

This document has been prepared as part of the implementation project of Legal Pathways to Deep Decarbonization (Michael B. Gerrard and John C. Dernbach, eds. Environmental Law Institute [2019]) (LPDD). For background information on the project, see <https://lpdd.org>

**MODEL MUNICIPAL ORDINANCE PERMITTING CURBSIDE ELECTRIC VEHICLE
CHARGER INSTALLATION IN RESIDENTIAL AREAS
WITH COMMENTARY IN ITALICS**

There is a strong consensus in the scientific community that profound changes are occurring in the world’s climate; that these changes are due in large measure to human activities; and that the consequences of unchecked climate change pose grave risks to the environment, human health and socioeconomic stability. *See, e.g., “Climate Science Special Report, Fourth National Climate Assessment,”* (the “National Climate Assessment”) which was released by the federal government on November 17, 2017 (“Earth’s climate is now changing faster than at any time in the history of modern civilization, primarily as a result of human activities.”)¹ The symptoms of climate change are now readily apparent: average global temperatures are increasing inexorably, sea levels are rising measurably, glaciers are retreating, arctic sea ice is disappearing, ocean waters are warming, permafrost is thawing, record droughts are occurring, wildfires are becoming more intense and storms are becoming more severe.”²

The U.S. is not immune to such impacts. Recent years have seen record wildfires break out in the west, unprecedented flooding in the mid-west and devastating storms along our coasts. Over the longer term, reports published by NASA, Columbia University, and Cornell scientists in 2015³ and 2016⁴ predict that “megadroughts” (i.e., droughts of the depression-era “dust bowl” magnitude, but lasting for decades) “could become commonplace” in the southwest and U.S. plain states “if climate change goes unabated.” *Id.* at 6. It is predictions such as these that have led the 2019 report of the World Economic Forum to identify the “failure of climate change mitigation and adaptation” to be one of the *top risks* facing society – ahead of weapons of mass destruction, cyber-attacks, terrorism and the increasing scarcity of potable water.⁵

¹ U.S Global Change Research Program, *Fourth National Climate Assessment*, p.34.
<https://www.globalchange.gov/browse/reports/climate-science-special-report-fourth-national-climate-assessment-nca4-volume-i>

² *Id.* at 37.

³ Benjamin I. Cook, Toby Ault, & Jason Smerdon, “*Unprecedented 21st Century Drought Risk in the American Southwest and Central Plains States,*” *SCIENCE ADVANCES* (Feb. 12, 2015), <http://advances.sciencemag.org/content/1/1/e1400082>.

⁴ Toby Ault, Justin S. Mankin, Benjamin I. Cook & Jason E. Smerdon, “*Relative Impacts of Mitigation, Temperature, and Precipitation on 21st-Century Megadrought Risk in the American Southwest,*” *SCIENCE ADVANCES* (Oct. 5, 2016), <http://advances.sciencemag.org/content/2/10/e1600873>.

⁵ *The Global Risks Report 2019*, Part I, WORLD ECON. FORUM,
<https://www.weforum.org/reports/the-global-risks-report-2019>

The December 12, 2015 Paris Agreement aims to avoid the worst impacts of climate change by holding the increase in average global temperatures to “well below 2°C above pre-industrial levels” with efforts “to limit the temperature increase to 1.5°C above pre-industrial levels.”⁶ Achieving these goals will be a daunting task, requiring that greenhouse gas emissions from industrial countries like the U.S. be reduced by about 80 percent by 2050. Reductions of this magnitude will take a colossal effort by virtually all levels of government in the U.S. and all sectors of the economy.

A book published by the Environmental Law Institute, entitled *Legal Pathways to Deep Decarbonization in the United States* (Michael Gerrard & John Dernbach, Eds., ELI 2019) (“LPDD”)⁷, has identified more than 1000 legal strategies that can be taken to achieve dramatic greenhouse gas emission reductions in the United States. Many of those pathways are focused on shifting transportation fuel sources in the U.S. away from fossil fuels, at a level that would result in the deployment of approximately 300 million alternative fuel vehicles (“AFVs”) – particularly electric vehicles (“EVs”), plug-in hybrid electric vehicles (“PHEVs”) and hydrogen fuel cell vehicles (HFCVs”). “The goal is to shift 80%-95% of the miles driven from gasoline to lower carbon energy sources like electricity and hydrogen.”⁸ The importance of achieving this goal is readily apparent: in the United States the transportation sector accounts for 28% of the total energy consumed, 72% of petroleum usage and about a third of GHG emissions.⁹ Cars and trucks use about half the total energy consumed by the transportation sector, which also includes trains, subways, planes, ships and other water craft.

One pathway towards reducing greenhouse gases from the transportation sector is to implement programs aimed at promoting the widespread use of EVs. Since local governments wield broad authority over the use of streets, they could play an important role in the development and implementation of such programs. Among other things, they could adopt a local ordinance making the recharging of EVs more available and convenient to those residents who own or operate them.

Electric vehicle owners rely primarily on charging their vehicles at home on a daily basis. Even Tesla, which has installed a wide commercial charging network, expects that residential charging will remain dominant. However, in some residential neighborhoods, residents do not have the ability to install a charger on their property in conformity with zoning, because there is no room for a garage and they have to park on the street, or the construction of a garage or parking area would be prohibitively expensive. A solution to this barrier to home charging would be to permit

⁶ *Id.* The NASA Study indicates that the risks of a megadrought occurring in the Western U.S. drop sharply – to a range from 30-60 percent in a 2°C warming scenario. *See*, e.g., <https://www.ecowatch.com/megadroughts-2031955357.html>.

⁷ Michael Gerrard and John Dernbach, *Legal Pathways to Deep Decarbonization in the United States* (“LPDD”)(Environmental Law Institute, 2019).

⁸ LPDD, Ch. 14, at 353; *see also*, Chris Gearhart, *Implications of Sustainability for United States Light-Duty Transportation Sector*, 3 MRS Energy & Sustainability 1, 7, note 6 (2016)

⁹ U.S. Energy Information Agency: Annual Energy Review: 2011 (2012), available at: <http://www.eia.gov/totalenergy/data/annual/>; *see also*, <http://www.eia.gov/todayinenergy/detail.php?id=29612>.

homeowners to install chargers at street curbs and to have exclusive access to parking beside those stations for nightly recharging of registered EVs.

The model ordinance allowing curbside charging is similar to, but differs significantly from, previously tested solutions. Philadelphia and Berkeley instituted test pilot programs to permit the installation of a charging station adjacent to the public right of way in front of a residence, but did not assure exclusive daily access for recharging.^{10/} These programs have not been successful: Philadelphia is ending its program, and Berkeley has been asked to grant only several dozen permits over several years. The omission from these programs of provisions allowing owners to reserve access to the charger overnight made them unattractive to the homeowner, who is responsible for the payment of all costs of the charger's installation (which may be \$2,500 or more). Given that expenditure, and in light of the fact that homeowners who build garages or driveways install a curb cut that takes away one street parking space in perpetuity, 24/7, the model ordinance reserves the charger for the homeowner at night. In most other respects it is modeled on one enacted by New Orleans in late 2017.^{11/}

The program that would be established under the ordinance would permit homeowners to install one charger adjacent to the public right-of-way in front of their residence if they do not have a garage or driveway, in residential districts, and to grant the residents exclusive access to the parking space adjacent to the charger from 6 p.m. to 6 a.m. The space would be available for use by others during daytime hours. Given that the impact on parking is less than building a garage or driveway, this solution would be preferable even where the construction of a garage or driveway would be permitted by zoning laws.

The permits would be limited to residents of single-family and two-family residences because they are likely to have sufficient street frontage to accommodate a charger and a reserved space for each unit. Multiple-unit residences may have insufficient street frontage to accommodate a charger and a reserved space for each unit; even if they did, allocating spaces closest to the building entrance could lead to conflict and resentment; and, in any event, multiple-unit residences are more likely to be in denser neighborhoods with better access to public transportation alternatives.

^{10/} Pilot Manual: Residential Curbside Electrical Vehicle (EV) Charging Pilot: [www.cityofberkeley.info/uploadedFiles/Planning and Development/Level 3 - Energy and Sustainable Development/Manual %20 with %20 attachments %2012-1-14.pdf](http://www.cityofberkeley.info/uploadedFiles/Planning%20and%20Development/Level%203%20-%20Energy%20and%20Sustainable%20Development/Manual%20with%20attachments%202012-1-14.pdf).^{11/} www.philapark.org/2015/10/electric-vehicle-charging-stations-everythingyou-need-to-know . City of Philadelphia's Electric Vehicle Policy Task Force Policy Recommendations, March 8, 2018

^{11/} [https://www.nola.gov > onestop > residential > residential-parking-permit-](https://www.nola.gov/onestop/residential/residential-parking-permit-)