



PRESENTER:



Bill Collester, CSI, CEI  
Pavement Consulting

MODERATOR:



Greg Walterscheid, eMBA, FMP  
Facilities Consulting

Webinar Series – Building Value:  
Strategies for Performance, Resilience, and ROI

# **Maximizing Pavement Performance: Strategic Management for Long-Term Savings**

August 7, 2025

# IIF<sup>TM</sup> Incident and Injury-Free<sup>TM</sup>



- Safety is a culture for Terracon.
- Safe data collection.

# About Terracon

## ABOUT TERRACON

### Our Services:

- Facilities
- Environmental
- Geotechnical
- Materials



**7,000+**  
PROFESSIONALS

**180+**

LOCATIONS NATIONWIDE

**85,000+**

PROJECTS COMPLETED  
IN 2024  
WITH OVER **23,000** CLIENTS



ENR RANKINGS 2025

**#19**

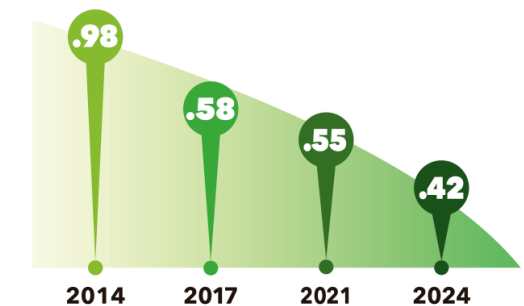
TOP 500  
DESIGN FIRMS

PROJECTS  
IN ALL



EMPLOYEE-OWNED

TRIR



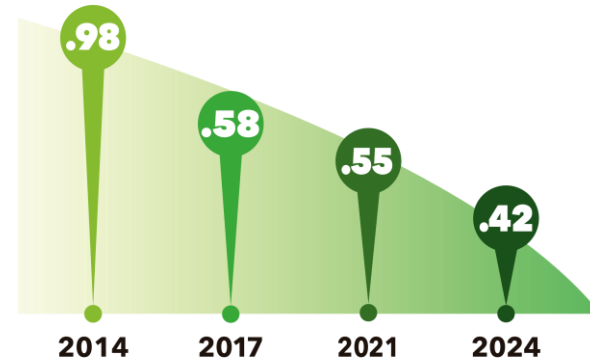


# Delivering success safely

- Safety is one of Terracon's core values.
- Our commitment to being an *Incident and Injury-Free (IIF)* company is an operational priority.
- We strive to build safety and well-being into all aspects of our business.

## Total Recordable Incident Rate (TRIR)

### TRIR



IIF®  
Incident and Injury-Free®



# Expertise for a Variety of Project Needs



# Local Presence and Expertise

**Our knowledge of local of local conditions is unmatched.**

Lean on our local lifecycle experts.



# Maximizing Pavement Performance: Strategic Management for Long-Term Savings

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Pavement Consulting



# Pavement Management Team



**Andrea Blanchette,  
P.E.**  
Pavement Group Mgr.  
14 years of experience



**Bill Collester**  
Client Development  
Manager  
20 years of experience



**Tyler Means, P.E.**  
Sr. Geotechnical Project  
Manager  
10+ years of experience



**Jennifer Tran**  
Sr. Geotechnical Project  
Manager  
17 years of experience

# Streamlined Communication

- Strong, trusting partnership.
- Provides consistency.
- Single point of contact to manage our pavement and accessibility consulting services.



# Client story: The value of a single point of contact

*Having a single point of contact streamlines our communication and makes our work more productive and efficient. Reporting template consistency was key to building a trusting partnership with them. I collaborated with multiple contacts to create a report template customized to fit the needs of their national organization across 10 zones.*

*I held their hand through all of it – they didn't have to worry about the plan details. When there were any questions or concerns, the client knows who to call. Our client said that this process is working out for them.*

*~ Jennifer Tran, pavement project manager*



# Self-reflection

**What do your pavements look like?**  
**What are your pain points?**

# Pavement Management Programs

## **Consider Terracon YOUR Pavement Doctor**

- Annual pavement evaluation/Pavement Condition Index (PCI) study.
- Diagnose problems and design plan for maintenance schedule.
- Provide data to make strategic budgeting decisions.
- Help administer contract work.
- Perform onsite pavement inspection.



# Sustainability

## LONGER LIFE PAVEMENTS

Lower costs, reduced environmental impacts, and positive social benefits



### ENVIRONMENTAL

- Reduced waste from fewer rehabilitations
- Reduced impact to surrounding ecosystems
- Reduced energy usage



### SOCIAL

- Improved safety and ride quality
- Reduced disruptions to traveling public



### ECONOMIC

- Reduced pavement lifecycle costs

**Value: Save Money**





# Impact

**How do your pavements impact  
your revenue?**

**How do your pavements impact user safety?**

**Operations?**

**Risk?**



# Do You Know?

- **General:** Do we have a strategic plan in place to management pavement assets?
- **Budgeting:** How are annual capital expenditures allocated?
- **Design:** Is there a professional engineering team currently responsible for managing our entire portfolio of facilities consistently, effectively, and efficiently.
- **Operations:** How often does your poor pavement conditions negatively affect productivity at your facilities?

# How Pavement Management Can Save You Money

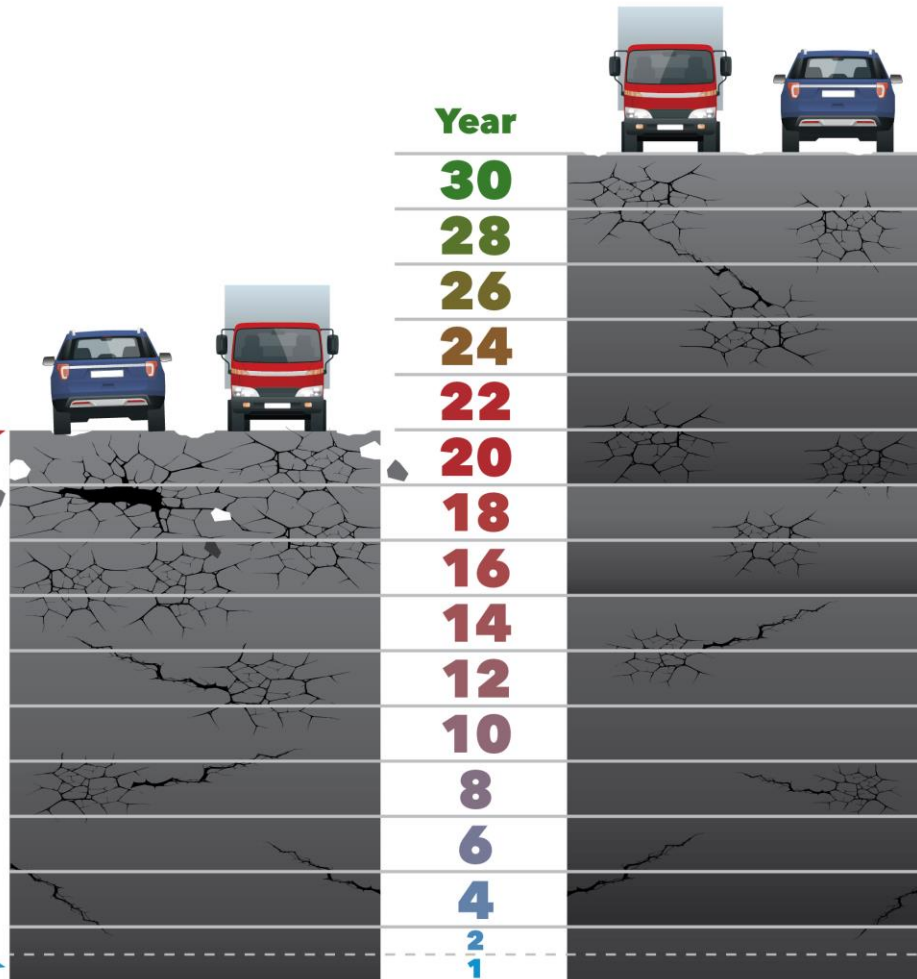
## Client A

does nothing -  
no pavement maintenance plan

Total cost over 20 years:  
**\$1.9 million**

Year 20: New construction  
@ \$11.15/sq. ft = \$1,114,460

Year 1: New construction  
@ \$7.50/sq.ft = \$750,000



## Client B

follows a pavement maintenance plan

Total cost over 20 years:

**\$1.3 million**

almost \$600K saved

PLUS, the pavement will likely last an additional 10-15 years and will not need a reconstruction until year 30 or beyond!

Year 18: Surface treatment  
@ \$.31/sq. ft = \$71,412

Year 15: Mill and overlay  
@ \$4.04/sq. ft = \$404,000

Year 3: Surface treatment  
@ \$.53/sq. ft = \$53,000

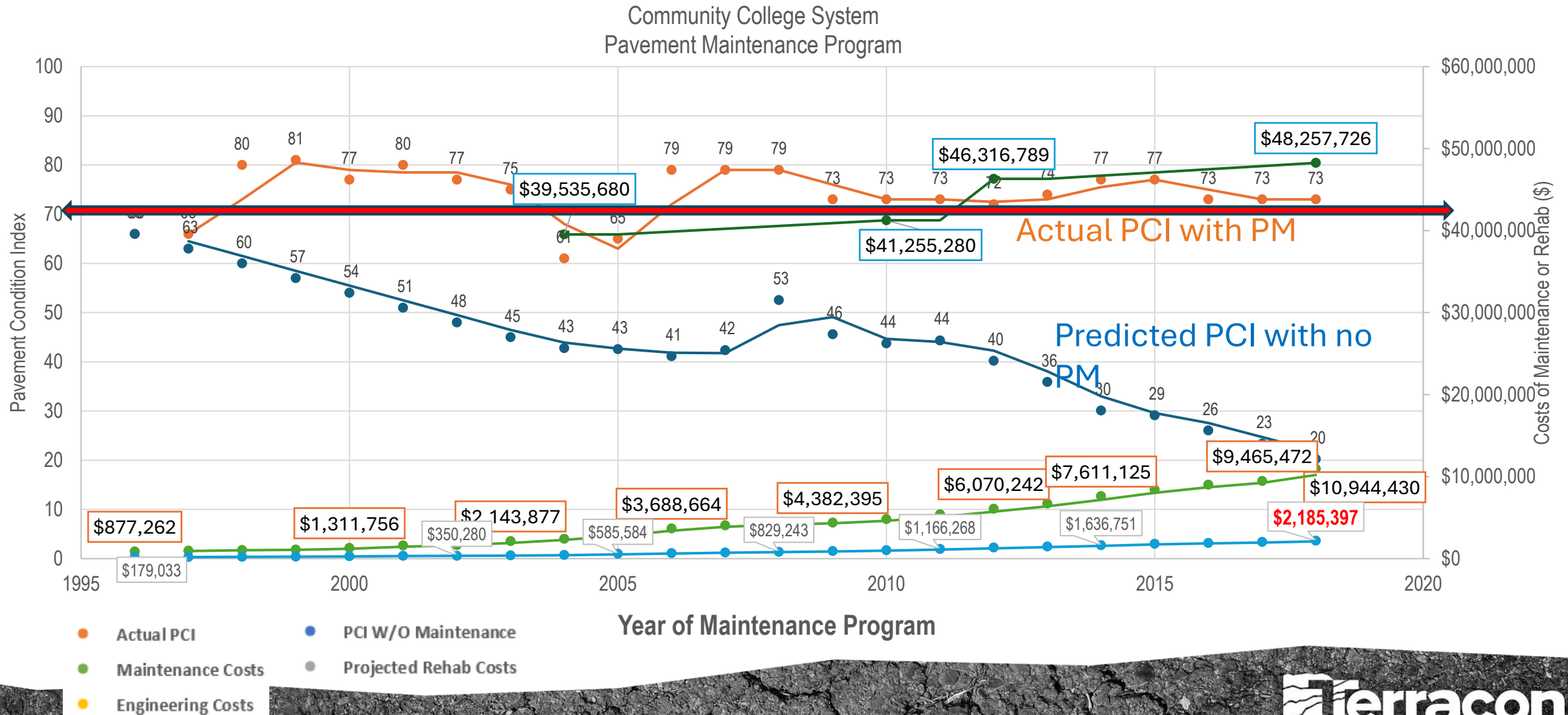
Year 1: New construction  
@ \$7.50/sq. ft = \$750,000



# Client Story: Maricopa County Community College

- More than 25 years of pavement tradition tracking.
- Monitoring 15M square feet of pavement.
  - 32 campuses
  - 16 facility managers
- We determine critical junctures to perform maintenance:
  - crack sealing
  - surface treatment
  - milling overlay
- Maintenance delays a more fully, costly reconstruction.

# Using Data to Help Budget and Plan




# Table 1.

## 2023 Five-Year Pavement Condition Index Projections

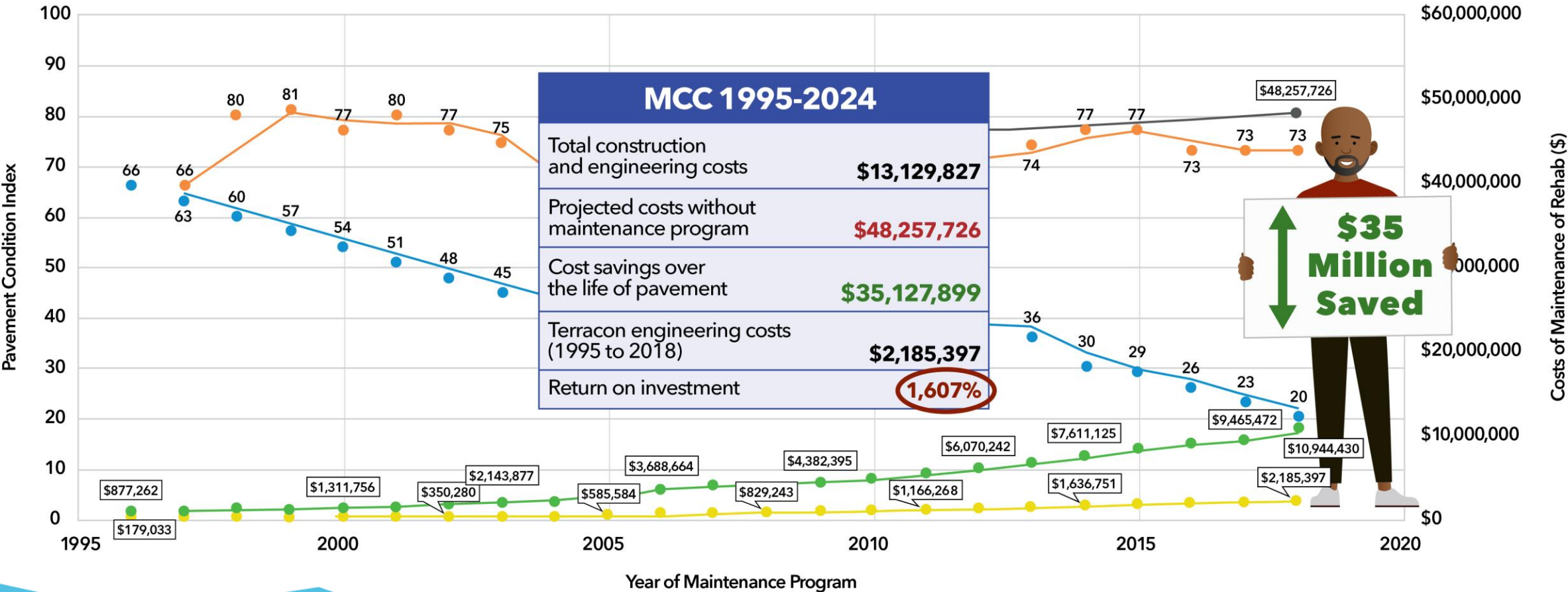
PROJECT DATA

Network name Maricopa County Community College District  
Total Pavement Area (ft<sup>2</sup>) 15,704,297

| Campus   | Section  | Area (ft <sup>2</sup> ) | Last Surveyed | 2023 | 2024 | 2025 | 2026 | 2027 | Composite PCI by Campus for 2023 |
|--|----------|-------------------------|---------------|------|------|------|------|------|----------------------------------|
|  CGCC@W<br>514,939 sf | 100      | 96,199                  | Aug-22        | 76   | 73   | 74   | 69   | 67   | 71                               |
|  | 110      | 33,048                  | Aug-22        | 65   | 62   | 59   | 56   | 53   |                                  |
|  | 16       | 21,304                  | Jan-21        | 90   | 89   | 88   | 87   | 85   |                                  |
|  | 89       | 7,934                   | Aug-22        | 72   | 71   | 70   | 69   | 67   |                                  |
|  | 90       | 14,380                  | Jan-21        | 75   | 74   | 73   | 72   | 71   |                                  |
|  | 91       | 11,554                  | Mar-22        | 80   | 79   | 79   | 78   | 78   |                                  |
|  | 92       | 51,300                  | Mar-22        | 67   | 63   | 60   | 57   | 54   |                                  |
|  | 94       | 77,800                  | Apr-20        | 81   | 79   | 77   | 74   | 72   |                                  |
|  | BLUE FL  | 20,664                  | Mar-22        | 90   | 90   | 90   | 89   | 88   |                                  |
|  | Facility | 150,000                 | Mar-22        | 75   | 70   | 68   | 66   | 64   |                                  |
|  | MSB      | 11,927                  | Mar-22        | 76   | 75   | 74   | 73   | 72   |                                  |
|  | Tahoe    | 10,579                  | Mar-22        | 94   | 93   | 93   | 92   | 91   |                                  |
|  | Texas    | 8,250                   | Jan-21        | 96   | 93   | 90   | 87   | 84   |                                  |

# Using Data To Help Budget A Plan

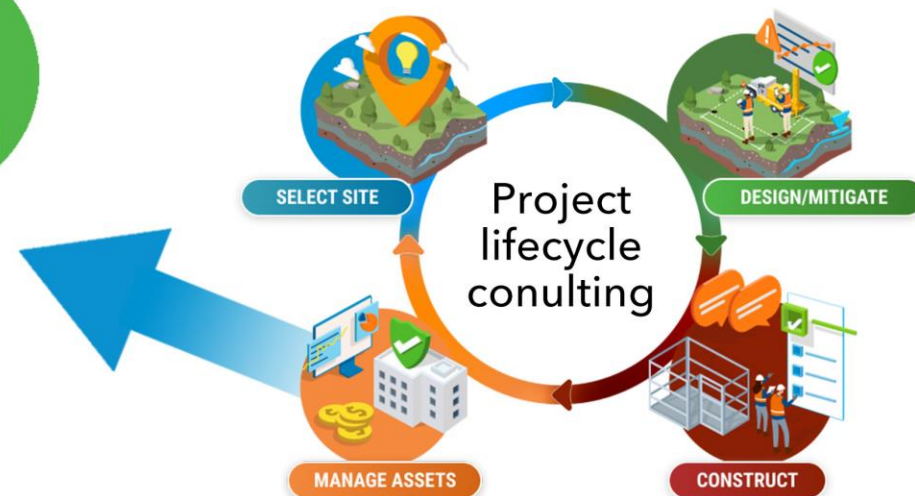
Maricopa Community Colleges Pavement Maintenance Program





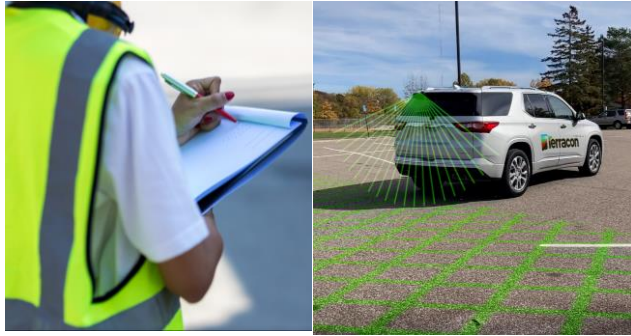
# Lifecycle Management





# Pavement Consulting Services

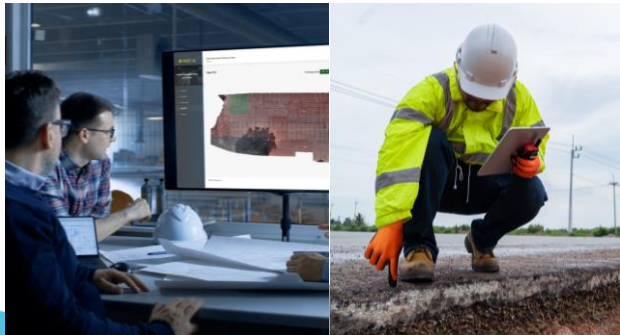
## Pavement Assessment



## Sub-surface evaluations



## Design construction services



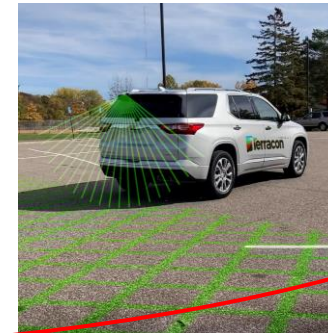
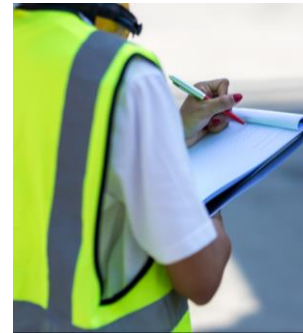
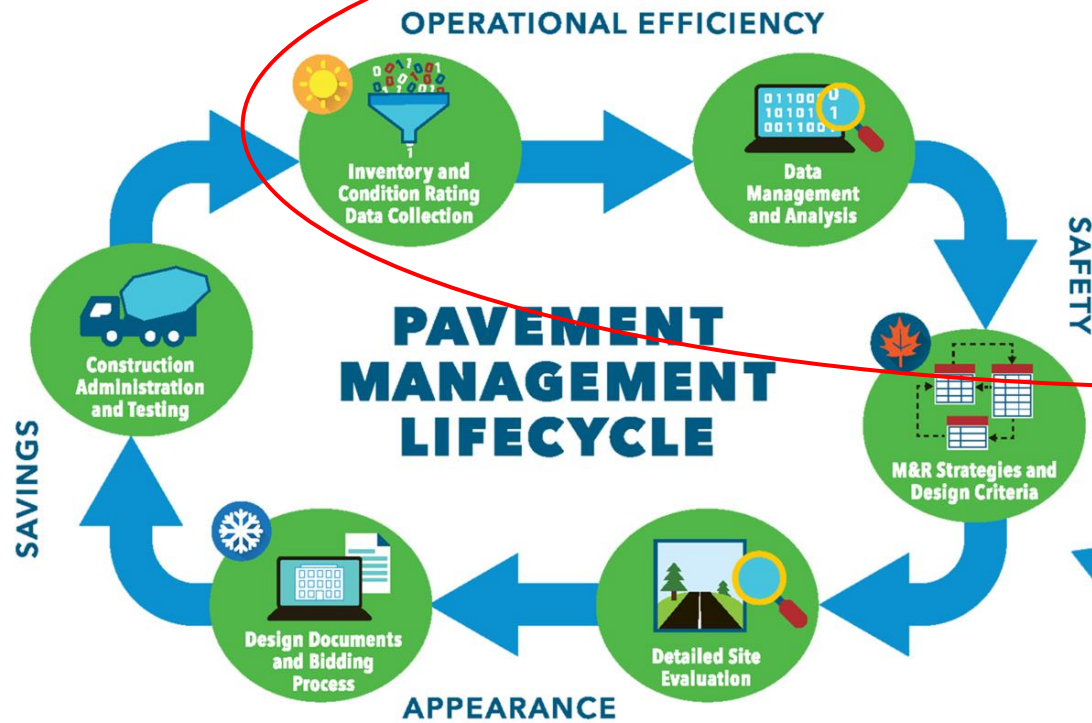
## Pavement Management



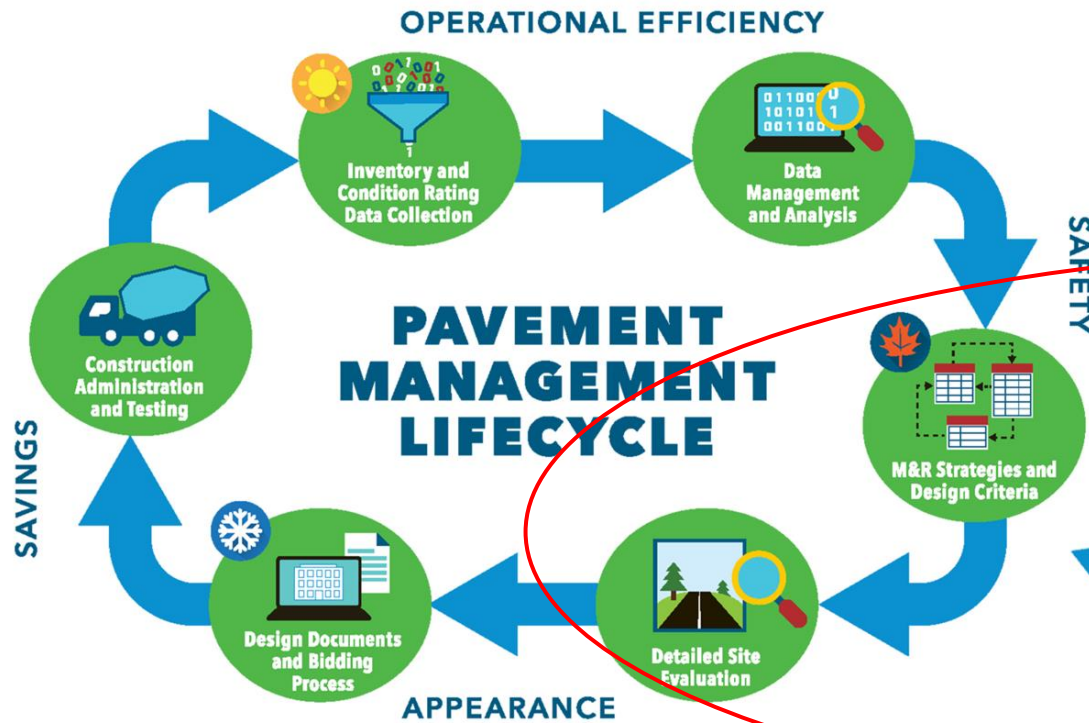


# Pavement Consulting Services

## Pavement Assessment



# Pavement Consulting Services



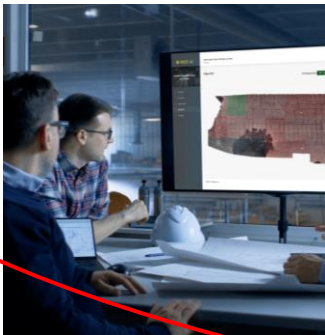
## Sub-surface evaluations





# Pavement Consulting Services

## Design construction services





# Pavement Consulting Services

## Pavement Management



# Assessment Technology

# Before scanning technology

- Potential for inconsistent data
- Significant time investment
- Underrepresented data/damage



Photo #1 Entrance to Section 4A in really poor condition.



Photo #2 Exposed subgrade in high severity pothole observed at loading area entrance.



Photo #3 High severity scaling with chunks of concrete being dislodged from the concrete apron at loading area entrance off of CSX Way.



Photo #4 Close-up to Photo #3.



# The value of an expert consultant



That looks like low severity damage.

Based on the last PCI score of 56, this damage has worsened to a poor score of 42. The area needs reconstruction.



# Advanced scanning technology



Objective / Repeatable advanced scanning technology



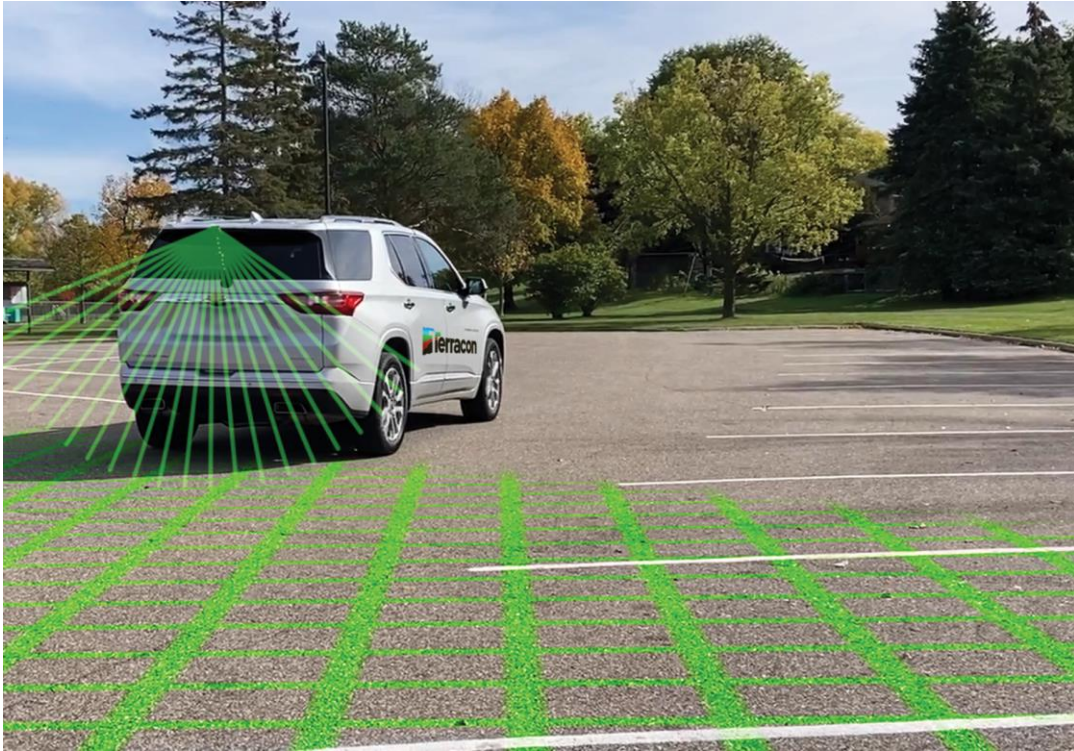
How we used to measure distresses



Today's methodology



# Advanced scanning technology



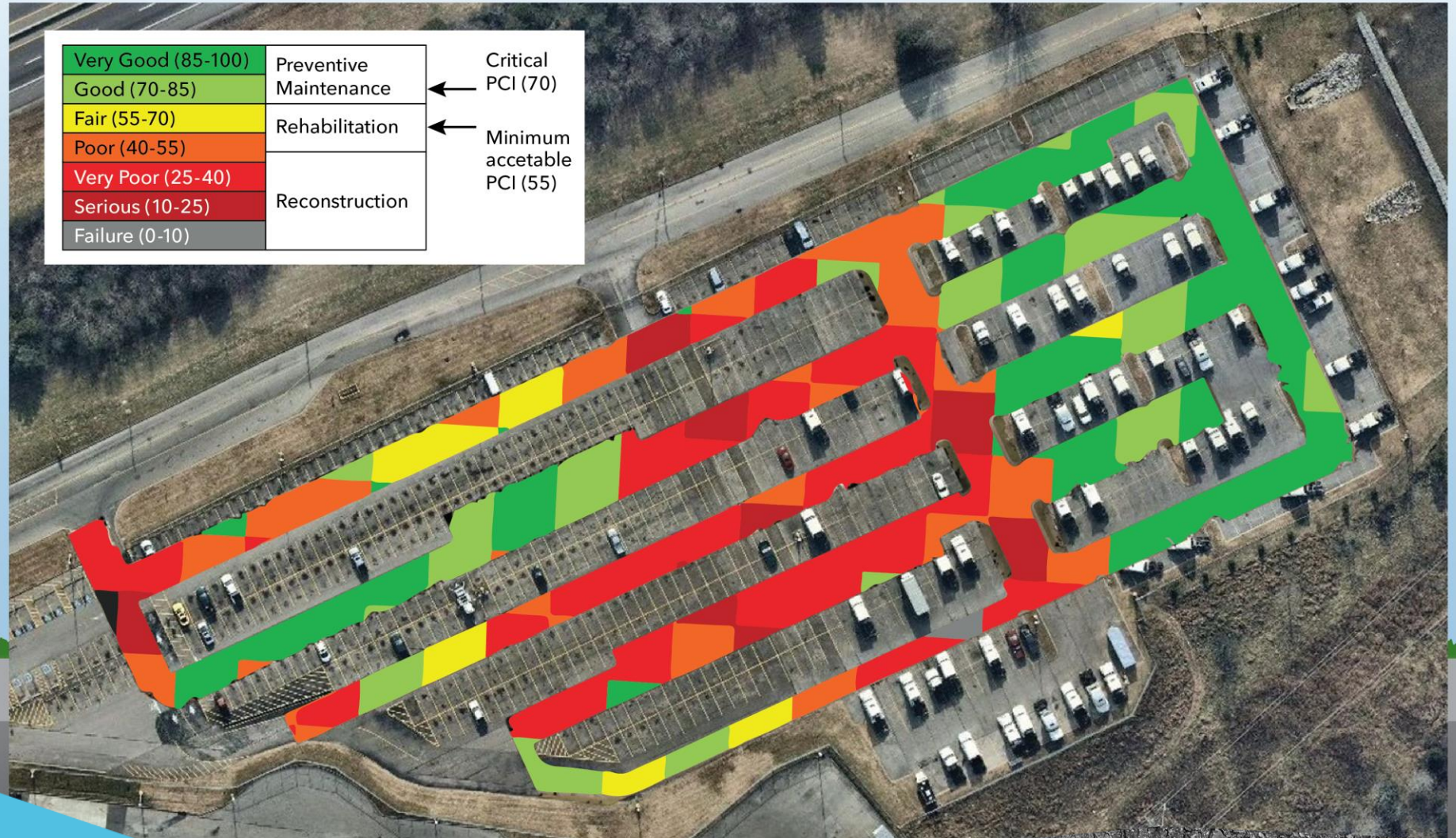
A car-mounted camera captures pavement condition data.



GPS- and time-stamped video footage of pavement condition



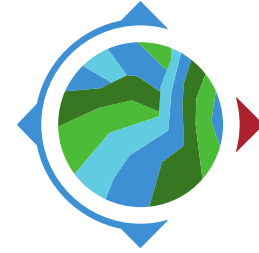
# Heat map data reveals damage levels



# Client Project Deliverable Platform

Terracon

# Compass

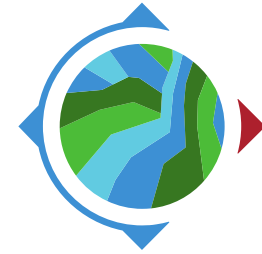


- Real-time/on-time project tracking and delivery tool.
- Enables clients to quickly find and view specific data.
- Make timely, informed decisions about their projects.





# Compass



Terracon
Compass

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**Pavement Evaluation Services**

- [Activities Calendar](#)
- [Client & Other Parties](#)
- [Terracon Project Team](#)
- [Documents](#)
- [Project Map](#)
- [View Map in Tab](#)
- [Final Reports](#)
- [Additional Files](#)

Documents marked with an "M" are preliminary.

**Options**

☒ Project  
☒ Project borders  
☒ Terracon Geotechnical Data

**Images**

☐ Conductivity Plot  
☐ Overlay 2  
☐ Overlay 1  
☐ PCI Index Overlay  
☐ GPH Overlay

**Pave All Layers**

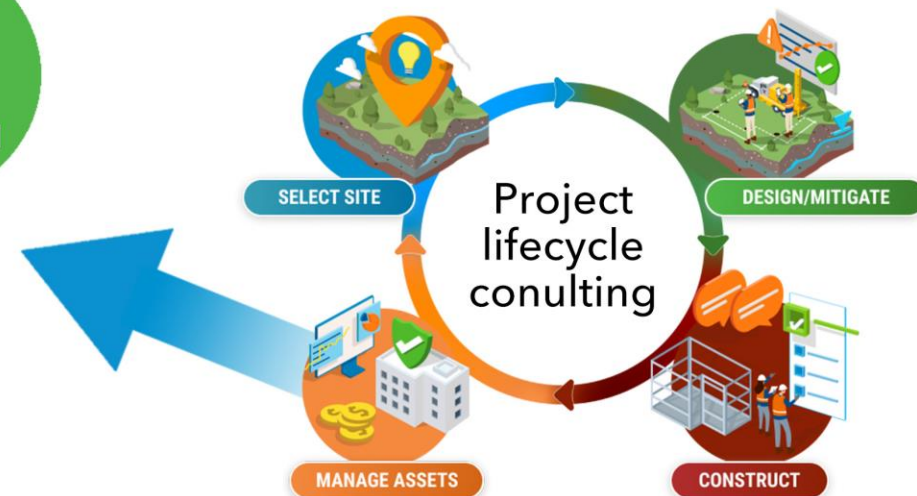
☒ Heatmap\_Healthcare\_Prudental\_Campus (Zoom In)  
☐ Orthomosaic\_Healthcare\_Prudental\_Campus (Zoom In)  
☒ Heatmap\_Healthcare\_Bassett\_Campus (Zoom In)  
☐ Orthomosaic\_Healthcare\_Bassett\_Campus (Zoom In)  
☒ Heatmap\_Healthcare\_St\_Augustine\_Campus (Zoom In)  
☐ Orthomosaic\_Healthcare\_St\_Augustine\_Campus (Zoom In)  
☒ Heatmap\_Healthcare\_Seaches\_Campus (Zoom In)  
☐ Orthomosaic\_Healthcare\_Seaches\_Campus (Zoom In)  
☒ Heatmap\_Roundrock\_TX (Zoom In)  
☐ Orthomosaic\_Roundrock\_TX (Zoom In)  
☒ Heatmap\_Logistics\_Atlanta (Zoom In)  
☐ Orthomosaic\_Logistics\_Atlanta (Zoom In)  
☒ Heatmap\_Corporate\_Site (Zoom In)  
☐ Orthomosaic\_Corporate\_Site (Zoom In)  
☒ 08\_Heatmap\_Terracon\_Milwaukee\_WI (Zoom In)  
☐ 08\_Orthomosaic\_Terracon\_Milwaukee\_WI (Zoom In)  
☒ Heatmap\_Lubbock\_Texas\_Schools (Zoom In)  
☐ Orthomosaic\_Lubbock\_Texas\_Schools (Zoom In)

**Legend**

Good (86-100)  
 Satisfactory (71-85)  
 Fair (56-70)  
 Poor (41-55)  
 Very Poor (26-40)  
 Serious (11-25)  
 Failed (0-10)

**Layers**

☒ Basemap Only  
☐ National  
☒ 2021 World Imagery  
☐ NRCS SSURGO  
☐ Depth to Bedrock  
☐ Depth to Water  
☐ Flooding Frequency  
☐ Soil Parent Material  
☐ USGS





# QUESTIONS?

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National Client Development Manager

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