

Written Testimony of
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**On the “The Business Case for Climate Solutions in
Transportation”**

**Before the House Transportation and Infrastructure
Committee**

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AECOM Introduction

Good morning Chairman DeFazio, Ranking Member Graves and distinguished members of the committee.

Thank you for the opportunity to testify today on this important issue. My name is Troy Rudd and I am the Chief Executive Officer of AECOM.

Our 47,000 professionals – including 19,000 US-based employees – are engineers, architects, scientists, software programmers, urban and transportation planners, program and construction managers, and economists who plan, design and deliver infrastructure.

Globally, we are consistently ranked No. 1 in transportation engineering and design, and we are the No. 1 provider of environmental services.¹

AECOM has earned a reputation as an industry leader through the critical and essential support we provide our clients, and because the work and infrastructure solutions we deliver uplift communities, advance economic growth and improve health, safety and overall quality of life.

Today, our clients are focused on emerging challenges. At the center of this is ESG, or environmental, social and governance concerns. Our clients are acutely aware of the need to address and prepare for change, whether it is electrification of transit systems,

¹ "Engineering News-Record Top Lists." *Engineering News Record RSS*, 2020, www.enr.com/toplists.

creating access to mass transit for all, or preparing for natural disasters that disrupt commerce and our way of living.

At AECOM, we are leading by example through our own practices, including setting approved science-based targets in alignment with the Paris Agreement. We are already exceeding our 2025 targets in reducing Scope 1 and 2 emissions and are committed to being net-zero for Scopes 1, 2 and 3 by 2030.

We are a proud partner to the federal government, state and municipal agencies, and the private sector, working together in both urban centers and rural communities across America.

Drawing from our global experience working on every continent, we hope to be a resource for this Committee as it seeks to consider climate responsive and resilient solutions for new and rehabilitated infrastructure and to unlock the full economic, environmental and mobility benefits of a modern transportation system.

The work of this Committee is essential to keeping our nation moving forward, and I thank all of the members of the Committee for your efforts.

Focus of Testimony

Transportation is crucial in ensuring prosperity and well-being today, tomorrow and long into the future.

As the Committee considers the right approach to create lasting benefits, the business case for climate solutions in transportation is predicated on delivering the following outcomes for all Americans:

- Creating jobs and more importantly, lasting careers.
- Accelerating innovation and giving rise to fresh thinking in transportation so that our systems of mobility meet the needs of the future.
- Enhancing quality of life through the health benefits of reduced emissions and social benefits through equitable access, improved mobility and public safety.
- Ensuring infrastructure resiliency, continuity and extended lifecycles against both natural and human-made impacts.
- Stimulating economic growth that drives prosperity.

Additionally, we believe we all share the goal of ensuring that the benefits of a modern US transportation system elevate all communities, especially disadvantaged and vulnerable populations and areas that have been underserved in the past.

In my testimony today, I want to focus on three areas where government leadership can help achieve the outcomes I have described.

- Advancing Electrification
- Building Resilient Infrastructure
- Unlocking Innovation

Advancing Electrification

AECOM has guided more than 20 public-sector agencies and many private-sector clients with early adoption of transportation electrification.

In Los Angeles, AECOM is helping the city's Department of Transportation convert their existing bus facilities to support a full fleet conversion to battery electric buses. This fleet is anticipated to be one of the earliest fully converted electric bus fleets in the nation.

In Fresno, a primarily rural county in California, AECOM recently completed a study on the impacts of electrification on the grid and how the rural transit agencies can best convert to and leverage electric vehicles to support resilience during events like grid outages.

For the Washington Metropolitan Area Transit Authority (WMATA) in Washington, D.C., AECOM developed the strategy for an initial bus pilot with a path forward to electrify the full fleet over two decades.

In partnership with our clients, we have identified numerous potential benefits of advancing electrification, including emissions reductions in disadvantaged communities, creation of new high-quality jobs and careers, innovation and resiliency.

Based on real world examples, AECOM believes that significant opportunities exist to revisit and strengthen existing federal Department of Transportation (USDOT) programs that advance strategic national deployment of a reliable and accessible national electric charging network.

We also believe that such a charging network could provide a potential future revenue stream to replace or supplement current user fees that fund the maintenance and operation of roads and transit, while fostering continuing investment in community priorities.

With nearly 30% of emissions in the US arising from the transportation sector², the connection between infrastructure and public health, equity and justice are more urgent today than they have ever been. The transportation sector is the greatest contributor to these air pollutants and therefore presents the greatest opportunity to deliver impactful solutions.

AECOM is taking an active role in changing our transportation infrastructure and how we use it to reduce emissions that have an adverse impact on human health. Low-income communities are disproportionately impacted given their increased exposure to environmental hazards, particularly related to our highways and other transportation facilities that reduce local air quality in those communities.

A widespread transition to zero-emissions transportation technologies could produce emissions reductions that by 2050, could total up to \$72 billion in avoided health harms including 6,300 premature deaths, 93,000 asthma attacks, and 416,000 lost workdays annually. In addition, the benefits to our environment in the form of avoided climate change impacts could surpass \$113 billion in 2050 as the transportation systems

² "Fast Facts on Transportation Greenhouse Gas Emissions." EPA, Environmental Protection Agency, 29 July 2020, www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions.

combust far less fuel and our power system comes to rely on cleaner, non-combustion renewable energy.³

Shifting to zero emissions vehicles can also create jobs – and even new careers. In California, a 2020 study showed that transportation electrification has created more than 275,000 direct EV industry jobs, and that number is expected to rise. These jobs are typically higher paying, with a salary average of over \$91,000, which is well above the state average of \$68,500.⁴

This Committee’s work on the FAST Act, which created corridors with alternative fueling and charging infrastructure, has directly contributed to significant reduction in harmful mobile source emission pollutants. It has also created an exciting new landscape in which our public agency clients routinely engage our expertise in designing systemwide EV charging infrastructure for new projects.

Recommendations:

To foster a more integrated and resilient approach to transportation electrification, we encourage the Committee to consider the following:

1. Working with the private sector in setting design standards to encourage interoperability of charging infrastructure and advancing the use of electric vehicles.

³ “Road to Clean Air - Electric Vehicle Report.” *Road to Clean Air - Electric Vehicle Report | American Lung Association*, American Lung Association, www.lung.org/clean-air/electric-vehicle-report.

⁴ “LAEDC Report: California and SoCal EV Industry Is Growing, Giving Region Global Competitive Advantage.” *Los Angeles County Economic Development Corporation*, 8 Mar. 2020, laedc.org/2020/03/01/laedc-ev-industry-report/.

2. Prioritizing pilot projects to convert large state/municipal and private sector fleets (as a precursor to broader community transition).
3. Investing in charging innovations, including dynamic charging embedded in roads and freeways.
4. Positioning the federal government as a leader in advancing the use of electric vehicles by electrifying the US Postal Service fleet and deploying regional and rural charging infrastructure.

Additionally, we suggest that deployment of new electrification corridors could be enhanced by exploring new rules that facilitate the use, transfer and disposition of under-optimized transportation rights-of-way for EV charging transmission, broadband and telematics.

Building Resilient Infrastructure

Pursuing infrastructure improvements to minimize disruption risks, and to extend the performance, safety and longevity of their transport infrastructure are prevailing – and immediate – concerns of our public- and private-sector clients.

This leads to the second area where government can accelerate the benefits of climate solutions in transportation: building resilient infrastructure.

Presently, AECOM is developing a flood mitigation study for BNSF Railway to understand the potential of flood impacts with more specificity, as well as a cost-benefit analysis of risk reduction strategies. The intent of the project with BNSF Railway is to

minimize annual damage repairs and losses from out-of-service delays by developing a flood risk prioritization tool and impact assessment.

In the San Francisco Bay area, AECOM carried out a resilience study for the region's Metropolitan Transportation Commission to address future flood impacts on the Bay Bridge touch down area and adjacent disadvantaged communities.

As lead consultant for the Lower Manhattan Coastal Resiliency Study, AECOM's comprehensive climate risk analysis of Lower Manhattan included an economic analysis that accounted for potential transportation disruption. Similar analyses, including a regional economic assessment for Southeast Florida investment in resilience, all share the same conclusions: that billions of dollars in potential losses due to disruption posed by natural or man-made events can be offset by smaller investments today.

In the case of Southeast Florida, daily tidal inundation under 2070 conditions could affect over 100 miles of major roadways, expose \$53.6 billion worth of property value, affect 17,800 jobs, and cause \$384 million in fiscal losses in a single year (2019 dollars).

Investing in regional adaptation solutions would have positive returns on investment and provide job opportunities. The analysis showed that every \$1 invested in community-level adaptation would drive \$2 in economic benefits. Overall, community-level

adaptation investment could support 85,000 job-years (a job year is one year of work for one person).⁵

In 2020, the United States experienced 22 natural disaster events with losses exceeding \$1 billion each – the most ever. It was also the sixth consecutive year in which 10 or more billion-dollar disaster events occurred in the US.⁶ Factoring in the human toll as well, we believe the business case for investing in prioritizing and mitigating the impacts on transportation is profound.

Recommendations:

1. AECOM is supportive of reauthorization reforms that incorporate methodologies that better incentivize investments in projects by taking into account economic, environmental, social and safety benefits, in addition to traditional life-cycle cost assessments.
2. A grant pilot program that offsets the additional cost of new resilient infrastructure in a market that prioritizes low bids, would incentivize and capitalize on the opportunity to build truly resilient and long-lasting infrastructure, and realize a range of associated benefits.

⁵ “The Business Case for Resilience in Southeast Florida.” *ULI Knowledge Platform*, knowledge.uli.org/reports/research-reports/2020/the-business-case-for-resilience-in-southeast-florida.

⁶ *Hurricane Costs*, coast.noaa.gov/states/fast-facts/hurricane-costs.html.

Unlocking Innovation

In our most recent fiscal year, AECOM worked on more than 29,000 projects for transportation clients in the United States.

Many innovative solutions do ultimately advance to project delivery and operation.

However, in some instances, the ability to advance innovation is stymied as a result of commercial models, dated standards, jurisdictional conflicts and more.

Advances in new modes of mobility can play a critical role in congestion management, emissions reduction, economic output and innovation.

AECOM has been supporting clients to explore visionary, new forms of mobility ranging from High Speed Rail to Hyperloop, and more recently Electric Vertical Take-Off and Landing (eVTOL).

AECOM led the environmental process to support federal decision making for the high-speed rail project between Dallas and Houston.

The project would create direct employment and earnings of \$14.5 billion during construction; direct and indirect annual employment and earnings of \$232 million for the State of Texas during operations; and at full operations, reduce vehicles miles traveled by 1.35 billion.

AECOM has also conducted preliminary studies of hyperloop systems to understand the economic and social benefits for both industry and citizens. We have found opportunity

to increase intermodal connectivity, reduce vehicles miles traveled and provide environmental benefits.

In addition to new modes of mobility, AECOM sees merit in encouraging greater use of innovative mobility options to address first mile and last mile needs and expand access to existing systems.

This is aligned with the growing equitable interest in supporting populations across the country that cannot drive. These vulnerable populations may be elderly, disabled or low-income workers that can benefit significantly from intermodal solutions that may encompass ride sharing for the last section of their trip.

Bronzeville, a neighborhood on the southside of Chicago, is a perfect example of integrated planning and innovation.

AECOM is working with Commonwealth Edison and the Chicago Housing Authority to address transportation, electrification and broader community benefits such as jobs and education. AECOM is developing the first renewable powered microgrid for the utility in this underserved community. At the same time, energy saving programs are helping residents and businesses reduce their utility bills. Additional initiatives focus on job creation, technical training in support of clean energy jobs leading to expertise that is transferable to projects around the country and preparing low-income high school students for STEM careers. My hope is this would change the beliefs and opportunities for the future families of these students for generations.

A first- and last-mile EV shuttle service is being provided to three senior centers providing connection to Chicago Transit Authority train and bus stops with the intent of adding similar shuttles to the local academic community in partnership with the Illinois Institute of Technology. Additionally, shared electric vehicles are being piloted in the community.

Among other innovations, there are advances in construction strategies and materials that can deliver real benefits to sustainability, costs and resilience. Examples include low noise asphalt (resulting in reduction of noise abatement structures), low carbon concrete (emissions), cost effective use of artificial intelligence to detect wildlife hazards rural areas and innovative use of energy storage and stormwater management. A more adaptive regulatory environment would help firms like AECOM to specify these solutions in the design and accelerate their deployment.

Recommendations:

1. We believe opportunities exist to address these challenges through changes to USDOT programs, revisions to contracting rules and greater flexibility in standards to accelerate the adoption of innovation in transportation.
2. We believe the fundamental goal should be to encourage agencies at the state and local level to adopt alternative investment methodologies that foster innovation and engagement of the private sector.

Summary and Close

AECOM stands ready to assist this Committee and our public and private clients throughout the US to adopt and operationalize a paradigm shift in infrastructure.

To build projects that will last for generations, this Committee has an excellent opportunity to alter the project investment paradigm, one that that will foster incubation at all levels of government, champion new design and performance methodologies that harness cutting-edge technologies, and inspire and incentivize our clients to build next generation, long-lasting infrastructure.

Historically, the infrastructure industry has been a powerful jobs creator. It has also helped soften the impact of the coronavirus pandemic by engineering solutions to social distancing and virus detection, aid policymakers in planning for the future, and designing for a more equitable and resilient tomorrow.

The incorporation of climate solutions that help (i) Advance Electrification, (ii) Build Resilient Infrastructure and (iii) Unlock Innovation will yield significant benefits across America.

As I noted in my introduction, the business case for these climate solutions is strong in terms of (1) creating jobs and lasting careers, (2) accelerating innovation, (3) enhancing quality of life, (4) ensuring resiliency in our infrastructure for future generations, and (5) stimulating economic growth that drives prosperity.

Thank you again for the opportunity to testify.

I look forward to your questions and to working with the Committee to craft solutions to these pressing challenges.