February 18, 2021

The Honorable Susan Rice
Assistant to the President for Domestic Policy, and
Director, Domestic Policy Council
The White House
1600 Pennsylvania Ave, NW
Washington, DC 20500

Dear Director Rice,

On behalf of the more than 23,000 members of the National Society of Professional Engineers, I’d like to offer our staff and members as resources on the many policy initiatives on which NSPE and the Biden administration align.

NSPE is a professional organization whose mission is to “foster licensed professional engineers in service to society.” Its members practice engineering across a wide spectrum of industries, including emerging technologies, infrastructure, and renewable energy. Our members also care deeply about, and our staff is engaged on, issues such as sustainability, diversity and inclusion, and STEM education. In each of these areas, the public health, safety, and welfare is paramount for NSPE members.

During the 116th Congress, NSPE actively supported numerous pieces of legislation, including:

- The Rural STEM Education Act and the INSPIRES Act, both of which aimed to improve access to quality STEM teaching and education facilities for underserved communities;
- The Clean Economy Jobs and Innovation Act and the Climate Resilient Communities Act, which addressed vital aspects of America’s response to climate change via monetary support of renewable energy and energy storage projects, and a thorough review of FEMA’s use of building codes and standards to prepare for climate change and resilience issues;
- The Bridge Investment Act of 2020 and the Transportation Infrastructure for Job Creation Act, which sought to address the significant and ongoing issues with this country’s infrastructure;
- The National Artificial Intelligence Initiative Act and the Smart Cities and Communities Act, which aimed to harness the incredible potential of emerging technologies, while ensuring that the public isn’t put at unnecessary risk.

NSPE supports these issues in the current Congress as well and hopes to engage in constructive dialog as the administration works to advance its priorities. NSPE
encourages the Domestic Policy Council, as it focuses on issues like climate, racial equity, and the economy, to work toward the following goals:

Implementing a regulatory framework for emerging technologies that encourages innovation while continuing to protect the public.

Per NSPE’s Emerging Technologies Policy Statement, we support the development of emerging technologies “in a manner that protects the health, safety, and welfare of the public through rigorous development, testing, and deployment….” As an organization, we recognize the benefits of continued research and development, while also understanding the importance of minimizing risk to the public.

Ground-breaking innovations, like autonomous vehicles and smart cities, have the potential to profoundly change society for the better. The process of developing these technologies, however, must be managed responsibly in order to avoid unintentional harm to the public. Not only is public harm an issue in and of itself, but it can also create public distrust of technology.

Uber, and the broader autonomous vehicle development market, has experienced this distrust firsthand. One year after Uber’s fatal AV accident, a Reuters/Ipsos poll found that “half of Americans think autonomous cars are more dangerous than human-driven ones,” and the numbers haven’t improved with time. J.D. Power’s Q3 2020 survey found that just “14% of people who drive a personal vehicle feel comfortable riding in a self-driving car.” I invite you to review NSPE’s Position Statement No. 03-1772 on Autonomous Vehicles and our Regulatory Policy Guide, which outline not only concerns, but potential solutions that apply both to AVs and to broader emerging technology development.

Improving access to STEM education by allocating the necessary resources to develop or improve STEM education facilities for underserved students.

NSPE’s Position Statement No. 02-176 details the organization’s strong support of and advocacy for access to STEM education for all students, especially “students who exhibit an aptitude for, or an interest in pursuing STEM-related careers.” STEM careers are vital to the continued economic prosperity and national security of the United States.

In January, the Wisconsin Policy Forum, citing data from the Higher Education Regional Alliance, noted that “women and Black students remain highly underrepresented among STEM graduates relative to their share among all college graduates.” In 2019, the National Center for Women & Information Technology completed a years-long study aimed at understanding why women choose careers in technical fields like computing. Following participants through high school and
college, and into their careers, NCWI found that “prior experience with computer programming is the most important predictor” of whether a woman will pursue computer science or computer engineering as a career. Extrapolated to include all STEM careers, the NCWI study confirms the importance of having middle and high school educational facilities that make the opportunities available for all students who express interest or aptitude.

Improving access means addressing shortfalls in internet/broadband access, updating classroom material (like textbooks) and other school resources (like computer and engineering labs), and providing STEM-specific after school activities. It also means focusing these improvements in both urban and rural communities. And it means providing mentorship opportunities both for students and for young professionals. One of the key findings from DiscoverE’s Despite the Odds study was that women who choose and stick with engineering careers have strong support networks. The foundation of a strong network is laid in middle and high school, and mentorship is the cornerstone.

**Developing equity and inclusion policies that use tools like professional licensing and certification, which have been proved to reduce the wage gap for women and minorities.**

Discussions about equity in STEM education lead naturally to discussions about equity in general.

Last year’s civil unrest, in the wake of the killing of George Floyd, sparked a renewed sense of urgency for our nation to address long-standing inequities that exist in nearly every aspect of society. While NSPE is not, as an organization, equipped to address some of the most egregious issues, we can help root out systemic issues within our profession. And while the licensing of engineers helps protect the public, licensing has also been shown to reduce wage inequity. A recent study conducted by Oxford Economics found that “among professionals in technical fields requiring significant education and training, a license narrows the gender-driven wage gap by about one third and the race-driven wage gap by about half.” While licensure alone won’t solve every problem, it can level at least one portion of the playing field.

With that in mind, NSPE encourages the Biden administration to strongly consider eliminating professional licensing exemptions for federal workers and contracts. These exemptions allow unlicensed, lesser-qualified individuals to perform work that should be reserved for licensed professionals who have met minimum standards for education and experience as well as passed two licensing exams. Eliminating these exemptions also helps the country move a small step closer to righting the wrongs of inequality and systemic racism.
Promoting common sense climate change mitigation
and environmental sustainability policies.

NSPE is committed to taking reasonable, scientifically-based actions to address issues of environmental sustainability and resilience. Our members recognize the importance of sustainable development and the urgent need for effective, scalable solutions for mitigating climate change. It is NSPE’s position that sustainable engineering can take many forms, and that professional engineers have an ethical responsibility to consider future generations as they design today’s communities.

One way that we can begin to make a difference now is by supporting the use of alternative construction material and methods. Concrete, for example, has such a large carbon footprint that, were the industry a country, “it would be the third-largest [carbon] emitter in the world.”

There are companies working on new formulas for cement that could drastically reduce concrete’s carbon footprint, and alternative design methods can also reduce the amount of concrete needed for a given construction project.

While we look forward to working with you on sustainability and resilience, we also strongly caution against taking drastic measures that result in unnecessary job losses in the energy and related sectors. There is some concern about administration policies exacerbating unemployment at a time when the country is already fighting to limit economic damage caused by the pandemic. NSPE believes responsible environmental policy must consider potential unintended economic consequences and must include measures aimed at mitigating job loss and providing all possible support for those whose jobs are negatively affected.

Advocating proper investment in the nation’s infrastructure.

Every four years, the American Society of Civil Engineers releases its Infrastructure Report Card. In its most recent report, ASCE gave the United States a D+; a failing grade. The only category that ranked above a C was rail. Our own position statement on critical infrastructure acknowledges the decay that is occurring at an unsustainable rate. Consumer protection and public interest groups, labor, construction, and professional organizations have long sounded the alarm regarding the nation’s crumbling infrastructure. It is an issue that has gone largely unaddressed for far too long.

The United States has a lot of work to do in this area, and professional engineers will be at the center of it. We believe the public benefits when licensed professional engineers play a lead role in creating, maintaining, and renewing infrastructure. To ensure that our bridges, roads, ports, and public transit systems can be not just repaired, but improved, a strategic budget process must be
developed and maintained by all levels of government. Without vital improvements, we will be unable to adequately handle future needs or design the technological upgrades necessary to integrate our infrastructure with emerging technologies like autonomous vehicles and smart cities.

The National Society of Professional Engineers welcomes the opportunity to serve as a resource on developing policy solutions that work for all of America. Our staff is happy to meet virtually or talk with you about these policy areas, and possible solutions that address some of the country’s most-pressing issues, while also protecting the public health, safety, and welfare. At NSPE, we believe both are possible, and we look forward to working with you to achieve them.

Sincerely,

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President, NSPE

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