



September 27, 2017

Ms. Tracy Zinn
T&B Planning
17542 East 17th Street
Tustin, CA 92780

SUBJECT: ASSESSMENT OF 2010 TRUCK ENGINE STANDARDS

Dear Ms. Tracy Zinn:

The following assessment has been prepared to evaluate the viability of requiring 2010 or better truck engine standards for warehouse logistics projects in southern California.

OVERVIEW OF THE TRUCK AND BUS REGULATION

The California Air Resources Board (CARB) became part of the California EPA in 1991. This clean air agency is responsible for ensuring implementation of the California Code of Regulations (CCR), Title 13, section 2025, and for regulating emissions from heavy-duty diesel-fueled vehicles. The California CCR Title 13, section 2025 mandates achievement of the maximum degree of emissions reductions possible from in-use diesel trucks and buses that operate in California.

On December 12, 2008, CARB approved the Truck and Bus regulation to reduce emissions of diesel particulate matter (PM), oxides of nitrogen (NO_x), and other criteria pollutants from diesel-fueled vehicles operating within the state of California. In December 2014, the CARB released the Final Regulation Order to the regulation set forth in 13 C.C.R. section 2025.

Under the Truck and Bus Regulation, all diesel truck fleets operating in California are required to adhere to an aggressive schedule for upgrading and replacing heavy-duty truck engines. Pursuant to such regulation, older, heavier trucks, i.e., those with pre-2010-year engines and a gross vehicle weight rating (GVWR) greater than 26,000 pounds are already required to have installed a PM filter and must be replaced with a 2010 engine between 2015 and 2020, depending on the model year. By 2015, all heavier pre-1994 trucks must be upgraded to 2010 engines and newer trucks are thereafter required to be replaced over the next eight years. Older, more polluting trucks are required to be replaced first, while trucks that already have relatively clean 2007-2009 engines are not required to be replaced until 2023. Lighter trucks (those with a GVWR of 14,001 to 26,000 pounds) must adhere to a similar schedule, and will all be replaced by 2020 (1).

Further, nearly all trucks that are not required under the Truck and Bus Regulation to be replaced by 2015 were required to be upgraded with a PM filter prior to that date. Therefore, most heavy-duty trucks entering a given project site will meet or exceed U.S. EPA 2007 and 2010 emission standards within a

relatively short period of time after the project becomes operational in 2017, and all such trucks entering the property will meet or exceed such standards by 2023.

Fleets based outside of California are eligible to operate a single vehicle that does not meet the emissions reduction requirements once per calendar year. This exemption is only permissible through the approval of a "Three Day Pass". This pass can be obtained by submitting a request online or via paper form by mail. The request must be filed with a CARB Executive Officer at least three days prior to the planned vehicular use in California. The fleet must obtain a written approval from the Executive Officer. The written approval must be carried within the vehicle for the duration of the trip. If the Executive Officer fails to respond to a request by the date the vehicle plans to operate in the state, the vehicle may still operate in California for those requested three days. However, if the vehicle's operator fails to present documentation to ARB enforcement personnel, upon request, the fleet may be cited and subject to penalties (2). Penalties and sanctions may include a fine of up to \$300 to \$10,000 per vehicle per day, collection procedures with additional late fees and fines, and liens on real estate or personal property. The Department of Motor Vehicles (DMV) Vehicle License Title Shop (VLT) will prevent registration, renewal, or transfer of any vehicles. Furthermore, the California Highway Patrol may remove the vehicle in violation from service at the request of the ARB (3)

ADDITIONAL DIESEL REGULATIONS

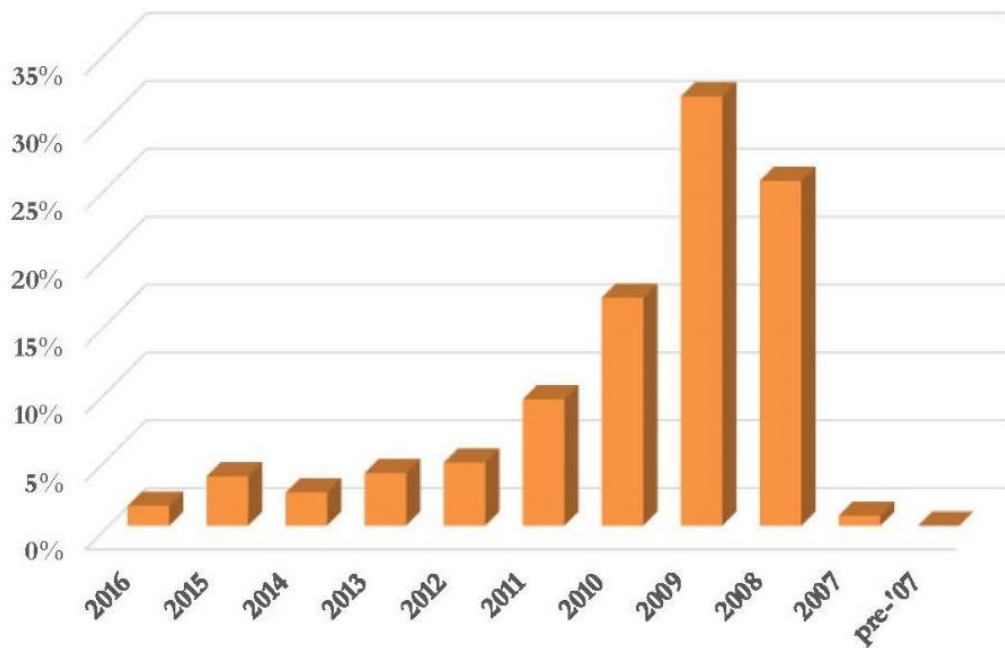
The CARB and the Ports of Los Angeles and Long Beach (POLALB) have adopted regulations for diesel trucks that are aimed at reducing diesel particulate matter (DPM). The CARB Drayage Truck Regulation seeks to reduce emissions and public exposure to diesel particulate matter (diesel PM), oxides of nitrogen (NOx), and other air contaminants associated with movement of goods to and from California through the state's ports and rail facilities (4). The Ports of Los Angeles and Long Beach "Clean Truck Program" (CTP) require accelerated implementation of "clean trucks" into the statewide truck fleet (5). In other words, older more polluting trucks will be replaced with newer, cleaner trucks as a function of these regulatory requirements.

CLEAN TRUCK PROGRAM

In order to significantly reduce the health risks caused by port-related operational emissions, the Ports of Los Angeles and Long Beach made took the initiative to improve air quality in SCAB. With the help of the CARB, South Coast Air Quality Management District (SAQMD), and the U.S. Environmental Protection Agency (EPA), the ports adopted the San Pedro Bay Ports Clean Air Action Plan (CAAP) (6). The central element to this plan is the CTP which seeks to replace and/or retrofit old diesel trucks with 2007 or newer generation vehicles. This aggressive program started in October 2008 where all pre-1989 trucks were banned from entering either port. Then in January 2010, 1989 to 1994 trucks were banned as well as 1994 to 2003 trucks that had not been retrofitted. By January 2012, all trucks that did not meet the 2007 Federal Clean Truck Emissions Standards were banned from the Ports of Los Angeles and Long Beach. As shown the POLALB used a gradual phase-in schedule for requiring only 2007 or better trucks and has not altered these requirements since 2012.

The *Port of Los Angeles Inventory of Air Emissions 2016* tracked approximately 4.5 million truck calls made to the Port of Los Angeles and Port of Long Beach. Through radio frequency identification (RFID) data, model year of trucks were determined for each truck operating at both ports. Out of the 4.5 million trucks, roughly 58% were trucks with pre-2010 model engines (7) as shown on Table 1. Although there is still a significant amount of pre-2010 vehicles still in operation, within the first year, the Port of Los Angeles saw the reduction of approximately 70 percent of truck emissions. When the program was fully implemented in 2012, port truck emissions were reduced by more than 80 percent. The Port of Long Beach saw similar results after banning the last remaining older, more polluting trucks from Port terminals in 2012. Today, virtually all of the 17,000 active drayage trucks servicing the Port terminals are 2007 or newer models. Currently, 45% were built after 2010, with a positive trend heading towards 50% by the end of this year. Notwithstanding, if a lead agency required only 2010 or better trucks to access an individual project, the lead agency would effectively be limiting almost half of the trucks that are able to access the POLALB from accessing an individual project site within their jurisdiction.

Table 1: Model Year Distribution of the Heavy-Duty Truck Fleet



STATEWIDE AND REGIONAL TRUCK POPULATION ESTIMATES

On December 31, 2014, CARB released the latest version of the Emissions Factor (EMFAC) model which was approved by the U.S. EPA by December 14, 2015. The model is used to calculate emission rates from all motor vehicles operating within California. EMFAC has been used to determine the vehicle fleet population of trucks by model year operating within the state of California and in the South Coast Air Basin (SCAB).

The amount of medium-heavy duty trucks (MHDT) and heavy-heavy duty trucks (HHDT) operating in California and within the SCAB with pre-2010 model year engines or 2010 engines or equivalent emissions are shown in Tables 2 and 3. Data provided through EMFAC, indicated that during 2017 roughly half of all MHDT and HHDT operating in California are vehicles that do not meet the 2010 engine standards. In 2018, almost half of the fleets in commission around the state would still not meet the 2010 engine standards. If a lead agency required an individual project from requiring 2010 or better trucks, approximately 50% of the truck population in California on the road today would be prohibited from accessing a project site that requires 2010 or better truck engine standards.

Table 2: Population of Pre-2010 MHDT & HHDT vs. 2010 or newer MHDT & HHDT Operating in California

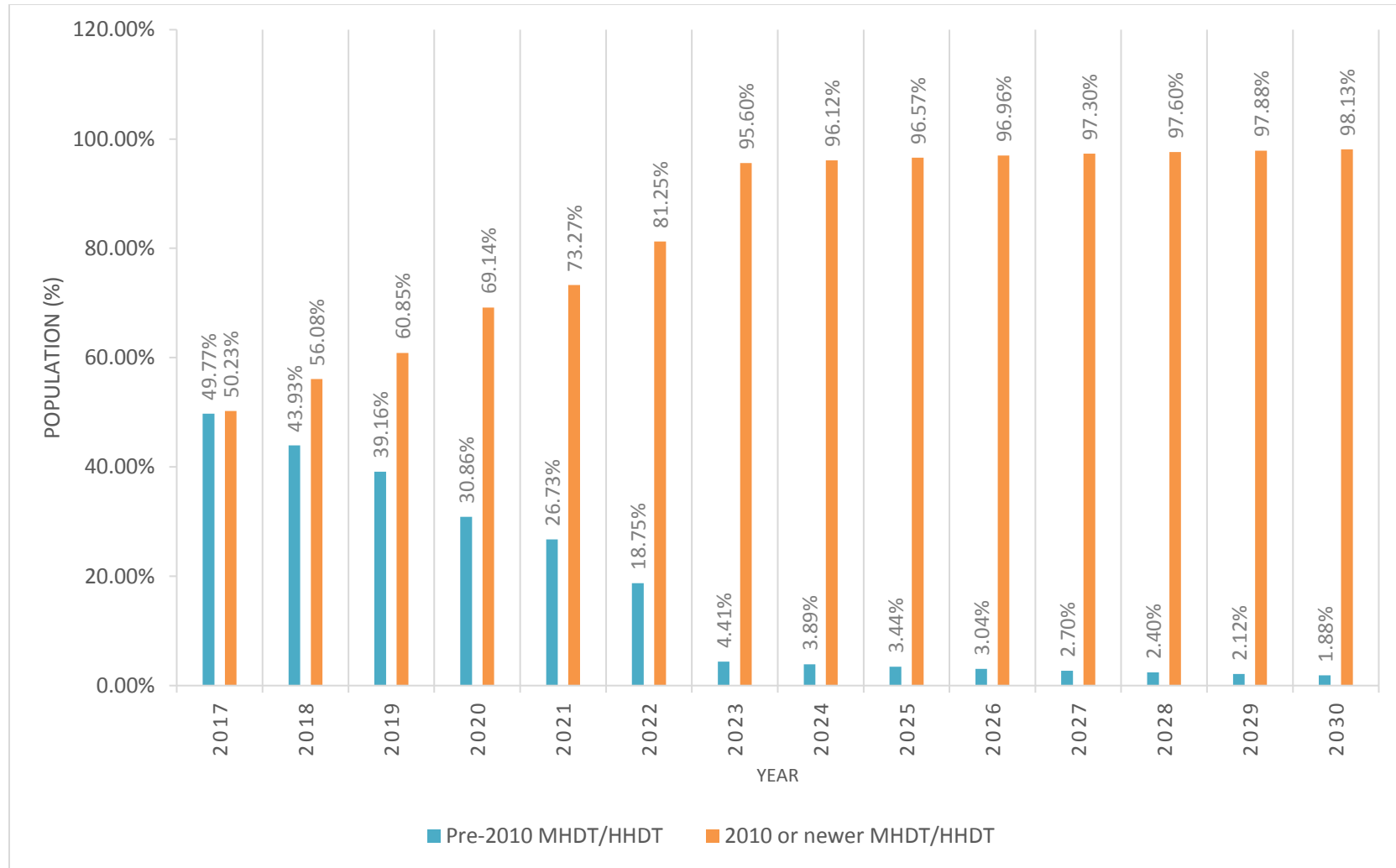
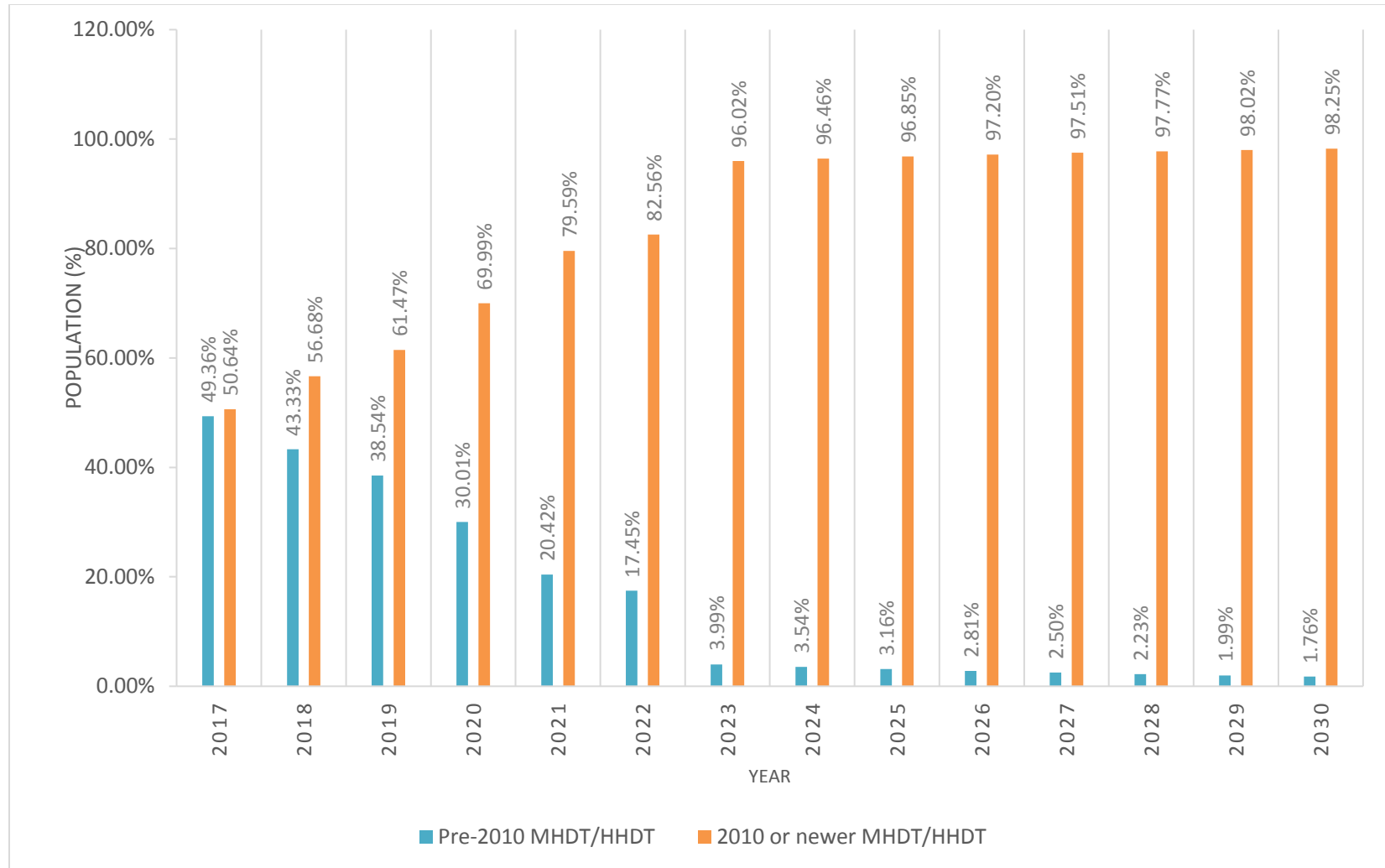


Table 3: Population of Pre-2010 MHDT & HHDT vs. 2010 or newer MHDT & HHDT Operating within the SCAB



CONCLUSION

Since its inception the Truck and Bus Regulation shows signs of significant improvement in reducing air quality emissions due to the phasing out of older vehicles that operate in California. The EMFAC model projects that over 95% of MHDT and HHDT (the primary types of trucks associated with goods movement and logistics) operating in California and within the SCAB will be 2010 or newer standards by the 2023 deadline.

It is important to note that additional measures and enforcement actions that may be recommended would be beyond the scope or control of any future Project. Notwithstanding, current implementation and enforcement standards by the State and other responsible entities would act to ensure compliance with the Truck and Bus regulations.

An individual development project is typically constructed to serve the market for warehouse and distribution facilities used in connection with freight movement originating from the ports of Los Angeles and Long Beach, rail facilities, and other sources, and destined for various sources inside and outside of the air basin. Although 2010 trucks are used in the freight movement industry, as shown on Table-1, in 2016 roughly 58% of all vehicles traveling in state/basin are older than 2010. Almost all industrial entitlement is done without an identified tenant. As such, an individual tenant would not know whether the operator will use its own fleet of vehicles, and if so, whether that fleet is comprised entirely of 2010 trucks; or whether the operator will need to receive trucks operated by independent truckers or other companies not subject to the Truck and Bus Rule. Considering the very limited use of 2010 trucks in the industry, to require an individual project to permit access to only those trucks having 2010 or better powered engines will eliminate a large percent of prospective tenants from consideration, thereby making the project extremely difficult to market. Therefore, requiring a project to enforce the regulation by limiting business to clients that only operate vehicles with 2010 engine models or better is unfeasible and most likely economically unfeasible.

Federal and state agencies regulate and enforce vehicle emission standards. It is not feasible for any lead agency staff to effectively enforce a prohibition on trucks from entering a property within their agency that would otherwise be permitted to operate in California and access other locations in the region and state. Furthermore, even if a lead agency were to apply such a restriction, to an individual future project, in the absence of a uniform regulation that would apply throughout the air basin, such a restriction would merely drive distribution facilities other warehousing locations in the air basin where there is no such restriction, thereby resulting in no improvement to regional air quality. As such, if a truck that does not meet a potential engine standard requirement were to attempt access to a future project and be denied, there would potentially be additional idling emissions and travel emissions associated with that truck since it would ultimately travel to another destination with no restriction in place.

URBAN CROSSROADS, INC.



Haseeb Qureshi,
Senior Associate

REFERENCES

1. **Air Resources Board.** Truck and Bus Regulation. *On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation*. [Online] <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>.
2. **Board, California Air Resources.** Final Regulation Order . [Online] <https://www.arb.ca.gov/msprog/onrdiesel/documents/TBFinalReg.pdf>.
3. **California Air Resources Board.** Penalties and Sanctions . [Online] <https://www.arb.ca.gov/msprog/truckstop/azregs/enforcement.htm>.
4. **Air Resources Board.** ARB's Drayage Truck Regulatory Activities. [Online] <http://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm>.
5. **The Port of Los Angeles.** Clean Truck Program. [Online] http://www.portoflosangeles.org/ctp/idx_ctp.asp.
6. **Angeles, Port of Long Beach and Port of Los.** San Pedro Bay Ports Clean Air Action Plan. [Online] <http://www.cleanairactionplan.org/>.
7. **Angeles, The Port of Los.** Port of Los Angeles Inventory of Air Emissions - 2016. *The Port of Los Angeles*. [Online] https://www.portoflosangeles.org/pdf/2016_Air_Emissions_Inventory.pdf.