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Presentation Title: COVID-19 and Beyond: Exploring Behavioral Factors Shaping a New 'Normal' for Local, Regional and National Mobility, Energy, and Societal Outcomes

Abstract: It has never been clearer that sustainable, accessible, and energy-efficient mobility systems play a key role in shaping social, economic, and environmental outcomes. This interdisciplinary framework aims to explore post-crisis recovery planning and the key behavioral factors that will define a new "normal" for all. Indeed, travel behavior and decision factors in 2020 during COVID-19 have had significant implications on travel demand and congestion, and subsequently public health and economic recovery. The COVID-19 pandemic has spawned perturbations across mobility, energy, economic, and social equity domains. Individuals are shifting value towards open-space, affordable housing, and personal vehicles over access, high density, and convenience as a prioritization of perceived health and safety. NREL researchers have synthesized emerging public and private sector mobility systems datasets including traveler surveys, moving and storage transactions, vehicle trajectories and other movements data in order to characterize the immediate and future impacts of changing traveler behavior on mobility, energy, and societal outcomes. Post-COVID influencing factors that stand to impact mobility energy productivity include 1) reduced willingness by travelers to use shared modes such as transit, carpooling, or ride-hailing services, 2) migration of people out of urban areas into more affordable and lower density settlements due to economic hardship or fear of future epidemic events, 3) further proliferation of e-commerce and 4) reconsideration to which educational and employment activities can be performed by telecommuting. NREL's data synthesis framework provides insight on how these influencing factors ultimately impact mobility, energy, and societal outcomes at national, regional and local resolutions. This holistic capability to characterize system-level impacts at varying resolutions and integrate public and private sector data to address mobility, energy, economic, public health and safety, and environmental policies and outcomes, is critical especially in times of national and global emergency.