicle is ready for revenue service, and include language within the regulation requiring a technology assessment of these ZEB types in 2026 to evaluate commercial availability and operational readiness based on data gathered from real-world deployments of these ZEB types prior to the inclusion of these vehicles in the regulation.

H-8-5 Provisions for Extension or Exemption of a ZEB Purchase (Section 2023.4): The proposed regulation enumerates the conditions under which a transit agency may request an extension or exemption from the ZEB purchase requirement. These conditions, which must be verified by ARB's Executive Officer, generally relate to delays in bus delivery, delays in infrastructure buildout, and the unavailability of requisite ZEB technology that exist beyond the transit agency's control.

These conditions, which reflect many of the recommendations we offered in our July 19, 2018 comment letter are well-thought out and provide assurance that transit agencies will not be forced to comply with the ZEB purchase requirement, if external factors would make compliance impossible or otherwise harm transit service.

While we support this provision and the specific conditions outlined in the proposed regulation, we recommend that ARB replace Section 2023.4 (c)(4)(B)(3) in the proposed regulation with the following:

- ***The cost or performance characteristics of the zero-emission bus would result in a transit agency violating any federal, state, or local laws, regulations or ordinances.***

H-8-3 Additionally, we commit to working with ARB staff to clarify that the deferral for ZEBs that cannot meet a transit agency's daily mileage need requires the development of a new testing protocol to determine range based on real world operation, and should not use the Orange County bus test cycle.

H-6 Compliance Option for Joint Zero-Emission Bus Groups (Section 2023.2): The proposed regulation outlines the requirements for establishment of Joint Zero-Emission Bus Groups. This provision allows two or more transit agencies to pool their resources to meet their ZEB purchase requirements, if the agencies share the same Metropolitan Planning Organization (MPO), Transportation Planning Agency (RTPA) or are located in the same air basin. Overall, we support the inclusion of this provision, which offers an alternative, more flexible pathway to compliance for small agencies across the state. That said, there are several small agencies in close proximity to one another that do not share an MPO, RTPA or air basin, but which would benefit from this provision. **For that reason, we recommend that ARB remove the requirement that transit agencies share an MPO, RTPA or air basin to form a joint zero-emission bus group.**

H-6 B. The Association's Alternative

The Association believes the technical recommendations described above would dramatically enhance the proposed regulation. As such, ARB should consider an alternative under which ARB would adopt the proposed regulation with the following amendments.

F-4 Collectively, the following proposals are referred to as the "Association's Alternative."

- **Strengthening Performance Review:**
 - **Establishing Benchmarks:** The inclusion of language that would establish benchmarks for ZEB cost and performance and funding availability. These benchmarks should be sourced from the inputs and assumptions used by ARB staff in the Original SRIA, Draft Environmental Analysis and Cost Update.

- **Relationship between Benchmarks and ZEB Purchasing Requirements:** The inclusion of language that would require ARB to temporarily halt the ZEB purchase requirement if real-world ZEB cost and performance and funding availability are misaligned with the benchmarks established in the proposed regulation.
- **Waiver of Certain ZEB Purchasing Requirements:** Section 2023.1, subdivisions (b)(1) and (b)(2) should be replaced with the following requirements:
 - **Subdivision (b)(1):** The ZEB purchase requirements for calendar year ending December 31, 2023, would be waived if California transit agencies collectively have at least eight hundred (800) zero-emission buses purchased or in active bus fleets by December 31, 2020, as determined by the Executive Officer based on the reporting data for calendar year 2020 required by section 2023.8.
 - **Subdivision (b)(2):** If the 2023 ZEB purchase requirement is waived under Subdivision (b)(1), the ZEB purchase requirements for calendar year ending December 31, 2024, would be waived if California transit agencies collectively have at least one-thousand and two hundred (1,200) zero-emission buses purchased or in active bus fleets by December 31, 2021, as determined by the Executive Officer based on the reporting data for calendar year 2021 required by section 2023.8.
- **Modification of Definition of “Large Transit Agency,” under Section 2023(b)(29):**
 - “Large Transit Agency” means a transit agency operating in an UZA with population of at least 200,000 with at least 100 vehicles in annual maximum service
 - For the purposes of this section, a transit agency that is otherwise defined as a small transit agency shall be considered a large transit agency, if the following conditions are met:
 - The agency operates in either the South Coast and San Joaquin Valley air basins
 - The agency operates more than 65 vehicles in annual maximum service
- **Modification of Definition of “Small Transit Agency,” under Section 2023(b)(49):**
 - “Small Transit Agency” means a transit agency that satisfies either of the following conditions:
 - The transit agency operates in an UZA with population less than 200,000
 - The transit agency operates fewer than 100 vehicles in annual maximum service

- **Role of Incentives:** Provisions would be added to the proposed regulation requiring ARB to fund the transition to ZEBs.
- **Purchase Definition:** Section 2023.1(a)(5) would be replaced with the following language:
 - A new bus is considered purchased when a Notice to Proceed or Purchase Order is issued to the manufacturer and a transit agency's funds are identified, committed and encumbered.
- **ZEB Bonus Credit:**
 - Section 2023.3(d) would be augmented to expand the schedule to include one bonus credit for conversions to battery-electric placed in service on or before December 31, 2017 and which remained in service as of January 1, 2018.
 - In addition, in crediting ZEB deployments that exceed ZEB purchase requirements, ARB would provide the same level of credit for conversions to battery-electric as purchases of standard battery-electric buses, and one-half credit for electric trolley buses placed into service between January 1, 2018 and December 31, 2020.
- **Excluded Buses:** The proposed regulation would be amended to include language requiring a technology assessment of these ZEB types in 2026 to evaluate commercial availability and operational readiness based on data gathered from real-world deployments of these ZEB types prior to the inclusion of these vehicles in the regulation.
- **Provisions for Extension/Exemption of a Zeb Purchase:** Section 2023.4(c)(4)(B)(3) would be replaced with the following language:
 - The cost or performance characteristics of the zero-emission bus would result in a transit agency violating any federal, state, or local laws, regulations or ordinances.
- **Compliance Option for Joint ZEB Groups:** The requirement that transit agencies share an MPO, RTPA or air basin to form a joint zero-emission bus group would be removed.

II. Part II: Comments on Appendix I and Concerns Arising Under the APA

A. Alternatives Analysis under the APA

E-14

The Legislature requires that state agencies avoid unnecessary or unduly burdensome regulation. As such, ARB may not propose regulations unless it has determined no alternative to its own proposal would be "as effective and less burdensome to affected private persons and equally effective in implementing the statutory purpose or other provision of law." (Govt. Code, § 11346.5(a)(13).) To adopt a regulation, ARB must likewise affirm and explain, with "supporting information," that "no alternative" it has considered "would be more effective and less burdensome to affected *private persons* than the adopted regulation, or would be more

cost effective to affected private persons and equally effective” in meeting the proposal’s legislative objective. (Govt. Code, § 11346.9(a)(4) [emphasis added].)

The proposed regulation will affect “private persons.” Specifically, if grant funding is inadequate to cover the high upfront capital costs, then transit agencies will be forced to increase fares or decrease transit service, and “private persons” will experience increased costs and reduced availability of public transit. The impact to “private persons” of the proposed regulation would be particularly acute for low-income persons and persons from minority communities who overwhelmingly comprise the transit customer base. Consider, for example, that the 2012 American Communities Survey found that the average income for a transit rider is \$15,281 in the City of Los Angeles; 71 percent of transit riders in Los Angeles are Hispanic. In the Cities of San Diego, San Francisco and Sacramento, the average income of transit riders is \$18,143, \$42,230, and \$30,227, respectively. These income levels are far below the average in these cities and significantly less than the income levels of all commuters.

Under these circumstances, ARB bears the burden of demonstrating no alternative would be “as effective and less burdensome to affected private persons and equally effective in implementing the statutory purpose or other provision of law.” (Govt. Code, § 11346.5(a)(13).) Likewise, before considering the proposed regulation for adoption, ARB must demonstrate, with “supporting information,” that “no alternative” that the Board has considered “would be more effective and less burdensome to affected private persons than the adopted regulation, or would be more cost effective to affected private persons and equally effective” in meeting the proposal’s legislative objective. (Govt. Code, § 11346.9(a)(4).)

The legislative objective (or, “statutory purpose”) of the proposed regulation can be found in the text of SB 32, which states:

[i]n adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030.

(Health & Saf. Code, § 38566.) Thus, the legislative objective underlying the proposed regulation is to ensure GHG emissions will be “reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030,” in a manner that is technologically feasible and cost-effective. (*Id.*; see also ISOR at X-1 [“The proposed ICT regulation is designed to reduce criteria pollutants, toxic air contaminants, and GHG emissions from the public transit sector, and to reduce community and regional air pollution.”].)

Although the Alternatives Analysis in Section IX of the ISOR includes some findings concerning the above statutes, those analyses do not contain supporting information for the conclusions drawn. For instance, ARB asserts that Alternative 2 (a proposal for a less stringent zero-emission bus purchase requirement) “will result in less emission reduction benefits in early years compared with the proposed purchase requirement.” (See ISOR, IX-11.) However, ARB has not shown that sufficient funding will be available to allow transit agencies to achieve the more demanding requirement without increased costs or decreased services. In the absence of such information, there is no basis for a conclusion that Alternative 2 would be less

effective than ARB's proposal. As such, ARB's alternatives analysis does not include the evidence and discussion required under Sections 11346.5 and 11346.9.

ARB should consider the Association's Alternative, which is identified in Part I(B) above. This alternative would be more than "equally effective in implementing the statutory purpose." (Govt. Code, § 11346.5(a)(13).) The Association's Alternative makes only modest changes to the waiver of certain ZEB purchasing requirements, and would be equally effective in implementing the statutory purpose of the proposed regulation. The Association's Alternative also makes several common sense changes to the proposed regulation to lessen its burden on transit agencies and to ensure that the regulation is achieving its intended goals, including strengthening ZEB performance review standards, modifying the definitions of "large" and "small" transit agencies to reflect real-world conditions, relaxing current limitations on funding for the purchase of ZEBs, and others. The Association's Alternative, would thus be equally effective in meeting CARB's statutory objectives, while at the same time reducing cost impacts to regulated entities, and thus, affected private persons.

As a result of the foregoing, ARB should not on the current record proceed to a final action because it cannot, among other things, comply with Section 11346.9(a)(4) of the Government Code. If ARB intends to pursue the proposed regulation, the record should demonstrate ARB has addressed the issues raised by the Association.

B. Association's Concerns Regarding the SRIA

The APA requires that state agencies proposing to "adopt, amend, or repeal any administrative regulation" first perform an assessment of "the potential for adverse economic impact on California business enterprises and individuals." (Govt. Code, § 11346.3(a).) Specifically, ARB must prepare a Standardized Regulatory Impact Assessment ("SRIA") analyzing "the potential adverse economic impact on California business and individuals of a proposed regulation," (Govt. Code, § 11346.3), and declare in the notice of proposed action any initial determination that the action will not have a significant statewide adverse economic impact directly affecting business. (Govt. Code, § 11346.5(a)(8); *Western States Petroleum Assn. v. Board of Equalization* (2013) 57 Cal.4th 401, 428 [hereinafter, "WSPA"].) The SRIA must evaluate several issues, including "elimination of jobs within the state," "the elimination of existing businesses within the state," and "[t]he competitive . . . disadvantages for businesses currently doing business within the state." (Govt. Code, § 11346.3, subs. (c)(1)(A)-(C).) The SRIA must be circulated with the ISOR, and must be supported by "facts, evidence, documents, [or] testimony," and made available for public review and comment for at least 45-days before an agency approves a regulation. (Govt. Code, §§ 11346.5, subs. (a)(7), (a)(8), 11347.3(b)(4).) The SRIA cannot be based on "mere speculati[on]." (*WSPA, supra*, 57 Cal.4th at 428.) "A regulation . . . may be declared invalid if . . . [t]he agency declaration . . . is in conflict with substantial evidence in the record." (*Calif. Ass'n of Medical Products Suppliers v. Maxwell-Jolly* (2011) 199 Cal.App.4th 286, 306.)

E-16 The SRIA does not meet applicable standards. One of the fundamental assumptions of the SRIA is that "the incremental costs to transit agencies of the proposed ICT regulation could be offset without relying on financing options" due to the availability of grant funding. (See SRIA at 41.) According to the SRIA, "grant funding **can reduce or eliminate most of the initial capital costs** of the proposed ICT regulation" such that transit agencies who experience

increased costs will not pass those costs on to individuals through decreases in service or increases fares. (See SRIA at 41.) On the basis of this assumption, the SRIA concludes that there are no direct costs incurred by individuals as a result of the proposed regulation. (*Id.*) However, ARB's analysis of available funding shows that it falls well short of covering the estimated cost of the proposed regulation, and consequently, fails to demonstrate that transit agencies will not have to reduce transit service and/or increase fares to comply with the proposed regulation.

ARB estimates that the cost of the proposed regulation through 2030 and 2040 will be \$605.7 million and \$1.1 billion, respectively. To arrive at these estimates, ARB built a complex cost model that rests on a series of optimistic assumptions, including bus purchase costs, bus maintenance costs, fuel costs, fuel efficiency, and charger install costs. We have particular concern about the assumption used in ARB's cost model that includes Low Carbon Fuel Standard (LCFS) credits for transit agencies through 2050 when, in fact, LCFS is presently only statutorily authorized through 2030. When the model is updated to reflect the true sunset date for LCFS, the estimated cost of the proposed regulation through 2040 climbs to \$2.01 billion. This higher cost estimate does not include changes to any of the other assumptions listed above, which would meaningfully increase the cost of the proposed regulation.

ARB identifies five potential funding sources. Taken together, however, these are clearly not sufficient to ensure that transit agencies will not be compelled to increase fares or decrease service as a result of the proposed regulation.

The Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project ("HVIP") provides point-of-sale vouchers to partially offset the incremental cost of zero- and near-zero emission trucks and buses. These vouchers, which are funded through an annual appropriation by the State Legislature, are issued to public and private fleet owners on a first-come/first-serve basis. In FY 2017-18, HVIP made a total of \$188 million available to fleet owners, with at least \$35 million set aside for zero-emission bus deployment, specifically. (SRIA at 41.) In FY 2018-19, HVIP made an additional \$125 million available to fleet owners. While the current funding capacity of HVIP is substantial, this capacity is not specifically earmarked to zero-emission bus deployment, and the program itself relies on annual appropriation by the State Legislature, which provides no guarantee of future funding. Moreover, the capital costs of the proposed regulation are estimated to be at least \$74 million in the year 2020 alone, and as much \$989 million through 2032. (SRIA at 37, Table C12.) The currently available – and therefore, knowable – funding in HVIP is plainly inadequate to meaningfully offset these costs so as to ensure no changes in service or increased fares.

Pursuant to SB 350 Clean Energy and Pollution Reduction Act of 2015, the California Public Utilities Commission approved over \$750 million in funding for investments in infrastructure projects in the service territories of Southern California Edison and Pacific Gas & Electric that support the deployment of zero-emission vehicles. (See *id.* at 42.) Of this total, transit agencies in the SCE and PGE service territories are guaranteed a combined minimum investment in infrastructure projects of \$52.5 million. These funds, however, are available for only a five-year period. (See *id.* at 42.) Again, this is plainly inadequate in light of the \$989 million of estimated costs through 2032. (*Id.* at 37, Table C12.)

The Volkswagen Environmental Mitigation Trust (“Mitigation Trust”) provides California approximately \$423 million to fund specified eligible actions to mitigate the lifetime excess NOx emission caused by Volkswagen’s emission test defeat device. Of this total, \$130 million is specifically earmarked for transit, school and shuttle buses and supporting infrastructure. No more than 50% of this funding, or \$65 million, can be used for any one vehicle type (e.g. transit buses or shuttle buses). Guidelines for this funding have not been developed yet.

The Low Carbon Transit Operations Program (“LCTOP”) is claimed to provide an **unidentified amount** that “will support new or expanded bus or rail services, expand intermodal transit facilities, and **may** include equipment acquisition, fueling, maintenance and other costs to operate those services or facilities . . .” (*Id.* at 42.) Yet, an unidentified amount that “may” be used to offset ZEB purchases, maintenance, and other costs cannot be relied upon to offset the increased costs to transit agencies.

Finally, the Transit and Intercity Rail Capital Program (“TIRCP”) provides **competitive grants of unidentified amounts** “to fund transformative capital improvements that will modernize California’s intercity, commuter, and urban rail systems, and bus and ferry transit systems, to significantly reduce GHG emissions, vehicle miles traveled, and congestion.” (*Id.* at 43.) Again, an unidentified amount that may or may not be used to offset the regulation’s initial capital costs, and which is not guaranteed to all transit agencies because it must be competitively granted, cannot be relied upon to meaningfully offset transit agencies capital costs.

ARB estimates that the cost of the proposed regulation through 2030 and 2040 will be \$605.7 million and \$1.1 billion, respectively. When their model is updated to reflect the true sunset date for LCFS of 2030, the estimated cost of the proposed regulation through 2040 climbs to \$2.01 billion. Although the SRIA claims that “grant funding **can reduce or eliminate most of the initial capital costs** of the proposed ICT regulation” and that, as a result, transit agencies will not pass on those costs to individuals through changes in services or increased fares, (*id.* at 41 [emphasis added]), the available grant funding identified in the SRIA falls well short of the proposed regulation’s estimated costs. The HVIP guarantees only \$35 million for ZEBs, much of which has already been committed, and only for FY 2017-18; SB 350 guarantees \$52.5 million for infrastructure projects that support zero-emission bus deployments in the SCE and PGE service territories, but not for ZEB purchases and only for a five year period; the Mitigation Trust provides a maximum of \$65 million for zero-emission transit buses and charging infrastructure; the LCTOP provides an **unidentified** amount, which “may include” ZEB costs; and, similarly, the TIRCP provides an **unidentified** amount that may or may not be used to fund ZEB-related activities.

Accordingly, the conclusions in the SRIA that transit agencies will not pass on costs to customers due to the availability of grant funding are not be supported by “facts, evidence, documents, [or] testimony,” (Govt. Code, §§ 11346.5, subds. (a)(8)), are “mere speculat[ion],” (*WSPA, supra*, 57 Cal.4th at 428), and are contradicted by the record evidence.

C. External Peer Review

Pursuant to Health and Safety Code § 50074, ARB may not “take any action to adopt the final version of a rule unless” it undertakes a peer review to evaluate the “scientific portions” of the rule. (Health & Saf. Code, § 57004(d).) Section 57004 was enacted by the Legislature in response to “[s]ignificant questions . . . raised by both the environmental and regulated communities about the scientific basis for some rules.” (California Bill Analysis, S.B. 1320 Assem., 8/11/1997.) Thus, it requires CALEPA agencies, such as the ARB, to submit the “scientific portions” of a proposed regulation to an external peer reviewer “for the purpose of conducting an analysis of the science on which the regulation is based.” (*Id.*) The peer reviewer must then “provide a written evaluation as to whether the scientific portion of the rule is based on sound scientific knowledge, methods and practices.” (*Id.*; see also Health & Saf. Code, § 57004(d) [stating that “board, department, or office [must] submit[] the scientific portions of the proposed rule, along with a statement of the scientific findings, conclusions, and assumptions on which the scientific portions of the proposed rule are based and the supporting scientific data, studies, and other appropriate materials, to the external scientific peer review entity for its evaluation” and that the “external scientific peer review entity [must] prepare[] a written report that contains an evaluation of the scientific basis of the proposed rule”].) The “scientific portions” of a proposed regulation include “those foundations of a rule that are premised upon, or derived from, empirical data or other scientific findings, conclusions, or assumptions establishing a regulatory level, standard, or other requirement for the protection of public health or the environment.” (*Id.*, subd. (a)(2).)

B-4 The proposed regulation contains numerous “scientific portions” that must be subjected to external peer review pursuant to § 50074 because they “are premised upon, or derived from, empirical data or other scientific findings, conclusions, or assumptions establishing a regulatory level, standard, or other requirement for the protection of public health or the environment.” (*Id.*, subd. (a)(2).) These “scientific portions” include, but are not limited to:

- Determination of the feasibility of implementing the ZEB purchase requirement
- Determination of the percentage of total new bus purchases that must be ZEBs
- Determination of the minimum number of ZEBs that transit agencies must collectively purchase to trigger waiver of the purchase requirements for 2023 and 2024
- Determination that all new bus purchases need to be ZEBs by 2029
- Determination of the number of zero-emission passenger miles per year deemed equivalent to having one ZEB in the agency’s fleet
- Determination of the number of bonus credits for each FCEB or BEB placed in service
- Determination of the dates for application of the bonus credits
- Determination of the date for requiring the purchase of low-NOx engines
- Determination of the date for requiring the use of renewable fuels for diesel and CNG buses
- Determination that sufficient funding will be available to offset initial capital costs such that transit agencies will not be forced to increase fares or decrease service

As such, CARB must submit these portions of the rule, “along with a statement of the scientific findings, conclusions, and assumptions on which [they] are based and the supporting scientific

data, studies, and other appropriate materials, to the external scientific peer review entity for its evaluation.” (*Id.* at subd. (d)(2).)

III. Part III: Comments on Appendix C

A. ARB’s Obligations under CEQA

State agencies such as ARB must “refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects.” (*City of Arcadia, supra*, 135 Cal.App.4th at 1421 [citing *Mountain Lion Found. v. Fish & Game Comm.* (1997) 16 Cal.4th 105, 134].) To perform this evaluation, ARB must “first . . . identify the environmental effects” of a proposed regulation, “and then . . . mitigate [any] adverse effects through the imposition of feasible mitigation measures or through the selection of feasible alternatives.” (*Sierra Club, supra*, 7 Cal.4th at 1233.) “The CEQA process is intended to be a careful examination, fully open to the public, of the environmental consequences of a given project, covering the entire project, from start to finish. This examination is intended to provide the fullest information reasonably available upon which the decision makers and the public they serve can rely in determining whether or not to start the project at all, not merely to decide whether to finish it.” (*NRDC v. City of Los Angeles* (2002) 103 Cal.App.4th 268, 271.)

State regulatory programs “that meet certain environmental standards and are certified by the Secretary of the California Resources Agency are exempt from CEQA’s requirements for preparation of EIRs, negative declarations, and initial studies.” (*City of Arcadia, supra*, 135 Cal.App.4th at 1421.) The scope of this exemption, however, is narrow, and only excuses ARB from complying with the requirements found in Chapters 3 and 4 of CEQA (*i.e.*, Pub. Res. Code, §§ 21100-21154) in addition to Public Resources Code § 21167. (Pub. Res. Code, § 21080.5(c).) However, “[w]hen conducting its environmental review and preparing its documentation, a certified regulatory program is subject to the broad policy goals and substantive standards of CEQA.” (Kostka & Zischke, *Practice Under Cal. Env. Quality Act* (2016 update) § 21.10) [“Kostka & Zischke”] [citing *City of Arcadia, supra*, 135 Cal.App.4th at 1422; *Sierra Club, supra*, 7 Cal.4th 1215; *Californians for Native Salmon & Steelhead Ass’n v. Dept. of Forestry* (1990) 221 Cal.App.3d 1419; *Env’tl Protection Info. Ctr. v. Johnson* (1985) 170 Cal.App.3d 604, 616].) The broad policy goals of CEQA include: (1) providing public agencies and the public with detailed information about the effect that a proposed project is likely to have on the environment, (2) identifying the ways in which the significant effects of a proposed project might be minimized, and (3) identifying alternatives to the proposed project. (See Pub. Res. Code §§ 21002, 21002.1(a), 21061; 14 C.C.R. § 15362.) Thus, the CEQA Guidelines expressly provide that “[i]n a certified program, an environmental document used as a substitute for an EIR must include ‘[a]lternatives to the activity and mitigation measures to avoid or reduce any significant or potentially significant effects that the project might have on the environment.’” (*City of Arcadia, supra*, 135 Cal.App.4th at 1422 [quoting CEQA Guidelines, § 15252(a)(2)(A)].)

ARB’s functional equivalent document is the “staff report,” which “shall be prepared and published by the staff of the state board.” (17 Cal. Code Regs., § 60005(a).) The regulations require the staff report to be “published at least 45 days before the date of the public hearing”

on the rulemaking, and to “be available for public review and comment.” (*Id.*) Staff reports must be prepared “in a manner consistent” “with the goals and policies of” CEQA, and “shall contain” “[1] a description of the proposed action, [2] an assessment of anticipated significant long or short term adverse and beneficial environmental impacts associated with the proposed action and [3] a succinct analysis of those impacts.” (17 Cal. Code Regs., § 60005(b).) Additionally, the analysis must “address feasible mitigation measures and feasible alternatives . . . which would substantially reduce any significant adverse impact identified.” (*Id.*)

The regulations also provide that an action “for which significant adverse environmental impacts have been identified during the review process shall **not** be approved or adopted as proposed if there are feasible mitigation measures or feasible alternatives available which would substantially reduce such adverse impact.” (*Id.*, § 60006 [emphasis added].) “Feasible” means “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors, and consistent with the state board’s legislatively mandated responsibilities and duties.” (*Id.*)

If ARB receives comments raising “significant environmental issues associated with the proposed action,” staff must “summarize and respond to the comments either orally or in a supplemental written report. Before taking final action on any proposal for which significant environmental issues have been raised, the decision maker shall approve a written response to each such issue.” (*Id.*, § 60007.) ARB must respond to the issues raised by the public by providing a “good faith, reasoned analysis in response, and at a level of detail that matches the level of detail in the comment.” (CEQA Guidelines, § 15088(c); *Pfeiffer v. City of Sunnyvale* (2011) 200 Cal.App.4th 1552, 1568.) If ARB disagrees with the “recommendations and objections raised in the comments,” the “recommendations and objections” “must be addressed in detail,” with the agency “giving reasons why specific comments and suggestions were not accepted.” (CEQA Guidelines, § 15088(d).) “Conclusory statements unsupported by factual information will not suffice.” (*Id.*) Finally, because ARB may not take “final action on any proposal which raise significant environmental issues associated with the proposed action” until the state board “approve[s] a written response to each” issue raised, (Cal. Code Regs., § 60007(a)), ARB staff’s responses to environmental comments must be presented to the state board before consideration of the Proposed Amendments for approval. (*Id.*)

B. Compliance with ARB’s Certified Regulatory Program and CEQA

1. The EA does not Discuss the Proposed Regulation’s Potentially Significant Environmental Impacts From Transit Agency Service Changes

The EA estimates emissions savings resulting from the conversion of today’s transit bus fleet, powered by internal combustion engines, to zero-emission, all other things remaining equal. It projects that the proposed regulation will “reduce GHG emissions by 19 million metric tons of carbon dioxide equivalent (MMT CO₂e) from 2020 to 2050” and “result in an estimated 7,032 tons and 39.4 tons emission reduction from 2020 to 2050 for tailpipe NO_x and PM_{2.5}, respectively.” Absent from the EA is any assessment of how the cost of the regulation, estimated at \$1.1 billion through 2040 by ARB staff, might degrade transit service, whether

through higher fares or reduced service, and ultimately, transit ridership and statewide emissions.

An analysis by the Orange County Transportation Authority (OCTA), presented to their Board of Directors on September 20, 2018, proves that these impacts to transit service are more than hypothetical. The analysis found that “if the ARB adopts the Proposed Regulation, it would create financial implications for OCTA’s transit system if no additional funding is identified. It is currently expected that OCTA will proceed with its next large transit bus procurement after 2020, subjecting the procurement to the new purchase requirements. It is expected that almost 300 buses will be procured at that time. If the ZEB purchase requirement is in place, this could increase procurement costs by as much as \$114 million. **Overall, to replace our entire fleet with ZEBs, including paratransit, it would cost at least an additional \$442 million in current dollars, more than double what it would cost to replace the fleet with traditional fuel vehicles. These estimates assume that there would need to be an expansion of the fleet by about 40 percent due to range limitations with existing ZEBs; however, these estimates do not include the costs of infrastructure and potential for increased fueling costs. This would significantly impact OCTA’s ability to maintain existing services and could result in a service reduction of over 20 percent if the additional funding were not identified.** Furthermore, there are several technology challenges that continue to exist for ZEBs, including the inability to meet existing transit bus range requirements, lack of commercially available ZEBs to replace paratransit vehicles, and no guarantee that existing technology will meet necessary warranties to fulfill federal useful life requirements.”

Virtually every transit agency that has submitted comments on the ISOR has projected similar impacts to their transit operations. As of the drafting of these comments, these agencies include: AC Transit; City of Pasadena; County Connection; Golden Gate Bridge, Highway and Transportation District, Monterey-Salinas Transit; Napa Valley Transportation Authority; Riverside Transit Agency; San Diego Metropolitan Transit System; and, San Mateo County Transit District.

Because the proposed regulation would significantly increase the costs to transit agencies, the proposed amendments would impair transit ridership and, thus, emissions resulting from reduced service. For example, research compiled by the Victoria Transport Policy Institute, which cites studies by the American Public Transportation Association, among others, demonstrates that demand for transit service is not perfectly inelastic and can be negatively influenced by degradation of service quality and/or fare prices (Litman 2017). That is, if transit service is reduced, increasing the temporal cost of taking public transit, mode shift to other forms of motorized travel, like personal automobiles or transportation network companies, may be induced. These findings were validated by TransitCenter, which found that “the idea that people without cars are ‘captive’ and will use transit regardless of quality is severely overstated’ (TransitCenter, 2016). By the same token, if transit fares increase, some transit riders will substitute rides on buses and rail with other modes of motorized travel, increasing VMT and emissions. APTA found that average bus fare elasticities in large and small cities are -0.36 and -0.43, respectively (Pham and Linsalata, 1991). These elasticities mean that, in large and small cities, even a modest increase in fare prices of 10% will lead to a 3.6% and 4.3% decline in transit ridership. These findings were further validated by a major study in the United Kingdom that found that bus fare elasticities are -0.4 in the short-run and -0.7 in the long-run

(Daragay and Hanly, 1999). The larger impact of bus fare increases in the long-run reflects the fact that individuals, given time, will be able to secure additional travel options. The EA likewise fails to analyze the impact that higher costs may have on procurement habits, if agencies are unable to secure funding to purchase currently more expensive ZEBs. In this scenario, a resource-strapped transit agency would have the potential to delay the procurement of new buses until they have the resources necessary to purchase the mandated ZEB. This has the potential to cause agencies to operate an older, more polluting compressed natural gas or diesel bus, resulting in higher emissions.

The EA should be augmented to discuss these potential impacts, as it is not the burden of the public to investigate these issues. (See, e.g., *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 352, 311 [“CEQA places the burden of environmental investigation on government rather than the public,” and a lead agency “should not be allowed to hide behind its own failure to gather data.”].)

2. The EA’s Findings of Less-than-Significant Impacts for Certain Resource Categories Are Inadequate

An environmental document must identify and focus on the “significant environmental effects” of the proposed project. (See Pub. Res. Code § 21100(b)(1.); CEQA Guidelines, §§ 15126(a), 15126.2(a), 15143. A significant effect on the environment is defined as a substantial or potentially substantial adverse change in the environment. (See Pub. Res. Code §§ 21068, 21100(d); CEQA Guidelines, § 15382.) The “environment” refers to the physical conditions “existing within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, [and] objects of historic or aesthetic significance,” among others. (Pub. Res. Code § 21060.5) The environment affected by a project includes both natural and man-made conditions. (See CEQA Guidelines § 15360.)

To assess the impact of a proposed project on the environment, the lead agency must examine the changes to existing environmental conditions that would occur in the affected area if the proposed project were implemented. (See CEQA Guidelines, § 15126.2(a); *San Joaquin Raptor Rescue Ctr. v. County of Merced* (2007) 149 Cal.App.4th 645.) An agency may find that an environmental impact is less than significant if it concludes the impact is not a substantial or potentially substantial adverse change to the environment. (See CEQA Guidelines, § 15382; *National Parks & Conserv. Ass’n v. County of Riverside* (1999) 71 Cal.App.4th 1341, 1359.) The agency must briefly indicate the reasons that possible significant effects were determined not to be significant. (See 14 CEQA Guidelines, § 15128.) Thus, when there is evidence that an impact might be significant, the agency may not adopt a contrary finding without providing an adequate explanation along with supporting evidence. (See *East Sacramento Partnership for a Livable City v. City of Sacramento* (2016) 5 Cal.App.5th 281, 302.) Additionally, while economic and social effects ordinarily need to be discussed in an environmental document, physical changes to the environment caused by a project’s economic or social effects are secondary impacts that must be included in the impact analysis if they are significant. (See CEQA Guidelines, § 15131(a).)

The EA finds the potential impacts for several resource categories would be less-than-significant based on inadequate analysis. These resource categories include, but are not

limited to, public services, short-term, construction-related impacts energy demand, and short-term, construction-related impacts to mineral resources. The analyses for these resource categories all disclose substantial or potentially substantial adverse changes to the environment without providing an adequate explanation, including supporting evidence, of the reasons why these effects were deemed not to be significant.

Regarding impacts on public services, the impact analysis purports to address “Short-Term Construction-Related **and** Long-Term Operational-Related Effects on Public Services.” (Draft Environmental Analysis, p. 77 [emphasis added].) However, aside from one sentence addressing “increased demand on public services related to fire protection,” there is no discussion of the proposed regulation’s long-term operational impacts on transit services. (See *id.* at pp. 77-78.) This, notwithstanding that the analysis appears to rely on CEQA Guidelines, Appendix G for its significance standards, and Appendix G expressly identifies adverse impacts to “response times or other performance objectives.” As explained above, however, there is a significant danger that the proposed regulation will negatively impact transit agencies’ ability to maintain existing levels of service, which would cause physical changes in the environment as people are forced to forego public transportation in favor of individualized options.

Regarding the short-term, construction-related impacts to mineral resources, the EA acknowledges the possibility that building construction could have a negative impact on access to mineral resources. (Draft Environmental Analysis, p. 66.) However, the EA then discounts that impact because “buildings would be limited in size such that they would not wholly preclude resources recovery from adjacent areas.” (*Id.*) To illustrate, the EA then provides an example of a facility that “could occupy about 8 acres” and asserts that such a facility would be “unlikely to completely preclude mineral resources recovery from a specific deposit.” (*Id.*) “As a result,” the EA concludes, “this impact would be **less than significant.**”

This analysis is inadequate. While the EA asserts the impact is less than significant, it fails to cite evidence to support its assumptions regarding the size of the facilities to be constructed (*i.e.*, that they will general occupy about 8 acres) or the size of affected deposit areas (*i.e.*, that they will generally be larger than 8 acres). (See *East Sacramento Partnership for a Livable City, supra*, 5 Cal.App.5th at 302.) Indeed, the environmental document asserts elsewhere that there is “inherent uncertainty” as to “the exact location of new facilities,” the “geologic conditions at project sites,” the “characteristics of any new facilities,” and the “kinds of modifications to existing facilities” that would occur under the proposed regulation. (See Draft Environmental Analysis, p. 49.)

As a result, the EA should be revised and recirculated to address these issues.

3. The EA Should Further Analyze the Recognized Significant and Unavoidable Impacts Associated with New Facilities

According to the EA, the proposed regulation would result in the construction of a large number of new and modified facilities built to increase the supply of ZEBs. The EA finds the impacts of these new facilities to be significant for a wide range of resources. Although the EA identifies “suggested” mitigation to offset these impacts, and notes that these measures could

reduce the impacts to a less-than-significant level, the EA does not identify any mitigation measures that would provide enforceable mechanisms to lessen the significant impacts of the proposed regulation. Instead, for each of the resources, the EA finds the impact would continue to be significant and unavoidable because ARB does not possess land use authority over new facilities. There are several concerns with this approach, as explained below:

An environmental document cannot simply label an impact “significant and unavoidable” without first providing adequate discussion and analysis, as this would “allow[] the agency to travel the legally impermissible easy road to CEQA compliance.” (*Berkeley Keep Jets Over the Bay Comm. v. Bd. of Port Comm’rs* (2001) 91 Cal.App.4th 1344, 1370.) Accordingly, the eventual adoption of a statement of overriding considerations does not excuse the lead agency from properly conducting environmental review in the first instance. (*Id.*) Rather, the lead agency must adequately quantify the impact, and consider feasible mitigation based on that analysis, prior to concluding that an impact is “significant and unavoidable.” (See, e.g., *Sundstrom*, supra, 202 Cal.App.3d at 311 [“CEQA places the burden of environmental investigation on government rather than the public,” and a lead agency “should not be allowed to hide behind its own failure to gather data.”].) As such, “sole reliance” on another agency’s regulatory authority “is inadequate to address environmental concerns under CEQA.” (*Californians for Alternatives to Toxics v. Department of Food and Agriculture* (2005) 136 Cal.App.4th 1, 16.)

The draft EA claims that “there is inherent uncertainty in the degree of mitigation that would ultimately need to be implemented” because “the programmatic analysis in the Draft EA does not allow for identification of the precise details of project-specific mitigation.” (*Id.* at 20.) Consequently, the Draft EA’s significance conclusions “tend[] to overstate the risk that feasible mitigation may not be sufficient to mitigate an impact to less than significant.” (*Id.*) Nevertheless, the Draft EA claims, “[i]t is also possible that the amount of mitigation necessary to reduce environmental impacts to below a significant level may be far less than disclosed in th[e] Draft EA” because “[i]t is expected that many potentially significant impacts of facility and infrastructure projects would be avoidable or mitigable to a less-than-significant level as an outcome of their project-specific environmental review process.” (*Id.*) There are several problems with this approach.

First, “identification of the precise details of project-specific mitigation” is not necessary to determine “the degree of mitigation that would ultimately need to be implemented” in all cases, as the Draft EA claims. (*Id.* at 20.) For instance, the Draft EA claims “[o]peration of new or expanded [lithium-ion battery] recycling facilities could require substantial energy use to process, breakdown, and refurbish batteries.” (*Id.* at 48.) But then finds that “there is inherent uncertainty as to the location and size of new or expanded recycling facilities; therefore, the total energy demand for any future facility is speculative.” (*Id.*) However, the Draft EA contains sufficient information to permit a reasonable estimate of total energy demand. The Draft EA states that, at present, “there are ten specialized companies processing and recycling lithium-ion batteries in the U.S. and Canada.” (*Id.* at 59.) The Draft EA could have used the energy demands of these facilities to generate a reasonable estimate of how much energy a facility of that type requires. Further, the Draft EA could have used the production capabilities of these facilities to generate a reasonable estimate of how many additional recycling facilities will be needed to accommodate increased demand from the proposed regulation. Yet the

Draft EA did no such thing. Instead, the Draft EA simply concluded “the total energy demand for any future facility is speculative.” (*Id.* at 48.)

Similar examples can be found throughout the Draft EA. The Draft EA states that “[t]he demand for additional mining to meet increased use of [lithium-ion] batteries could result in the development of new mines and mining of lithium.” (*Id.* at 67.) It then asserts that “it would be too speculative to determine if, when, and where a new mine may be located.” (*Id.*) However, specific knowledge of these facts is not necessary to perform a meaningful analysis of potential environmental impacts. The Draft EA contains information regarding the number of lithium mines currently in operation in the U.S., the amount of lithium resources in the U.S., the amount of lithium resources globally, and the amount of demand that will be stimulated by the proposed regulation. (*Id.* at 67-68.) Using this information, the Draft EA could have analyzed how many new mining facilities will likely be needed to accommodate increased demand from the proposed regulation, and the types of impacts that can be expected to result from the construction and operation of such facilities. Information regarding the specific location and design of the facilities is not necessary to draw general conclusions regarding the likely scope of impacts.

Second, by expressly claiming to overstate the risk that feasible mitigation may be insufficient while, at the same time, asserting that impacts could be reduced to less-than-significant levels by local lead agencies, the Draft EA obscures the significance of its identified impacts. However, an environmental document that does not include sufficient information to “enable[] the reader to evaluate the significance of [] impacts” is inadequate under CEQA. (*Lotus, supra*, 223 Cal.App.4th 645, 654.) ARB’s approach “precludes both identification of potential environmental consequences arising from the project and also thoughtful analysis of the sufficiency of measures to mitigate those consequences.” (*Id.* at 658.) The fact that the proposed project’s significant environmental impacts may be mitigated by local lead agencies does not relieve ARB from its duty to consider and to quantify the project’s environmental impacts.

Third, by relying solely on local lead agencies to enforce mitigation measures, the Draft EA sidesteps analysis of important environmental impacts. Here, as in *Californians for Alternatives to Toxics*, ARB has “repeatedly deferred” to local and federal “regulatory scheme[s] instead of analyzing environmental consequences.” (*Californians for Alternatives to Toxics, supra*, 136 Cal.App.4th at 16.) As such, ARB has failed to discharge its duty under CEQA to “meaningfully consider the issues raised by the proposed project.” (*Id.*) In *Californians for Alternatives to Toxics*, the lead agency relied on another agency’s regulatory scheme to support a finding of no significant impact. (*Id.* at 17.) Here, in contrast, ARB finds a significant impact, but then immediately asserts that the impact may not actually be significant in light of state and federal regulatory schemes. In both cases, however, the result is the same: the lead agency sidesteps CEQA’s informational purpose and fails to “meaningfully consider the issues raised by the proposed project.” (*Id.* at 16.)

4. The EA Does Not Propose Adequate Mitigation for New/Modified Facilities

As explained above, CEQA requires mitigation measures to be enforceable through means that are legally binding. (Pub. Resources Code, § 21081.6(b); CEQA Guidelines, § 15126.4.) This requirement is designed to ensure that mitigation measures will actually be implemented. (*Fed. of Hillside & Cyn. Ass'ns, supra*, 83 Cal.App.4th at 1261; *Anderson First, supra*, 130 Cal.App.4th at 1186.)

None of the mitigation measures identified in the draft EA are enforceable through legally binding means. Instead, the EA merely identifies “[r]ecognized practices routinely required to avoid and/or minimize impacts to” the relevant resource category. (See generally Draft Environmental Analysis, Attachment B.) There is, however, nothing in the proposed regulation that ensures those “recognized practices” will actually be implemented. Although ARB defends this approach on the ground that it “does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions,” that is insufficient to discharge ARB’s obligations under CEQA. The environmental document contains no discussion or analysis regarding ARB’s consideration of feasible mitigation measures, other than to state in conclusory fashion that none exist. ARB must use whatever authority it has at its disposal to ensure that the mitigation measures identified in the EA are enforceable through legally-binding means. Thus, at the very least, ARB must analyze a range of potential mitigation measures and determine, based on the results of that analysis, whether such measures are feasible or not.

5. Alternatives Analysis

The requirement that environmental documents identify and discuss alternatives to the project stems from the fundamental statutory policy that public agencies should require the implementation of feasible alternatives or mitigation measures to reduce the project’s significant impacts. (See, e.g., Pub. Resources Code, § 21002.) The lead agency must “focus on alternatives to the project . . . which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives. . . .” (CEQA Guidelines, § 15126.6(b).) Additionally, the range of alternatives “shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects.” (*Id.* at subd. (c).) The CEQA Guidelines specifically recognize that comments raised by members of the public on an environmental document are particularly helpful if they suggest “additional specific alternatives . . . that would provide better ways to avoid or mitigate the significant environmental effects.” (CEQA Guidelines, § 15204.)

The Draft EA should include the Association’s Alternative in its alternatives analysis. As noted above, the Association’s Alternative makes only modest changes to the waiver of certain ZEB purchasing requirements, and would therefore be equally effective in implementing the statutory purpose of the proposed regulation. The Association’s Alternative also makes several common sense changes to the proposed regulation to lessen its burden on transit agencies and to ensure that the regulation is achieving its intended goals, including strengthening ZEB performance review standards, modifying the definitions of “large” and “small” transit agencies to reflect real-world conditions, relaxing current limitations on funding for the purchase of ZEBs, and others. Consequently, the Association’s Alternative “could feasibly accomplish [all]

of the basic objectives of the project and could avoid or substantially lessen one or more of [its] significant effects.” (CEQA Guidelines, § 15126.6(c).)

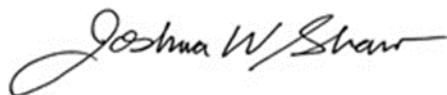
IV. Conclusion

These suggestions and recommendations, comprising the Association’s Alternative, represent the best thinking of our Association leadership for improving the proposed regulation, and were developed following many hours of thoughtful and collaborative engagement with ARB staff. We believe strongly that incorporating them in your final rule is essential to protecting transit service quality, maintaining affordable fares, and ensuring that the riders who depend on the service our members provide are not disadvantaged by the proposed regulation. These changes will maximize the chances of successfully reaching our shared goal of widespread transit electrification by 2040 and will minimize adverse impacts to Californians most in need of healthy and growing public transit options.

We thank you again for this opportunity to comment, and for your dedication to working with us to get the transition to a fully electrified transit bus fleet right.

Please contact Legislative and Regulatory Advocate Michael Pimentel at 916-446-4656 or at michael@caltransit.org, if you have any questions or comments about the Association’s feedback on this proposed regulation.

Sincerely,



Joshua W. Shaw
Executive Director

cc: Kim Craig, Deputy Cabinet Secretary, Office of Governor Edmund G. Brown, Jr.
Alice Reynolds, Senior Advisor, Office of Governor Edmund G. Brown, Jr.
Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
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September 24, 2018

California Air Resources Board, Members
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**45-Day
Docket No. 416
Table IV.1
45-Day Comment Period**

RE: Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation

Chair Nichols and Members of the California Air Resources Board:

On behalf of Trinity County Transportation Commission, I submit the following comments in response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit (ICT) Regulation. Trinity County provides service intercity and local bus service within Trinity County and to our neighboring counties of Shasta and Humboldt with a transit fleet comprised of eight cutaway buses. This is a very remote area with steep terrain and one-way trips are up to 60. Each of our routes have a mountain pass to go over and we often have several delays due to road construction delays, wildland fires, and slides. Trinity County supports the electrification program, however, we do not have the means to switch our cutaway fleet to electric.

As currently drafted, the proposed regulation improves on the Draft Regulatory Concept for the Proposed Innovative Clean Transit Regulation, released December 2017. Improvements to the proposed regulation reflect ongoing discussions between California Air Resources Board staff and the leadership of the California Transit Association. **While the progress made on the proposed regulation is substantial, we remain concerned that the imposition of the zero-emission bus (ZEB) purchase requirement is not tied to benchmarks for ZEB cost and performance, infrastructure buildout costs, and funding availability. Moreover, we see significant risks in assuming, as ARB staff has, that data gathered from limited, short-term ZEB deployments will accurately reflect the realities of ZEB deployments at-scale. We assert that, despite the claims of some interest groups, ZEB cost and performance, infrastructure buildout, and the cost of electricity as fuel, are still issues.**

B-2

As you move to finalize the proposed regulation, Trinity County Transportation Commission believes you should be guided by one question: *“What will happen to transit service, if the assertions made by ARB staff and interest groups are wrong, and the cost and difficulty of the transition to fully electrified bus fleets more closely align with the warnings of California’s public transit agencies?”* To help navigate this question, we urge the Air Resources Board to review current range and cost-specific data obtained and provided by both large and smaller operator’s experience as well as unbiased consultants when estimating the actual impact of Innovative Clean Transit on public transit service delivery and review the following considerations:

B-2

- **Benchmarking and Regulatory Assessment:** This provision would require the California Air Resources Board to conduct a regulatory assessment – *before* a ZEB purchase requirement goes into effect – that evaluates real-world ZEB cost and performance with benchmarks for ZEB cost and performance established at the time of rule adoption. This regulatory assessment should allow the Board to issue an across-the-board suspension of the ZEB purchase requirement, much like the

original Transit Fleet Rule did, if real-world ZEB cost and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses. This provision would have no impact on the ZEB purchase requirement, if benchmarks for ZEB cost and performance are being met, as anticipated by ARB staff and interest groups.

E-8

- **Incentives:** The staff report supporting the proposed regulation emphasizes the importance of incentive funding to minimizing adverse impacts to transit service (see Initial Statement of Reasons, pages ES-8, III-8, VIII-26). Given the stated importance of this funding and our shared goal of protecting vital transit service, this provision would require ARB to revise its current policy disallowing the use of incentive funding to meet regulatory compliance to explicitly allow transit agencies to use incentive funding whenever they are prepared to purchase a ZEB.

E-10, E-13

In addition, the HVIP is an equitable and efficient process for offsetting the cost of a zero emission bus. However, CARB must express its support for creating an infrastructure funding program. This program should also be available to small operators to finance the rollout plans. Without a secure source for infrastructure investments in fueling/charging facilities, maintenance facilities, and storage capacity, the ability to meet the goals of this rule is doubtful.

E-9

We urge the Air Resources Board to review and compare purchase orders and actual costs associated with the purchase of CNG/Clean Diesel vehicles and Battery-electric vehicles. Battery-electric buses are more than double the cost of CNG/Clean Diesel Buses *after* HVIP vouchers. The HVIP program and PG&E transit budgeting are non-dedicated, temporary funding sources available to implement a costly and sometimes unreliable form of technology. Dedicated and reliable funding and incentive programs will allow for continuity of services when implementing the technology.

H-2-4, H-5-5

- **Delayed Compliance:** Trinity County Transportation Commission strongly supports the delayed compliance for small operators with adopting the rollout plans and purchase mandates. As a small operator, additional time will be needed to secure funding for developing and adopting the rollout plans. Implementation of Innovative Clean Transit may require our agency to purchase and build new storage facilities to meet infrastructure requirements of electric charging stations. The additional time needed to develop the rollout plans support the need for the later purchase mandate timeline. The later purchase mandate should also benefit our agency to take advantage of lower vehicle prices as demand increases and supply chains mature. Trinity County Transportation Commission operation service area is within the County of Trinity, which is a vast county of 3,200 square miles with routes up to 60 mile and service provided in less ideal ZEB-driving conditions, such as inclement weather and steep grades. Delayed compliance allows our agency to begin purchasing Electric Buses as the technology advances and begins to meet range requirements for our standard routes. Earlier compliance may force our agency to otherwise cut services, some of which provide lifeline services to individuals with limited mobility options. Added to long distances is the likelihood of natural disasters causing long distance detours to get passengers to intermodal bus stations located in Redding in Shasta County and Arcata in Humboldt County where national transportation providers such as Greyhound and Amtrak are available. For example, during the 2018 Carr Fire, State Highway 299 was closed between Weaverville and Redding for several weeks. Our transportation service had to travel on State Route 3 and 36 in order to provide service between our rural area and Redding. This took an additional 2 hours and increased the mileage from 50 miles to 120 miles each way. Over the past few years we have had several natural disasters within the area that have increased our idle time and length of trips. Trinity County is either hot or cold so we are constantly running heaters or air conditioners.

H-1-5

- **Cutaway Definition** Trinity County Transportation Commission also supports the proposed definition of a cutaway bus. These vehicles are the workhorse of small transit systems due to their lower capital and operating costs. These vehicles are produced in a wide variety of sizes, and the proposed definition specifying vehicles weight of 14,000 pounds to 26,000 pounds is appropriate. In addition, the rule recognizes that a commercially available zero emission cutaway bus is currently not available.

H-1-2

- **Small Operator Definition:** As an agency that operates 4 vehicles during peak operations but has 8 vehicles total, we urge the Board to reconsider the definition of a “small operator” and use the definition employed by federal and state programs for compliance purposes. The proposed regulations define a small operator as any operator with less than 100 buses. Trinity County Transportation

Commission urges the Board to rely on the current federal definition that specifies a small operator as having less than 100 buses during peak operations. The number "100" is nominal and does accurately portray the size of an operator as a whole. Many vehicles in a fleet may not be regularly used: some may only be used during emergencies or during fleet maintenance, may be retired, or may be vehicles that have met their useful life. We urge CARB not to rely solely on NTD data for the total number of buses because these numbers can represent total buses on the lot including buses being sold or disposed that have met their useful life and back up vehicles used for emergencies.

E-9

- **Funding Considerations:** We urge the Air Resources Board to consider the vast difference between agencies considered small to both the Federal Transit Administration and California Department of Transportation but not the Air Resources Board. These agencies are traditionally rural or non-profit/ADA providers with inequitable funding in comparison to "other" large operators pooled into the same definition by the Air Resources Board. These agencies have much smaller staffing capacities and current transit employment trends, such as driver and maintenance staff shortages are exacerbated in smaller communities. These agencies often have much larger routes and service areas. Rural transit systems and ADA/non-profit providers face unique challenges that are not considered in the regulation as it exists today due to vague definitional standards. Trinity County annually receives approximately \$280,000 in Local Transportation Funds (LTF) that covers TDA administration, transit operations, and a purchased transportation program for our local residents who live in areas that are not serviced by public transportation. With SB 1, we now receive approximately \$110,000 in State Transit Assistance Funds (STA), which is used for operations and to replace rolling stock or improve bus stops. With Trinity County having a population of only 13,628 we are not a self-help county so we are very dependent on LTF, STA, and federal funding. Electric buses and charging stations would have to be purchased and installed through a grant program, which historically has been difficult for our low population county to be successful in.

We respectfully ask that you consider the comments we have provided in addition to those provided by the California Transit Association and the California Association for Coordinated Transportation (CALACT.) Our agency is committed to alleviating providing mobility options to our community and reducing the dependence on single use vehicles. We support efforts to reduce pollution in our community but ask that you consider our comments as to protect California's transit agencies, and the riders who rely on our service, from the risks associated with this transition. We greatly appreciate your continued commitment to working with the California Transit Association to get this proposed regulation right.

If you have any questions or comments, please feel free to contact me at (530) 623-1365 Extension 3427.

Sincerely,



Polly Chapman
Senior Transportation Planner

cc: Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
Shirin Barfjani, Mobile Source Control Division, California Air Resources Board



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45-Day
Docket No. 420
Table IV.1
45-Day Comment Period

September 24, 2018

California Air Resources Board Members
1001 I Street
Sacramento, CA 95814

RE: Response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit Regulation

Chair Nichols and Members of the California Air Resources Board:

On behalf of Metro, I submit the following comments in response to the Initial Statement of Reasons for the Proposed Innovative Clean Transit (ICT) Regulation. Metro provides service to Los Angeles County with a transit fleet comprised of 2,400 compressed natural gas 40', 45', and 60' heavy duty transit buses. Since 1993, when Metro's Board of Directors signed the landmark policy to only procure Alternative Fueled Vehicles, and in 2017 strengthened that commitment by directing staff to convert the entire fleet to zero emission operation by 2030, Metro has and continues to be at the forefront of reducing emissions and operating the cleanest transit fleet possible.

Metro appreciates the efforts that the ARB has put forth to work with Metro in attempting to better understand how our organization operates both on the road and with our procurement process. Even though the results of the ARB's efforts of working with Metro, along with other agencies in the California Transit Association (CTA), have been incorporated into the latest draft of the regulation we would also add our concurrence to the issues raised in CTA's comments on the regulation.

Metro's plan for zero emission conversion is more aggressive than the Proposed Innovative Clean Transit Regulation. We are deploying 105 electric buses over the next 2 years. This will be the largest deployment of electric buses at any North American Transit Agency. Additionally, in 2019, we are anticipating completing our Zero Emission Bus (ZEB) Master plan which will be our roadmap to deploy ZEBs effectively and efficiently with minimal impact to service. While we have adopted an aggressive program, our ability to accomplish that goal is challenged by issues originally detailed in our comment letter dated January 22, 2018. While many of those issues are addressed in ARB's new proposed rule we would urge you to consider the following overall concerns as you move forward with implementation of the ICT.

- C-9 1. **Charging infrastructure and power costs – Large scale ZEB charging systems have not been fully developed nor deployed in the US. We are working with our utility partners at the local level to address how to provide sufficient power at an affordable rate to make this conversion. While we have established strong working relationships with our utilities, we have not resolved the most challenging issues in this area. These issues include:**

- Reliable and Resilient electrical service to ensure all-electric transit bus service operations are not impacted. For example, customers in LADWP territory lost power and were urged to turn off high demand electrical appliances on July 6, 2018. (<http://www.latimes.com/local/lanow/la-me-ln-ladwp-heat-outage-20180707-story.html>) Metro cannot adjust our service levels as a result of extreme temperatures or impacts to the grid.
- Charging solutions for large scale, urban transit operations are not service-proven in North America. Our divisions do not have enough real estate to add plug-in chargers next to every transit bus. Furthermore, there could be delays to providing sufficient power to support our depots. Although we are encouraged by an overhead charging solution employed in the Netherlands, this has yet to be deployed in North America.

C-5

2. Vehicle capabilities – Performance of ZEB’s still does not match those of our existing buses. In order to implement ZEB vehicles into our operation we must identify specific routes suitable to their limited capabilities under all operating conditions to ensure reliable service. As noted during the Advanced Transit Vehicle Consortium (ATVC) Board meeting, March 2018, New Flyer presented how range is impacted by both battery age and ambient temperature conditions. Figure 1, below shows mileage for 40’ and 60’ buses under ideal test conditions; 225 and 200 miles, respectively. It also shows the range of the same buses, with aged batteries on a hot summer day in San Fernando (Figure 2), 135 and 96 miles, respectively; approximately a 50% decrease in range.

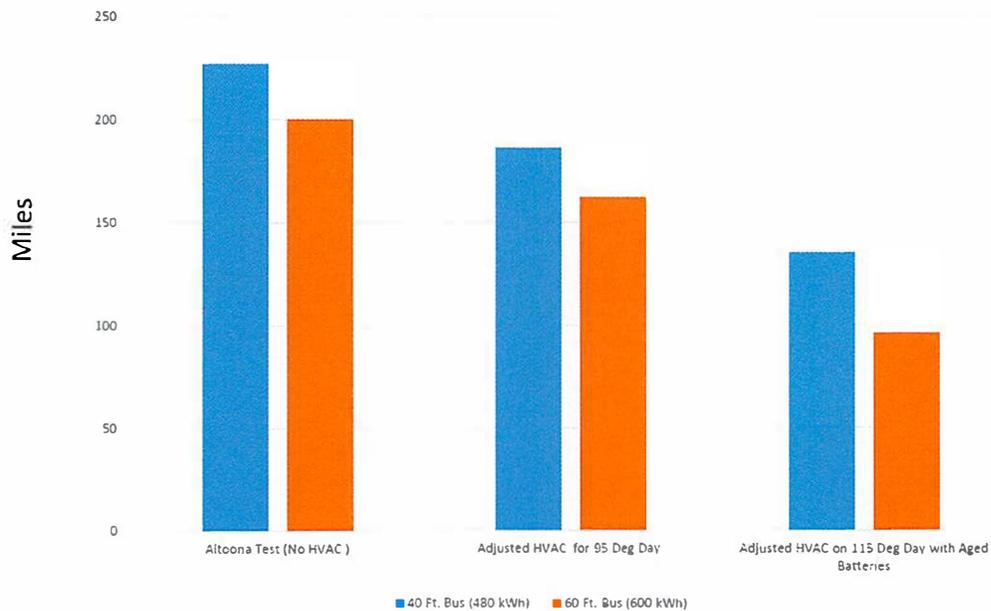


Figure 1. Range Effects based on Temperature and Aged Batteries.

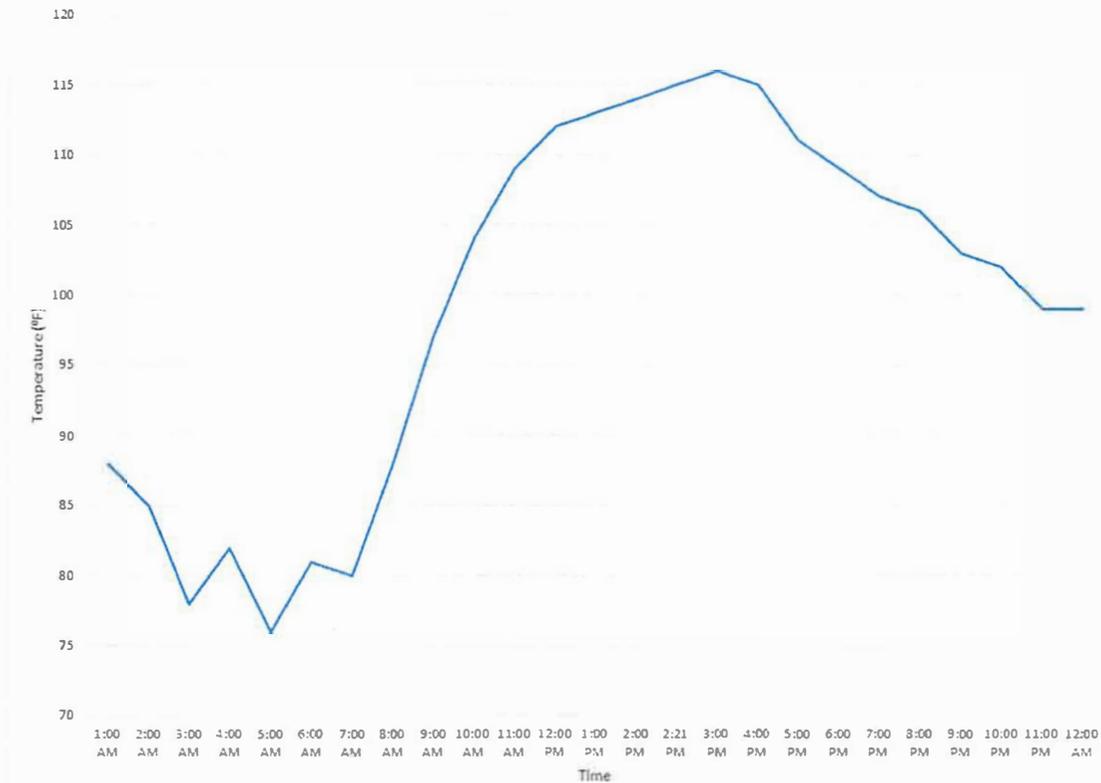


Figure 2. July 6, 2018 Temperature in San Fernando Valley

E-9

3. Need for continued financial assistance – The infrastructure and charging equipment required for full ZEB service, coupled with the higher initial vehicle purchase cost, point to the continued need for predictable and reliable additional funding as provided from current and as to be identified future funding sources. We would encourage ARB to continue to consider flexibility in its grant programs to allow for expanded funding for agencies working to convert their fleets to zero emission technologies.

B-1, B-3

Due to the concerns noted above, we believe it is important for the rule to incorporate Benchmarking and Regulatory Assessments. This provision would require the California Air Resources Board to conduct a regulatory assessment – *before* a ZEB purchase requirement goes into effect – that evaluates real-world ZEB cost and performance with benchmarks for ZEB cost and performance established at the time of rule adoption. This regulatory assessment should allow the Board to issue an across-the-board suspension of the ZEB purchase requirement; much like the original Transit Fleet Rule did, if real-world ZEB cost and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses. This provision would have no impact on the ZEB purchase requirement if benchmarks for ZEB cost and performance are being met, as anticipated by ARB staff and interest groups.

We greatly appreciate your continued commitment to working with the transit agencies in California as well as all the other stakeholders in this process. Metro remains committed to working with ARB during the implementation of the rule.

Sincerely,



Jesus Montes
Sr. Executive Officer, Vehicle Engineering
& Acquisition
213-418-3277
MontesJe@metro.net

- c: Richard Corey, Executive Officer, California Air Resources Board
Steve Cliff, Deputy Executive Officer, California Air Resources Board
Jack Kitowski, Chief, Mobile Source Control Division, California Air Resources Board
Tony Brasil, Heavy Duty Diesel Implementation Branch, California Air Resources Board
Shirin Barfjani, Mobile Source Control Division, California Air Resources Board
Phillip A. Washington, Chief Executive Officer
Stephanie Wiggins, Deputy Chief Executive Officer
James T. Gallagher, Chief Operations Officer
Pauletta Tonilas, Chief Communications Officer
Michael Turner, DEO, Government Relations



**45-Day
Docket No. 421
Table IV.1
45-Day Comment Period**

Kevin Maggay
Energy and Environmental Affairs
555 W. 5th Street
Los Angeles, CA 90013

tel: 213-244-8192

Email: kmaggay@semprautilities.com

September 24, 2018

Submitted electronically: ict2018

Re: Innovative Clean Transit Regulation

To Whom It May Concern:

SoCalGas appreciates the opportunity to provide comments on the proposed Innovative Clean Transit (ICT) Regulation. SoCalGas has been participating in ICT activities as natural gas transit buses are critical to achieving criteria pollutant and greenhouse gas emission reductions in a timely and cost-effective manner. We look forward to continuing to collaborate with the Air Resource Board (ARB) on the development and implementation of the regulation.

SoCalGas would like to submit previous letters (attached) provided throughout the workshop process into the official rulemaking docket as well as the following overall comments on the ICT.

The technology is not yet proven

C-1 Zero emission buses are not yet proven to work in transit applications. While there are several current demonstrations and the technology may appear promising, it is not proven to be commercially or economically feasible. In several cases, most notably with LA Metro, battery electric buses have had a “record of poor performance and mechanical problems” (LA Times article 5/20/18). Similar issues have been reported with a number of other zero emission bus operations including Albuquerque, New Mexico (Albuquerque Business Journal, 5/17/18). Transit agencies that are using zero emission transit operators like Foothill Transit and the Orange County Transportation Authority have also raised concerns about CARB’s proposed ICT rule (Foothill letter to ARB dated 7/5/18; OCTA letters dated 5/14/18 and 1/22/18).

H-8-1 Transit agencies and ridership could suffer unintended consequences

Transit agencies, which are not for profit organizations and rely heavily on subsidies to provide services, will be asked to take on the financial burdens of zero emission technologies. If they are unable to get zero emission buses and their associated infrastructure fully subsidized, they will have no choice but to pass the burden on to their ridership in the form of increased fares or reduced service. If the technology struggles continue, not only transit agencies will be impacted, but those that rely on the essential services transit agencies provide will be impacted as well. This is significant because most riders who rely on public transit are low-income individuals.

H-5-4 Rollout plan submittals should be delayed until technologies are proven

The regulation start date and schedule is far too aggressive for technologies that are not yet proven. The proposed regulation requires a transit agency to develop a rollout plan in 2020. Transit agencies would have approximately one year from the adoption of the regulation to decide how they will meet

the requirements of the regulation before technologies are proven to be economically and operationally feasible. This would force transit agencies to choose the technology they will be using for multiple decades based on limited prototype information. While battery electric buses are further developed than hydrogen, hydrogen has several advantages over battery electric buses. Hydrogen buses do not have range limitations of battery electric buses. The range of a battery electric bus is limited by the size of the battery, while hydrogen tanks take up minimal space. Also, battery electric buses require significant time to charge the batteries. Hydrogen, on the other hand, can be fueled in a matter of minutes. Transitioning to a mobile, conventionally fueled technology such as hydrogen would present less operational concerns. Hydrogen could ultimately be a better zero emission technology for transit and other mobile applications. Transit agencies should be able to wait for the technologies to further develop before committing significant resources to a specific technology.

Efforts to reduce emissions should be on high polluters

E-15 The ICT Initial Statement of Reasons (ISOR) states that 39 percent of the state's greenhouse gas (GHG) emissions come from the transportation sector. However, the ISOR neglects to mention that in 2015, transit emissions account for less than one half of one percent (0.462%) of the state's GHG emissions. Per the ICT cost analysis, battery electric buses cost \$770,000 per bus, which is \$330,000 more than a conventional bus. Turning over the statewide fleet of 14,000 buses would cost over \$10 billion, with the total incremental cost exceeding \$4 billion. This cost is solely for the buses and does not include infrastructure, which will significantly increase the overall cost. LA Metro quoted that the costs for their battery charging systems represented 20% of the total zero emission program cost. This is a high price tag for what will amount to minimal emission reductions. Emission reduction efforts and investments should focus on high polluting sectors. This is particularly important as the Los Angeles Times recently reported (July 23, 2018) that transportation greenhouse gas emissions have increased since 2013. This is an alarming trend as the state has invested approximately \$1.7 billion in Low Carbon Transportation Incentives, specifically to reduce transportation emissions. To effectively reduce transportation emissions, efforts and incentives should focus on high polluters.

Cost effective solutions should be prioritized

E-15 As stated above the cost to replace the statewide bus fleet would be over \$10 billion, plus infrastructure. Transit agencies have thoroughly studied the use of zero and near-zero emission natural gas buses running on renewable gas and have found using the latter provides significant emissions benefits at a much lower cost. LA Metro conducted a cost and emissions analysis on zero and near-zero emission buses and found that "...the use of Renewable Natural Gas (RNG) and transition to low NOx buses, will be more effective at reducing in-basin PM, total CO2, total GHGs, and total NOx from the LAMTA fleet over the next 40 years than transition to either electric or fuel cell buses...This approach will also be less expensive than transition to either electric or fuel cell buses."¹ With billions of dollars going into reducing transportation emissions, while emissions are increasing, now is the time to be prudent with programs and incentives to reduce emissions cost effectively.

The state cannot fund compliance

E-8 There are currently unprecedented amounts of incentive funding in the state. Greenhouse Gas Reduction Funds (GGRF) are expected to be able to fund a portion of the near-term turnover to zero

¹ "Zero Emissions Bus Options: Analysis of 2015-2055 Fleet Costs and Emissions," Ramboll Environ (Feb. 5, 2016) (prepared for LA Metro), *available at*: https://media.metro.net/board/Items/2016/09_september/20160914atvcitem4.pdf.

emission buses. Many of the transit agencies that have committed to zero emission buses have already used funding for early action. However, if ICT is approved and purchasing zero emission buses becomes a compliance obligation, transit agencies will no longer be eligible for incentives. Early actors that have already committed to zero emissions, such as large transit agencies, will be able to access the funds. Transit agencies that are not ready to move to zero emissions will not be able to use state incentives and their ability to access federal funds may also be at risk.

F-3 **Waiting for technologies to develop leaves emission reductions on the table**

To impact climate change, it is important to achieve as much emission reductions as quickly as possible. Waiting for developing technologies means emissions reductions are not being achieved during the waiting period. Low NOx engines with RNG, which are available, can achieve emission reductions today.

Comparing the emission reductions, the LA Metro study found that the deployment of buses using Low NOx engines with RNG over a 40-year period would reduce GHG emissions by 72 percent compared to its existing fleet. Meanwhile, deployment of electric buses would reduce GHG emissions by 52 to 53 percent over the same timeframe. This is because RNG significantly reduces GHG emissions, there are GHG emissions associated with the electric grid, and largely because there is a delay in the ability to begin deploying zero emission buses in mass. Reducing emissions early ultimately leads to more emission reductions.

F-2 **Reasonable alternatives were not considered**

ARB is required to examine alternatives to a proposed regulation. Government Code Section 11346.5(D)(13) reads as follows:

“A statement that the adopting agency must determine that no reasonable alternative considered by the agency or that has otherwise been identified and brought to the attention of the agency would be more effective in carrying out the purpose for which the action is proposed, would be as effective and less burdensome to affected private persons than the proposed action, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.” (emphasis added)

CARB staff’s conclusion that a performance-based regulation alternative is “not feasible” is incorrect, because it is inconsistent with the fact that the current “Fleet Rule for Transit Agencies” has an existing performance-based standard for fleet NOx emissions and has proven successful. Such a standard could easily be extended to other parameters, such as GHG emissions, petroleum reduction, and diesel PM emissions. Unfortunately, this obvious performance-based approach was not considered or evaluated by CARB staff. Thus, it appears that CARB staff has failed to meet its burden under Government Code §11346.5(a)(13) of showing that “no reasonable alternative was considered ... more effective ..., less burdensome ... more cost effective....”

In addition, and as stated above, LA Metro conducted a study to compare the zero and near-zero emission alternatives. The study, commissioned by a transit agency, found that near-zero technologies with RNG would be more effective at reducing emissions and less expensive, or in other words, less burdensome. However, the ISOR states ““...no alternative proposed was found to be less burdensome and equally effective in achieving the purposes of the regulation in a manner that ensures full compliance with the authorizing law.” Therefore, as LA Metro has concluded that there is an alternative that would more effective and less burdensome, ARB did not fully examine reasonable alternatives and

therefore did not fulfill this requirement. SoCalGas recommends that ARB first conduct a thorough analysis of feasible alternatives, including a true performance-based standard, before proceeding with this regulation. We urge ARB to assess a true performance standard or alternative compliance method in lieu of the proposed regulation. A true performance based standard can potentially achieve comparable emission reductions at a fraction of the cost and should be assessed per Government Code Section 11346.5(D)(13).

Thank you again for the opportunity to comment on the ICT. SoCalGas supports reducing emissions from the transit sector; however, there are significant flaws in how the proposed regulation intends to achieve that goal. An unfunded mandate for unproven technologies would have drastic impacts on transit agencies and users throughout the state and we urge ARB to reconsider the proposal.

If you have any questions, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be the initials 'KM' or similar, written in a cursive style.

Kevin Maggay



Kevin Maggay
Energy and Environmental Affairs
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Los Angeles, CA 90013

tel: 213-244-8192

Email: kmaggay@semprautilities.com

July 23, 2018

Jack Kitowski
Division Chief, Mobile Source Control Division
California Air Resources Board
1001 "I" Street, Sacramento, CA 95814

RE: SoCalGas Comments to the Draft Proposed Innovative Clean Transit Regulation and its Regulation Summary

Mr. Kitowski:

Thank you for the opportunity to comment on the Draft Proposed Innovative Clean Transit Regulation and its Regulation Summary released June 11, 2018.

As a member of the California Natural Gas Vehicle Coalition (CNGVC), we support the comments made by CNGVC and would like to add the following additional insights to their comments.

H-5-4,
H-2-3, B-3

Regulation start date and schedule

The regulation start date and schedule is far too aggressive for technologies that are not yet proven. While there have been purchases and deliveries of zero emission transit buses, there have yet to be any documented successes for large scale fleet conversions that would warrant such an aggressive schedule. Given your proposed timetable that requires a zero-emission bus (ZEB) rollout plan in 2020 for large transit agencies and 2023 for small transit agencies, large transit agencies would essentially have one year to decide on what type of ZEB pathway to take based on data that shows sub-par performance, uncertain capital costs (buses and infrastructure), and unstable electrical costs. It would not be prudent to force a technology on transit agencies without better results in the field and while competing ZEB technologies are being developed. In addition, the infrastructure issues attendant to Battery-Electric buses (e.g. charging equipment) have also proven to be less-than-ready. The ICT regulation should take this uncertainty into account and allow transit agencies more timeline flexibility.

F-3

Sunset on old diesel buses still in service

Under the proposed regulation, existing diesel users would only be required to upgrade their existing buses to 2010 diesel engines until they purchase ZEBs per their rollout schedule. This is not equitable and grossly counterproductive to the goals of the program. The most significant and fastest emission reductions available can be achieved by converting buses to "near zero" technologies as soon as possible. At a minimum, any buses being turned over should be treated similarly. Under the proposed regulation, natural gas users are required to upgrade to an engine certified to near-zero emissions. Additionally, all new fuel contracts must be for renewable fuel only. For a limited time, this should be applied to all buses being turned over by transit agencies, until they are able to move to ZEBs. This same standard should be applied to transit agencies that have diesel engine vehicles. They should upgrade to

buses with engine that are certified to the same CARB optional low NOX standard. The emissions savings would be significant and there would be no loss of reliability in terms of performance.

H-8-1 Create an off-ramp or deferral process for agencies that will have difficulty transitioning to zero-emission vehicles.

Not all transit agencies have the same operational needs. Transit agencies operate varying routes and duty cycles and there is not a one size fits all approach. Zero emission buses may work well for some transit agencies, but not for others depending on the routes, operations, and economic considerations. Even within transit agencies where electric buses have been deployed, performance varies based on the types of routes being driven as well as many other factors. Further, if range and other performance issues affect the ability to keep buses on the road reliably, a transit agency will either have to curtail service OR purchase more buses resulting in significant financial implications (increased costs). Off-ramps should be provided for transit agencies that will have difficulty using all ZEBs. Flexibility of integrating technologies should be afforded to transit agencies based on their specific needs.

B-3 Technology feasibility studies are needed

In order to help mitigate the issues mentioned above, CARB should collect more data from those agencies that ARE piloting ZEB technology. Technology feasibility studies should be conducted that realistically assess and document the performance capabilities of ZEBs. Then, based on the ongoing findings and undoubtedly improving performance, transit agencies could calibrate their purchase and integration of ZEB technology in a manner that is best for them. Feasibility studies that prove that the technology is viable should be required prior to enacting any requirements of the regulation.

In addition to the comments above, SoCalGas would also like to reiterate comments made in previous comments letters.

F-3, I-6 Emission reductions should be the focus of the regulation

The average carbon intensity of renewable natural gas (RNG) is 60-80 percent lower than diesel and can have a carbon intensity (CI) up to 400 percent lower than diesel - carbon negative values far below any other fuel/technology. This is possible because RNG mitigates emissions that would have escaped to atmosphere if not captured. ARB awarded AMP Americas, a renewable energy company, a CI score of -254.94 grams of carbon dioxide per megajoule (g CO₂e/MJ), which is the lowest ever issued by ARB. In comparison, the California electric grid has an energy efficiency ratio corrected CI value of approximately 20 g CO₂e/MJ.

I-6 Last year, Cummins Westport Inc. certified a 12-liter engine to the Optional Low Nitrogen Oxide (NOx) standard. A study commissioned by ARB and completed by Southwest Research Institute (SWRI) was recently released that showed that in some transit duty cycles, the natural gas 12 liter near zero engine showed 0.000 grams of NOx per brake horsepower/hour (g/bhp-hr).¹ The SWRI report concluded that 2010-compliant natural gas engines could be developed, using existing technology, that reduced NOx tailpipe emissions to undetectable levels. These technologies are available today and can cost-effectively achieve more emission reductions while also maintaining an expected level of service for the transit agencies purchasing the technology. Continued deployment of existing, proven, clean bus

¹ “Evaluating Technologies and Methods to Lower Nitrogen Oxide Emissions from Heavy-Duty Vehicles”, Southwest Research Institute, April 2017

engines would achieve immediate emission reductions that would benefit the public and help to achieve the state's climate goals.

I-6, F-3 Additionally, LA Metro's recent study found that "...the use of RNG and transition to low NOx buses, will be more effective at reducing in-basin PM, total CO2, total GHGs, and total NOx from the LAMTA fleet over the next 40 years than transition to either electric or fuel cell buses...This approach will also be less expensive than transition to either electric or fuel cell buses." Existing natural gas technologies combined with the use of renewable natural gas achieve more emission reductions at a faster rate and at a lower cost than ZEBs. A long-term technology mandate for ZEBs leaves significant emission reductions on the table, while the technology is still being developed. ARB should focus on emission reductions rather than a technology mandate of ZEBs. This can be done by providing alternative compliance based on emission reductions.

F-3, B-3 **Flexibility for transit agencies**
As the technology is still being developed, transit agencies need flexibility in achieving emission reductions, particularly in the early years. The proposed regulation should be performance based to provide maximum flexibility to transit agencies. If CARB proceeds with a technology mandate, it should not be so aggressive until the technology is developed, particularly when Low NOx engines operating on RNG is available.

F-3 **ICT can help to meet Short Lived Climate Pollutant (SLCP) goals**
SLCPs, such as methane and black carbon, have a much higher global warming potential than other greenhouse gases. Reductions of these emissions are critical for curbing climate change. ARB's SLCP Strategy states, "While reducing CO2 emissions limits climate change over the long term, reducing emissions of SLCPs will effectively slow the rate of climate change in the near-term. Therefore, the best path forward is to emphasize parallel strategies for reducing SLCP and CO2 emissions."

In its SLCP Strategy, ARB has a goal to reduce methane emissions by 40 percent. The SLCP Strategy proposes the capture of biogas to be used as a transportation fuel, injected into natural gas pipelines, and used to generate on-site renewable electricity and heat. Increasing the use of renewable gas as a transportation fuel would not only reduce methane emissions from organic waste streams, but also reduce black carbon by displacing diesel in older, conventionally fueled heavy-duty vehicles. Renewable natural gas in transit buses, which in many cases already have natural gas infrastructure in place, is an effective way to quickly achieve methane reduction to meet the state's goal.

Thank you again for the opportunity to comment on the proposal. We look forward to working with you and your staff on the upcoming formal regulatory proceeding.

Respectfully submitted,



Kevin Maggay
Energy and Environmental Affairs Program Manager



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January 12, 2018

Ms. Shirin Barfjani, Lead Staff
California Air Resources Board
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Sacramento, CA 95814
Transmitted to: shirin.barfjani@arb.ca.gov

Re: Innovative Clean Transit Regulation Discussion Document

Dear Ms. Barfjani:

SoCalGas appreciates the opportunity to provide comments on the Innovative Clean Transit (ICT) Regulation Discussion Document ("Discussion Document"). SoCalGas has been participating in ICT activities as natural gas transit buses are critical to achieving criteria pollutant and greenhouse gas emission reductions in a timely and cost-effective manner. We look forward to continuing to collaborate with the Air Resource Board (ARB) on the implementation of the measure. To that end, SoCalGas respectfully submits the following comments on ICT.

ARB should pursue performance standards rather than a technology mandate.

F-2

As stated in previous comment letters, SoCalGas strongly recommends a flexible approach based on performance standards to allow transit fleets to deploy advanced, clean technologies that address state environmental needs while providing transit agencies operational flexibility and choice. ARB previously stated that "ARB would develop and propose a variety of approaches and mechanisms to support the transition to a suite of innovative clean transit options."¹ The measure then goes on to explain that the proposal may require a "binding" commitment from transit providers for transitioning to zero-emission buses and *other technologies*" (emphasis added).² However, the proposed regulation, as currently drafted, is a strict technology mandate with no flexibility. Setting a "one size fits all" mandate for a technology that is not fully tested or suitable for all transit duty cycles, will force transit agencies to either purchase buses that don't serve their needs or wait for the technology to be developed. This would result in the state forgoing emission reductions that can be achieved today, with existing, advanced technologies.

¹ "Revised Proposed State SIP Strategy," ARB, pp. 69-70 (March 7, 2017).

² *Id.*

The Discussion Document states “California has made significant progress and is on track to meet the Assembly Bill 32 goals of reducing greenhouse gas (GHG) emissions to the 1990 level by 2020. However, we need to continue making progress beyond 2020 to meet the following goals:

- Federal health-based ambient air quality standards (key milestones in 2023 and 2031).
- 40 percent reduction in GHG emissions from 1990 levels by 2030.
- 80 percent reduction in GHG emissions from 1990 levels by 2050.
- 50 percent petroleum reduction target by 2030.
- Continued reductions in criteria pollutants and toxic air contaminants to protect public health.”

Each of these goals can easily be translated into fleet-wide average performance standards for transit agencies, similar to what has already been done under the CARB “Fleet Rule for Transit Agencies” that sets fleet-wide average NOx and diesel PM emission standards.³ Further, transit agencies operating “near zero” natural gas buses and using renewable natural gas (RNG) are already meeting a 90% reduction in NOx, a 100% reduction in petroleum use, a 100% reduction in diesel PM, and up to a 400% reduction in GHG depending on the RNG source. Thus, transit agencies operating on natural gas can, under a properly designed performance based regulation, meet and exceed the goals established in the Discussion Document and in a shorter timeframe than a technology mandate.

I-11

The Performance Based Option conclusion is flawed

The Discussion document addresses a performance based regulation option but claims a “fleet-wide performance standard” is problematic and dismisses that approach for several reasons, none of which are defensible:

1. **Inability to access funding programs.** ARB staff states “funding programs would not allow funding to be used to purchase ZEB or low NOx engines until the transit agency could show compliance with the next compliance requirement.” ARB has had a performance based “Fleet Rule for Transit Agencies” regulation in effect for many years that set fleet-wide average NOx and diesel PM emission performance standards and has enabled transit fleets to access funding where they showed the emission reductions went above and beyond the prevailing standard. ARB staff does not explain why this would not be the case under a technology mandate mechanism. Transit agencies will still be able to access funding programs under a performance based regulation, so this objection is misplaced.
2. **Inability to establish an “equitable” performance based mechanism.** ARB staff states “For example, a uniform NOx reduction goal may be easy to meet for a CNG bus fleet because low NOx engines are already available but may be impractical for a diesel bus fleet that could be forced to retire buses and aggressively ramp up ZEB purchases to achieve the same reductions.” It is not clear why ARB staff believes it is inequitable to force diesel bus fleets to aggressively ramp up ZEB purchases but

³ The ARB “Fleet Rule for Transit Agencies” is codified at 13 CCR § 2023.1

believe it is equitable to force all bus fleets to aggressively ramp up ZEB purchases. A properly designed performance based mechanism would provide diesel bus fleets various options to meet the performance based requirements which may or may not include ZEB purchases. Transit fleet operators should be given fuel and technology choices that allow them to cost-effectively meet performance based emission standards while retaining operational flexibility.

3. **Inability to separate a performance based regulation from other parallel ARB regulations.** ARB staff states “there are challenges with properly separating new actions from those that are already occurring due to ARB regulations for engine emissions standards, vehicle efficiency requirements, and policies to reduce transportation fuel carbon intensity”. ARB has had a performance based “Fleet Rule for Transit Agencies” regulation in effect for many years that set fleet-wide average NOX and diesel PM emission performance standards and has performed well independent of other ARB actions such as the development of the optional low NOX engine standards, the Low Carbon Fuel Standard program, and other regulations. To suggest that updating the “Fleet Rule for Transit Agencies” for NOX and diesel PM emission standards and including new GHG and petroleum reduction standards would be problematic is not explained by CARB staff and is incorrect.
4. **Inability to utilize the National Transit Database (NTD) due to fluctuations in fuel use, mileage, and passenger counts.** ARB staff lists this as a potential barrier but does not explain why the fluctuation in NTD information would prevent the use of a performance based regulation.

ARB staff identifies several other potential compliance methods, including a “zero-emission-miles-based fleet-wide approach”. This method is extremely impractical and would not result in gaining the most emission reductions in the most efficient manner. Transit agencies operate varying routes and duty cycles and there is not a one size fits all approach. Zero emission buses may work well for some transit agencies, but not for others depending on the routes, operations, and economic considerations. A transit agency that chooses to not fully utilize zero emission buses (ZEBs) because of these considerations would be forced to modify its operations to use ZEBs for a set number of miles despite these considerations. A zero-emission-miles-based approach is of particular concern because ZEBs are better suited for very short routes, which would not log as many miles as longer routes. Also, there is no mileage requirement for transit agencies who meet the purchase requirements.

The purpose of the performance based option is to “provide for the greatest opportunity to let market forces drive the form of the emission benefits.” This method clearly does not meet this goal as a strict technology mandate will not accomplish that goal. The performance based option should solely be based on emission reductions.

I-6, F-3

Emission reductions should be the focus of the regulation

Any fuel and technology capable of meeting the emission performance goals established by ARB should be an option for transit operators to retain and maximize operational flexibility, control and reduce costs, and ensure no service curtailments or interruptions. As an example, the average carbon intensity of RNG is 60-80 percent lower than diesel. Based on the source, RNG

can have a carbon intensity (CI) up to 400 percent lower than diesel, and can be carbon negative, as RNG mitigates emissions that would have otherwise occurred. ARB recently awarded the company, AMP Americas, a renewable energy company, a CI score of -254.94 grams of carbon dioxide per megajoule (g CO₂e/MJ) for RNG, which is the lowest CI score ever issued by ARB for any fuel or technology. In comparison, the California electric grid has an energy efficiency ratio corrected CI value of approximately 20 g CO₂e/MJ. Clearly, RNG can meet and exceed the greenhouse gas emission reductions resulting from the use of electricity and should be an option for transit fleet operators in any new regulation.

I-6

The Cummins Westport Inc. has had a 9-liter engine certified to the Optional Low Nitrogen Oxide (NO_x) standard at the lowest level of 0.02 grams/bhp-hr. Last week Cummins Westport Inc. also certified a 12-liter engine to the Optional Low NO_x standard. While it meets the standard, the engine was actually certified to 0.01 grams NO_x, which is 95% lower than existing diesel (certifications attached). A study commissioned by ARB and completed by Southwest Research Institute (SWRI) was recently released that showed that in some transit duty cycles, the natural gas 12 liter near zero engine showed 0.000 grams of NO_x per brake horsepower/hour (g/bhp-hr).⁴ The SWRI report concluded that 2010-compliant natural gas engines could be modified, using existing technology, that reduced NO_x tailpipe emissions to zero.

Additionally, LA Metro's recent study found that "...the use of RNG and transition to low NO_x buses, will be more effective at reducing in-basin PM, total CO₂, total GHGs, and total NO_x from the LAMTA fleet over the next 40 years than transition to either electric or fuel cell buses... This approach will also be less expensive than transition to either electric or fuel cell buses."⁵ In other words, existing natural gas technologies combined with the use of renewable natural gas achieve more emission reductions at a lower cost than ZEBs. A long-term technology mandate for ZEBs leaves significant emission reductions on the table, while the technology is still being developed. ARB should focus on emission reductions rather than picking aspiration goals to be achieved by a specific technology. ARB's plan should allow for alternative compliance, which would likely result in greater emission reductions at a faster rate.

E-1, E-5

Costs

The Discussion Document states that "on a one-for-one basis in California, the operational savings can make the total cost of ownership comparable to conventional buses even without incentives." In several workshops, multiple transit agencies have stated that this is not true. A study conducted by LA Metro, using actual data rather than the conservative assumptions used in ARB's Transit Fleet Cost Model, shows that electric buses have higher cost

⁴ "Evaluating Technologies and Methods to Lower Nitrogen Oxide Emissions from Heavy-Duty Vehicles", Southwest Research Institute, April 2017

⁵ "Zero Emissions Bus Options: Analysis of 2015-2055 Fleet Costs and Emissions," Ramboll Environ (Feb. 5, 2016) (prepared for LA Metro), *available at*: https://media.metro.net/board/Items/2016/09_september/20160914atvcitem4.pdf.

of total ownership than its current natural gas fleet⁸. LA Metro did not include a cost comparison to diesel buses because they do not have diesel buses in their fleet, however it is safe to assume that they cost difference between diesel and electric buses would be even greater.

In addition to the total operating costs, significant investment must be made to purchase, install and maintain charging infrastructure to power ZEBs. This cost would be passed to customers – transit users and/or electric customers – in the form of reduced service and/or increased costs. Not only would this increase consumer costs, this could also result in stranded assets and investments into existing fueling infrastructure.

F-3

ICT should support the State’s Short-Lived Climate Pollutant (SLCP) goals

SLCPs, such as methane and black carbon, have a much higher global warming potential than other greenhouse gases. Reductions of these emissions are critical for curbing climate change. ARB’s SLCP Strategy states, “While reducing CO₂ emissions limits climate change over the long term, reducing emissions of SLCPs will effectively slow the rate of climate change in the near-term. Therefore, the best path forward is to emphasize parallel strategies for reducing SLCP and CO₂ emissions.”

In its SLCP Strategy, ARB has a goal to reduce methane emissions by 40 percent. The SLCP Strategy proposes the capture of biogas to be used as a transportation fuel, injected into natural gas pipelines, and used to generate on-site renewable electricity and heat.⁹ Increasing the use of renewable gas as a transportation fuel would not only reduce methane emissions from organic waste streams, but also reduce black carbon by displacing diesel in older, conventionally fueled heavy-duty vehicles. Renewable natural gas in transit buses, which in many cases already have natural gas infrastructure in place, is an effective way to quickly achieve methane reduction to meet the state’s goal.

F-3

Low NOx Engines are in use and readily available today

The Discussion Document proposes that agencies include Low NOx engines be included in purchases if they are available. As stated above, Cummins Westport Inc. has two product offerings that meet the 0.02-gram NOx standard in both 9- and 12-liter sizes. The requirement should be modified as the availability of these engines are not in question.

H-7-1

Early Action Credits

The proposal includes “credit” provisions for agencies that purchase ZEBs prior to the requirement years. The credit should be based on emission reductions not on purchases. The credits should also be extended to transit agencies that purchase any type buses technology, such

⁸ “Zero Emissions Bus Options: Analysis of 2015-2055 Fleet Costs and Emissions,” Ramboll Environ (Feb. 5, 2016) (prepared for LA Metro), *available at*: https://media.metro.net/board/Items/2016/09_september/20160914atvcitem4.pdf.

⁹ California Air Resources Board, Proposed Short-Lived Climate Pollutant Strategy, p. 66 (November 2016), *available at*: <https://www.arb.ca.gov/cc/shortlived/meetings/11282016/revisedproposedslcp.pdf>.

as near zero, natural gas buses powered by renewable natural gas, as long as early emission reductions are achieved.

Thank you for the opportunity to comment and SoCalGas looks forward to working with you on advancing this regulation.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'KM' or similar initials, written in a cursive style.

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Todd R. Campbell
Vice President Public Policy & Regulatory Affairs



September 24, 2018

Mary Nichols, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814

**45-Day
Docket No. 422
Table IV.1
45-Day Comment Period**

Re: Proposed Innovative Clean Transit Rule

Dear Chair Nichols and Members of the Governing Board,

F-1

Clean Energy continues to hold real concerns over the proposed Innovative Clean Transit (ICT) rulemaking. While it is evident that the Air Resources Board (ARB) staff is determined to move aggressively toward a zero-emission ICT rulemaking, we and many other transit property stakeholders maintain our position that the staff analysis supporting the rule is overly optimistic and underestimates the potential public health, societal, and economic costs that could result from faulty analysis. Compounding the pain, the ICT does not have adequate benchmarking and regulatory assessment mechanisms to ensure transit properties up and down the state have the flexibility to successfully operate and fulfill their mission of transporting people for work, school, health or leisure. Further, we find the proposed ICT to be devoid of its obligation under Government Code Section 11346.5(D)(13) to fully consider alternatives to ZEBs.

Clean Energy strongly encourages ARB's Governing Board to direct staff to perform a alternatives analysis prior to rule adoption. Further, Clean Energy urges the Governing Board to require a regulatory assessment with benchmarks prior to any ZEB purchase requirement. The Governing Board should, at the very least, give itself the authority to scale back the rule if ARB staff's ZEB projections on cost, operational reliability and technology readiness fall short. Further, the Governing Board should ensure that transit properties are resilient during a state-of-emergency and allow transit properties to meet their ZEB purchase requirements with near zero emission strategies powered by renewable fuels if ZEB strategies fail to meet key benchmarks required for full ZEB adoption.

Reasonable Alternatives Not Considered

ARB is required to examine alternatives to a proposed regulation under Government Code Section 11346.5(D)(13) which reads as follows:

"A statement that the adopting agency must determine that no reasonable alternative considered by the agency or that has otherwise been identified and brought to the attention of the agency would be more effective in carrying out the purpose for which the action is proposed, would be as effective and less burdensome to affected private persons than the proposed action, or would

be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.” (emphasis added)

F-3

ARB staff chose not to fully examine both zero and near-zero emission alternatives by stating in the ISOR that “no alternative proposed was found to be less burdensome and equally effective in achieving the purposes of the regulation in a manner that ensures full compliance with the authorizing law.” However, LA County Metro performed a comparative study on zero and near-zero emission technologies which found that near-zero emission technologies fueled by renewable natural gas would be more effective at reducing emissions and at a much lower cost to implement. Since ARB opted not to fully evaluate all viable alternatives Clean Energy recommends that ARB conduct a thorough alternatives analysis for the proposed ICT prior to its adoption to comply with existing law.

As stated above, LA Metro conducted a study to compare the zero and near-zero emission alternatives. The study, commissioned by a transit agency, found that near-zero technologies with RNG would be more effective at reducing emissions and less expensive. However, the ISOR states “...no alternative proposed was found to be less burdensome and equally effective in achieving the purposes of the regulation in a manner that ensures full compliance with the authorizing law.” In other words, ARB did not fully examine reasonable alternatives and therefore did not fulfill its obligation under Government Code Section 11346.5(D)(13).

Clean Energy recommends that ARB conduct a thorough alternatives analysis for the proposed ICT prior to its adoption to comply with existing law.

Require Benchmarking and Regulatory Assessment to balance Optimistic Technology and Cost Projections

B-2, C-1

ARB’s assessments of zero emission bus (ZEB) technology and costs remain overly optimistic. While it is evident that ZEB technology has evolved since the first adoption of ARB’s first transit bus rule, today’s ZEB technology still cannot meet the operational and performance needs of most transit agencies, large or small, and there is still much room for improvement before we should consider them fully commercial. In fact, most of the focus on the number of agencies adopting ZEBs into their fleets or the number of ZEBs purchased is more reflective of transit agencies willing to test out the technology based on the very generous incentives that have been provided by the State of California. Such statistics that are being showcased throughout the staff report should not be construed as either complete acceptance of the technology, a testament that the technology works for each agency, or that such purchases are anything more than a demonstration project. ARB’s governing board should not overly misconstrue the true meaning of a transit’s willingness to test out ZEB strategies.

E-1

Further, ARB’s cost estimates are substantially below most transit industry expert’s estimates. Assumptions that ZEB can eventually replace conventional buses on a 1:1 basis and ZEB life cycle operational costs could be discounted by as much as 25 percent within the next decade are speculative. In fact, ARB’s cost model does not fully account for electrical charging systems. The California Transit Association estimates statewide costs for such infrastructure could be as much as \$10 billion more than ARB’s estimate. Further, ARB’s cost model does not contemplate

resiliency planning that will be necessary for state of emergency scenarios. Not only can forecasts mislead ARB's Governing Board about the true capital cost of the ICT, a decision to move the rule forward without accurate projections could result in the rule's failure to protect the health of the public, our state's transit agencies, and regional mobility throughout California. The negative outcome could be further compounded if there are no meaningful offramps for transit agencies to access.

B-2

The ICT's overly aggressive electrification goals combined with overly optimistic technology advancement and cost projections demand that the ARB Governing Board include a regulatory assessment that evaluates real-world ZEB costs and performance with benchmarks for ZEB cost and performance established at the time of rule adoption. Further, this regulatory assessment should occur before the ZEB purchase requirement goes into effect and should allow the Board to issue an across-the-board suspension of the ZEB purchase requirement, much like the original Transit Fleet Rule did, if real-world EB costs and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses. Further, this safeguard should be in addition to the case-by-case, agency-by-agency, ARB Executive Officer-approved off-ramps from the ZEB purchase requirement discussed under the ICT's "Deferral for ZEB Purchase Requirement."

No Resiliency Considerations during a State of Emergency

The proposed ICT rule does not consider how a "ZEB-only" transit fleet could impact California's ability to respond to a state of emergency caused by a natural disaster or a cyber-attack on the electrical grid. The news media has recently covered how our current building codes in California may be insufficient for major earthquakes due to a modeling issue.¹ This discovery created so much concern that Assembly Member Nazarian proposed legislation that would update California's building codes.² Even as Hurricane Florence hits the Carolinas, many residents and commercial businesses lost electrical power just like those hit by Hurricane Katrina along the Gulf Coast or in Puerto Rico with Hurricane Irma.³

In terms of cyberattacks, Russia and China are at the top of the Pentagon's list as cyber threats to the country. In fact, American intelligence agencies have identified cyberthreats as the No. 1 risk facing the United States — it has ranked ahead of terrorism for years now in the annual assessment provided to Congress, even before the Russian intrusion into the election.⁴ In March of this year, the US government released a security alert that claimed Russian hackers sought to

¹ See "A Seismic Change in Predicting How Earthquakes Will Shake Tall Buildings" <https://www.nytimes.com/2018/06/27/us/california-earthquakes-building-safety.html> or "At Risk in a Big Quake: 39 of San Francisco's Top High Rises" <https://www.nytimes.com/2018/06/14/us/california-earthquakes-high-rises.html>

² See "California Today: How Much Is a Safe Building Worth?" <https://www.nytimes.com/2018/07/06/us/california-today-earthquakes-vulnerable-buildings.html>

³ See "Factbox: More Than 870,000 Without Power as Florence Looms Inland" <https://www.nytimes.com/reuters/2018/09/15/us/15reuters-storm-florence-outages-factbox.html>

⁴ See "Pentagon Puts Cyberwarriors on the Offensive, Increasing the Risk of Conflict" <https://www.nytimes.com/2018/06/17/us/politics/cyber-command-trump.html>

penetrate multiple U.S. critical infrastructure sectors, including **energy**, nuclear, commercial facilities, water, aviation, and manufacturing.⁵

While we expect natural disasters to eventually occur and accept that there are no guarantees that all future cyber-attacks will be prevented, transit fleets often play a critical role in mobilizing the public so that they can evacuate areas that have been hit hard by hurricanes, wildfires, floods and earthquakes. In many cases, these natural disasters have wreaked havoc on electrical power systems that disable both electrical and diesel transit bus platforms. Meanwhile, natural gas buses have often been used to help move people during times of crisis as the pipeline system was not impacted and natural gas vehicle stations are not reliant upon the electrical grid.⁶

Proposed ICT should be more Inclusive of Near Zero Buses Powered by Renewable Gas

H-9-2

Although near zero natural gas buses and renewable natural gas are commercially available, cost-effective and deliver ZEB-like performance for both nitrogen oxide (NOx) a carbon emission, the proposed ICT regulation does little to leverage this more affordable alternative as a compliance option. Instead, the proposed ICT only requires the technology when ZEB technologies are not being purchased by a transit property that already runs a natural gas property. For those transit properties that operate on diesel, there is no requirement at all unless a low NOx diesel product becomes available on the market. Of course, based on the State Implementation Plan, we may not see diesel low NOx engines until 2023.

H-2-8

Given that some transit properties opted to change their entire operational system to accommodate natural gas less than two decades ago to further clean the air, we would encourage ARB providing these transit agencies with greater flexibility on the ZEB adoption timeline. Specifically, these properties should automatically be allowed to delay ZEB purchase requirements until 2025 regardless of the collective ZEB purchase of buses statewide.

H-1-2

ARB Staff's Change in Fleet Size Definition Remains Problematic

We have addressed the issue of fleet size and ARB's proposed changes in definition in earlier comments and we urge the Governing Board to ensure consistency with FTA's definitions. Specifically, under today's ARB transit rule, large fleets are defined as transit agencies with 200 or more buses, excluding cutaway vehicles toward fleet totals. The proposed definition of large transit fleet is 100 or more vehicles and counts both standard transit buses and cutaway vehicles toward fleet totals. Clearly, these definitions have been promulgated by ARB staff for simplicity and greater inclusion of transit properties required to follow a more aggressive ZEB adoption schedule. Unfortunately, this decision to change the definitions of large and small transit fleets will be misaligned with the definitions for small and large agencies used by the Federal Transit Administration (FTA) to determine the eligible uses of critical federal funding sources, like Chapter 53 of Title 49 U.S.C 5307. We strongly recommend that the Governing Board support the

⁵ See "In a First, U.S. Blames Russia for Cyber Attacks on Energy Grid"

<https://www.reuters.com/article/us-usa-russia-sanctions-energygrid/in-a-first-u-s-blames-russia-for-cyber-attacks-on-energy-grid-idUSKCN1GR2G3>

⁶ See the Office of Energy Efficiency and Renewable Energy's "5 Ways Alternative Fuels Aid Response to Hurricanes and Natural Disasters at <https://www.energy.gov/eere/articles/5-ways-alternative-fuels-aid-response-hurricanes-and-natural-disasters>).

California Transit Association's request that ARB staff adopt definitions established by the FTA which are as follows:

- A large agency shall be defined as a transit agency operating in a primary urbanized area with population of at least 200,000 with at least 100 vehicles in annual maximum service
- A small agency shall be defined as a transit agency, if any of the following conditions are met:
 - The agency operates in a primary urbanized area with a population less than 200,000; or,
 - The agency operates fewer than 100 vehicles in annual maximum service.

Concluding Thoughts

F-5

Clean Energy shares the goals of ARB to further reduce emissions throughout the state's transit properties. Where we diverge in approach is on technology. While ARB is pushing to move transit only to a full ZEB outcome, we believe a more hybrid approach is warranted. Because no one can credibly argue that ZEB technology can fully meet today's transit properties needs with existing battery or fuel cell technology or state that ZEB technologies will be ready in time to aggressively implement ZEB purchase requirements outlined in the ICT, we believe ARB should have performed a full comparative analysis as required by Government Code Section 11346.5(D)(13). Unfortunately, ARB staff opted not to perform this analysis by making a statement that has yet to be validated. Furthermore, the historical narrative that celebrates transit properties that chose to adopt ZEB strategies within the text of the proposed ICT ignores the significant tax payer dollars spent and herculean effort made by transit properties that switched away from diesel to 100 percent natural gas operations. These transit players didn't demonstrate a few buses and run the rest of their fleet on diesel. They made a complete transitional change to a new technology that was proven and cost-effective. Rather than allow such transit properties to harness their existing infrastructure and adopt near zero emission strategies powered by renewable natural gas that can deliver ZEB-like performance, these transit properties are now being forced to abandon their operations for a strategy that has yet to be fully commercialized and install costly infrastructure that will present significant challenges and costs that are largely unforeseen. Furthermore, there is little consideration of resiliency and little consideration of what to do if ARB staff's projections are overly optimistic and prevent transit properties to fulfill their core mission: to move people.

With recent articles alerting us to extended smog days in the South Coast not seen for 20 years,⁷ finding more cost-effective ways to combat mobile source air pollution over costly ZEB strategies may be warranted.

Sincerely,



Todd R. Campbell

⁷ See 87 days of smog: Southern California just saw its longest streak of bad air in decades at <http://www.latimes.com/local/lanow/la-me-smog-streak-20180921-story.html>

**45-Day
Docket No. 423
Table IV.1
45-Day Comment Period**

Hi,

Please find the attached blog "*California Gets one Step Closer to Zero-Emission Transit Buses*" in support of the Innovative Clean Transit standard. I got the error message below when trying to submit online, apologies!

Best,

Jimmy O'Dea

James R. O'Dea, Ph.D.
Senior Vehicles Analyst, Clean Vehicles Program
Union of Concerned Scientists
Oakland, CA

Originally posted at: <https://blog.ucsusa.org/jimmy-odea/california-gets-one-step-closer-to-zero-emission-transit-buses>



Photo: Jimmy O'Dea

California Gets one Step Closer to Zero-Emission Transit Buses

JIMMY O'DEA, SENIOR VEHICLES ANALYST | SEPTEMBER 6, 2018, 11:25 AM EDT

The California Air Resources Board (CARB) recently [released](#) a draft standard for transitioning the state's transit buses to zero-emission battery or fuel cell technologies by 2040. This is great news for bus riders, bus drivers, local air quality, and tackling global warming emissions from the transportation sector.

The proposal is the result of more than [three years](#) of stakeholder engagement and public comment. In the process, CARB has generated a wealth of knowledge, including a sophisticated total cost of ownership analysis, a charging cost [calculator](#), and a thorough understanding of the on-the-ground challenges to deploying a new technology on a large scale.

As a key step in the official regulatory process, the standard will be discussed and public comment heard at the September 27-28 CARB Board Meeting. A final vote will occur at a subsequent Board Meeting (date to be determined).

What’s being proposed?

For large transit agencies (100 or more buses), 25 percent of bus *purchases* must be battery or fuel cell electric vehicles beginning in 2023. This increases to 50 percent in 2026 and 100 percent in 2029.

For small agencies, the proposed purchase standard doesn’t begin until 2026 (at 25 percent) and increases to 100 percent in 2029. Thirty of the state’s 214 transit agencies fall into the definition of a “large” agency and represent 75 percent of buses in the state.

When CARB began hosting workshops in 2015, the purchase standard was scheduled to take effect in [2018](#). So, the current proposal represents a five-year delay from CARB’s original plan.

To encourage early adoption, the 2023 purchase standard will be waived if 1,000 zero-emission buses have been purchased across the state by the end of 2020. If an additional 150 zero-emission buses are purchased by the end of 2021, the purchase standard will remain waived until 2025.*

CARB’s draft clean transit purchase standard

Date	Large agencies (100 buses or more)	Small agencies (less than 100 buses)
January 1, 2020	Submit zero-emission bus rollout plan to meet 2040 goal	-
January 1, 2023	25 percent of purchases must be battery or fuel cell buses (waived through 2025 if 1,150 bus threshold met)	Submit zero-emission bus rollout plan to meet 2040 goal
January 1, 2026	50 percent of purchases must be battery or fuel cell buses Articulated, shuttle, coach, and double-decker buses become subject to the purchase standard if they have passed federal testing	25 percent of purchases must be battery or fuel cell buses (including articulated, shuttle, coach, and double decker buses)
January 1, 2029	100 percent of purchases must be battery or fuel cell buses	100 percent of purchases must be battery or fuel cell buses
December 31, 2040	Goal of entire fleet being zero-emission	Goal of entire fleet being zero-emission

With more than 130 zero-emission transit buses already [operating](#) in California, several hundred more on order, and significant amounts of [incentive funding](#) allocated for buses, transit agencies are *already* on track to exceed the early-adoption thresholds.

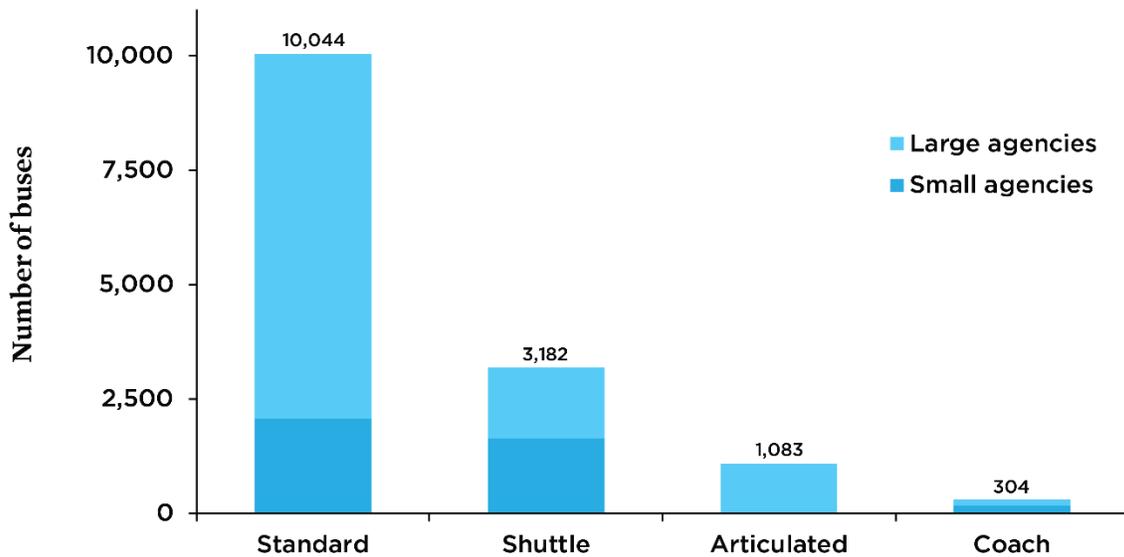
Finally, the standard also requires agencies to develop and submit plans to CARB for how they will reach a 100 percent zero-emission fleet by 2040. These plans will be critical to transit agencies' successful incorporation of zero-emission vehicles in their fleets.

Which buses are included in the standard?

“Buses” in the context of this proposal include standard 30 to 40-foot buses, shuttle buses (cutaway buses), articulated buses, coach buses, and double-decker buses operated by transit agencies. There are 14,600 transit buses falling under this definition in California. For reference, the city of Shenzhen in China (population of 12 million people compared to California’s 40 million people) *already* has [16,000 electric buses](#) on the road.

The chart below shows a breakdown of California’s transit bus population by type (not shown are double-decker buses, of which there were only six in the most recent survey).

Transit bus population by type in California

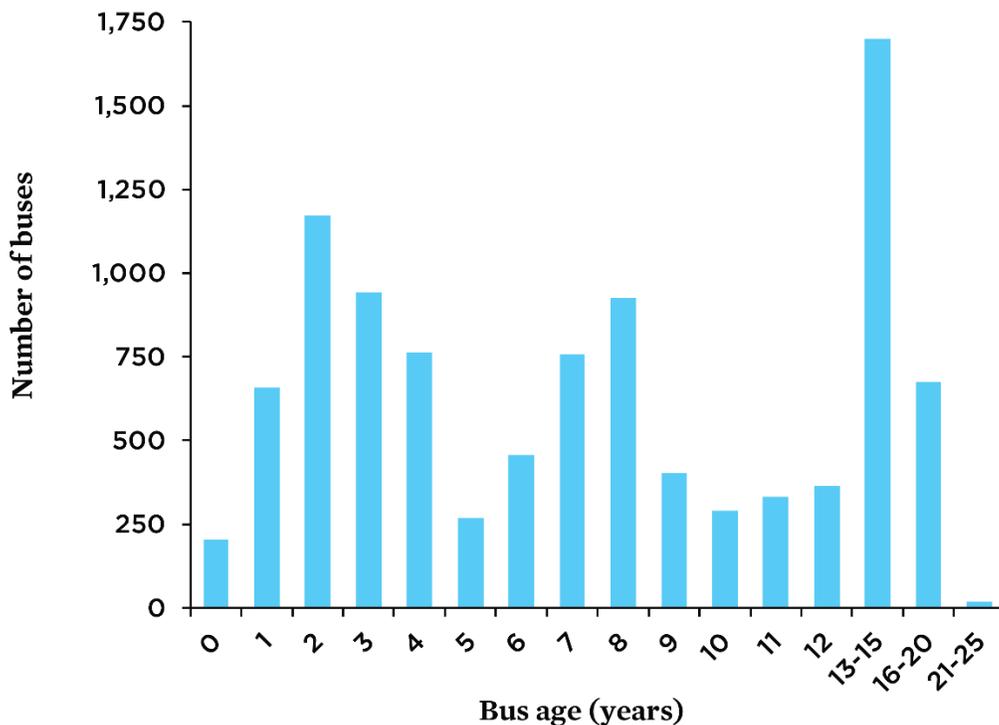


Source: National Transit Database 2016

The standard's percentages apply to purchases, not the total makeup of a fleet

Given transit buses are typically on the road for 14 years, this corresponds to a fleet turnover rate of roughly 7 percent each year. So, a 25 percent purchase standard in 2023 works out to roughly 2 percent of total buses on the road across all agencies.

Transit bus (standard) population by age in California



Source: National Transit Database 2016

Looking at bus [purchases](#) statewide over the last five years, the 25 percent purchase standard in 2023 corresponds to about 150 zero-emission buses. The 50 percent purchase standard in 2026 corresponds to about 550 zero-emission buses.**

Individual transit agencies don't necessarily turnover 7 percent of their fleet every year; instead making larger purchases every few years as shown in these [two charts](#). Transit agencies' different purchasing schedules points to the need for individual rollout plans in addition to purchase standards.

For a large agency like San Diego MTS, the 25 percent purchase standard corresponds to about 12 buses based on MTS' purchase history. For a small agency like Sonoma County Transit, a 25 percent purchase standard corresponds to about 2 buses.

The chart above shows bus population by age in California (zero years old corresponds to 2016). More than half the buses on the road are from 2009 or earlier, which has significant implications for air quality as these vehicles were not subject to the latest engine standards. A combustion bus from before 2010 can have [up to 30 times higher NO_x tailpipe emissions](#) compared to its newer combustion counterpart.

Three ways CARB can improve the proposed standard

H-5-2

1. The standard should clearly state that all buses must be zero-emission by 2040. Since CARB began workshops in May 2015, the goal of this standard has been achieving a full transition to zero-emission buses by 2040, yet the actual language of the standard doesn't explicitly say this. In fact, it could be several years past 2040 when the full transition is achieved based on how the standard is currently written.

The rule's proposed standard of 100 percent zero-emission buses purchases beginning in 2029 would guarantee a transition by the end of 2040 only for buses on the road for 12 years. But many buses in California are on the road for 14 years or longer and there is up to a two-year lag between when a bus is purchased and when it hits the road, so a 2029 purchase standard would likely not achieve the goal of all zero-emission buses by 2040. Anything past 2040 ignores the state of technology and how quickly other jurisdictions are making this transition, namely in China.

H-4-3

2. The standard should apply to shuttle, articulated, coach, and double-decker buses sooner. Under the proposed rule, these buses are not subject to the purchase standard for eight years despite comprising one-third of transit buses.

Waiting until 2026 would miss an opportunity to reduce emissions from these buses. Several models of these buses are on the road today and becoming increasingly available across manufacturers. We recommend these buses fall under the purchase standard two years after at least two models of a given type of bus have completed testing by the Federal Transit Administration.

If you haven't been following the electric bus industry, there are currently 14 companies that make over 30 different models of buses ranging from standard transit buses to shuttle buses, coach buses, double-decker buses, and long, articulated buses.***

Zero-emission battery and fuel cell electric bus manufacturers and models

Manufacturer	60 ft	45 ft	40 ft	35 ft	33 ft	30 ft	21-27 ft	Double-decker	Coach	Shuttle (cutaway)
Advanced Vehicle Manufacturing					X		X			
BYD	X	X	X	X		X		X	X	
Complete Coach Works			X	X		X				
eBus			X				X			
El Dorado National			X							
Gillig			X							
GreenPower Bus		X	X	X		X		X		
Lightning Systems										X
Lion							X			
Motiv										X
New Flyer	X		X	X						
Nova Bus			X							
Phoenix										X
Proterra			X	X				X		

H-5-5 **3. Small transit agencies should submit transition plans by 2021 to take advantage of current incentive funding.** Under the draft plan, transit agencies with less than 100 buses have until 2023 to submit plans for transitioning their fleets to zero-emission buses by 2040. If these transit agencies wait five years to come up with a plan, they could miss taking advantage of the significant amount of incentive funding currently available across the state for the bus itself as well as electric vehicle charging infrastructure. And due to the gaps between agencies' purchases, a delay in planning could result in a several year delay in deploying zero-emission buses.

Why a standard is needed

In the three years CARB's standard has been under development, there has been a significant increase in the number of transit agencies deploying zero-emission buses. Twelve agencies (see below) have made voluntarily commitments to [100 percent zero-emission fleets](#). These agencies represent both small and large fleets and operate 37 percent of the state's total buses.

Antelope Valley Transportation Agency is working to transition its 85 bus fleet by the end of *this year*. LA Metro, the second largest bus fleet in the country, has committed to transitioning its fleet by 2030, a full 10 years ahead of what the state standard will achieve.

Zero-emission bus commitments in California

Agency	Zero-emission transition goal	Fleet size
Antelope Valley Transportation Authority	2018	76
Anaheim Resort Transportation	2019/2020	74
San Joaquin RTD	2025	133
Porterville Transit	2025	20
Foothill Transit	2030	369
LA Metro	2030	2,510
LA Dept. of Transportation	2030	357
Santa Monica Big Blue Bus	2030	206
Santa Clara Valley Transportation Authority (VTA)	2033	511
San Mateo County Transit District (SamTrans)	2033	365
San Francisco MUNI	2035	618
Santa Cruz METRO	2040	115
Total	-	5,354

Source: National Transit Database 2016

With leadership shown by these agencies, it's important to acknowledge that a state-wide standard is critical to realizing the benefits of zero-emission buses across the state. AC Transit, in its [plan](#) to rollout 144 electric buses by 2032, directly references CARB's proposed standard as a motivating factor in creating the agency's plan.

If you look at the [actual language](#) of the proposed standard, you'll notice it is a revision to an existing standard, first adopted 18 years ago. California's early demonstration of zero-emission bus technology, such as fuel cell buses operated at [Sunline Transit](#) and [AC Transit](#), can be traced to the original standard.

The proposed standard is a reasonable next step. The standard is achievable and without it, zero-emission buses would see a slow deployment. The technology is here, the public health and climate benefits are significant. The thoughtful conversations and detailed analyses have been had. The standard should be approved and California should continue to show we are a state that embraces solutions to air pollution and global warming.

** CARB's draft standard also awards credits to agencies with zero-emission buses already on the road that can be used to offset future purchase requirements. Current credits correspond to roughly 150 buses.*

*** The purchase estimate in 2023 is based only on standard bus purchases made by large transit agencies. The purchase estimate in 2026 includes purchases made by small agencies and accounts for shuttle, articulated, coach, and double-decker buses.*

**** The list of bus manufacturers and models includes those available for purchase if not already on the road.*