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Prepared Testimony of

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before a public hearing of the

Pennsylvania Senate Majority Policy Committee

September 15, 2023

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Chairman Laughlin, members of the Committee, welcome to Nova Place.

The robotics industry here in Pittsburgh prides itself on building innovative solutions to real problems facing our state, nation, and the world. In that frame, Pittsburgh and southwest Pennsylvania have a massive opportunity to be an economic and innovation driver for our region and the state.

In Gecko's case, we focus on making sure the structures and systems that society relies on work. It's an often overlooked problem that we solve with a combination of wall-climbing robots and AI-powered software to help customers maintain critical infrastructure, ranging from bridges and power plants to ships and national security infrastructure.

It's a huge problem that our customers on six continents struggle with every day. The world depends on the reliable and efficient operation of infrastructure assets across several critical sectors, including power generation, manufacturing, oil and gas, government and defense, maritime, and beyond. However, there has been a pervasive gap in the ability to effectively use technology to modernize and assess the needs of these critical assets used in our everyday lives. As these assets age, they become increasingly prone to failure due to mechanical integrity issues, like corrosion, erosion, and cracking—leading to disastrous circumstances like widespread blackouts, a lack of essential resources, and weakened military defense systems.

The Association for Materials Protection and Performance estimates that the global cost of corrosion is equivalent to about 3.4% of the world's GDP—equivalent to $3.4 trillion USD globally in 2022.[1] The consequences of corrosion (and infrastructure deterioration more broadly) are on plain display in the Commonwealth of Pennsylvania. In recent years, we have witnessed the collapse of the Fern Hollow Bridge in Pittsburgh,[2] a tragic chocolate factory explosion in Reading,[3] and other key infrastructure failures.

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[1] Association for Materials Protection and Performance. *Economic Impact.* http://impact.nace.org/economic-impact.aspx

[2] CBS News. *Frick Park Bridge Collapse: 10 People Injured, 4 sent to Hospital.* January 29, 2022. https://www.cbsnews.com/pittsburgh/news/frick-park-bridge-collapse-injuries-reported-emergency-crews-at-the-scene

[3] CBS News. *Preliminary report of West Reading candy factory explosion investigation: NTSB*. May 2, 2023. https://www.cbsnews.com/philadelphia/news/preliminary-report-of-west-reading-candy-factory-explosion-investigation-ntsb/

This was the problem we built Gecko Robotics to solve. It began just up the road from here at a power plant that was struggling with assets failing and regular blackouts harming the surrounding community.

As a college student at Grove City College, our CEO and Co-Founder Jake Loosarian built the first prototype of a wall-climbing inspection robot to create a safer and smarter inspection process for this power plant. By providing high-quality, never-before-seen data on the health and material thickness of boilers in power plants, Jake helped reduce the asset failures of this plant while improving safety. That was just the beginning. From there, Gecko Robotics began its journey to improve the reliability of the built world.

Gecko continues to tackle new challenges around the world. We expanded from boiler tubes to storage tanks—preventing dangerous leaks of heavy chemicals and catastrophic explosions. We revolutionized maritime vessel maintenance—improving the United States Navy's fleet readiness by reducing the man-hours required for ship inspections. We expanded our focus on power generation infrastructure from fossil fuels to also inspect critical components within renewable energy sources such as hydroelectric dams—ensuring the reliability of our electricity grid, not just today but also into the future. Gecko envisions a future with no more bridge collapses, industrial explosions, and workplace injuries or fatalities while inspecting heavy infrastructure. All of this is made possible by technological innovations developed in-house in Pennsylvania.

One common theme in our work - and I think work you see throughout the growing robotics industry in Pittsburgh - is the commitment to solving real world problems. Problems that impact real people everyday throught our state, nation and the world. That's the opportunity robotics offers the world but also the opportunity to put Pittsburgh on the map as a key global hub of innovation.

The problems being solved here in Pittsburgh are only getting more important and more valuable as global infrastructure ages. Take, for example, bridges. Pennsylvania consistently ranks near the bottom of the country in terms of bridge quality and other critical civic infrastructure. According to the American Society of Civil Engineers (ASCE), Pennsylvania has earned a "C-" grade for its infrastructure. This grade drops to D+ for the health of our bridge infrastructure. ASCE claims that Pennsylvania contains the second highest number of poor-condition bridges among states in the country.[4]

[4] American Society of Civil Engineers. *Pennsylvania 2022 Report.* https://infrastructurereportcard.org/state-item/pennsylvania/

It doesn't need to be this way. There are several emerging technologies powered by robotic innovation and cutting-edge AI systems that are poised to save lives and revitalize American infrastructure.[5] The engineers, roboticists, and programmers at these organizations are focused on addressing our biggest infrastructure challenges. However, due to the unique nature of *who* manages infrastructure, the robotic inspection industry needs continued support across all levels of government to make it across the finish line. The technology exists to collect robust data on the status of Pennsylvania's infrastructure and identify critical weaknesses before they lead to tragedy.

This is where the state has an opportunity to help support our industry and the economic growth of this region. Just this year, our state has seen the profound impact that innovation can have on bridges when private industry and state agencies collaborate to cut the red tape. Bringing together local suppliers that provided lightweight glass repair materials[6] with NASCAR equipment to dry a rainy bridge[7] resulted in a bridge repair in record time. At that moment, the state rewrote the playbook for bridge repair—just like how the robotics sector is rewriting the playbook for infrastructure maintenance.

The recent push towards cutting red tape and developing a "one-stop shop" to permitting and licensing through the Office of Transformation and Opportunity is an encouraging sign. We encourage the state to keep fostering civic innovation through partnerships with Pittsburgh's emerging tech sector. A future with no more bridge collapses won't happen without partnerships from the Pennsylvania Department of Transportation. A future without other tragic infrastructure failures will require collaboration across other state agencies that embrace the innovative spirit of our home-grown technology sector to address their emerging challenges.

We have the potential to change the narrative of a state with crumbling infrastructure to becoming the first state that brings the digital revolution to the built world. Imagine having insights into the health of every one of Pennsylvania's 25,000+ bridges,[8] and being able to detect the most pervasive corrosion that threatens the safety of those who share our roads. That future is possible.

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[5] The Wall Street Journal. *America's Bridges, Factories and Highways Are in Dire Need of Repairs. Bring in the Robots.* August 18, 2023. https://www.wsj.com/tech/inspection-robots-infrastructure-ebb4172c

[6] AP News. *Pennsylvania using tons of recycled glass nuggets to rebuild collapsed Interstate 95*. June 14, 2023. https://apnews.com/article/i95-interstate-collapse-philadelphia-buttigieg-269d1c784e2c8e3cdb60b141a549f21c

[7] CNN. *How a collapsed section of I-95 reopened in just 12 days.* June 23, 2023. https://www.cnn.com/2023/06/23/business/i95-philadelphia-reopening-fast/index.html

[8] Pennsylvania Department of Transportation. *Bridges.* Accessed September 12, 2023. https://www.penndot.pa.gov/ProjectAndPrograms/Bridges/pages/default.aspx

Gecko Robotics continues to build for the future, and we are proud to have our flagship office at Nova Place – the self-proclaimed “Innovation Headquarters of Pittsburgh” – amidst a booming robotics community. Our office and this hearing sit near the confluence of Pittsburgh’s three rivers while our tech sector sits at its own confluence of hard-working talent, unrivaled opportunity, and a strong professional network. We hope that this is just the start of many exciting moments in Pittsburgh’s transformation into a innovation powerhouse.

Thank you for the opportunity to speak with you all today.

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