

# Minnesota

## Taking a high-flying approach to infrastructure

More than 55,000 bridges across the U.S. are in need of replacing or serious repair, and workers in Minnesota have an idea to speed up the process.

In 2015, the state began a pilot program using drones to look for weaknesses in bridges, opting for the maneuverability of the aerial devices over the dangers of leaving the task to human workers. Now in the final leg of the pilot program, state officials hope to turn it into a fully-fledged system for inspecting bridges and preventing dangerous conditions.

The increased use of drone technology was a natural outgrowth of the push to improve bridge infrastructure in Minnesota following the tragic 2007 collapse of a portion of the I-35 over the Mississippi River.

Camera-equipped aerial drones give workers a better view of hard-to-reach places, and the images can be used to form a 3D model capable of identifying short-term issues and tracking problems before they develop. Other drone models are designed to crawl along walls and into narrow spaces. State officials hope the use of drones will cut inspection costs by half.

Even as the state welcomes drones with open arms, other disruptive tech lacks the support of state leaders. Minnesota lacks a law legalizing ridesharing services statewide, and authorities should throw their support behind short-term rentals in cities like Minneapolis.

Sources: (Washington Post) (City Lab) (NPR) (State Scoop)

## WHAT DID WE DO RIGHT?

The state supports nearly 275,000 technology jobs, a per capita rate second only to Virginia.

## WHAT CAN WE DO BETTER NEXT YEAR?

Minnesota can pass a right-to-work law, support short-term rentals and pass a statewide ridesharing law.

## WHERE HAVE WE MOST IMPROVED?

Outpaces its neighboring states in the proportion of residents over the age of 24 with an advanced degree at 11.5 percent.

Best & Brightest	C
Fast Internet	B-
Grants Advanced Degrees	B
Tech Workforce	A
Tax Friendly	D+
Attracts Investment	B
Entrepreneurial Activity	B
Ridesharing	B
Short-Term Rentals	C+
Sustainable Policies	B-
Self-Driving Vehicles	A
Drones	A



### Attracts Investment

Per capita spending of \$1,235.52 on R&D investment beat out the majority of states.



### Tech Workforce

Home to approximately 50 tech jobs per 1,000 residents, the second highest in the country.



### Entrepreneurial Activity

Minnesota businesses created a net of 313,140 new jobs between Q2/2011 and fourth quarter of 2016, a rate of about 57 jobs per 1,000 residents.



## Fast Internet

Nearly 60 percent of households have internet connections of at least 10 mbps, and more than half have connections of at least 25 mbps.

## Educating Teachers to Pass Coding Skills on to the Next Generation

Minnesota nonprofit Code Kitty is offering low-cost robotics projects to elementary school teachers to encourage young students to learn coding skills.

Code Kitty's open source software and hardware uses 3D-printed parts and microcontrollers to help fourth- and fifth-grade teachers understand how to teach computational thinking. The teachers first construct a robot, and then use that experience to instruct their students. The nonprofit provides interactive workshops, as well, along with story-based lessons to teach students coding and robotics.

Minnesota is also home to a branch of First Lego League, an international robotics competition for kids, in which teams of students build and program a robot in one phase of the competition and develop innovative solutions to an assigned problem in another.

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The Land of 10,000 Lakes also hosts Silicon North Stars, a nonprofit launched by a husband-and-wife team Steve and Mary Grove of Google, which aims to bring high schoolers from minority and underrepresented backgrounds on tours of Silicon Valley, and which held its first demo day for high school students in 2017.

PHOTO CREDIT: High Tech Kids | Sources: (Tech.mn) (High Tech Kids) (Tech.mn)

