

2020 TIBBETTS AWARD WINNER

Fuchs Consulting, Inc.



U.S. Small Business
Administration



SBIR · STTR
America's Seed Fund
POWERED BY SBA

**Fuchs Consulting, Inc.
provides an innovative
approach that enables
bridges to be inspected
without interrupting traffic,
through ThermalStare.**

LOCATION

VA
Leesburg

PHASE III SUCCESS

\$1M⁺

FUNDING AGENCIES

DOT
Department of Transportation

Navy
Department of Defense

Impact & Achievement

A nondestructive inspection method that allows bridge inspections without traffic control - enabling measurements to take place with live traffic flow, without disrupting those who rely on roadways to conduct their daily lives? This innovation, along with a range of other nondestructive inspection systems for both commercial and military use, are what Fuchs Consulting, Inc. (FCI) brings to the table with ThermalStare, which allows for the inspection of bridges with live traffic - reducing the impact inspection requirements can have on the traveling public. The technology provides data for decision-making on maintenance and repairs for structures. In military applications, the technology can locate defects in critical flight deck areas, improving aircrew and flight deck crew safety working with vital aircraft equipment. From a maintenance standpoint, the technology not only enables repair planning - but ensures the effectiveness of repairs made.

As the result of a Department of Transportation (DOT) Small Business Innovation Research (SBIR) project, Virginia-based FCI founded a new business entity in ThermalStare - offering instrumentation and services related to the application of innovative infrared-based nondestructive evaluation technologies developed under the SBIR program effort. ThermalStare offers a non-visual, nondestructive evaluation tool for the assessment of coatings. The instrument is field-portable, initially designed for highway bridges and applicable for other scenarios including large metalized coating systems. ThermalStare offers a unique and patented method for assessment of internal damage in large structures using time-lapse thermography. This method provides a new approach to the inspection of large structures, with levels of accuracy and information not possible with other methods. ThermalStare is designed for quick setup at a bridge structure, collecting data while the bridge is completely open to traffic - permitting inspection of the most challenging high-traffic structures. Defects can be detected through thick overlays and data can be used for repair and maintenance decisions. These methods were also transferred to U.S. Navy to help meet critical inspection needs.

FCI was able to leverage the success of this SBIR project - the only the company has undertaken - to acquire a new office facility for R&D and manufacturing, to form a new business entity, to produce commercial instruments and services, and create patented technology. The company has seen more than \$1 million in revenue generated from innovations related to this project, including the sale of two coating inspection systems and a motorized coating inspection platform. Phase III follow-on success has included funding from several state DOTs, including Oregon, Virginia, New Jersey, Missouri, and Maryland. Additional Phase III funding included that from the United States Navy, as well as a variety of engineering companies. Follow-on funding locations include the United States, China, and South Africa, with applications ranging from infrastructure, to energy production, to military use.

www.thermalstare.com