

Innovation

- Bridge caution signs already exist, but lack the ability to give a definite answer to whether the bridge is icy or not
- Our design improves the standard road sign by providing accurate, consistently updated information to drivers
- The sign will utilize sensors to detect the temperature and humidity to determine whether or not the bridge is likely to be frozen

Engineering Process

- Had many ideas before we settled including a trash can that floats on water and a moisture detecting grain silo robot
- Had many ideas for how the sign would work, such as thermal cameras
- Settled on a temperature and moisture sensor

Expenses

- Yellow Flashing Lights
- Stencils
- Black Spray Paint
- Primer
- Yellow Spray Paint
- Road Sign
- Temp. and Humidity Sensor
- Sign Post
- Led Screen
- RGB Screen
- Assorted Hardware (No Link)



Research

- Studies show that around 24% of weather related crashes happen on icy/slushy roads or bridges
- This means that there are roughly 1300 fatalities and over 116,000 injuries that could be prevented.



BRIDGE ICE DETECT G E T I O N S Y S T E M



Prototype Video Presentation



Problem & Solution

- Standard “Bridge May Be Icy” signs don’t provide adaptive information
- Install moisture and temperature sensors on bridges
- Use these readings to determine if the bridge is icy
- Display on a road sign if the bridge is icy or not icy, and can change depending on the conditions of the road

Art

- Art enhances STEAM by visual communications
- We used visual communications between drivers and our system to create a definite warning of whether the bridge is iced over or not.

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