



## Harnessing AI for Streamlined and Accessible Road Assessments

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# One Portfolio of Brands

## With Tires

**BF Goodrich**  
Tires

**TIGAR**

**UNIROYAL**

**+ MORE**

**MICHELIN**  
MOBILITY INTELLIGENCE

## Around Tires

 **masternaut**  
A MICHELIN GROUP COMPANY

**NexTraq**  
A MICHELIN GROUP COMPANY

**WATÈA**  
by Michelin

**RoadBotics**  
by Michelin

**+ MORE**

## Beyond Tires

**VIAMICHELIN**

**FENNER**  
CONVEYORS  
A MICHELIN GROUP COMPANY

**LE GUIDE MICHELIN**

**SYMBIO**  
A FAURECIA MICHELIN HYDROGEN COMPANY

**+ MORE**



**MICHELIN**

A Global Brand for Over 130 Years

A world map with a dark blue background. Several regions are highlighted in a lighter olive green color: North America (USA and Canada), Western Europe (UK, France, Germany, Spain, Italy), India, and Australia. The rest of the map is in a medium blue color.

## RoadBotics by Michelin Works With

**300+**

Communities  
Assessed

**30+**

Partners

**14**

Countries

**34**

US States

# Modern Day Uses of Artificial Intelligence

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AI is transforming various aspects of government operations to improve efficiency, enhance citizen services, and address complex challenges.

- **Emergency Response and Disaster Management**
- **Social Services**
- **Water Quality Monitoring**



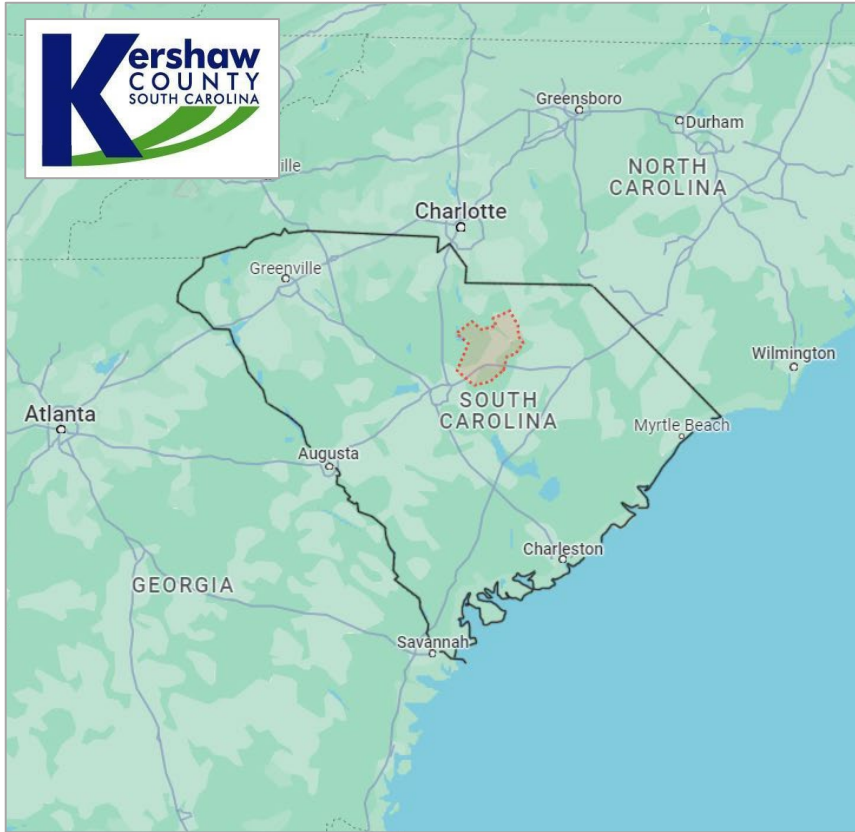
AI-driven  
healthcare app



Online therapy  
platform



Detects water  
contaminants with AI



# Real World Applications of AI for Road Assessments

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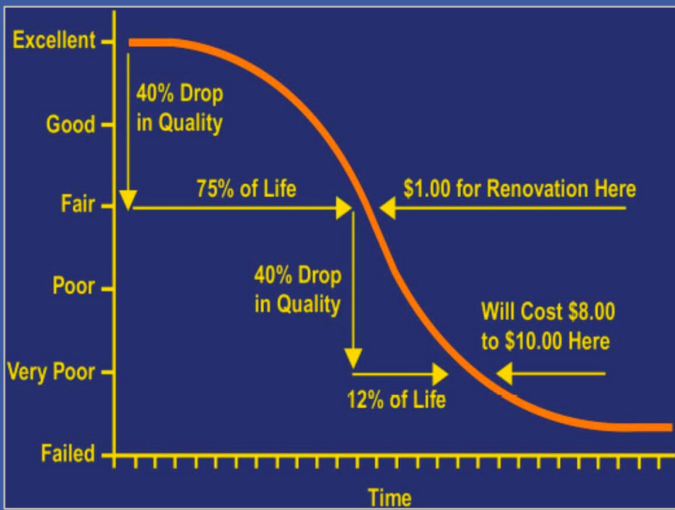
First time for Kershaw County, SC using an AI-based assessment

- Objectivity
- Funding
- Minimizing complaints

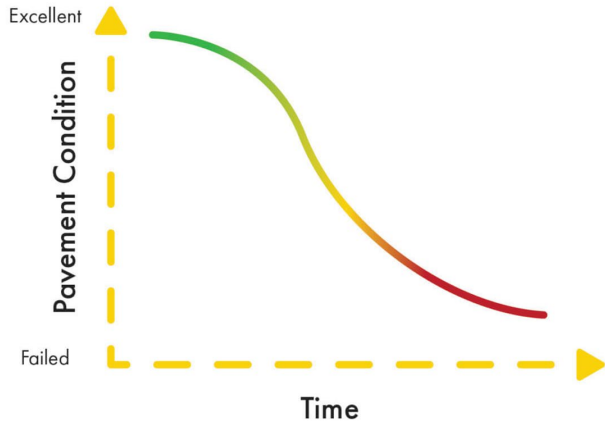


# Why We Do Pavement Inspections

# Why Having Good Data Is Critical



## Standard PF Curve



- 01 Do you know the location and condition of every road in your network? How do you collect data around your current pavement conditions?
- 02 Do you have an objective way of identifying which roads will be repaved?
- 03 Do you have a preventative maintenance plan? Is it proactive or reactive?

# Common Road Assessment Methods



**Manual/Windshield  
Inspection**

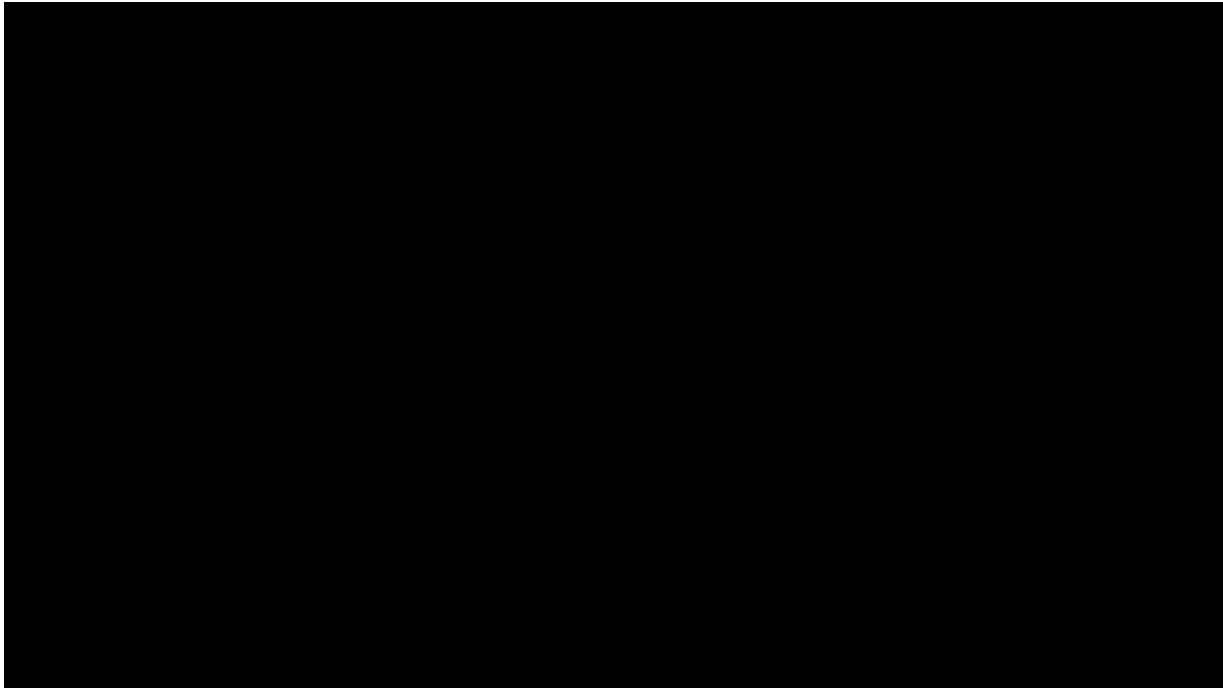


**LiDAR Scans**

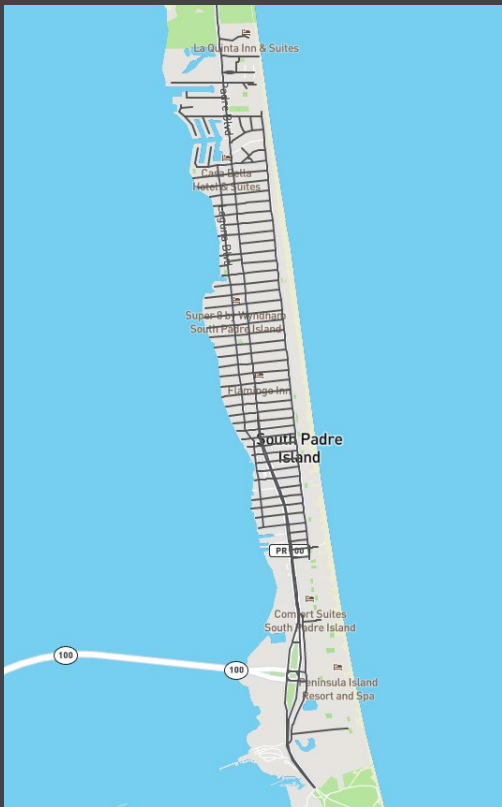


**Smartphone/AI  
Assessments**

# Using AI to Assess Pavement Conditions



# How Does It Work?



1

GeoJSON or  
Shapefile



2

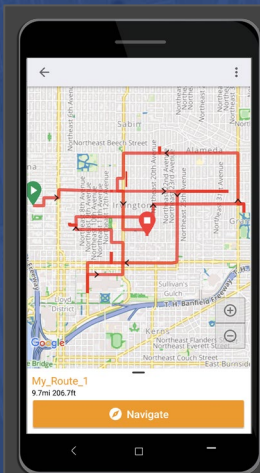
Mount the smartphone at the top of the  
windshield

# How Does It Work?



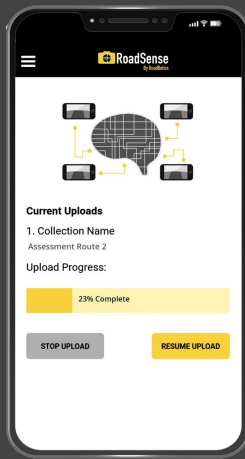
3

Collect data with a smartphone



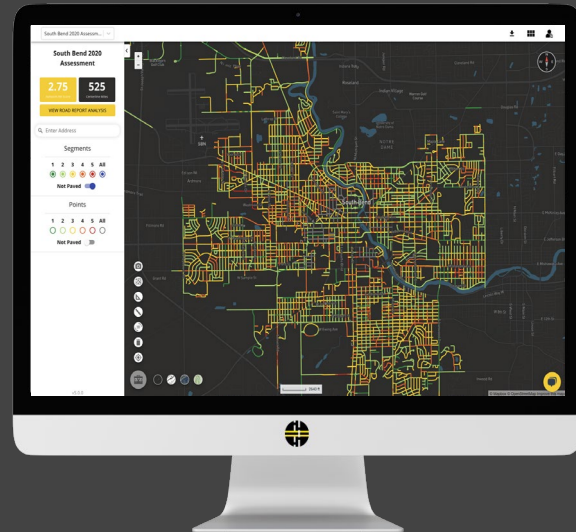
4

Follow turn-by-turn navigation to collect all data



5

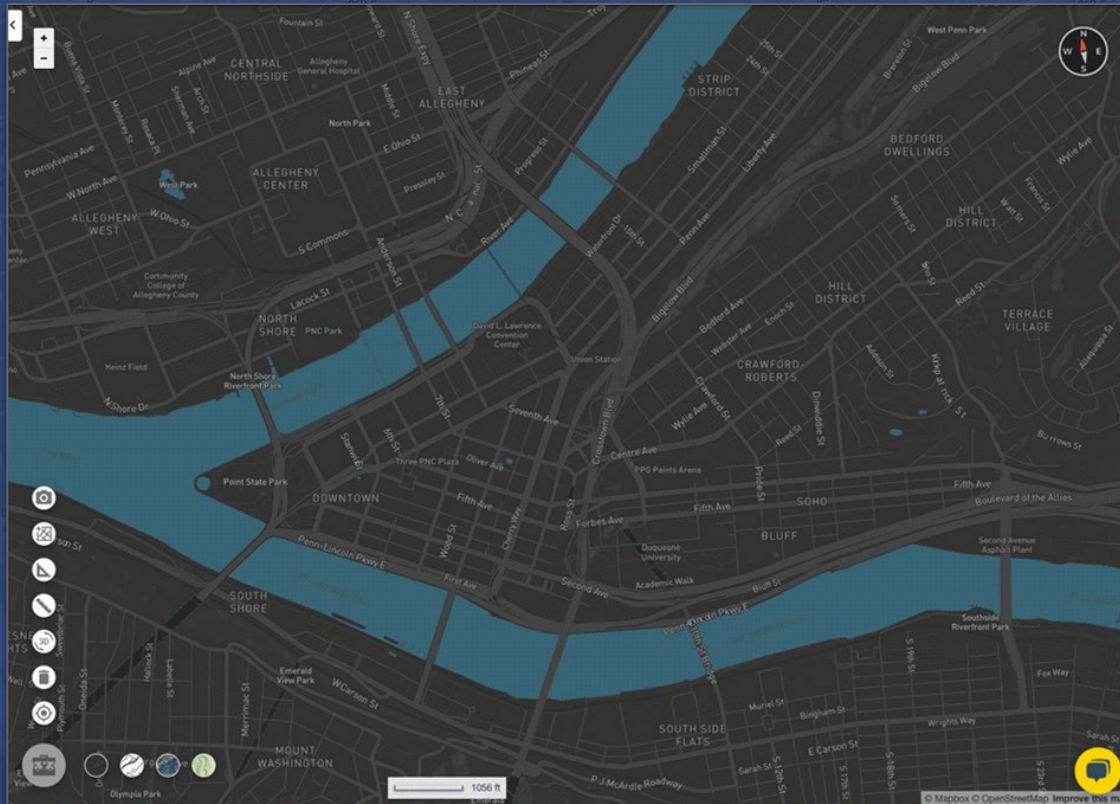
Upload the data through the app



6

Data is analyzed and results appear online on roadway 30-45 days

# Pavement Condition Ratings



**RATING 1** No or minor surface distress

**RATING 2** Minor surface damage, no critical issues

**RATING 3** Appearance of pervasive distresses

**RATING 4** Significant damage or emerging critical failures

**RATING 5** Major surface damage and/or critical fatigue issues

# Understanding How Our AI Model Works

Collected images are assessed using computer algorithms (artificial intelligence) using image processing as follows:

## Road Identification

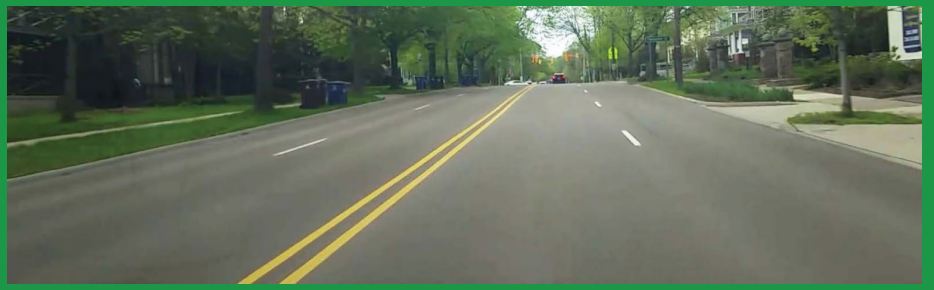


## Algorithmic Assignment of Condition Rating



# Rating 1

No or very minor surface damage



# Rating 2

Minor surface damage, no critical issues



# Rating 3

Appearance of pervasive surface distresses



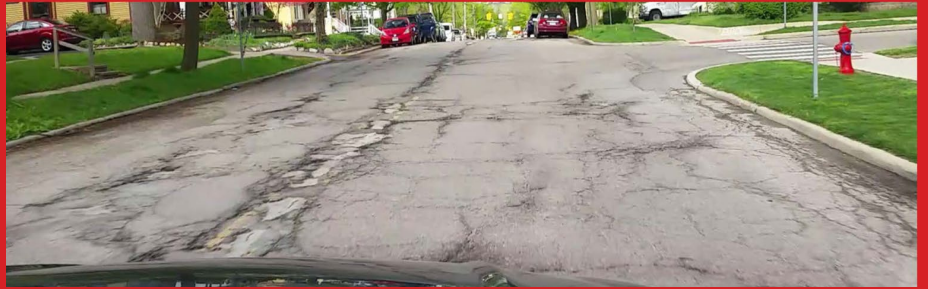
# Rating 4

Significant damage or emerging critical failures



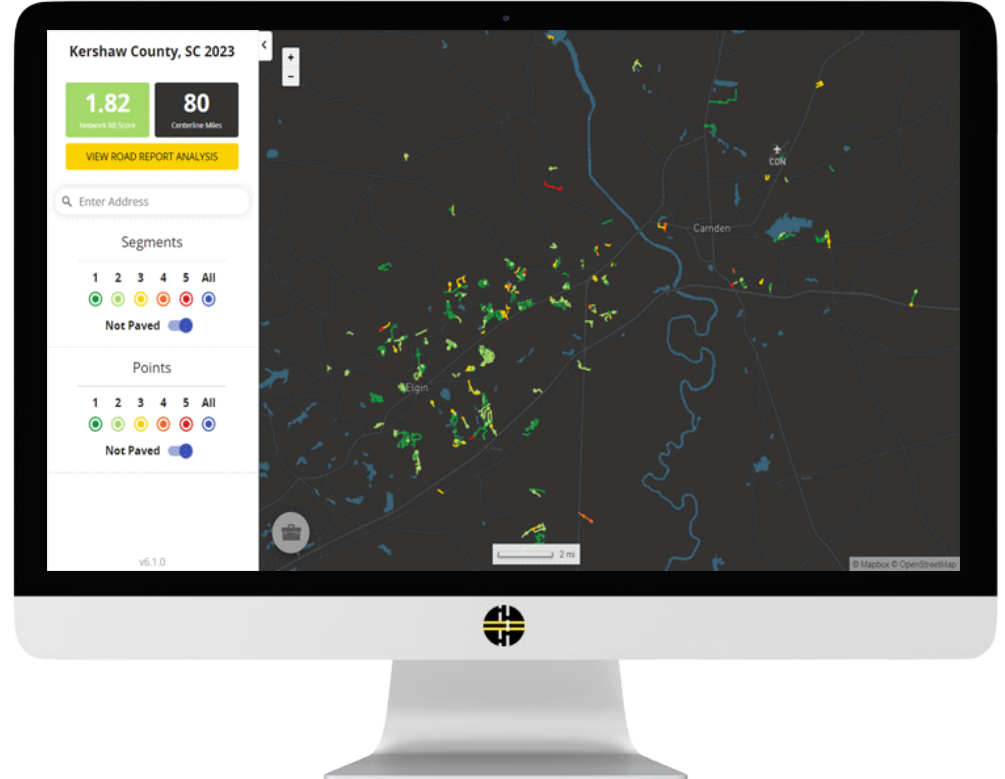
# Rating 5

Major surface damage or critical surface failures



# Kershaw County, SC

- Funding is a problem
- Process for fielding self-reported complaints
- Objectivity is important for clear communication
- Division by council area for easier planning



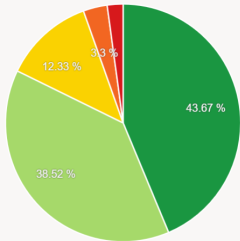
## Road Report Analysis

Kershaw County, SC 2023

Road Network Score

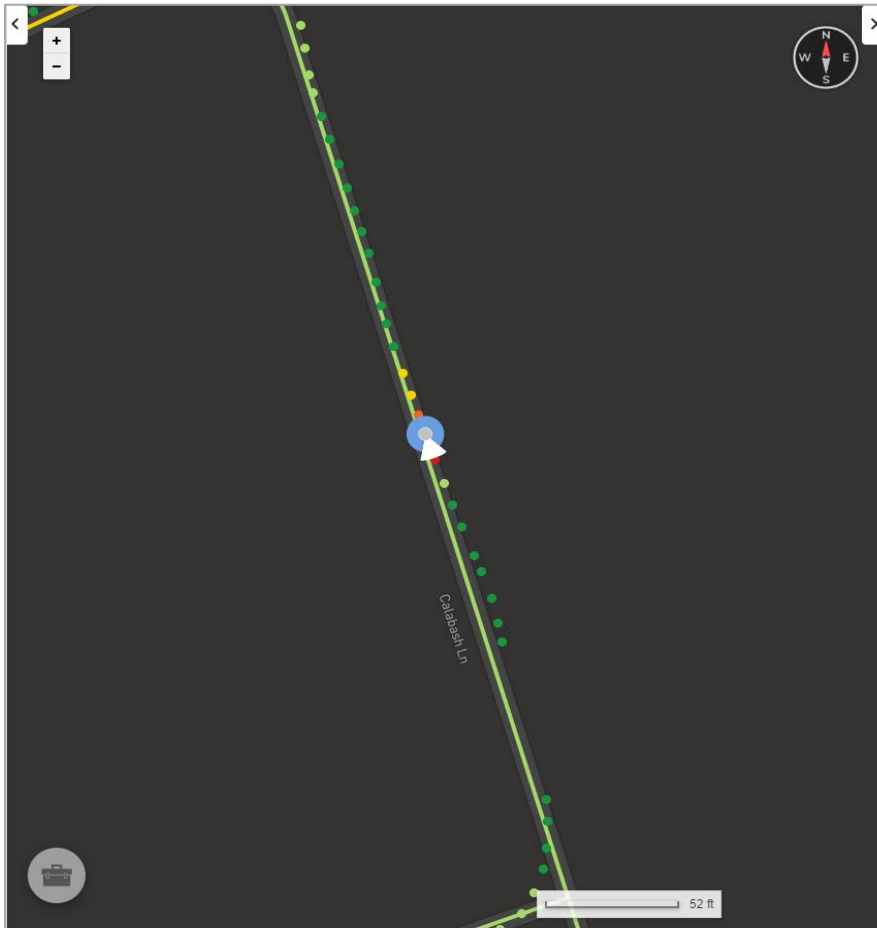
1.82

Network Ratings Breakdown



# Kershaw County, SC

- Maintaining quality of recently added roads
- Majority of roads managed are dirt
- Shapefile data available for ArcGIS integration
- Dashboard for public-facing communication



Calabash Lane

Avg Rating: 1.61 Length: 416.6 Feet

**RATING**  
**5**

< PREV    NEXT >

📍 25 Calabash Lane    🕒 Nov 29, 2023, 10:53 am  
🌐 34.14539, -80.76903    📍 South

# Integration with Your Systems

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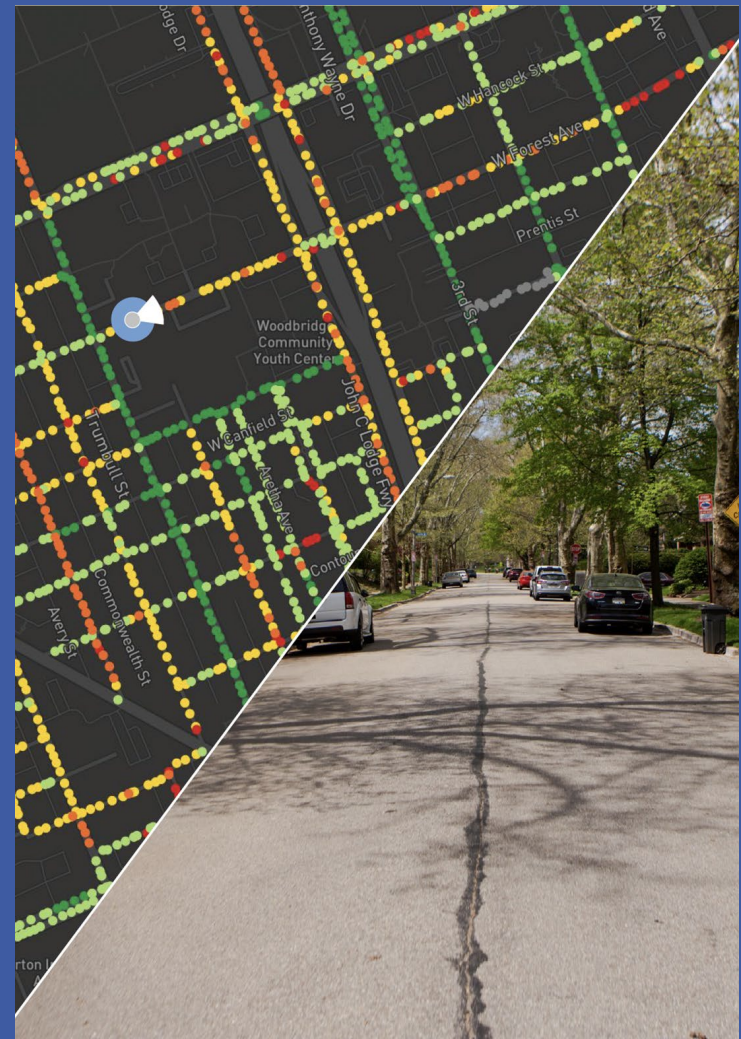
If you already use an existing asset management platform, RoadBotics by Michelin will work with you to provide our geospatial data in a shapefile that can be easily integrated into most GIS-enabled platforms.

This data is key to filling the void of pavement condition data and can simplify the pavement management planning process.



# Can Technology Upgrade Your Road Assessment Process?

- 01 Location and condition of all of the roads in your network
- 02 You can rank from best to worst in terms of surface deterioration?
- 03 Make data-driven decisions
- 04 Create more efficient plans and can you see the big picture.
- 05 Present objective data to community and council
- 06 Save Time and Money





Questions?

# Thank You!

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