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Docket Management Facility

U.S. Department of Transportation
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Via Federal Express and Federal eRulemaking Portal:
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RE: Docket Numbers: NHTSA-2016-0067 (RIN 2127-AK92); FMCSA-2014-0083 (RIN 2126-AB63)

Ladies and Gentlemen:

**Interests of the Commenters and Summary of Comments**

Texas Public Policy Foundation ("TPPF"), a not-for profit organization headquartered in Austin, Texas, has been asked by Western States Trucking Association (a trade association headquartered in California), Thomas Guglielmi (a Texas-based trucker), and True Grit Transportation, Inc. (a trucking company headquartered in Texas) (collectively, the "Commenters") to submit comments on their behalf in connection with the regulation proposed jointly by the National Highway Traffic Safety Administration ("NHTSA") and the Federal Motor Carrier Safety Administration ("FMCSA") regarding speed limiting devices, set forth in 81 Fed. Reg. 69142 (September 7, 2016), as well as documents associated with the proposal (the "Joint Proposed Rules"). The docket numbers of the Joint Proposed Rules are referenced above.

The Commenters represent thousands of small and midsize motor carriers nationally who consider highway safety among their highest priorities. The Joint Proposed Rules will not improve overall highway safety. Contrary to the statements made in the Preamble, the Joint Proposed Rules are not based on any safety need but, rather, on a misguided effort to use federal traffic safety laws to govern emissions of greenhouse gases from trucks. Neither NHTSA nor FMCSA has the legal authority to misuse federal law in that manner. Accordingly, the Commenters believe the Joint Proposed Rules are misguided, counterproductive, illegal, and dangerous.

NHTSA and FMCSA have promulgated many rules for the trucking industry over the years, ostensibly predicated on improving highway safety. The rules were based on estimates of lives to be saved and crashes to be reduced. If those estimates had been accurate, highway fatality rates should be declining. They are not, and the Agencies are well aware of that fact. Clearly, the assumptions upon which prior rules were based are incorrect. The assumptions underlying the Joint Proposed Rules are no exception. Specifically, the preamble, the Regulatory Impact Analysis ("RIA"), and the Environmental Impact Statement ("EIS") used to support this rulemaking are fatally flawed, and both Agencies have failed to properly follow the Administrative Procedure Act ("APA"). For example, the preamble attempts to link improved mpg performance caused by speed limiting devices with reduced exhaust exposure to support its assertion that the Joint Proposed Rules would improve driver health. In fact, the peer-reviewed scientific literature proves the assertion is false. Furthermore, the EIS fails to meet even the most rudimentary requirements of the National Environmental Policy Act ("NEPA"), such as the requirement to review a reasonable range of alternatives, while instead relying on unsubstantiated assertions of environmental benefits.

The Commenters believe the focus on trucker health and environmental issues became necessary because neither NHTSA nor FMCSA could rationally support the Joint Proposed Rules based solely on highway safety considerations. NHTSA had the opportunity to establish an environmental and health rationale for regulating speed limiting devices in connection with the recent joint DOT/EPA multi-phase rulemakings governing greenhouse gas emissions and fuel economy standards for trucks. Because EPA has regulatory authority to promulgate rules to protect health and the environment, those joint rulemakings were the proper venues for making a health or environmental case for speed-limiters. Neither NHTSA nor FMCSA has been delegated the authority to issue truck rules based upon health or environmental considerations. Accordingly, the Joint Proposed Rules requiring speed limiting devices, which cannot rationally be justified without taking into account health and environmental considerations, are ultra vires for both Agencies.

## Neither NHTSA nor FMCSA Is Authorized to Promulgate the Joint Proposed Rules

Section IV of the preamble to the Joint Proposed Rules purports to speak of a "safety problem" intended to be addressed by the rules. For three reasons, the analysis on pages 61950-61951 shows that there is no significant safety problem the rules would solve. First, the studies cited (FARS and GES) allegedly show that over the period of a decade (2004-2013) there were 10,440 fatalities involving "heavy vehicles" on "roads with posted speed limits of 55 mph or above," resulting in approximately 1,044 annual fatalities. Of the total fatalities over the course of a decade, 9,747 are attributable to crashes involving combination trucks, 422 from single unit trucks and the remaining 251 from buses. Yet there is no explanation of the extent to which any of the crashes or fatalities are attributable to any specific speeds at which the vehicles were operating on the roads. In other words, there is no statistical correlation examined regarding the impact of increased speeds on fatalities. *See* 81 Fed. Reg. 61950.

Second, the preamble cites to the National Transportation Safety Board (NTSB) Accident Reports and concludes that there was "*one* motorcoach crash in which excessive vehicle speed was

cited as a major safety risk." (Emphasis added.) *See* 81 Fed. Reg. 61951. Even with regard to that single incident, the preamble acknowledges that (1) the motorcoach was equipped with a speed limiting device that provided for a maximum speed of 72 mph, (2) the motorcoach could achieve higher speeds going downhill, and (3) the speed limiting device to be required by the Joint Proposed Rules would not necessarily have effectively limited the speed at which that particular motorcoach was traveling. No analysis is provided regarding what constituted an "excessive speed" in connection with that crash or how the Joint Proposed Rules would have averted it. *Id.*

Third, the Joint Proposed Rules acknowledge that NHTSA's own 1991 study shows that "incremental benefits of speed limiting devices were questionable." *See* 81 Fed. Reg. 61951. Indeed, the preamble explicitly states that NHTSA has "no plans at this time to prepare an updated study, given limited agency resources." *Id.* Instead, the Agencies assert that the data gathered between 2004-2013 was viewed through the lens of the extent to which speed limiting devices could affect "crash severity," arguing that "this methodology allows us to estimate with greater certainty the lives that can be saved." *Id.* But neither the preamble nor the Regulatory Impact Analysis shows why or how such a focus is in fact a better methodology providing any greater certainty than that used in the more formal, detailed, and better reasoned 1991 study.

The National Traffic Motor Safety Act of 1966 (Safety Act) authorizes NHTSA to set and enforce safety performance standards for new vehicles that "meet the *need* for motor vehicle safety." 49 U.S.C. Section 30111(a). (Emphasis added). The Safety Act does not contemplate the elimination of all accidents or injuries, only those that are "unreasonable." 49 U.S.C. Section 30102(a)(8). As set forth above, there is no showing by either NHTSA or FMCSA that there is a *safety* "need" for proposed regulation. Because Congress has not delegated authority to the Agencies to set and enforce safety standards without a showing that there is a "need" for a particular safety standard, the Joint Proposed Rules are beyond the regulatory powers of the Agencies. Likewise, there is no showing that the risks sought to be avoided by the Joint Proposed Rules are attributable to excessive truck speeds. Nor is there a showing that the current risks are "unreasonable." Accordingly, the Agencies do not have the power to promulgate or enforce the Joint Proposed Rules. *See Whitman v. American Trucking Associations,* 531 U.S. 457, 472-73 (2001) (power to set and enforce specific regulations at issue must be delegated by Congress). *See also Burnett Ranches, Ltd. v. United States*, 753 F.3d 143, 147 n.8 (5th Cir. 2014) (overly expansive reading of statute impermissible as unauthorized "administrative legislation"); *United States v. Palazzo*, 558 F.3d 400, 404 n. 4 (5th Cir. 2009) (administrative agency may not prescribe standards of conduct by rulemaking unless within the scope of delegated authority from Congress).

The reason the Agencies have proposed the regulation is not traffic safety. Rather, it is the fact that, if promulgated, the Joint Proposed Rules would result in substantial reduction of greenhouse gas emissions. *See* 81 Fed. Reg. 61945, 61946, 61963, 61970, where the preamble speaks in detail regarding the alleged "negative externality" imposed by greenhouse gas emissions from trucks "on society." It is that type of non-safety societal "benefit" that the Agencies estimate to amount to "$1.1 billion to $5.0 billion annually for 60 mph speed limiters, $1.0 billion to $2.8 billion annually for 65 mph speed limiters, and $0.5 to $1.3 billion annually for 68 mph speed limiters, assuming an annual 7 percent discount rate." *Id.* at 61945. Indeed, the Agencies acknowledge that it is precisely those greenhouse-gas-based calculations that would make the Joint Proposed Rules "cost-beneficial." *Id.* Federal administrative agencies may only regulate to the

extent authorized by Congress. Neither NHTSA nor FCSMA has authority to regulate truck operations based upon environmental "negative externalities" that may be attendant to greenhouse gas emissions from trucks. Accordingly, they do not have the power to promulgate the Joint Proposed Rules. *See Michigan Gambling Opposition v. Kempthorne*, 525 F. 3d 23, 30 (D.C. Cir. 2008); *Gulf South Pipeline Co. v. F.E.R.C.*, 876 F.2d 431, 433 (5th Cir. 1989).

**The Joint Proposed Rules Would Violate the Administrative Procedure Act**

When federal administrative agencies like NHTSA and FMCSA engage in legislative rulemaking, they must comply with the "notice and comment" provisions of the Administrative Procedure Act, 5. U.S.C. Section 553, which require that the public be informed of the details of a proposed rule and be given an opportunity to comment on those details in a meaningful manner. *See U.S. v. Utesch,* 596 F. 3d 302, 310 (6th Cir. 2010) (failure to provide adequate notice and opportunity to comment invalidates rule); *Bushmann v. Schweiker*, 676 F. 2d 352, 358 (9th Cir. 1982) (without notice and comment opportunity rule is of no effect); *Sprint Corp. v. Federal Communications Commission*, 315 F. 3d 369 (D.C. Cir 2003) (absence of notice and comment is fatal flaw to rule). *See generally, Perez v. Mortgage Bankers Association,* 135 S. Ct. 1199, 1203-05 (2015); *North Alabama Exp., Inc. v. U.S.*, 585 F.2d 783, 787, (5th Cir. 1978) (failure to provide adequate notice is a jurisdictional defect that invalidates administrative action until the defect is cured.)

The Joint Proposed Rules do not propose any particular speed limit at which the proposed speed limiting devices should or must be set. Rather, they provide a range of three "possible" speed limits: 60 miles per hour, 65 miles per hour, and 68 miles per hour. NHTSA and FMCSA ask for comments on each of those possibilities. The problem with this approach is that the public does not know which, if any, of these three "possible" speed limits is actually being proposed. Each of the three potential speed limits has its own unique characteristics and will have its own unique impacts on traffic safety. The Administrative Procedure act does not require the interested public to guess what the proposed regulatory action will be in the final rule, because the proposed rule itself must spell out the proposed regulatory action, and comments are to be made in connection with that specific proposal. Without an actual regulatory proposal, there is no adequate notice and opportunity to comment. See *Safe Air for Everyone v. U.S. EPA,* 488 F. 3d 1088, 1097-98 (9th Cir. 2007) (notice must inform public of proposed action); *Morton v. Ruiz,* 415 U.S. 199, 233-35 (1974) (submitting comments not possible where proposed action not disclosed); *North Alabama Exp., Inc.*, 585 F.2d at 787 ("In the administrative context, due process requires that interested parties be given a reasonable opportunity to know the claims of adverse parties and an opportunity to meet them."). Here, there is no proposal regarding which of the three options is either contemplated or preferred. The Administrative Procedure Act requires notice, not a menu of possibilities. Accordingly, the Joint Proposed Rules cannot not be permissibly finalized without first publishing in the Federal Register a notice of proposed rulemaking that actually proposes a specific speed limit at which speed limiting devices must operate.

## The Draft Environmental Impact Statement Fails to Comply with the NEPA and Its Implementing Regulations

### A. The Draft Environmental Impact Statement Does Not Analyze a Reasonable Range of Alternatives

An environmental impact statement must "study, develop, and describe appropriate alternatives to recommended courses of action." 42 U.S.C. §§ 4332(2)(C), 4332(2)(E). NEPA's implementing regulations provide that the alternatives analysis "is the heart of the environmental impact statement [by] sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." 40 C.F.R. § 1502.14. The regulations require federal agencies to (1) "rigorously explore and objectively evaluate all reasonable alternatives" to a proposed action, 40 C.F.R. § 1502.14(a); (2) "not commit resources prejudicing selection of alternatives before making a final decision," 40 C.F.R. § 1502.2(f); (3) present alternatives in a "comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public," 40 C.F.R. § 1502.14; and (4) "rigorously explore and objectively evaluate all reasonable alternatives" and to address the reasons why any alternatives "were eliminated from detailed study." 40 C.F.R. § 1502.14(a). *See Center for Biological Diversity v. U.S. Bureau of Land Management*, 746 F. Supp. 2d 1055, 1086 (N.D. Cal.2009) ("rigorous exploration and objective evaluation of all reasonable alternatives is 'the heart of an EIS' ") (quoting *Natural Res. Def. Council v. U.S. Forest Service*, 421 F.3d 797, 813 (9th Cir. 2005); *Citizens Against Burlington, Inc. v. Busey*, 938 F. 2d 190, 196 (D.C. Cir. 1991) (requirement to examine reasonable range of alternatives "does not give agencies license to fulfill their own prophesies, whatever parochial impulses drive them"); *Coalition for Advancement of Regional Transportation v. FHA*, 576 Fed. App. 477 (6th Cir. 2014) (highway transportation alternatives considered cannot be defined so narrowly as to point to a foreordained conclusion; *Sierra Club v. Federal Highway Administration*, 715 F.Supp.2d 721, 729 (S.D. Tex. 2010) (agencies required to "rigorously explore and objectively evaluate all reasonable alternatives" that are "feasible" and "non-speculative."); *Environmental Defense Fund, Inc. v. Corps of Engineers of U.S. Army*, 492 F.2d 1123, 1135 (5th Cir. 1974) (NEPA's imperative directive to consider reasonable alternatives requires "a thorough consideration of all appropriate methods of accomplishing the action.").

Here, NHTSA and FMSCA considered three alternatives in detail, ranging from limiting speeds at 60 miles per hour to 68 miles per hour, with a mid-point of 65 miles per hour. The total arc of speed limits comprised a difference of 8 miles per hour, while the difference between two of the alternatives amounted to 5 miles per hour and the differences between the other points amounted to only 3 miles per hour. Every other alternative was summarily dismissed from meaningful consideration, including the "no action" alternative, which received a scant two paragraphs of analysis on pages 10-11 of the Draft EIS.

The Council on Environmental Quality ("CEQ"), the federal agency responsible for overseeing NEPA implementation by the federal government, has issued guidelines specifically addressing the meaning of the term "reasonable range of alternatives." Those guidelines are "entitled to substantial deference" in connection with NEPA's interpretation. *State of Cal. v. Block,* 690 F.2d 753, 769 (9th Cir. 1982) (quoting *Andrus v. Sierra Club*, 442 U.S. 347, 358 (1979);

*see also Mississippi River Basin Alliance v. Westphal,* 230 F.3d 170, 176 (5th Cir. 2000); *Save Barton Creek Ass'n v. Federal Highway Admin*., 950 F.2d 1129, 1134-3; (5th Cir. 1992); *Sierra Club v. Froehlke*, 816 F.2d 205, 209 n.2 (5th Cir. 1987).

CEQ FAQ 1(b) states that a "reasonable range of alternatives" in an environmental impact statement "must" cover "the full spectrum of alternatives" to a proposed agency action. CEQ offers the example of how much of a forest should be dedicated by the Forest Service to wilderness areas, stating that a reasonable range of alternatives would include a comparison and contrast of alternatives dedicating "0%, 10%, 30%, 50%, 70%, 90% or 100% of the forest to wilderness." 46 Fed. Reg. 18,026, 18,026 (Mar. 23, 1981). Thus, CEQ guidelines call for seven alternative decision points as a "reasonable range of alternatives." Here, other than the "no action" alternative, which was summarily dismissed from consideration, NHTSA and FMSCA limited their series of alternatives to three decision points, all within a limited umbrella of 8 miles per hour, without justifying why they veered from the CEQ guidelines. There is no explanation of why those particular decision points were chosen (60, 65, 68) or why decision points below 60 or above 68 were not given meaningful consideration. *See Save Our Cumberland Mountains v. Kempthorne*, 453 F. 3d 334, 336 (6th Cir. 2006) (review of "three alternatives . . . unduly circumscribes the scope of alternatives that the statute and regulations require federal agencies to consider"); *Association Concerned About Tomorrow, Inc. v. Dole*, 610 F.Supp. 1101, 1112 (N.D. Tex. 1985) ("The discussion of alternatives is the linchpin of an EIS.") (*quoting Monroe County Preservation Council, Inc. v. Volpe*, 472 F.2d 693, 699-700 (2d Cir. 1972).

Courts have routinely rejected environmental impact statements that so severely limit the range of alternatives considered by federal agencies. *See State of California v. Block,* 690 F. 2d 753, 769 (9th Cir. 1982) ("[T]he [NEPA] procedure becomes meaningless if the variables are assigned numerical values such that only a limited range of outcomes results); *Oregon National Desert Association v. Bureau of Land Management*, 625 F.3d 1092, 1123-24 (9th Cir. 2008) (environmental impact statement fatally flawed because the Bureau of Land Management failed to analyze the full spectrum of viable alternatives); *Union Neighbors United, Inc. v. Jewell,* 831 F. 3d 564, 576 (D.C. Cir. 2016) (Fish and Wildlife Service failed to consider reasonable range of alternatives based on review of only four alternatives limiting turbine operations to protect bat species).

A hypothetical is instructive. Posit a federal agency tasked with building a major construction project on some portion of a 1,000-acre parcel. The agency must determine which portion of the 1,000-acre tract parcel will be the construction site. The agency summarily decides that it will only use the northwest corner of that parcel, comprising 300 acres, for its alternatives analysis, rejecting the remaining 700 acres from alternatives consideration. The agency then proceeds to analyze alternative locations on only those 300 acres. No matter how the 300 acres are divided by the agency for purposes of its alternatives analysis, that analysis does not cover a reasonable range of alternatives, given that the agency's task was to determine where on the 1,000-acre parcel to build the construction project. Thus, limiting the alternatives analysis to only 30% of the possible alternatives leaves out 70% of the possible alternatives, which is impermissible under CEQ Guideline 1(b). So too, here the detailed alternatives analysis was limited to an 8-mile spectrum. If speed limiting devices could reasonably be set at anywhere between 55 miles per hour and 75 miles per hour, a reasonable range of alternatives to be considered in the

environmental impact statement could have and should have been a spectrum of 20 miles per hour. Instead, NHTSA and FMSCA chose an 8-mile-per-hour spectrum, which constitutes 32% of the possible reasonable alternatives. If the purpose and need for speed limiting devices is safety on the nation's highways, an alternatives analysis that explores 32% of the reasonable alternatives is insufficient. *See Natural Resources Defense Council, Inc. v. U.S. Forest Service,* 634 F. Supp. 2d 1045, 1060 (E.D. Cal. 2007) ("reasonable range of alternatives" must be measured in light of the purpose and need for the particular federal agency action at issue). The decision to conduct alternatives analysis on only 32% of the reasonable range of alternatives means that the draft environmental impact statement neglected to consider the remaining 68% of the available alternatives.

NEPA requires agencies to "rigorously explore and objectively evaluate all reasonable alternatives," *Natural Res. Def. Council v. U.S. Forest Service*., 421 F.3d at 813, and "a viable but unexamined alternative renders an environmental impact statement inadequate." *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985). By eliminating from alternatives review 68% of the reasonable alternatives, NHTSA and FMSCA did not "rigorously explore and objectively evaluate all reasonable alternatives," and left potentially "viable but unexamined alternatives" unexamined. Accordingly, the agencies did not identify and analyze a reasonable range of alternatives. *See City of Carmel-by-the-Sea v. U.S. Dept. Of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997) (agency cannot review alternatives in "unreasonably narrow terms").

**B. NHSTA and FCSMA Failed to Coordinate with State and Local Government, in Contravention to NEPA and its Implementing Regulations**

The Agencies failed to cooperate and coordinate with state and local government in analyzing the need for speed limiting devices and the speeds to which the devices must be set. NEPA provides that "it is the continuing policy of the Federal Government, *in cooperation with State and local governments*, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain social, economic, and other requirements of present and future generations of Americans." 42 U.S.C. § 4331(a) (emphasis added). NEPA regulations provide that "[a]gencies shall cooperate with State and local agencies *to the fullest extent possible* to reduce duplication between NEPA and comparable State and local requirements." 40 C.F.R. § 1502.16(c) (emphasis added). To better integrate environmental impact statements into State or local planning processes, statements "shall discuss any inconsistency of a proposed action with any approved State or local plan and laws (whether or not federally sanctioned)." 40 C.F.R. § 1502.16(d). "Where an inconsistency exists, the statement should describe the extent to which the agency would reconcile its proposed action with the plan or law." *Id*. (emphasis added). NEPA regulations also require that an environmental impact statement include a discussion of "[p]ossible conflicts between the proposed action and the objectives of Federal, regional, State, and local . . . plans, policies and controls." 40 C.F.R. § 1502.16(c).

The draft environmental impact statement does not include a discussion of state or local plans or policies regarding speed limiting devices in particular or highway safety standards in general. It is silent regarding the manner in which the agencies cooperated or coordinated with

state and local agencies in developing the Proposed Joint Rules or the draft environmental impact statement, leaving the public to make the reasonable inference that no such cooperation or coordination took place. Accordingly, the draft environmental impact statement fails to comply with the requirements of 42 U.S.C. 4331(a) and 40 C.F.R. 1502.16.

**The Joint Proposed Rules Violate Federal Law by Misstating Impacts on Human Health**

The statute under which FMCSA operates authorizes that Agency to prescribe safety standards to ensure that the "physical condition" of vehicle operators is not adversely impacted by job performance. 49 U.S.C. Sections 31136(a)(3); (a) (4). The preamble of the Joint Proposed Rules makes the following statement:

> [T]he proposed rule would significantly reduce the consumption of diesel fuel (which is used by most vehicles heavier than 26,000 pounds), with corresponding reductions in exhaust emissions. The effect on the health of drivers (and others) from exposure to diesel exhaust is difficult to estimate in the absence of a dose/response curve, significant changes in the chemical composition of diesel fuel over the years, and the presence of confounding factors like smoking [*See* ''Hours of Service of Drivers,'' 70 FR 49978, 49983–49987, August 25, 2005]. Nonetheless, reducing the total volume of exhaust emissions will likely have some beneficial effect on the health of many individuals, including drivers.

81 Fed. Reg. 69147. Thus, by its own admission, FMCSA can point to no tangible evidence that any emissions reductions attributable to speed limiting devices will protect, let alone enhance, the "physical condition" of truck drivers. Rather, the Agency speculates that reducing the volume of emissions "will likely have some beneficial effect." Speculation is insufficient to justify a regulation. *See Motor Vehicle Manufactures' Association v. State Farm Mutual Automobile Insurance Company*, 463 U.S. 29, 43 (1983) (must be a "rational connection between the facts found and the choice made"); Louisiana *Forestry Ass'n Inc. v. Secretary U.S. Dept. of Labor*, 745 F. 3d 653, 679 (3rd Cir. 2014) (same); *Texas v. U.S. Environmental Protection Agency,* 690 F.3d 670, 677 (5th Cir. 2012) (same).

Moreover, the National Institute for Occupational Safety and Health ("NIOSH") funded a peer-reviewed mortality study of owner-operator truck drivers that was published in the American Association of Occupation Health Nurses ("AAOHN") journal. The study is included as Exhibit 1 of these comments. The findings were a surprise to many because they contravened conventional wisdom that "guessed" the job of driving a truck was causing early mortality among truck drivers related to non-traffic crash related events. The research abstract of the NIOSH study states:

> Previous studies report that truck drivers are at increased risk for illness and on-the-job mortality. It is unknown whether owner-operator truck drivers face the same risks as employee drivers, yet few studies have targeted owner-operators as a study population. This study examined the overall and cause-specific mortality ratios for a cohort with owner-operator truck drivers constituting 69% of the study population. Of the 26 major disease classifications and 92 specific causes of death

> examined, only mortality due to transportation accidents was significantly elevated (standardized mortality ratio = 1.52, 95% confidence interval = 1.36-1.70). Leading causes of death were ischemic heart disease and lung cancer, although risk was *below* that of the general population. Transportation accidents pose a particular hazard for members of the trade association. (Emphasis added).

The Agencies have failed to scientifically substantiate any linkage between diesel exhaust exposure and poor health outcomes or increased mortality for truck drivers. More importantly, the Joint Proposed Rules offer no evidence that the rules will in any way help the "physical condition" of vehicle operators. Furthermore, as set forth in more detail above, there is little evidence that speed-limiting devices will substantially reduce transportation-related fatalities or injuries of truck drivers.

Discussion within the Draft Environmental Impact Statement of environmental related "driver health" (i.e. air quality) issues exclusively focuses on nebulous guesstimates that a driver spending increased time on the road as a result of being slowed down may spend more time in a hotel located near an area with idling trucks. That assertion ignores a central fact. The reason long-haul trucks are equipped with sleeper-berths is to eliminate the cost of expensive hotel rooms. Hence, requiring speed limiting devices will not tend to increase driver use of hotel rooms. Again, no rational connection has been established between any facts regarding driver "physical conditions" and the need for speed limiting devices.

## The Joint Proposed Rules Conflict with the National Highway System Designation Act of 1995

Although the preamble cites the National Highway System Designation Act of 1995, 23 U.S.C. Section 109 (the "NHSDA"), it ignores the fact that Congress enacted NHSDA to disassociate the federal government from setting national speed limits. But that is precisely what the Agencies are trying to do with regard to trucks and other heavy vehicles in the Joint Proposed Rules. Specifically, Section 205 of Title II of the NHSDA provides for relief from federal speed limit mandates. The Joint Proposed Rules in fact are federal mandates on manufacturers and truck buyers, requiring states to enforce national speed-related rules, which the NHSDA prohibits.

Thus, the Joint Proposed Rules contemplate that states will enforce the speed limiter requirements on the nation's roads. As modal agencies with U.S. DOT, if states were to refuse to enforce a final rule they could be penalized by the denial of federal highway funding monies. FMCSA could use its Motor Carrier Safety Assistance Program ("MCSAP") as either a carrot or stick to coerce states to enforce any final rule. Unless the final rule explicitly allows states to opt out of any enforcement obligation, the promulgation of the Joint Proposed Rules in their current form would violate the NHSDA.

Moreover, there are serious Constitutional issues associated with commandeering state resources, directly or indirectly, to meet federal regulatory demands. *See New York v. US,* 505 U.S. 144, 175-76 (1992) (requiring state governments to assume liabilities of private waste generators or requiring states to regulate waste disposal as directed by Congress constitutes unconstitutional commandeering of state resources); *Koog v. U.S.* 79 F. 3d 452, 457 (5th Cir. 1996)

(federal government may not coerce states into administering federal regulatory program). Such 10th Amendment issues raise substantial federalism concerns. *See Louisiana Public Service Commission v. FCC*, 476 U.S. 355, 374 (1986) (federal administrative agency "literally has no power to act, let alone pre-empt the validly enacted legislation of a sovereign State, unless and until Congress confers power upon it."); *Luminant Generation Co., LLC v. EPA*, 675 F.3d 917, 932 (5th Cir. 2012) (same).

In short, the Jointed Proposed Rules impose a federal speed-limit-mandate on the states, which is specifically and unambiguously rejected by Section 205 of Title II of the NHSDA. The Agencies cannot leap frog over the restrictions of the NHSDA by requiring states to enforce speed limiting devices on trucks. *See Texas Office of Public Utility Counsel v. FCC*, 183 F.3d 393, 424 (5th Cir. 1999) (FCC regulation prohibiting state telecom carriers from disconnecting services is contrary to unambiguous congressional intent of 1996 Telecommunications Act, which prohibited FCC regulation of interstate telecommunications services).

**The Joint Proposed Rules Impermissibly Misstate the Economic Impacts**

The evaluation of economic impacts on small-business motor carriers/owner-operators set forth in the Joint Proposed Rules is based on a series of hypothetical guesses with little to no basis in reality. The Agencies speculate that reduced travel times will reduce the total amount of work that can be accomplished, thereby reducing income, and they assign a $54 million value to that lost income. The Agencies also suggest that "large" entities will fill the void created by slowing down the supply-chain and that small companies and owner-operators account for only 30 percent of total vehicle miles (VMT) traveled nationally. These statements are not only unsupported; they are unsupportable.

The Agencies factored lost "labor income" as the single financial negative economic impact. That measurement artificially minimizes the actual financial impact. For any trucking business, the impact on *gross income* must be considered, not just lost "labor income." Reducing the legally available loads any business can haul directly reduces overall gross income required to pay a wide variety of fixed costs such as equipment, insurance, buildings, and employee salaries. Moreover, the Agencies do not show how they arrived at the figure of $54 million in lost labor income. Agencies must show a rational connection between the facts found and the decision made. That showing is utterly lacking here. *See Motor Vehicle Mfrs. Ass'n of United States, Inc. v. State Farm Mutual Automobile Insurance Co.,* 463 U.S. 29, 43 (1983) (An administrative agency "must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.").

We are unaware of any scientifically valid study of owner-operator income other than one performed by Dr. John Husing of the Inland Empire Economic Partnership titled *Owner-Operator Driver Compensation – 2015. See* Exhibit 2 of these comments. The study portrays more robust and defensible net income numbers for owner-operators. Importantly, the Husing study points out that median net income "reflects the fact that costs do not fall proportionately as revenue drops, again underscoring the fixed cost impacts." (Page 12, *Owner-Operator Driver Compensation – 2015*). Accordingly, if companies lose labor income, they also lose gross income which is necessary to the cash flow (and success) of any business enterprise, large or small.

Furthermore, annual lost income for small-businesses and owner-operators is significantly underestimated by NHTSA and FMCSA, and the economic losses are more significant for those who operate extensively in western states, which have the highest truck speed limits. The Agencies have a duty to perform a more comprehensive analysis on the negative financial effects on small businesses in the trucking industry.

NHTSA and FMCSA speculate that "large trucking companies would absorb additional cargo with their reserve capacity of trucks and drivers," essentially making a zero sum argument regarding industry dislocation from this proposed rule. There are two major problems with this analysis. First, it is widely recognized that the industry is facing a driver shortage; hence there is no "reserve capacity" of drivers. Second, even if some small-business capacity aligned itself with larger motor carriers, that does not solve a capacity shortage of available trucks to haul the same amount of goods attendant to a slowing down of the supply-chain. When overall travel times are increased, resulting in longer trip times, the only way to move the same amount of goods would be to add additional capacity to the nation's truck and bus fleets. Since crash rates are directly tied to the volume of total traffic, more trucks/buses will equal more crash involvement, a safety factor ignored by the Agencies.

The Agencies estimate that small-business accounts for only 30 percent of national VMT is belied by their admission that their data is insufficient to support the conclusion. The Agencies have substantially underestimated VMT attributable to small-fleets and owner-operators. Owner-operators leased to a fleet and operating under that fleet's US DOT number have their individual VMT diluted into overall fleet numbers and thus are, as a practical matter, invisible. Accordingly, the 30 percent conclusion reached by the agencies is not based on fact. Although the Agencies call for comments on this issue, the invisibility factor is compounded by the fact that the Agencies suggest that the rule *might* only apply to CMV's over 26,000 lbs., while leaving the door open to a more universal mandate affecting all CMV's (10,001 lbs. or greater). The difference between potentially affected vehicle populations ranges from a low of approximately 3 million CMV's to as high as nearly 14 million. At the same time, the Agencies assert that FMCSA regulates nearly 258,000 one-truck motor carriers and another 96,000 two-truck motor carriers. When combined with "leased-on" owner-operators, the total amounts to approximately 800,000 CMV's, which are mostly used in interstate operations and are consequently subjected to higher VMT than when compared to vocational trucks.

While fleet size is important in determining certain calculations, the Agencies ignore the fact that a small-business trucking operation is defined by the Small Business Administration as having no more than $27.5 million in annual receipts. The calculation is gross receipt and not the number of trucks. Based on FMCSA's own numbers of regulated motor carrier in its "pocket guide," 543,442 motor carriers out of 551,150 will most likely be classified as small-businesses (virtually 99 percent) since it is improbable that a fleet with even 100 trucks would average $275,000 in revenue per power unit.

The Joint Propose Rules would apply to "intrastate" operators of affected CMV's. But not all states require motor carriers to have a U.S. DOT number. Accordingly, it is incumbent on the Agencies to work with each individual state's Department of Motor Vehicles to determine the number of registered CMV's within the affected class. Further, California began requiring

"intrastate" U.S. DOT numbers the first of this year and all of those generated U.S. DOT numbers lack mileage data required for "interstate" authorized motor carriers as part of their motor carrier profiles.

In short, under-representing VMT attributable to small-business trucking negatively affects virtually all other equations in the cost-benefit analysis, especially the cost to small-business in lost revenue. Accordingly, the Agencies must, at the very least, revise and seek comments on an amended Regulatory Impact Analysis that addresses these bread-and-butter economic issues that are of great significance to small businesses throughout the nation engaged in trucking operations. *See Motor Vehicle Mfrs. Ass'n of United States, Inc. v. State Farm Mutual Automobile Insurance Co.,* 463 U.S. 29, 43 (1983) (An administrative agency "must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.").

Sincerely,

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# Mortality Among Members of a Truck Driver Trade Association

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RESEARCH ABSTRACT

Previous studies report that truck drivers are at increased risk for illness and on-the-job mortality. It is unknown whether owner-operator truck drivers face the same risks as employee drivers, yet few studies have targeted owner-operators as a study population. This study examined the overall and cause-specific mortality ratios for a cohort with owner-operator truck drivers constituting 69% of the study population. Of the 26 major disease classifications and 92 specific causes of death examined, only mortality due to transportation accidents was significantly elevated (standardized mortality ratio = 1.52, 95% confidence interval = 1.36-1.70). Leading causes of death were ischemic heart disease and lung cancer, although risk was below that of the general population. Transportation accidents pose a particular hazard for members of the trade association. The absence of excess disease mortality deserves careful interpretation, and may be due to both a strong healthy worker effect and a short monitoring period.

The safety and health of truck drivers is a topic of special interest both within the United States and abroad (Saltzman & Belzer, 2007). Previous research suggests that truck drivers are at increased risk for lung cancer (Garshick et al., 2008; Jarvholm & Silverman, 2003; Menvielle et al., 2003; Steenland, Deddens, & Stayner, 1998), prostate cancer (Jarvholm & Silverman, 2003), heart disease (Bigert et al., 2003; Laden, Hart, Smith, Davis, & Garshick, 2007; Leigh & Miller, 1998; Robinson & Burnett, 2005), hypertension (Koda et al., 2000; Korelitz et al., 1993; Sato, Taoda, Wakaba, Kitahara, & Nishiyama, 1999), stomach ulcers (Koda et al., 2000), bladder cancer (Boffetta & Silverman, 2001; Colt et al., 2004), and stomach cancer (Cocco, Ward, & Dosemeci, 1998). Truck drivers also face extraordinary risk of on-the-job mortality. In 2008, the fatality rate for "driver/sales workers and truck drivers" was 22.8 per 100,000 workers, compared with a rate of 3.6 per 100,000 for all workers (Bureau of Labor Statistics, 2008a), and drivers of heavy and tractor-trailer trucks had more fatalities (715 deaths) than any other single occupation (Bureau of Labor Statistics, 2008b).

Although truck drivers are at increased risk for specific diseases and on-the-job mortality, it is unknown whether drivers who own and operate their own trucks have the same risk as drivers who are company employees. Information with which to evaluate the health and safety of owner-operators is limited because (1) drivers who work independently or as contractors for larger companies are not included in the Bureau of Labor Statistics' Survey of Occupational Injuries and Illnesses, and (2) the

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EXHIBIT 1

## Applying Research to Practice

Compared to the average worker, truck drivers are at high risk for on-the-job mortality. In addition, studies suggest that truck drivers are at increased risk for a variety of diseases, including cancer and heart disease. Members of the study cohort were more likely than the general U.S. population to die from transportation accidents. Ischemic heart disease and lung cancer were responsible for the greatest number of deaths among cohort members. Occupational health nurses can have a positive impact on the health of truck drivers by helping drivers reduce their risk of transportation accidents, lung cancer, and ischemic heart disease.

wide variety of possible work arrangements for owner-operators complicates the task of recruiting them into a study cohort.

This study examined the overall and cause-specific mortality for members of a trade association whose membership includes 69% owner-operators.

## MATERIALS AND METHODS

### *Study Cohort*

Electronic membership data were obtained for current and former members of a trade association that provides services to independent truck drivers. In addition to demographic information, the database provided the most recent occupation or type of business in which the member was engaged, although specific work history was not available. The study cohort included all individuals who were regular members of the association at any time between September 29, 1989, and December 31, 2004, and for whom year of birth was available (156,241 individuals).

These membership data were submitted to both the Social Security Administration and the National Death Index (NDI), as described by Buchanich, Dolan, Marsh, and Madrigano (2005). Review of mortality data was completed through December 31, 2004.

### *Techniques for Handling Missing Data*

Missing data created analytical challenges. For example, the trade association did not collect information on race. In addition, approximately 75% of the records in the full membership data set were missing information on sex, 33% were missing Social Security number, and 5% were missing date of birth. To the extent possible, this information was obtained from the Social Security Administration under a confidential data-sharing agreement. This strategy reduced the percentage of records missing race to 23%, missing sex to 16%, missing Social Security number to 10%, and missing date of birth to 3%.

Because a large percentage of records were still missing information on race and sex, single imputation was employed to fill in the data gaps (Little & Rubin, 2002). To impute sex, data from the Current Population Survey (CPS) (Bureau of the Census, 2002), the 1990 U.S. Census (Bureau of the Census, 1995), and the NDI (2001) were used to estimate the probability of a member being male or female. The NDI and the 1990 Census data were used to calculate the proportion of men and women in the general population with each first name, and the CPS data were used to account for the majority of truck drivers being male. If an individual's first name did not appear in either the NDI or the Census data, then sex was not imputed and the individual was excluded from the analyses (1% of the cohort; Table 1).

A similar method of single imputation was used for records that were missing information on race/ethnicity. The surname data file derived from the 2000 Census (Bureau of the Census, 2007) provided the racial and ethnic distribution for 151,671 unique surnames (Word, Coleman, Nunziata, & Kominski, 2007). The likelihood that an individual would be assigned to a particular race/ethnic group was determined by the race/ethnicity distribution of the cohort member's surname. For the analyses, Hispanic and non-Hispanic White individuals were categorized as White, and all other races were categorized as non-White. If an individual's surname did not appear in the Census surname list, then race/ethnicity was not imputed and the individual was excluded from the analyses (2% of the cohort; Table 1).

### *Statistical Analyses*

Standardized mortality ratios (SMRs) and 95% confidence intervals (CIs) were calculated using the Life Table Analysis System.Net (LTAS), a public-domain software package developed at the National Institute for Occupational Safety and Health (Robinson et al., 2006). LTAS calculates SMRs for a standard set of 26 major disease classifications and 92 specific causes of death. In addition, SMRs were calculated for all causes of death combined and all cancers combined. The data were stratified by age (5-year age groups), racial group (White and non-White), sex, and calendar period (5-year intervals). The LTAS software and technical documentation are available at www.cdc.gov/niosh/LTAS.

## RESULTS

The study cohort was composed primarily of White men; 12% of the members were non-White, and 6% of the members were female (Table 1). Most members (69%) identified themselves as owner-operator truck drivers during their most recent contact with the trade association. Three percent of the cohort had died as of December 31, 2004.

Among the 26 major disease classifications, the three leading causes of death were cancer ($n$ = 1,435; 33% of deaths), heart disease ($n$ = 1,299; 30% of deaths), and accidents ($n$ = 474; 11% of deaths) (Table 2). Among the 92 specific causes of death, the three leading causes of death were ischemic heart disease ($n$ = 1,084; 25% of deaths), lung cancer ($n$ = 557; 13% of deaths), and transportation accidents ($n$ = 319; 7% of deaths) (Table 3).

The overall SMR was 0.76, indicating that the rate of death for the cohort was lower than that of the U.S. population (Table 2). Furthermore, the cohort did not have a statistically significant elevation in mortality for any of the 26 major disease classifications, although it did have significant deficits in mortality for several of them. Of particular note, mortality due to mental and psychiatric disorders was much lower than the general population (SMR = 0.30, 95% CI = 0.20-0.44), as was mortality due to diseases of the digestive system (SMR = 0.33, 95% CI = 0.27-0.40) and diseases of the genitourinary system (SMR = 0.38, 95% CI = 0.25-0.55) (Table 2).

Of the 92 specific causes of death examined, only mortality due to transportation accidents was significantly elevated among members of the trade association (SMR = 1.52, 95% CI = 1.36-1.70; Table 3).

Members of the cohort were less likely than the general population to die of ischemic heart disease (SMR = 0.91, 95% CI = 0.86-0.97; Table 3). The risk of death due to either liver disease or alcoholism was extremely low for members of the cohort, with SMRs of 0.25 (95% CI = 0.18-0.33) and 0.17 (95% CI = 0.08-0.32), respectively (Table 3).

Smoking-adjusted SMRs were generated using ordinary sensitivity analysis (Arah, Chiba, & Greenland, 2008) and smoking prevalence data from the 2000 National Health Interview Survey. Because truck drivers are more likely than the general population to be current or former smokers, SMRs for all smoking-related diseases were modestly depressed by the adjustment. However, because no smoking-related diseases were elevated in the cohort, the adjustment did not change the direction of the estimates.

Between the ages of 25 and 74, each 5-year age group had reduced mortality compared to the U.S. population. This demonstrated that the overall SMR did not obscure mortality differences among age groups (Table 4).

Table 1

**Characteristics of Members of the Truck Driver Trade Association Study Cohort, 1989-2004**

| | *N* | *%* |
|---|---|---|
| Total | 156,241 | 100 |
| Gender | | |
| Male | 146,261 | 94 |
| Female | 9,099 | 6 |
| Unknown[a] | 881 | 1 |
| Race | | |
| White[b] | 133,635 | 86 |
| Non-White | 18,945 | 12 |
| Unknown[a] | 3,661 | 2 |
| Occupational category | | |
| Owner-operator | 107,286 | 69 |
| Driver (not an owner-operator) | 29,823 | 19 |
| Non-driver | 7,993 | 5 |
| Unknown | 11,139 | 7 |
| Vital status | | |
| Living | 151,791 | 97 |
| Deceased | 4,450 | 3 |
| Age at cohort entry (years) | | |
| < 25 | 4,022 | 3 |
| 25-34 | 33,535 | 21 |
| 35-44 | 56,383 | 36 |
| 45-54 | 45,238 | 29 |
| 55-64 | 14,672 | 9 |
| > 64 | 2,391 | 2 |
| Years of follow-up | | |
| < 5 | 64,450 | 41 |
| 5-9 | 41,970 | 27 |
| > 9 | 49,821 | 32 |

Note. [a]*After imputation completed; excluded from analyses.* [b]*Includes Hispanic and non-Hispanic individuals.*

## DISCUSSION

For this cohort, composed primarily of owner-operator truck drivers, overall mortality was lower than that of the general U.S. population. Of the 92 specific causes of death examined, only one had a statistically significant elevation—transportation accidents. It is not surprising that the SMR for transportation accidents was elevated in this cohort, given that truck drivers can spend as much as 11 hours behind the wheel each day (Federal Motor Carrier Safety Administration, 2008). In 2008, transportation incidents were responsible for 78% of the occupational fatalities among truck drivers (Bureau of Labor Statistics, 2008b).

Mortality was not increased for any of the health conditions previously shown to be elevated among truck drivers (Bigert et al., 2003; Boffetta & Silverman, 2001; Cocco et al., 1998; Colt et al., 2004; Garshick et al., 2008; Jarvholm & Silverman, 2003; Koda et al., 2000; Korelitz et al., 1993; Laden et al., 2007; Leigh & Miller, 1998; Menvielle et al., 2003; Robinson & Burnett, 2005; Sato et al., 1999; Steenland et al., 1998), although the lack of statistically significant estimates for cancers of the stomach, bladder, and prostate indicates that excess mortality from these causes cannot be totally eliminated (Table 3). A small but statistically significant deficit in mortality due to ischemic heart disease was found.

Although not elevated compared with the general population, ischemic heart disease and lung cancer were responsible for the greatest numbers of deaths in this group. The trade association conducted a survey of its members in 2001. Based on these unpublished data, three risk factors for lung cancer and heart disease are of



EXHIBIT 1

Table 2

**Observed Deaths, Standardized Mortality Ratios, and 95% Confidence Intervals by Major Cause Among Members of the Truck Driver Trade Association Study Cohort, 1989-2004**

| *Major Disease Classification* | *Observed Deaths* | *SMR* | *95% CI* |
|---|---|---|---|
| All causes | 4,368 | 0.76 | 0.74-0.78 |
| All cancers | 1,435 | 0.88 | 0.84-0.93 |
| Buccal and pharynx | 21 | 0.52 | 0.32-0.80 |
| Digestive and peritoneum | 359 | 0.86 | 0.78-0.96 |
| Respiratory system | 567 | 0.98 | 0.90-1.06 |
| Breast | 7 | 0.47 | 0.19-0.96 |
| Female genital organs | 6 | 0.86 | 0.31-1.87 |
| Male genital organs | 63 | 0.87 | 0.67-1.12 |
| Urinary | 84 | 1.03 | 0.82-1.27 |
| Other and unspecified site | 176 | 0.70 | 0.60-0.81 |
| Lymphatic and hematopoietic | 152 | 0.94 | 0.80-1.10 |
| Benign and unspecified neoplasms | 14 | 0.74 | 0.40-1.23 |
| Tuberculosis | 0 | 0.00 | 0.00-1.07 |
| Diabetes mellitus | 96 | 0.57 | 0.46-0.70 |
| Diseases of the blood and blood-forming organs | 14 | 0.70 | 0.38-1.17 |
| Mental and psychiatric disorders | 26 | 0.30 | 0.20-0.44 |
| Nervous system disorders | 49 | 0.49 | 0.36-0.65 |
| Diseases of the heart | 1,299 | 0.85 | 0.81-0.90 |
| Other diseases of the circulatory system | 256 | 0.76 | 0.67-0.86 |
| Diseases of the respiratory system | 180 | 0.54 | 0.46-0.62 |
| Diseases of the digestive system | 99 | 0.33 | 0.27-0.40 |
| Diseases of the genitourinary system | 26 | 0.38 | 0.25-0.55 |
| Diseases of the skin and subcutaneous tissue | 3 | 0.68 | 0.14-1.99 |
| Diseases of the musculoskeletal and connective tissue | 9 | 0.55 | 0.25-1.05 |
| Symptoms and ill-defined conditions | 43 | 0.54 | 0.39-0.73 |
| Accidents | 474 | 1.05 | 0.96-1.15 |
| Violence | 202 | 0.71 | 0.62-0.82 |
| Other and unspecified causes | 143 | 0.42 | 0.35-0.49 |

Note. *Compared to the general U.S. population for the same time period. SMR = standardized mortality ratio; CI = confidence interval.*

particular concern for this cohort; smoking, obesity, and airborne particulate matter.

Smoking is a known risk factor for both lung cancer and heart disease (U.S. Department of Health and Human Services, 2004). According to the trade association's data, approximately 35.1% of members were current smokers of cigarettes, pipes, or cigars in 2001. This is similar to data from the National Health Interview Survey showing a prevalence of 34.8% for cigarette smoking among motor vehicle operators in 2000. In comparison, the prevalence of cigarette smoking for all workers 18 years and older was 25% (National Institute for Occupational Safety and Health, 2003).

Obesity and its consequences (e.g., hypertension and diabetes) are also risk factors for heart disease (Libby & Braunwald, 2008). Approximately 43.5% of members who responded to the trade association's 2001 survey were obese. This finding is somewhat lower than the results of a recent study of unionized truck drivers, which reported an obesity prevalence of 49.8% (Federal Motor

Table 3

**Observed Deaths, Standardized Mortality Ratios, and 95% Confidence Intervals for Select Specific Causes of Death Among Members of the Truck Driver Trade Association Study Cohort, 1989-2004**

| *Specific Cause of Death* | *Observed Deaths* | *SMR* | *95% CI* |
|---|---|---|---|
| Cancer | | | |
| Pharynx | 12 | 0.56 | 0.29-0.98 |
| Stomach | 33 | 0.79 | 0.54-1.11 |
| Intestine | 132 | 1.04 | 0.87-1.23 |
| Bladder and other urinary | 29 | 0.93 | 0.62-1.34 |
| Biliary, liver, gallbladder | 43 | 0.72 | 0.52-0.97 |
| Trachea, bronchus, lung | 557 | 1.00 | 0.92-1.09 |
| Prostate | 61 | 0.90 | 0.69-1.16 |
| Kidney | 55 | 1.08 | 0.82-1.41 |
| Skin | 30 | 0.64 | 0.43-0.92 |
| Brain and other nervous system | 45 | 0.76 | 0.56-1.02 |
| Non-Hodgkin's lymphoma | 66 | 0.93 | 0.72-1.18 |
| Leukemia | 54 | 0.94 | 0.71-1.23 |
| Alcoholism | 10 | 0.17 | 0.08-0.32 |
| Ischemic heart disease | 1,084 | 0.91 | 0.86-0.97 |
| Other heart disease | 153 | 0.64 | 0.54-0.75 |
| Cerebrovascular disease | 140 | 0.70 | 0.59-0.83 |
| Pneumonia | 33 | 0.43 | 0.30-0.61 |
| Chronic obstructive pulmonary disease | 109 | 0.59 | 0.48-0.71 |
| Pneumoconiosis and other respiratory disease | 33 | 0.54 | 0.37-0.76 |
| Cirrhosis and other chronic liver disease | 45 | 0.25 | 0.18-0.33 |
| Nephritis and renal failure | 17 | 0.37 | 0.21-0.59 |
| Transportation accidents | 319 | 1.52 | 1.36-1.70 |
| Accidental poisoning | 37 | 0.42 | 0.30-0.58 |
| Accidental falls | 19 | 0.55 | 0.33-0.86 |
| Suicide | 166 | 0.82 | 0.70-0.95 |
| Homicide | 36 | 0.48 | 0.34-0.67 |

Note. *Compared to the general U.S. population for the same time period. SMR = standardized mortality ratio; CI = confidence interval.*

Carrier Safety Administration, 2006). In comparison, the national prevalence of obesity among adults 20 years or older was 33.9% in 2007-2008 (Flegal, Carroll, Ogden, & Curtin, 2010).

Finally, exposure to airborne particulate matter is associated with both lung cancer (Valavanidis, Fiotakis, & Vlachogianni, 2008) and heart disease (Araujo & Nel, 2009; Valavanidis et al., 2008). Truck drivers are exposed to high levels of particulate matter ($PM_{2.5}$) when they sit or sleep in the truck while it is parked and idling (Fu, Calcagno, & Davis, 2010), a potentially common occurrence given that only 21% of drivers indicated they stayed in motels when making deliveries that took more than 1 day (unpublished trade association data). Interventions that reduce smoking, obesity, and exposure to environmental particulate matter may benefit the truck driver population.

### *Healthy Worker Effect*

Using the general U.S. population as the referent population has the advantage of providing stable mortality estimates. However, it has the disadvantage of poten-

Table 4

**Observed Deaths, All-Cause Standardized Mortality Ratios, and 95% Confidence Intervals by Age Group Among Members of the Truck Driver Trade Association Study Cohort, 1989-2004**

| *Age Group (years)* | *Observed Deaths* | *SMR* | *95% CI* |
|---|---|---|---|
| 20-24 | 1 | 0.13 | 0.00-0.71 |
| 25-29 | 28 | 0.60 | 0.40-0.87 |
| 30-34 | 103 | 0.81 | 0.66-0.98 |
| 35-39 | 173 | 0.67 | 0.57-0.78 |
| 40-44 | 321 | 0.73 | 0.65-0.81 |
| 45-49 | 461 | 0.70 | 0.64-0.77 |
| 50-54 | 623 | 0.73 | 0.68-0.79 |
| 55-59 | 767 | 0.74 | 0.68-0.79 |
| 60-64 | 794 | 0.78 | 0.73-0.84 |
| 65-69 | 565 | 0.80 | 0.74-0.87 |
| 70-74 | 338 | 0.85 | 0.76-0.94 |
| 75-79 | 152 | 0.99 | 0.84-1.16 |
| 80-84 | 33 | 0.78 | 0.53-1.09 |
| 85+ | 9 | 0.61 | 0.28-1.15 |

Note. *Compared to the general U.S. population for the same time period. SMR = standardized mortality ratio; CI = confidence interval.*

tially masking occupational risks because workers are usually healthier than the general population. Workers must maintain a certain level of health to perform their jobs; the general population includes individuals with health-related conditions that render them unemployable. Known as the healthy worker effect (HWE) (Pearce, Checkoway, & Kriebel, 2007), this phenomenon might exert a particularly strong effect among truck drivers, given that drivers must pass regular physical examinations to renew their commercial driver's licenses.

Although the HWE suppresses SMRs among the actively employed, it may not suppress SMRs equally for each specific cause of death; the less a given health condition is associated with employment status, the less impact from the HWE. Furthermore, the HWE may vary by the occupation studied. For example, strict federal regulations regarding alcohol use by truck drivers may be partially responsible for the low risk of alcoholism-related death in this cohort (Commercial Driver's License Standards, 2009; Driving of Commercial Motor Vehicles, 2009).

The HWE may explain why few published studies report elevated disease mortality among truck drivers when compared to the general population. One exception is a study by Laden et al. (2007), which estimated SMRs using a methodology similar to this study. Although the study cohort of unionized workers also had deficits for most causes of death, researchers did observe elevated mortality due to ischemic heart disease among long-haul truck drivers (SMR = 1.49, 95% CI = 1.40-1.59), in contrast to a small deficit of mortality due to ischemic heart disease in this study cohort (SMR = 0.91, 95% CI = 0.86-0.97).

Ischemic heart disease mortality may differ between the two studies for several reasons. One explanation could be differences in monitoring time; in the Laden et al. (2007) study, the entire cohort was followed for 16 years (1985 through 2000), whereas 41% of the trade association cohort was followed for less than 5 years (Table 1). Additionally, Laden et al. (2007) calculated occupation-specific SMRs, which was not possible for the trade association cohort. Finally, differences in calendar years for the two studies may have resulted in significantly different levels of exposure to harmful substances for each cohort, due to changes in either industry practices or the formulation of diesel fuel.

### *Limitations*

The data used for these analyses were not originally collected for research purposes. Therefore, information that would have been valuable to the analyses either was missing or had unsuitable categories. For example, occupation-specific SMRs are not presented because 11,139 records either had missing occupational categories or did not indicate if the member was a driver (Table 1). To avoid misrepresenting the data by either excluding these records from the analyses or arbitrarily categorizing them as drivers, the researchers calculated SMRs for all members combined. The missing occupational categories also prevented the researchers from conducting internal analyses.

The data also lacked information on several factors that are recognized as potential confounders (Checkoway, Pearce, & Crawford-Brown, 1989), including whether members were actively working, the age at which they started driving trucks, and the duration of their employment as truck drivers. As of July 25, 2005, 46% of the study cohort were no longer active members of the trade association. Although active members were likely to have been employed in the trucking industry during their entire study period, the employment status of former members was unknown.

Single imputation was used to create missing race and sex information within the data set. Although the researchers felt this approach was superior to excluding the incomplete records from analysis, imputing each missing value only once could have resulted in CIs that were too narrow, meaning the standard error was underestimated (Donders, van der Heijden, Stijnen, & Moons, 2006). Multiple imputation generally provides standard errors that properly reflect the uncertainty of missing data. However, multiple imputation was problematic for these analyses; multiple imputation would have required use of normal approximation to construct CIs, whereas the exact method was more appropriate for rare causes of death.

To ascertain the effect single imputation had on these results, the researchers performed two additional analyses: estimating the SMRs and 95% CIs with the incomplete observations excluded, and calculating coefficients of variation for SMRs from five imputed data sets.

Each analysis method yielded similar results. Compared to single imputation, excluding the incomplete observations resulted in minor differences in the SMR estimates, and only three causes of death changed significance levels. The SMRs for liver cancer and breast cancer became nonsignificant, whereas the SMR for brain cancer became significantly depressed (SMR = 0.67, 95% CI = 0.46-0.94).

Multiple imputation also had very little impact on the results. The largest coefficient of variation was only 0.27% (cancer of the female genital organs; Table 2), and for the overall SMR it was only 0.02%.

## CONCLUSION

This study presents the first characterization of mortality in a cohort primarily composed of owner-operator truck drivers. With a median follow-up period of 6 years, overall mortality and most cause-specific mortality were lower than expected when compared with the U.S. population. HWE may be strong in this population, given that a high percentage of individuals are likely to be actively working in a profession with stringent health requirements. The researchers expect HWE to diminish in this cohort over time, and will reanalyze the data in the future with additional monitoring.

Only death due to transportation accidents was significantly elevated; however, the numbers of deaths due to ischemic heart disease and lung cancer were high. Occupational health nurses can have a positive impact on the health of truck drivers by assisting them to reduce their risk for these three causes of death.

## REFERENCES


Arah, O. A., Chiba, Y., & Greenland, S. (2008). Bias formulas for external adjustment and sensitivity analysis of unmeasured confounders. *Annals of Epidemiology, 18*(8), 637-646.

Araujo, J. A., & Nel, A. E. (2009). Particulate matter and atherosclerosis: Role of particle size, composition and oxidative stress [Abstract]. *Particle and Fibre Toxicology, 6,* 24.

Bigert, C., Gustavsson, P., Hallqvist, J., Hogstedt, C., Lewne, M., Plato, N., et al. (2003). Myocardial infarction among professional drivers. *Epidemiology, 14*(3), 333-339.

Boffetta, P., & Silverman, D. T. (2001). A meta-analysis of bladder cancer and diesel exhaust exposure. *Epidemiology, 12*(1), 125-130.

Buchanich, J. M., Dolan, D. G., Marsh, G. M., & Madrigano, J. (2005). Under ascertainment of deaths using Social Security records: A recommended solution to a little-known problem. *American Journal of Epidemiology, 162*(2), 193-194.

Bureau of Labor Statistics. (2008a). *Fatal occupational injuries, total hours worked, and rates of fatal occupational injuries by selected worker characteristics, occupations, and industries, civilian workers, 2008*. Retrieved from www.bls.gov/iif/oshwc/cfoi/cfoi_rates_2008hb.pdf

Bureau of Labor Statistics. (2008b). *Table A-5: Fatal occupational injuries by occupation and event or exposure, all United States, 2008*. Retrieved from www.bls.gov/iif/oshwc/cfoi/cftb0236.pdf

Bureau of the Census. (1995). *Frequently occurring first names and surnames from the 1990 Census: Names file* [Data file]. Retrieved from www.census.gov/genealogy/names

Bureau of the Census. (2002). *Current population survey, basic monthly CPS files, January 1999-December 2002* [Data file]. Retrieved from www.bls.census.gov/cps_ftp.html#cpsbasic

Bureau of the Census. (2007). *File B: Surnames occurring 100 or more times* [Data file]. Retrieved from www.census.gov/genealogy/www/freqnames2k.html

Checkoway, H., Pearce, N., & Crawford-Brown, D. J. (1989). Issues of study design and analysis. In *Research methods in occupational epidemiology* (pp. 72-90). New York: Oxford University Press.

Cocco, P., Ward, M. H., & Dosemeci, M. (1998). Occupational risk factors for cancer of the gastric cardia: Analysis of death certificates from 24 US states. *Journal of Occupational & Environmental Medicine, 40*(10), 855-861.

Colt, J. S., Baris, D., Stewart, P., Schned, A. R., Heaney, J. A., Mott, L. A., et al. (2004). Occupation and bladder cancer risk in a population-based case-control study in New Hampshire. *Cancer Causes & Control, 15*(8), 759-769.

Commercial Driver's License Standards; Requirements and Penalties: Disqualification of Drivers, 49 C.F.R. §383.51 (2009).

Donders, A. R. T., van der Heijden, G. J. M. G., Stijnen, T., & Moons, K. G. M. (2006). Review: A gentle introduction to imputation of missing values. *Journal of Clinical Epidemiology, 59*(10), 1087-1091.

Driving of Commercial Motor Vehicles: Alcohol Prohibition, 49 C.F.R. §392.5 (2009).

Federal Motor Carrier Safety Administration. (2006). *Truck driver fatigue management survey*. Retrieved from www.fmcsa.dot.gov/facts-research/research-technology/report/Truck-Driver-Fatigue-Management-Survey-Report.pdf

Federal Motor Carrier Safety Administration. (2008). Hours of service of drivers; final rule. *Federal Register, 73*(224), 69567-69586.

Flegal, K. M., Carroll, M. D., Ogden, C. L., & Curtin, L. R. (2010). Prevalence and trends in obesity among US adults, 1999-2008. *Journal of the American Medical Association, 303*(3), 235-241.

Fu, J. S., Calcagno, J. A., & Davis, W. T. (2010). *Evaluation of noise level, whole-body vibration and air quality inside the cab of heavy-duty diesel vehicles during conditions of parked engine-idling and on-road driving* [DVD]. Transportation Research Board 89th Annual Meeting Compendium of Papers, Washington, DC.

Garshick, E., Laden, F., Hart, J. E., Rosner, B., Davis, M. E., Eisen, E. A., et al. (2008). Lung cancer and vehicle exhaust in trucking industry workers. *Environmental Health Perspectives, 116*(10), 1327-1332.

Jarvholm, B., & Silverman, D. (2003). Lung cancer in heavy equipment operators and truck drivers with diesel exhaust exposure in the construction industry. *Occupational & Environmental Medicine, 60*(7), 516-520.

Koda, S., Yasuda, N., Sugihara, Y., Ohara, H., Udo, H., Otani, T., et al. (2000). Analyses of work-relatedness of health problems among truck drivers by questionnaire survey [English abstract]. *Sangyo Eiseigaku Zasshi, 42*(1), 6-16.

Korelitz, J. J., Fernandez, A. A., Uyeda, V. J., Spivey, G. H., Browdy, B. L., & Schmidt, R. T. (1993). Health habits and risk factors among truck drivers visiting a health booth during a trucker trade show. *American Journal of Health Promotion, 8*(2), 117-123.

Laden, F., Hart, J. E., Smith, T. J., Davis, M. E., & Garshick, E. (2007). Cause-specific mortality in the unionized US trucking industry. *Environmental Health Perspectives, 115*(8), 1192-1196.

Leigh, J. P., & Miller, T. R. (1998). Job-related diseases and occupations within a large workers' compensation data set. *American Journal of Industrial Medicine, 33*(3), 197-211.

Libby, P., & Braunwald, E. (2008). *Braunwald's heart disease: A textbook of cardiovascular medicine* (8th ed.). Philadelphia: Saunders/Elsevier.

Little, R. J. A., & Rubin, D. B. (2002). *Statistical analysis with missing data* (2nd ed.). Hoboken, NJ: Wiley.

Menvielle, G., Luce, D., Fevotte, J., Bugel, I., Salomon, C., Goldberg, P., et al. (2003). Occupational exposures and lung cancer in New Caledonia. *Occupational & Environmental Medicine, 60*(8), 584-589.

National Death Index. (2001). *Names, names, names: First and last name frequencies compiled from the National Death Index* [CD-ROM]. Hyattsville, MD: National Center for Health Statistics.

National Institute for Occupational Safety and Health. (2003). *Work-related lung disease surveillance report, 2002*. Retrieved from www.

cdc.gov/niosh/docs/2003-111/2003-111.html
Pearce, N., Checkoway, H., & Kriebel, D. (2007). Bias in occupational epidemiology studies. *Occupational & Environmental Medicine, 64*(8), 562-568.
Robinson, C. F., & Burnett, C. A. (2005). Truck drivers and heart disease in the United States, 1979-1990. *American Journal of Industrial Medicine, 47*(2), 113-119.
Robinson, C. F., Schnorr, T. M., Cassinelli, R. T., Calvert, G. M., Steenland, N. K., Gersic, C. M., et al. (2006). Tenth revision US mortality rates for use with the NIOSH Life Table Analysis System. *Journal of Occupational and Environmental Medicine, 48*(7), 662-667.
Saltzman, G. M., & Belzer, M. H. (2007). *Truck driver occupational safety and health: 2003 conference report and selective literature review*. Cincinnati, OH: National Institute for Occupational Safety and Health.
Sato, S., Taoda, K., Wakaba, K., Kitahara, T., & Nishiyama, K. (1999). Effect of the long distance truck driving in Hokkaido on cardiovascular system [English abstract]. *Sangyo Eiseigaku Zasshi, 41*(6), 206-216.
Steenland, K., Deddens, J., & Stayner, L. (1998). Diesel exhaust and lung cancer in the trucking industry: Exposure-response analyses and risk assessment. *American Journal of Industrial Medicine, 34*(3), 220-228.
U.S. Department of Health and Human Services. (2004). *The health consequences of smoking: A report of the Surgeon General*. Retrieved from www.cdc.gov/tobacco/data_statistics/sgr/sgr_2004/index.htm
Valavanidis, A., Fiotakis, K., & Vlachogianni, T. (2008). Airborne particulate matter and human health: Toxicological assessment and importance of size and composition of particles for oxidative damage and carcinogenic mechanisms. *Journal of Environmental Science and Health Part C-Environmental Carcinogenesis & Ecotoxicology Reviews, 26*(4), 339-362.
Word, D. L., Coleman, C. D., Nunziata, R., & Kominski, R. (2007). *Demographic aspects of surnames from Census 2000*. Retrieved from www.census.gov/genealogy/www/freqnames2k.html

**EXHIBIT 1**

# OWNER – OPERATOR DRIVER COMPENSATION

2015


ANALYSIS BY JOHN HUSING PHD


FOR THE CALIFORNIA TRUCKING ASSOCIATION AND INLAND EMPIRE ECONOMIC PARTNERSHIP



EXHIBIT 2

# OWNER – OPERATOR DRIVER COMPENSATION 2015

**Copies of the OODC Study can be requested from:**

**CALIFORNIA TRUCKING ASSOCIATION**
Policy and Government Relations Department
Email: syang@caltrux.org
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Website: www.caltrux.org



**EXHIBIT 2**

# ABOUT THIS STUDY

Independent Owner-Operators have long been a vital part of the trucking industry. Estimated to make up nearly 20% of all professional drivers on the road today, some of America's largest, most successful fleets were built up from a single truck. These truckers have embodied the spirit of independence and entrepreneurship that runs throughout this proud industry as the backbone of the American economy.

As the CEO of the nation's largest statewide organization representing the trucking industry, I was troubled by a recent study claiming that – on the whole- Independent Owner-Operators have fallen behind company drivers in terms of compensation. This study was commissioned, in part, to analyze this question. The results of this study clearly show that the median net income of Independent Owner-Operators still exceeds that of company drivers, with nearly 75% of Independent Owner-Operators earning more than their company driver counterparts. Additionally, the top 20% of Independent Owner Operators take home six-figure incomes.

Because of the economic and entrepreneurial opportunity available to drivers, the CTA continues to support a drivers' freedom to choose the work environment which suits them best.

**Shawn Yadon, Chief Executive Officer**
**California Trucking Association**
**Study Co-Sponsor**

The greatest concern in the Inland Empire, home to over 4 million Californians, is its high level of poverty (*18% of all people, 26% of children under 158*). Importantly, local public health leaders have identified economic difficulties as the key to addressing their difficult public health concerns. This flows from research showing that poverty far outranks other determinants like access to medical care or the environment in impacting a community's health.

Ultimately, the need is for job growth in sectors with few educational barriers to entry and skill ladders up which workers can migrate to middle class incomes. This is why we at the Inland Empire Economic Partnership so strongly support logistics.

Logistics is the economic lifeblood of the Inland Empire and our area's fastest growing sector directly responsible for 19%, 20% and 23% of the over 50,000 jobs annually created in 2013-2015. It is a huge contributor to upper mobility for workers needing access to skill ladders leading to the middle class. That is the case given its $44,470 median income in 2015. Also, 83.0% of the sector's workers have jobs requiring a high school or less education putting 33% in occupations paying above the median income.

Within logistics, trucking is even better paying and the findings in this study support trucking's role as an entrepreneurial opportunity.

**Paul Granillo, CEO**
**Inland Empire Economic Partnership**
**Study Co-Sponsor**



**EXHIBIT 2**

# AUTHOR'S BACKGROUND

Dr. John Husing is a research economist who has specialized in the study of Southern California's growing economy since 1964. For decades, he has produced city and county specific economic development strategies for the region's local governments. In recent years, much of his research has focused on the impact that state policies are having on families living in poverty and on the large share of the state's workers who are marginally educated. A subset of that work has made him a leading authority on the impact of the goods movement industry on Southern California, and in particular its role as a provider of upward economic mobility to blue collar workers. A hallmark of Dr. Husing's research is to reach beyond standard regional economic impact analysis by conducting extensive annual one-on-one interviews with executives and entrepreneurs to understand their views of the forces shaping Southern California and the sectors in which they conduct business.

Dr. Husing served as the economist reviewing and recommending strategies for the successful Clean Truck Program instituted at the San Pedro Port Complex. For over a decade, he has performed a similar role on several key studies analyzing growing regional poverty and the important economic role played by the combined trucking, warehousing and wholesale trade sectors for the Southern California Association of Governments.

As a consequence of his research specialties, Dr. Husing has often been called upon to testify before legislative committees considering bills and policies affecting the state's economy and its transportation system.

**John E. Husing, Ph.D.**
**Chief Economist, Inland Empire Economic Partnership**



**EXHIBIT 2**

# ACKNOWLEDGEMENT

The Owner-Operator Driver Compensation study was prepared and conducted by Dr. John E. Husing, PhD of Economics and Politics, Inc. Through supportive review by the American Transportation research Institute (ATRI), ATRI provided guidance on statistical inputs and analysis to the publication.

# Executive Summary

In 2014-2015, the California Trucking Association (CTA) partnered with the Inland Empire Economic Partnership (IEEP) to develop a study that would quantify the net earnings of California Independent Owner-Operators (IOOs) and compare their earning power to the broader workforce.

Our analysis finds that:

- In 2013, the independent owner operators studied earned a median net income of $59,478 compared to $42,078 median pay of employee drivers in California.
- Three-quarters IOOs earned more than drivers in employee-based models.
- The top twenty percent of IOOs earn more than workers in 156 of the 158 logistics occupations in Los Angeles County and the Inland Empire, including those with Bachelor's degrees.

This study summarizes and examines data from a wide range of sources:

- California Employment Development Department's Occupational Employment Statistics survey,
- U.S. Census Bureau,
- American Transportation Research Institute; and,
- 28 different firms which includes data from 2,648 California IOOs.

This data was used to characterize gross revenue and business expenses for IOOs such as repairs and maintenance, fuel and insurance, mileage, and other applicable costs.



**EXHIBIT 2**

# Independent Owner Operator Compensation Data Analysis

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One of the economic issues emanating from the port-drayage segment of the trucking industry has been the issue of the trucking model whereby drivers are largely independent owner-operators (*IOO*) contracting with firms to move cargo for them. During the 2007-2008 development of the Clean Truck Program at the San Pedro Bay port complex a proposed mandate would have require trucking firms to hire drivers as employees. Some claimed that IOOs were underpaid. Other drivers, most trucking companies and port interests claimed that IOOs earn more as independent contractors and that the existing trucking model should be maintained. Ultimately, the appellate court decided that the employment mandate violated the federal preemption related to state regulation of "rates, routes and services" under the Federal Aviation Administration Authorization Act.

However, the controversy has not ended there. To date, the crucial question about IOO earnings has been largely argued by advocates and hard evidence about the actual facts has been missing. As the economist who conducted most of the economic analysis of the Clean Truck Program and being familiar with the issues surrounding this controversy, this report has been created to supply hard data to the discussion of this issue.

Specifically, the data used below relates to IOOs working in California, with specific reference, where possible, to those working in Southern California.

**CA Employment Development Department (*EDD*).** A starting place for such an analysis is official data supplied by government agencies. In the case of California, the main source is EDD which conducts the Occupational Employment Statistics (*OES*) survey. It is a semiannual mail survey measuring occupational employment and occupational wage rates for wage and salary workers in nonfarm establishments, by industry. The survey samples about 37,000 establishments per year, taking 3 years to fully collect the sample of approximately 113,000 establishments in California. The California Unemployment Insurance (*UI*) file provided the universe from which the OES survey drew its sample. The employment benchmark is obtained from reports submitted by employers to the UI program under penalty of perjury.[1]

[1] OES Survey Methodology and FAQs http://www.labormarketinfo.edd.ca.gov/data/oes-employment-and-wages.html#Method



**EXHIBIT 2**

Exhibit 1 below shows the latest OES data on wage and salary pay (*1st Quarter 2015*) for SOC code 53-3032 which is for heavy duty truck drivers. The data shown are for the State of California as well as Southern California's major markets.

It shows that the mean-average annual wage and salary level for heavy duty drivers varied from a low of $41,369 in San Diego County (*$19.64 an hour*) to a high of $48,302 in the Inland Empire (*$23.22 an hour*) in first quarter 2015. The state figure was $44,104 (*$21.21 an hour*).

Median pay levels (*half the workers above and below*) were somewhat lower as very high pay levels tend to pull the mean average levels to the high side. The median range was from $39,270 in Orange County (*$18.88 an hour*) to $45,802 in the Inland Empire (*$22.02 an hour*). The California median was $42,078 (*$20.23 an hour*).

U.S. Bureau of Labor Statistics indicates 2014 median pay for U.S. company drivers was $39,520. (http://www.bls.gov/oes/current/oes533032.htm)

**Exhibit 1.-Occupational Employment (May 2014) & Wage (2015 -1st Quarter) Data**
**Occupational Employment Statistics (OES) Survey Results**

| Area Name | SOC Code | Occupational Title | May 2013 Employment | Mean Annual Wage | Median Annual Wage | 25th Percentile Hourly Wage | Mean Hourly Wage | 50th Percentile (Median) Hourly Wage | 75th Percentile Hourly Wage |
|---|---|---|---|---|---|---|---|---|---|
| Inland Empire | 53-3032 | Heavy and Tractor-Trailer Drivers | 24,590 | $48,302 | $45,802 | $17.79 | $23.22 | $22.02 | $28.33 |
| Los Angeles Co. | 53-3032 | Heavy and Tractor-Trailer Truck Drivers | 29,430 | $42,416 | $40.165 | $15.51 | $20.39 | $1931 | $24.12 |
| CALIFORNIA[1] | *53-3032* | *Heavy and Tractor-Trailer Truck Drivers* | 127,330 | $44,104 | $42,078 | $16.48 | $21.21 | $20.23 | $25.08 |
| Orange Co. | 53-3032 | Heavy and Tractor-Trailer Truck Drivers | 5,990 | $41,969 | $39,270 | $16.11 | $20.18 | $18.88 | $22.92 |
| San Diego Co. | 53-3032 | Heavy and Tractor-Trailer Drivers | 6,,570 | $41,369 | $40,851 | $16.19 | $19.64 | $19.56 | $23.61 |



**EXHIBIT 2**

**U.S. Census Bureau.** A second source of data is the Non-Employer earnings of firms in the truck transportation business as shown by the U.S. Census Bureau. The sector is "Sector 48-49 -- Transportation and Warehousing – 484 Truck Transportation." It is precisely defined as:[2]

> "Industries in the truck transportation subsector provide over-the-road transportation of cargo using motor vehicles, such as trucks and tractor trailers. The subsector is subdivided into general freight trucking and specialized freight trucking. This distinction reflects differences in equipment used, type of load carried, scheduling, terminal, and other networking services. General freight transportation establishments handle a wide variety of general commodities, generally palletized, and transported in a container or van trailer. Specialized freight transportation is the transportation of cargo that, because of size, weight, shape, or other inherent characteristics require specialized equipment for transportation."

**Exhibit 2.-Gross & Average Receipts, Non-Employers, Truck Transportation, 2013**

| Area | Establishments | Gross Receipts | Mean Average Receipts |
|---|---|---|---|
| Inland Empire | 12,591 | $1,381,897,000 | $109,753 |
| California | 70,889 | $7,531,256,000 | $106,240 |
| Orange County | 2,700 | $280,280,000 | $103,807 |
| San Diego County | 2,371 | $219,516,000 | $92,584 |
| Los Angeles County | 23,301 | $2,058,986,000 | $88,365 |

Source: Non-Employer Statistics, 2013, U.S. Census Bureau

Three definitions are important in understanding these census data:[3]

- **Non-Employer.** A non-employer business is one that has no paid employees, has annual business receipts of $1,000 or more, and is subject to federal income taxes.
- **Number of Establishments.** Generally, an establishment is a single physical location at which business is conducted, services are rendered, or industrial operations are performed. However, non-employer statistics counts each distinct business income tax return as a firm. For non-employer statistics, the Census Bureau uses the terms firm and establishment interchangeably. Since a non-employer business may operate from

[2] 2012 Nonemployer Statistics, U.S. Census Bureau, http://censtats.census.gov/cgi-bin/nonemployer/nondetl.pl

[3] http://www.census.gov/econ/nonemployer/definitions.htm#firms

its owner's home address or from an unspecified physical location, most geography codes are derived from the business owner's mailing address, which may not be the same as the physical location of the business activity.

- **Gross Receipts.** Includes gross receipts, sales, commissions, and income from trades and businesses as reported on annual income tax returns. Business income consists of all payments received for services rendered.

Using data from this source, it is possible to calculate mean average gross receipts for non-employers in each market as of 2013 (*Exhibit 3*). The data show mean-average gross receipts varying from $88,365 in Los Angeles County to $109,753 in the Inland Empire.

**American Transportation Research Institute (*ATRI*).** For the past several years, ATRI has created its Analysis of the Operational Costs of Trucking. The strength of their work is that it is based upon an annual survey of companies which "operate 30,083 trucks, which accrued an estimated 3.5 billion miles in 2013."[4] It thus provides a good look at the cost per mile of various elements of operating heavy duty trucks. The weakness is that it is for "for hire" firms not IOOs.

The cost data are thus used sparingly below.

While these three data sources provide some insight into what is occurring in terms of earnings levels in California and Southern California, they have three weaknesses in terms of IOOs:

- EDD's information is for all wage and salary workers in heavy duty truck occupations for first quarter 2014. It does not include IOOs. It thus provides a basis for comparison for company-drivers, but does not give information about the central issue.
- The Census data is for non-employers and thus independent owner operators. However, the information is for 2013 when the Great Recession had just ended. It does give some indication of the flow of revenue into all IOOs that year. It shows gross, not net earnings for these firms and it provides mean-average data only … not medians.
- As stated, the ATRI data is from "for hire" firms in 2013. It provides useful information on costs per mile but not about specific costs borne by IOOs.

[4] Analysis of the Operational Costs of Trucking, American Transportation Research Institute, September 2014, pg. 5

**IOO Data Development**. As there is no third party source of information available to actually look at the net earnings of IOOs, it was necessary to develop this information. Three sources became available to this analyst using 2013 data:

- **Tax Records.** Important information came from the income tax filings for 456 IOOs. It was for all of the California drivers that were clients of a national accounting firm. The request for every such driver was made, rather than a sample, so a full picture would be created. The information was provided without names for confidentiality. It included gross revenue and cost items such as repairs and maintenance, fuel and insurance. It also included the total mileage driven by the operator.
- Two adjustments were made: Gross Income was calculated deducting the cost of leasing or buying equipment as this item varies widely depending upon lease/purchase/ subsidy agreements between trucking companies and IOOs affiliated with them. Other costs included $0.086 per mile for other expenses including permits, licenses, fees and tolls consistent with the ATRI 2013 estimate.[5] It did not include lifestyle costs, such as home office expenses, often used by entrepreneurs to reduce taxable income.

**Exhibit 3.-Average Performance, 466 IOO's Tax Records**

| Income Group | Gross | Insurance | Fuel | Repairs | Other | Total Cost | Mean Net | Median Net | Mileage |
|---|---|---|---|---|---|---|---|---|---|
| Top 25% | $171,233 | $7,632 | $40,363 | $11,786 | $5,855 | $65,636 | $105,597 | $93,290 | 160,989 |
| 2nd 25% | $117,811 | $6,019 | $32,250 | $10,018 | $5,059 | $53,345 | $64,466 | $63,929 | 121,615 |
| 3rd 25% | $108,853 | $6,334 | $38,744 | $10,263 | $5,587 | $60,928 | $47,925 | $48,296 | 116,805 |
| Bottom 25% | $84,107 | $6,032 | $32,515 | $10,748 | $4,912 | $54,207 | $29,900 | $31,239 | 101,428 |
| **Total** | $120,501 | $6,504 | $35,968 | $10,704 | $5,353 | $58,529 | $61,972 | **$55,261** | **125,209** |

Note: These data may be on the high side as the firms were able to use a national tax firm

[5] Analysis of the Operational Costs of Trucking, American Transportation Research Institute, September 2014, p. 12



**EXHIBIT 2**

The tax data was divided into four quartiles of 114 IOOs each. It provided important metrics (*Exhibit 3*):

- **Mean-average gross revenue** varied from a low of $84,107 for the bottom group to $171,233 for the group with the highest cash flow.
- **Average mileage** driven varied from a low of 101,428 among the lowest earning group to 160,986 in the top group. This measure substituted for "level of activity." It is inexact as it does not measure hours worked, number of turns, or number of containers handled.
- **Average total costs** ranged from $54,207 to $65,636. Importantly, costs did not fall as much as gross revenue as less miles were driven by each group. This reflects the fact that many costs are fixed and do not vary with level of activity.[6]
- **Mean-average net income** varied from $29,900 for the lowest group to $105,597 for the highest earning group. This difference reflects the longer distances driven by each quartile from top to bottom. It also reflects the fact that costs do not fall proportionately as revenue drops, again underscoring the fix cost impact.
- **Median net income** is the level at which half the drivers in the group make more and half make less. Here the range is less extreme because a few very high or very low values do not skew the numbers in the high or the low direction. The low group figure was $31,239, the high group was $93,290.
- **For all 456 drivers**:
  - **Average miles driven (*activity estimate*)** was 121,615
  - **Mean-average annual net earnings** was $61,972
  - **Median annual net earnings** was $55,261

Metrics from this source provide a comparison to the results from other sources.

[6] An oddity in the cost data was the second highest quartile of IOOs having lower average costs despite more activity and revenue than group three.

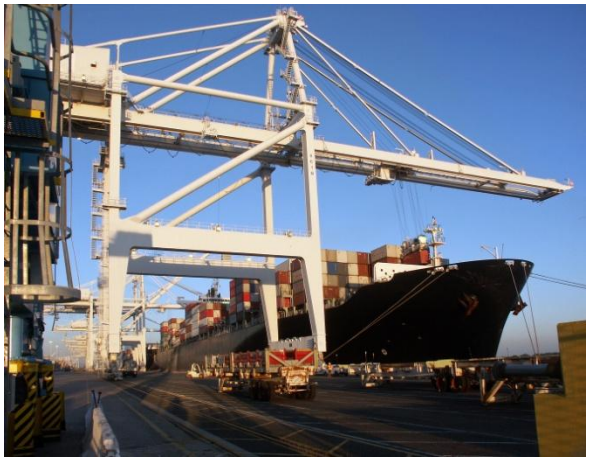


EXHIBIT 2

- **Detailed IOO Records.** A second source was the IOO gross revenues, costs and mileage for a drayage firm serving the ports of Los Angeles and Long Beach that had over 120 owner-operation drivers associated with it for at least some part of 2013. In this case, the client allowed this analyst to see the actual records from which the information was taken. The data was extracted for every driver associated with the firm so a full picture could be created. The net earnings from these IOOs could then be compared to the IOOs from the accounting firm to determine how well they matched.
- **Cooperating Firms.** A third source was the gross revenues, costs and mileage with regards to IOOs affiliated with them from a variety of firms that were willing to supply data. As in the other two cases, the request was for data on every IOO so a full picture could be seen. The information was provided without names for confidentiality. Here, the data was complete in some cases but partial in others:
    - **Mileage.** Annual mileage of each driver was made available as an estimate of level of activity.
    - **Gross Revenue.** Gross revenue paid to each IOOs was generally made available. For the few drivers where it was not, data were developed using the ratio of miles driven to IOO revenue for that firm among the drivers for which it was available.
    - **Fuel.** Fuel costs were available to most but not all IOOs. Since a large number were available, it allowed an estimate of fuel costs for those not revealed based upon the assumption of 6.0 miles to the gallon and 2013 average diesel cost per gallon of $3.90 or average of $0.65 per mile. The market price of diesel to IOOs is offset by most companies via the industry practice of a diesel surcharge paid to drivers to keep their fuel costs stable. This was omitted from companies that did not supply this specific information resulting in an overestimate of the fuel cost and an underestimate of net profit for numerous IOOs. Where the subsidies were available, fuel cost were lowered commensurately.
    - **Maintenance.** Average vehicle maintenance costs for each IOOs drivers were provided by the accounting firm and some of the individual companies. This made possible showing the relationship between miles driven and maintenance costs. The other firms provided average maintenance costs for IOOs associated with the firm for a full year. For drivers who accounted for less than half the median miles driven for a firm, the percentage their miles made up of the fleet median was determined and that share of maintenance costs applied to the driver. For IOOs driving 50% to 75% of the median, 75% of the median was applied. That likely overestimated their costs since most of this group of drivers had less than 75% of the median miles. For all other drivers, the full median maintenance cost was used.



EXHIBIT 2



- **Insurance.** Average 2013 insurance costs were provided for all IOOs by some firms, but not others. Based upon industry rates that year, and these figures, insurance costs were applied to the other IOOs. The same formula process used for vehicle maintenance was applied to insurance based upon an annual cost for most companies of liability coverage at $3,600; physical damage at $2,000; cargo coverage at $600. The total insurance cost at $3,600.
- **Other Costs.** As discussed earlier, other costs included $0.086 per mile for expenses such as permits, licenses, fees and tolls consistent with the American Transportation Research Institute 2013 estimate.
- **Net Income.** The Net Income to IOOs was calculated by subtracting the sum of these costs from the Gross Revenue paid to them. This calculation for these firms was compared to those from the accounting firm to determine whether the order of magnitude were reasonable.

**Exhibit 4.- Median & Mean Average Performance, 2,648 IOOs, 2013**

| Income Group | Gross | Insurance | Fuel | Repairs | Other | Total Cost | Mean Net | Median Net | Mileage |
|---|---|---|---|---|---|---|---|---|---|
| Top 25% | $234,746 | $6,676 | $96,949 | $4,756 | $16,277 | $124,659 | $110,087 | $102,087 | 195,251 |
| 2nd 25% | $151,701 | $6,521 | $58,978 | $6,161 | $9,355 | $81,015 | $70,686 | $68,936 | 124,782 |
| 3rd 25% | $104,253 | $5,859 | $36,190 | $5,452 | $5,988 | $53,488 | $50,764 | $47,005 | 84,442 |
| Bottom 25% | $63,905 | $3,961 | $23,643 | $3,002 | $4,057 | $34,663 | $29,242 | $28,297 | 53,739 |
| **Total** | **$138,651** | **$5,754** | **$53,940** | **$4,843** | **$8,919** | **$73,456** | **$65,195** | **$59,478** | **114,553** |



**EXHIBIT 2**

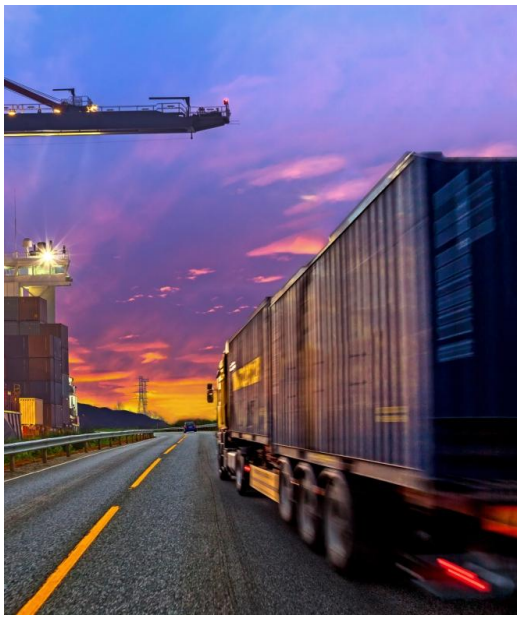
The data for 2,648 IOOs, which included all three of the groups and represented independent drives involved in port drayage, over-the-road and refrigeration indicated above was divided into four quartiles of 662 IOOs each. It provided several metrics (*Exhibit 4*):

- **Average gross revenue** varied from a low of $63,905 for the bottom group to $234,746 for the group with the highest cash flow.
- **Average mileage** driven varied from a low of 53,739 among the lowest earning group to 195,251 in the top group. Again, this was a rough estimate of different levels of activity.
- **Average total costs** ranged from $34,663 to $124,659. Again, costs did not fall as much as gross revenue as less miles were driven by each of the four groups. This reflects the fact that many costs are fixed and do not vary with miles or such activities as number of turns, containers or hours worked.
- **Mean-average net income** varied from $29,242 for the lowest group to $110,087 for the highest earning group. This difference reflects the longer distances driven by the each quartile from top to bottom. It also reflects the fact that costs do not fall proportionately as revenue drops, again underscoring the fix cost impact.
- **Median net income** The low group figure was $28,297, the high group was $102,087. Here the range is less extreme because a few very high or very low values do not skew the numbers in the high or the low direction.




**EXHIBIT 2**

- **For Total of 2,648 drivers**: **(*Exhibits 4 vs. Exhibit 3*)**
  - **Average miles driven** was 114,553 vs. 125,209 for the tax record group
  - **Mean-average annual net earnings** was $65,195 vs. $61,972 for the smaller group
  - **Median annual net earnings** was $59,478 vs. $55,261 for the sample tax record group
- Among the **highest earning** quartile of drivers:
  - **Average miles driven** was 195,251 vs. 160,989 for the tax record group
  - **Mean-average annual net earnings** was $110,087 vs. $105,597 for the smaller group
  - **Median annual net earnings** was $102,087 vs. $93,290 for the sample tax record group
- Among the **2nd highest earning** quartile of drivers:
  - **Average miles driven** was 124,782 vs. 121,615 for the tax record group
  - **Mean-average annual net earnings** was $70,686 vs. $64,466 for the smaller group
  - **Median annual net earnings** was $68,936 vs. $63,929 for the sample tax record group
- Among the **3rd highest earning** quartile of drivers:
  - **Average miles driven** was 84,442 vs. 116,805 for the tax record group
  - **Mean-average annual net earnings** was $50,764 vs. $47,925 for the smaller group
  - **Median annual net earnings** was $47,005 vs. $48,296 for the sample tax record group
- Among the **lowest earning** quartile of drivers:
  - **Average miles driven** was 53,739 vs. 101,428 for the tax record group
  - **Mean-average annual net earnings** was $29,242 vs. $29,900 for the smaller group
  - **Median annual net earnings** was $28,297 vs. $31,239 for the sample tax record group



**IOOs Compared to Logistics Occupations.** It is generally accepted that IOOs tend to have high school or less educations plus heavy duty truck certifications. Looking at workers in all logistics occupational categories, ranked by educational requirements for them, the following results appear (*Exhibit 4 levels versus Exhibit 5*):

- The highest quartile of IOOs, with net median income of $102,087, earns more than those working in 156 of the 158 occupations in Los Angeles County and the Inland Empire, including those with Bachelor's degrees.
- The second quartile of IOOs, with net median income of $68,936, earns more than logistics workers in 112 of the 158 occupations in the two largest Southern California markets, not including only those occupations requiring four year or higher college degrees.
- The third quartile of IOOs, with net median income of $47,005, earns more than those in 106 of the 158 logistics occupations, not including only those requiring Associates or higher degrees.
- The bottom quartile of IOOs, with net median income of $28,297, earns more than logistics workers in the 21 occupations requiring less than high school educations.

**Exhibit 5.-Occupational Pay by Educational Level With IOO Medians, 2015**
**Los Angeles County& Inland Empire Combined**

| Educational Requirement for Occupations | (1) Number of Occupations | (2) Worker Share | (3) Workers | (4) 25th Percentile Hourly Wage | (4) 50th Percentile (Median) Hourly Wage | (5) Median Annual Pay | (4) 75th Percentile Hourly Wage |
|---|---|---|---|---|---|---|---|
| Doctorate or Professional | 2 | 0.04% | 193 | $46.85 | $65.71 | $131,410 | $78.95 |
| **IOO Highest Quartile** | | | | | | **$102,087** | |
| Masters | NA | 0.00% | NA | NA | NA | $0 | NA |
| Bachelors | 44 | 16.36% | 85,189 | $30.56 | $42.55 | $85,109 | $58.29 |
| **IOO Second Highest Quartile** | | | | | | **$68,936** | |
| Associates | 6 | 0.46% | 2,405 | $22.14 | $28.80 | $57,591 | $36.04 |
| **IOO Third Highest Quartile** | | | | | | **$47,005** | |
| Some College, No Degree | 1 | 0.52% | 2,690 | $15.36 | $19.21 | $38,422 | $25.38 |
| Post 2nd, Non-Degree | 7 | 11.15% | 58,062 | $16.20 | $20.21 | $40,420 | $25.52 |
| High School | 77 | 51.45% | 267,914 | $15.20 | $20.05 | $40,108 | $26.85 |
| **IOO Lowest Quartile** | | | | | | **$28,297** | |
| Less Than High School | 21 | 20.03% | 104,298 | $9.90 | $12.21 | $24,429 | $16.01 |
| **All Logistics Sector Workers** | **158** | **100.00%** | **520,751** | **$16.81** | **$22.23** | **$44,470** | **$29.73** |
| **Full Time All Logistics Workers: 2,000 Hours** | | | | **$33,615** | **$44,470** | | **$59,456** |

Notes: Employment Development Department Data, Used As Follows:

1. Occupations in Wholesale Trade, Transportation & Warehousing (*Logistics Group*), Ranked by Educational Requirements
2. Worker Shares by Occupation in Wholesale Trade, Warehousing & Transportation, Average of 2010 & 2020
3. Occupational Shares Applied to Total Workers in Logistics sectors for Los Angeles County & Inland Empire, 2015
4. Pay By Standard Occupational Code in Logistics, Los Angeles County & Inland Empire, 1st Quarter 2015
5. Full time estimated at 2,000 hours



**EXHIBIT 2**

# Conclusions

- IOOs are entrepreneurs who determine the level of activity in which they wish to engage be it miles or numbers of hours, containers or turns.
- There is a clear relationship between the level of activity and their net incomes. It shows up in both the smaller sample of tax records as well as for all of the cooperating firms. For those drivers choosing to engage in more activity, there is a financial return, often quite substantial.
- The costs of operating an IOO are not as flexible as the level of activity in which they engage. For that reason, IOOs willing to undertake greater levels of effort be it miles, turns, containers or hour gain an advantage in net income because some of their costs are fixed.
- The companies involved in this study had median annual gross revenue of $138,651 in 2013. That exceeded the average of $104,536 for California IOOs in 2012. In part, this is likely the result of the state's Gross State Product growing from $1.96 trillion to $2.21 trillion, up 12.5% between 2012-2013. Meanwhile, U.S. e-commerce activity, which is often dependent on imports being driven by heavy duty trucks from the ports, expanded by 27.8%.[7] Both metrics drive heavy duty truck traffic.
- According to the U.S. Bureau of Labor Statistics, the 2015 median annual pay for employed drivers working 2,000 hours, was $40,411 in the combined Los Angeles and Inland Empire markets of Southern California.[8]
    - Three quarters of the IOOs surveyed for their 2013 earnings, using their median net incomes of

[7] Estimated Quarterly U.S. E-commerce sales, U.S. Department of Commerce, 2012-2013

[8] Median Pay, Heavy Duty Truck Drivers, Los Angeles County & Inland Empire, U.S. Bureau of Labor Statistics, 2015

$102,087, $68,936 and $47,005 earned more than this 2015 level

- One quarter of the IOOs at $28,297 earned less than this level.

- IOOs very likely have high school or less educations plus heavy duty truck certifications. However:
  - The highest earning IOOs earned more than the median incomes of logistics workers in occupations requiring post-graduate degrees.
  - The second quartile of IOOs exceeded the median incomes of all but those in occupations needing bachelors and higher degrees.
  - The third quartile exceeded the median incomes of all but those in occupations needing associates or higher degrees.
  - The lowest quartile fell below the median incomes of logistics workers in occupations requiring high school educations but above those requiring less schooling.
- From these data, it appears fair to conclude that as entrepreneurs, IOOs can choose to put in levels of activity that allow them to earn incomes rivaling or exceeding those found among the highest paying occupations in logistics.



EXHIBIT 2