

June 19, 2018

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

RE: Response to Innovative Clean Transit Draft Proposed Regulation Summary

Chair Nichols and Members of the California Air Resources Board:

On behalf of the California Transit Association, I write to you today to acknowledge, and thank you for, the considerable progress that has been made on the proposed Innovative Clean Transit regulation. We greatly appreciate that the "Innovative Clean Transit Draft Proposed Regulation Summary" (Summary), while still centered around a zero-emission bus (ZEB) purchase requirement and not the individualized ZEB deployment plans we believe are appropriate, improves on provisions of the proposed regulation that we have long-deemed onerous or problematic. We thank you and your staff for recognizing the importance of, at the very least, working to get these provisions right for California's transit agencies and the riders who rely on their service.

The comments that follow are not intended to convey support for the proposed regulation – we continue to urge you to adopt the Association's counterproposal in full – but rather, aim to limit adverse impacts to essential transit service that could result from the ZEB purchase requirement, should you proceed with the current framework. We hope you will seriously consider this feedback, as it offers important insights into transit operations and the state of our industry that are likely unknown by other stakeholders that participate in this proceeding. We look forward to reviewing the draft language of the proposed regulation when it is released later this summer, and hope to continue to work with you and your staff to construct a ZEB rule that is workable for all parties.

Benchmarking and Regulatory Assessment: When we first engaged your staff on the Memorandum of Understanding concept, we recommended that they include a robust regulatory assessment in the proposed regulation to manage risks associated with ZEB funding, ZEB cost and performance, infrastructure constraints and the cost of electricity as a fuel. We were pleased to see that the "Innovative Clean Transit Regulation Discussion Document" (Discussion Document), released December 15, 2017, and the "Update on Innovative Clean Transit Discussion Document" (Update), released March 27, 2018, both included language that highlighted the appropriateness of this type of provision; the latter even requested stakeholder feedback on how best to structure the assessment.

Despite our including a detailed and actionable framework for establishing an impartial regulatory assessment with our response to the Update (see Attachment A), the Summary removes all references to this provision. **We recommend that, given your aggressive electrification goals and the continued uncertainty around future funding availability, ZEB cost and performance, and**

infrastructure constraints, the regulation include a regulatory assessment 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 take place 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 ZEB cost and performance is not yet at parity with the cost and performance of conventionally-fueled transit buses. 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 below under *“Deferral for ZEB Purchase Requirement.”*

ZEB Purchase Requirement: The Summary 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 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 2025. Importantly, this delay will also allow small transit agencies to learn from the experiences of large agencies on effective ZEB deployment.

If combined with a realistic waiver for early compliance, strong benchmarking and regulatory assessment provisions that allow for an across-the-board suspension of the ZEB purchase mandate, and case-by-case, agency-by-agency off-ramps from the ZEB purchase mandate, the ZEB purchase requirement schedule offered in the Summary may be implementable. We are aware that some stakeholder groups support accelerating the ZEB purchase requirement schedule to claim ZEB deployments at more transit agencies sooner, even if those deployments are token. **We recommend that ARB resist calls to accelerate the ZEB purchase requirement schedule, particularly for smaller transit agencies.** Furthermore, we assert that transformation of our state’s public transit system 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.

Waiver for Early Compliance: The Summary introduces this new provision, which allows for a delay in the start date for the ZEB purchase requirement, if the number of ZEBs in operation and/or on order at the end of 2020 and 2021 reach 1,000 and 1,100, respectively. We appreciate the inclusion of this provision, as it is an original approach 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 with the following minor adjustments:**

- **Reduce the ZEB purchase threshold for 2020 from 1,000 to 800; and,**
- **Increase the ZEB purchase threshold for 2021 from 1,100 to 1,150.**

These adjustments reflect the Association’s best estimates for realistic ZEB purchase thresholds, based on known procurement cycles and funding availability. Without these adjustments, the ZEB threshold number for 2020 is too high and would translate into a de facto ZEB purchase requirement in 2023.

We note that our proposed ZEB purchase threshold for 2020 represents a 500% increase from the number of ZEBs operating in California today.

We would also encourage the ARB to consider expanding this concept into future years, potentially allowing waivers for the ZEB purchase requirement beyond 2025 if additional statewide purchase thresholds are met. This approach will provide flexibility for transit agencies to plan ZEB purchases based on their agency's needs, ensure continued availability of all incentive programs, and meet the goal of expanded ZEB deployment.

Large vs. Small Transit Agency: The Summary, consistent with the Discussion Document, defines large transit agencies as having 100 or more vehicles in their fleet and small agencies as having fewer than 100 vehicles in their fleet. The Summary 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 adopt the following definition of small and large transit agencies:**

- **A large agency shall be defined as a transit agency operating in an UZA 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 an UZA with population less than 200,000; or,**
 - **The agency operates fewer than 100 vehicles in annual maximum service.**

Role of Incentives: The Update called for stakeholder feedback on the role of incentives in the proposed regulation. Several stakeholders, including the Association, recommended that incentive funding, such as the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP), be available to transit agencies throughout the life of the regulation, even if it that means funding regulatory compliance. Yet, the Summary offers no material change to the role of incentives in the

regulation, and would limit access to incentive funding to 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 – 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.

Purchase Definition: The Summary requires ZEBs to be delivered within two years of the issuance 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.

For these reasons, we recommend that the two-year delivery requirement be removed from the purchase definition.

ZEB Roll-Out Plan: The Summary requires transit agencies to submit ZEB rollout plans 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 Summary 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 counterproposal's 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. 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.

ZEB Bonus Credit: The Summary 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.

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.

Excluded Buses: The Summary 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. 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.

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 instead require 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.

Deferral from ZEB Purchase Requirements: The Summary provides greater specificity to the case-by-case, agency-by-agency off-ramp provisions previewed in the Discussion Document, which allow a transit agency to request that ARB's Executive Officer grant them an extension or exemption from the ZEB purchase requirement, under specified conditions. These conditions generally relate to delays in bus delivery, delays in infrastructure buildout, and the unavailability of requisite ZEB technology.

Overall, these conditions are well-thought out and provide a degree of assurance that transit agencies will not be forced to comply with the ZEB purchase requirement, if external factors would make compliance impossible or harm transit service. While we support this provision and the specific conditions outlined in the Summary, we offer the following additional recommendations:

- Clarify that the deferral for delays related to infrastructure buildout also include delays related to depot space limitations;
- Clarify that the deferral for ZEBs that cannot meet a transit agency's daily mileage need should examine tested range at end of useful life for ZEBs, as defined by FTA;
- 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;
- Add a deferral for ZEBs with cost or performance that would result in a transit agency violating any state and/or federal regulation;
- Add a deferral for ZEBs if only one manufacturer for the ZEB type exists; and,

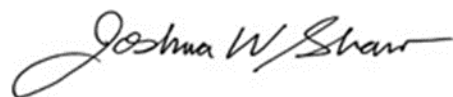
- **Add a deferral for transit agencies experiencing a fiscal emergency.**

Optional Joint Zero-Emission Bus Group: The Update provides greater specificity to the concept of an Optional Joint Zero-Emission Bus Group first introduced in the Discussion Document. 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.**

Thank you for this opportunity to comment.

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 regulatory concept.

Sincerely,



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Executive Director

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California Transit Association's Zero-Emission Bus Deployment Proposal

Highlights:

The California Air Resources Board (ARB) shall, in 2018, adopt a regulation containing the following elements –

- All transit agencies operating in California are required to transition their standard transit bus fleets to 100% zero-emission by 2040
- The ARB, working alongside transit agencies, directs initial funding to deploy zero-emission buses (ZEBs) (equal in # to the ZEBs that would have been purchased under the draft ICT mandate, from 2020-2023) in disadvantaged communities, state or federal non-attainment areas of the state, and/or, transit agencies with experience in the deployment of ZEBs and the potential to demonstrate the scalability of the technology
 - This ensures communities most impacted by poor air quality, and agencies with the dirtiest fleets, are first in line for ZEB deployments
- By 2020, each transit agency is required to develop and submit an individualized ZEB deployment plan to ARB that details its strategy for reaching 2030 and 2040 ZEB deployment targets (with the 2040 target required to be 100% zero-emission)
 - This approach provides transit agencies with the opportunity to plan for their transition to a ZEB fleet, similar to LA Metro in their [Strategic Plan for Metro's Transition to Zero-Emission Buses, adopted October 2017](#) and King County METRO (Seattle) in their [Feasibility of Achieving a Carbon-Neutral or Zero-Emission Fleet, finalized March 2017](#)
- ARB monitors each transit agency's progress toward fulfilling its ZEB deployment plan, and may impose an agency-level purchase mandate, under specified conditions beginning 2025, ensuring the 2040 ZEB deployment target is met

To reach these goals, each transit agency shall:

1. Beginning 2018, apply for funding to support the guaranteed deployment of approximately 350 ZEBs throughout the state from 2020 to 2023, consistent with the estimated deployment of ZEBs under the draft ICT's proposed purchase mandate in this timeframe
 - Access to funding shall be made available first and foremost, and with equal consideration, to: transit agencies serving disadvantaged communities and/ or state- or federally-designated non-attainment areas of the state; and/or, transit agencies with experience in the deployment of ZEBs and the potential to demonstrate the scalability of the technology
 - This preference for disadvantaged communities and/or state- or federally-designated non-attainment areas of the state, and transit agencies with experience in the deployment of ZEBs shall end in 2023
 - Wherein "funding" means: for the *incremental additional cost* of ZEB technology compared to available baseline non-ZEB technology
 - Wherein "funding" means: VW settlement funding or other new sources, and does not mean the redirection of, or the application of new requirements to, the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP), Transit and Intercity Rail Capital Program (TIRCP) or Low Carbon Transit Operations Program (LCTOP)
2. By 2020, develop and submit an initial ZEB deployment plan to ARB that details its individualized strategy for reaching its 2030 ZEB deployment target, and, a fully zero-emission fleet by 2040

California Transit Association's Zero-Emission Bus Deployment Proposal

- This plan shall be updated in 2022 and 2024, and as necessary, to incorporate lessons learned from the targeted early deployments supported by this proposal
- 3. Beginning 2021, submit data annually to ARB on ZEB deployments and purchases, as well as ZEB cost and performance
 - By 2019, transit agencies shall work with ARB to define the data and metrics necessary for reporting costs and performance, as well as the procedures for submitting the data to ARB, so ARB is able to measure agency performance against the benchmarks called for in number 5, below

To ensure progress toward these goals, ARB shall:

- 4. In 2018, estimate the through-2023 incremental additional cost to transit agencies of the regulation, and develop and secure a 5-year funding plan (covering 2018-2023) necessary to deploy approximately 350 ZEBs plus charging infrastructure from 2020 to 2023
 - Wherein “funding” means: for the *incremental additional cost* of ZEB technology compared to available baseline non-ZEB technology
 - Wherein “funding” means: VW settlement funding or other new sources, but does not mean the redirection of, or the application of new requirements to, HVIP, TIRCP or LCTOP
- 5. In 2018, establish, in coordination with transit agencies and manufacturers, benchmarks for future ZEB cost (including purchase costs for battery electric and hydrogen fuel cell, and, electricity rates and hydrogen fuel), performance and weight, compared to future non-ZEB vehicle cost, performance and weight (i.e. so any remaining incremental additional cost increase of ZEBs above the baseline cost for non-ZEBs can be identified)
- 6. In 2018, adopt a commitment to require interoperability between the ZEBs and charging infrastructure offered by different manufacturers
 - The specific standards and protocols for interoperability shall be developed by ARB, transit agencies and manufacturers, in coordination with academic experts
 - Interoperability shall include depot charging infrastructure, including overhead charging, and in-ground inductive charging
- 7. Beginning 2021, monitor the compliance of each transit agency with its ZEB deployment plan
- 8. In 2023 and every two years thereafter, initiate an independent and/ or peer-reviewed analysis of key measures, including, but not limited to:
 - The status of statewide ZEB deployment relative to statewide goals
 - Bus technology, including upfront capital costs (i.e. ZEB, charging and refueling infrastructure and necessary utility upgrades), total cost of ownership (i.e. upfront capital costs, operational costs and maintenance costs), battery density (BEB)/range, battery degradation, operational performance, weight, relevant advances and market availability
 - These measures will be compared against benchmarks established in the initial rulemaking process (see number 5, above)
 - Barriers to electrification, including funding, infrastructure and utility rates
 - These measures will be compared against benchmarks established in the initial rulemaking process (see number 5, above)

California Transit Association's Zero-Emission Bus Deployment Proposal

9. In 2023 and every two years thereafter, report to the Board on the findings of the report, as part of a public hearing
 - The Board may alter the regulation based on report findings
10. Subject to the independent/peer-reviewed findings, in 2025 and every two years thereafter, if ARB finds that expected costs, performance and weight benchmarks are being met, adequate funding is available statewide (and to the transit agency, specifically), but, an agency has nonetheless not yet made appropriate progress to reach its 2030 ZEB deployment target and/ or a fully zero-emission fleet by 2040, as outlined in accordance with its ZEB deployment plan, ARB shall institute a purchase mandate for that agency to ensure these targets are met

Other provisions:

Funding

- All current funding programs shall continue, pending appropriation, to provide financial support to transit agencies for ZEB purchases
- Utilities shall be wholly responsible for upgrading and providing sufficient electricity to transit agencies to begin deployments in 2020 and to achieve 100% deployment in 2040; where practical, transit agencies may explore private sector solutions to address infrastructure needs
 - Electric companies shall not charge transit agencies for such upgraded services

Vehicle Specifications

- The regulation shall apply only to standard transit buses above 26,000 lbs. gross vehicle weight (GVW), and shall defer its applicability to cutaways and over-the-road coaches
 - Applicability to cutaways and over-the-road coaches shall be revisited in 2030
- The regulation shall not require turnover of electric trolley buses to battery-electric or hydrogen fuel cell
- A ZEB shall be considered commercially available only if it meets the curb weight schedule established by current law
- All transit agencies operating in state- or federally-designated non-attainment areas shall purchase low NOx engines, if available, at the time of otherwise-allowable conventional standard bus purchase
- For otherwise-allowable conventional bus purchases, all transit agencies must purchase renewable fuels when diesel or natural gas contracts are renewed, pending availability

Compliance

- Maintains the ability for transit agencies to submit a joint-compliance plan (i.e. as in the draft ICT)
- Maintains credit for innovative mobility options, which must be approved the ARB Executive Officer (i.e. as in the draft ICT)
- Maintains the ability for the ARB Executive Officer to provide flexibility to a transit agency encountering an agency-specific challenge (i.e. as in in the draft ICT)