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September 28, 2016

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

Re: 2030 Target Scoping Plan Update, Transportation Sector

Dear Chair Nichols and Members of the Board:

On behalf of Defenders of Wildlife (Defenders) and our more than 170,000 California members and supporters, we are writing in support of California Air Resources Board's (CARB) vision of the transportation and land use scoping plan. The ideas presented in the Draft Vision and other workshop materials lay a strong foundation for actions that the state must take to continue reducing greenhouse gas (GHG) emissions for 2030 goals and beyond. While we support the Draft Vision, we provide the following additional recommendations to include in the final Vision to ensure that California will meet its GHG emission reductions goals while protection California's resources and providing healthy, livable communities for all Californians.

I. Prioritize the Conservation and Management of Natural and Working Lands as Part of the Effort to Create Healthy, Livable Communities.

Senate Bill 1386 was signed into law on September 23, 2016. It requires that all state agencies "consider the protection and management of natural and working lands as an important strategy in meeting the state's greenhouse gas reduction goals."[1] Moreover, state agencies are directed to "implement this requirement in conjunction with the state's other strategies to meet its greenhouse gas emission reduction goals."[2] This legislation includes the finding that promoting the conservation and management of natural and working lands includes not only actively managing these lands to sequester carbon, but that agencies must also avoid the loss of these lands. The destruction or elimination of natural and working lands not only prevents those lands from continuing to sequester carbon, but it will also result in the release of more carbon into the atmosphere from land disturbance and destruction. The law takes effect on January 1, 2017. We urge CARB to ensure that the conservation and management – including the avoidance of the destruction of these lands – is a prominent part of the Draft Vision.

[1] California Public Resources Code Section 9001.5(a)
[2] California Public Resources Code Section 9001.5(c)

In addition to providing carbon sequestration benefits, the conservation and management of natural and working lands also ensures that the ecological (or living) systems and processes that result in clean air, clean water, healthy soil and abundant species (e.g., microbes, insects, fish, wildlife and birds) will be maintained for the benefit of humans who depend on these living systems. We urge that the Draft Vision includes in its "Vision" section a more specific articulation of the benefits of maintaining healthy living systems and process by conserving and managing natural and working lands as part of the effort to reduce GHG emissions, provide climate adaptation and support thriving and healthy communities.

II. Prioritize Infill Development and the Conservation and Management of Natural and Working Lands in CARB's Vision for 2030 Goals.

Defenders recommends prioritizing infill development as the primarily tool for the transportation and land use sector to maximize the benefits of keeping the natural and working lands intact. As discussed above, natural and working lands are critical to California's GHG efforts as well as to the goal of providing healthy, livable communities. Infill development will not only result in less vehicle miles traveled, improved air quality, more livable and walkable communities, it will also provide a benefit of the avoided loss of these lands from the avoidance of sprawl and greenfield development.

A functional network of connected habitats is essential to the continued existence of California's diverse species and natural communities in the face of both human land use and climate change. Terrestrial species must navigate a landscape that meets their needs for breeding, feeding and shelter. Natural landscape must be large enough and connected enough to meet the needs of all species that use them. This requires connected wildlife corridors stay intact so fish and wildlife can transit from one area to another to get to food, mates and other life requisites.

Further, as habitat conditions change in the face of climate change, some species ranges are already shifting. Wildlife must be provided greater opportunities for movement, migration, and changes in distribution. Aquatic connectivity is critical for anadromous fish like salmon that encounter many potential barriers as they return upstream to their places of origin. Development must take into consideration the predicted future migration of fish and wildlife in the area. Furthermore, development must minimize the effects of existing barriers by creating wildlife crossings or fish passage structures.

While the Draft Vision discusses actions that establish land conservation targets and tools for land protection as well as developing policies for infrastructure siting, the vision fails to focus on an essential tool for implementing these actions – land use planning that identifies the important natural and working lands essential to keeping living systems functioning and land use tools to implement this land use planning. For example, CARB should focus on the implementation of large landscape scale conservation planning through the implementation of Assembly Bill 2087 (Regional Conservation Investment Strategies), Natural Community Conservation Plans, Habitat Conservation Plans and Open Space and Natural Lands Elements in General Plan updates in addition to the use of Urban Growth Boundaries. These tools should be incorporated into the Vision and into the list of State Level Strategies to Advance Sustainable Equitable Communities and Reduce Vehicle Miles of Travel. Without good planning that includes the identification of important natural lands critical for keeping natural systems working and tools to implement this planning, there will be little progress made to increase infill development and land conservation.

III. Integrate Climate Adaptation Planning into the Scoping Plan

We agree with CARB's emphasis on integrating other plans into the transportation and land use visions and goals of the scoping plan. Defenders recommends making climate adaptation strategies in those plans a top priority. A major challenge with the state's adaptation strategies, like the State Wildlife Action Plan or the Safeguarding California Plan, is the lack of mechanisms and funding to implement them. Supporting these plans with funds from the Greenhouse Gas Reduction Fund will go a long way in helping to implement them.

IV. Establish Concrete Measures to Meet the Vision Proposed

Defenders applauds CARB for the detailed vision to achieve GHG reductions in the transportation and land use sector while also ensuring natural and working lands are considered in future development. To ensure an effective vision for the transportation and land use sectors, CARB should create concrete measures to achieve stated goals. For example, in the vision for the natural and working lands sector of the 2030 scoping plan, a stated goal in the working paper is to "restore an additional 10,000 acres of managed wetlands in the Sacramento-San Joaquin Delta by 2030 that are unrelated to compliance obligations." This set measure allows government entities to implement strategies with set values so the goal can be achieved. Setting concrete measures like the one set for wetlands in the natural and working lands working paper will help strengthen this sector for future implementation. In addition, CARB should clarify that natural and working lands includes more than forests, rangelands and wetlands. Desert lands are critical carbon sequestration lands that should also be conserved and managed.[3] We urge CARB to use the definition of natural and working lands as set forth in SB 1386.[4]

V. Create Short and Intermediate Term Solutions that can Start Greenhouse Gas Reductions Right Away

Defenders approves of the ambitious goals set for the transportation sector in the working papers of the 2030 scoping plan, specifically transitioning the sector to zero carbon emission engines by 2030. To get to the state's goal of emission levels 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050, CARB will have to be even more ambitious. Until we can get to the point that we can rollout zero emission transports, we should implement short and intermediate actions to get the state on the path toward meeting GHG reduction goals. There are many steps the state can take until zero emission transports can be used statewide. We suggest:

A. Set a Speed Limit within 3 Nautical Miles of Land and in Shipping Lanes for Ship Freight Transports

Shipping off of the California coast is a major source of GHG pollution. Pollution from oceangoing ships represent some 15-30% of global nitrogen oxides (NOx) emissions and 5-7% of global sulfur oxides (SOx) emissions, while fuel usage ranges 2-4% of world fossil fuels. In 2007, container shipping alone (about 4% of the world's marine fleet) consumed more than 70 million metric tons of bunker fuel and emitted more than 230 Mmt of carbon dioxide (CO_2). It takes 191,590,000 acres

[3] Wohlfahrt, G. et al (2008). Large annual net ecosystem CO2 uptake of a Mojave Desert ecosystem. *Global Change Biology*. Vol. 14, Issue 7, pp. 1475-1487.

[4] California Public Resources Code Section 9001.5(d)1 &(d)2

of pine forest one year to sequester that much CO_2 from the atmosphere.[5] Fortunately, several studies have revealed slowing down the shipping fleet is the most feasible and cost effective way to lower the GHG emissions of the shipping industry.[6]

The value of lowering ships' speeds for GHGs emission reductions is evident. CARB is already aware of the clean air benefits of implementing a speed restriction off of the California coast. CARB sponsored a 2012 report which concluded that a reduction of 61% of CO_2, 56% of NOx, and 69% of fine particulates ($PM_{2.5}$) was observed when container ships reduced speeds from cruise to 12 knots or less.[7]

Further, lowering ship speeds would make it the most efficient transport of goods when compared to land and air transport. At reduced speeds, ships are one order of magnitude more efficient than land transport and two orders more efficient than air transport.[8] But, as ship speeds increase, much of these efficiencies are lost. In fact, faster ships have similar demands as airplanes.[9]

Some California shipping ports, like the Ports of Long Beach and Los Angeles have jumped onboard realizing these benefits of speed. These ports reward ships with incentives for remaining at or below 12 knots. The program participation rates exceeds 90%, which has resulted in significant reductions in ship emissions.[10] In 2007, those programs resulted in a GHG reduction of 1,345 tons of NOx, 832 tons of SOx, 112 tons of $PM_{2.5}$, and 55,502 tons of CO_2.[11]

The shipping industry is also beginning to recognize the economic and environmental value of reducing vessel speed and the need for regulation to set a standard.[12] Some have voluntarily implemented a policy of operating ships at reduced speeds in order to burn less fuel. In 2007, Maersk, a major international shipping company, shared this sentiment in a comprehensive study that proved its container ships could travel efficiently and safely at lower speeds.[13] In the second half of 2009, numerous shipping lines followed suit citing a desire to have less of an environmental footprint and achieve business sustainability.[14]

A speed restriction within coastal waters and in shipping lanes off the coast of California would also benefit whale conservation by reducing the number of ship strikes with whales in nearshore waters.

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[5] Maestad, O., Evensen, AJ, Mathiesen, L, Olsen, K. (2000 at 39). International climate policy –consequences for shipping. *SFN-Report* No. 82.

[6] Friends of the Earth International (FOEI). (2007b at 6). *Review of MARPOL Annex VI and the NOxTechnical Code: Allocation and Forecasting of Global Ship Emissions*. Submitted to the 48Bulk Liquids and Gases Sub-committee, IMO (Jan. 12, 2007). Prepared by J.Corbett *et al.* for the Clean Air Task Force.

[7] Dr. J. Wayne Miller In-use Emissions Test Program at VSR Speeds for Oceangoing Container Ship https://www.arb.ca.gov/ports/marinevess/vsr/docs/vsr.pdf

[8] Isensee and Bertram 2004. Quantifying external costs of emissions due to ship operation. *Proceedings of the Institution of Mechanical Engineers, Part M: Journal of Engineering for the MaritimeEnvironment* 218: 41.

[9] Id.

[10] Port of Long Beach. 2010 at 5. Green Flag Incentive Program Monthly Report, (1/1/09 to 12/31/09), Operator Compliance at 20 nm. Available at http://www.polb.com/civica/filebank/blobdload.asp?BlobID=6130 (accessed June 2, 2011).

[11] See http://www.cleanairactionplan.org/strategies/vessels/vsr.asp

[12] (Rickmers 2010, Rosenthal 2010, Vidal 2010, White 2010)

[13] Rosenthal, E. Feb. 17, 2010. "Slow Trip Across Sea Aids Profit and Environment." *New York Times*.

[14] Rickmers Maritime Newsletter. Feb., 2010. Super slow steaming heats up shipping industry.

Scientific research has shown that there is a direct correlation between vessel speed and ship strikes resulting in whale mortality.[15] Vanderlaan and Taggart report only at speeds slower than 11.8 knots does the chance of a fatal injury to a large whale drop below 50%.[16] Moreover, Pace and Silber found that the probability of serious injury or mortality increased from 45% at 10 knots to 75% at 14 knots, exceeding 90% at 17 knots.[17] Requiring a speed limit in California's coastal waters and in shipping lanes would provide whales with a greater opportunity to detect an approaching ship and avoid being hit.[18]

Even with the comprehensive amount of data concluding that there are numerous benefits in having a speed restriction on ships off of the California coast, CARB is not considering it in their 2030 transportation vision. With proven results and popular support, a speed restriction should be implemented to reduce GHG emissions while the shipping industry is transitioning to zero emission engines. Defenders recommends a speed restriction of 10 knots in these areas to lower emissions and also benefit whale populations off of the coast.

B. Create and Implement a Policy to Limit Highway Expansion on California State Roads

Expanding current roads or building new ones in California will influence people to travel more, leading to more GHG emissions. Widening highways or building new ones influences more vehicle travel and does not ease congestion, resulting in greater GHG emissions.[19] Researchers Turner and Duranton investigated the relationship between interstate highways and highway vehicle kilometers traveled (VKT) in US cities and determined that VKT increases proportionately to highway expansion.[20] They identified three important sources for the extra VKT: an increase in driving by current residents; an increase in transportation intensive production activity; and an inflow of new residents.[21] It is evident that road expansion will lead to increased vehicle travel resulting increased GHG emissions, so a policy that restricts expansion is needed in California. We recommend CARB, in coordination with CalTrans and the California Legislature, implement a policy drastically limiting any new road expansion to transition the state to meet 2030 goals. New roads should be discouraged and avoided in favor of improving existing roads and promoting public transportation and infill development.

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[15] Laist, D.W., Knowlton, A.R., Mead, J.G., Collet, A.S. and Podesta, M. 2001. Collisions between ships and whales. *Marine Mammal Science* 17(1): 35-75.

[16] Vanderlaan, A.S.M. and Taggart, C.T. 2007. Vessel Collisions with Whales: The probability of lethal injury based on vessel speed. *Marine Mammal Science* 23(1): 144-156, 149-152.

[17] Id.

[18] Silber, G.K., Slutsky, J., and Bettridge, S. 2010. Hydrodynamics of a ship/whale collision. *Journal of Experimental Marine Biology and Ecology* 391: 10-19.

[19] Gilles Duranton, Matthew A. Turner THE FUNDAMENTAL LAW OF ROAD CONGESTION: EVIDENCE FROM US CITIES; http://www.nber.org/papers/w15376.pdf

[20] Id.

[21] Id.

VI. Conclusion

Thank you for an ambitious and robust transportation and land use vision. It is a tremendous step forward for a climate resilient California. Please consider the information presented to you in this comment letter. Should you require more information or have any questions, feel free to contact me at jhanthorn@defenders.org or (916) 442-5780.

Sincerely,

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