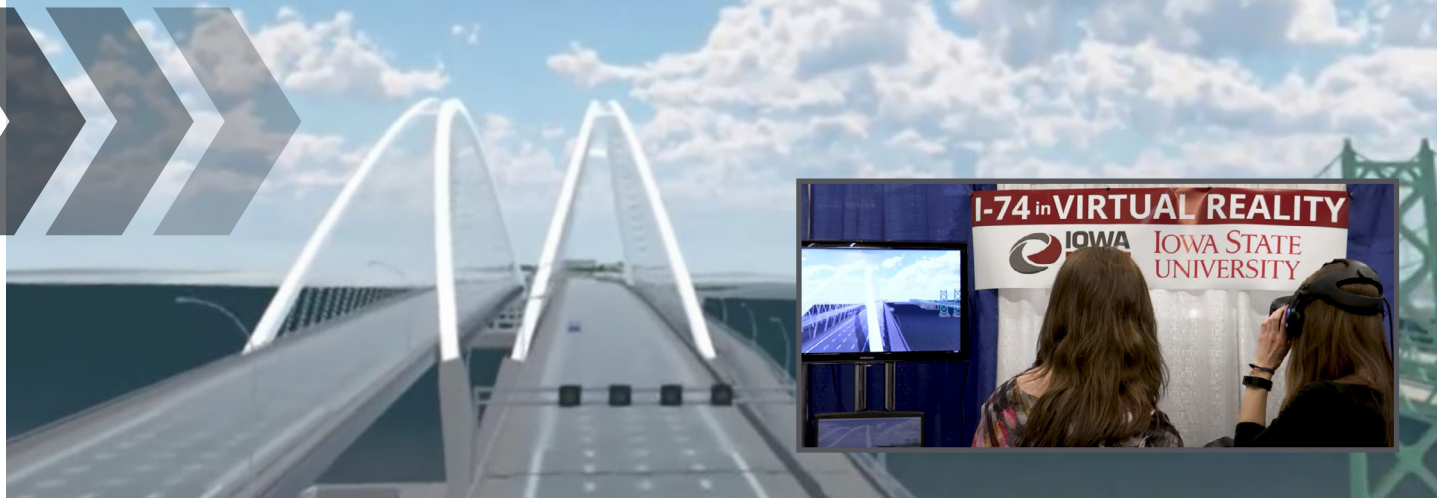


STIC Incentive funding has helped Iowa DOT engage the public through virtual reality simulation tools, such as headsets that allow meeting attendees to virtually explore construction projects.



# RESEARCH SOLUTIONS

## Federal STIC Incentive program helps Iowa move transportation ideas to reality

The freedom to try innovative methods and tools can lead to a safer, more efficient, and more cost-effective transportation system. To facilitate such exploration, the Federal Highway Administration (FHWA) **State Transportation Innovation Council (STIC) Incentive program** helps fund state projects that put innovative approaches into practice. The program encourages all states, including Iowa, to identify and implement innovative solutions through collaboration among a variety of experts in government, private industry, and academia. Iowa has successfully applied STIC funding to a wide range of projects since 2014.

### BACKGROUND

The process of finding and testing new ideas can require more time and resources at the outset than simply using a known material or process. FHWA's STIC Incentive program aims to make innovation more attractive by providing states with financial and technical support to help them put ideas into practice.

### PROGRAM

The STIC Incentive program awards each state up to \$100,000 per year to support or offset the costs of an approved transportation project. To receive funding, each state must establish a STIC—an oversight committee that serves to identify and recommend innovations and manage the approved project to completion.

The composition of each state's STIC is unique, reflecting the various stakeholder groups of the transportation community. These groups could include leaders from federal, state, and local agencies; tribal representatives; private contractors and consultants; and others. In Iowa, the **Iowa Highway Research Board**, which serves as

*(continued)*



**“STIC grants allow Iowa DOT and local public agencies to explore new and innovative possibilities with less financial risk.”**

**— AHMAD ABU-HAWASH,**  
Iowa DOT Chief Structural Engineer

a liaison for the state’s research stakeholders, was able to adapt to take on the additional role of the STIC.

STIC-funded projects must have a statewide impact, align with federal **Technology and Innovation Deployment Program goals** and other federal requirements, and be ready to begin within one year of receiving funds.

## SUCCESS STORIES

Since Iowa began participating in the STIC Incentive program in 2014, the state has received more than \$600,000 in funding for 12 projects (see sidebar). Highlights include:

- Developing and testing bridge components for use in accelerated bridge construction (ABC) in 2014. Using STIC funds, researchers constructed a prototype bridge substructure at an outdoor testing facility, which resulted in a better understanding of how ABC components perform under various weather conditions.
- Creating virtual reality (VR) simulations in 2018 to help people understand the need for safe driving behaviors. Through public outreach at the Iowa State Fair and other events, thousands of participants have been able to virtually experience the consequences of unsafe driving,

such as driving distractedly through a work zone or being in a car crash while not wearing a seatbelt. Iowa DOT has also used VR simulations to enhance public involvement during construction projects, allowing stakeholders to virtually drive on proposed roadways and bridges.

- Adopting Iowa’s Advanced Geotechnical Methods in Exploration (A-GaME) initiative in 2020 to identify tools and methods engineers can use to discover boulders, sinkholes, mine voids, and other characteristics below the earth’s surface. Having a more complete picture of a construction area’s subsurface conditions before construction work begins can improve foundation design, accelerate project delivery, and reduce costs.

## IOWA BENEFITS

The STIC Incentive program allows Iowa to pilot and implement new and innovative transportation ideas that might otherwise be time- or cost-prohibitive. Thanks to the continued input of an advisory council made up of stakeholders across Iowa’s transportation community, the projects funded through the program are tailored to meet Iowa’s evolving needs and directly impact Iowans.

## IOWA’S STIC INCENTIVE PROJECTS

**2014 – ABC:** Design and performance verification of a bridge column/footing/pile system (\$56,003)

**2014 – 3D engineered models:** Implementing 3D tools for structural detailing (\$43,997)

**2015 – Self-cleaning culverts:** Technical guidance and training on implementation (\$64,000)

**2015, 2016 – E-construction:** Expanding the use of mobile devices for field inspection (\$36,000 per year)

**2016 – Innovation exchange:** Innovations in Transportation Conference (\$8,000)

**2016 – Smarter work zones:** Deploying open data service for traffic operations (\$56,000)

**2017 – Pavement design:** Innovations to support the implementation of mechanistic-empirical design (\$80,000)

**2018 – Public outreach:** Virtual reality implementation for public engagement (\$95,200)

**2018 – NEPA:** Synchronization Workshop (\$4,800)

**2019 – Pedestrian safety:** Updating statewide design guidance (\$64,000)

**2020 – A-GaME:** Evaluating new methods for subsurface characterization (\$77,997)

## ABOUT THIS PROGRAM

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