

A photograph of an outdoor basketball court at sunset. The court is in the foreground, with white lines on the asphalt. In the background, there are several tall palm trees, a playground with a person sitting on a bench, and a low wall. The sky is a mix of blue and orange, with the sun low on the horizon.

# Pavements Update

Jeff Steuben

CRRC Executive Director

# Background

- Board-level working group (2022–2023)
- Literature review on cool pavement research
- Stakeholder outreach & interviews
- CRRC strategic plan & mission statement update (2023)
- Pavement Ratings Steering Committee (2023–present)



# Literature Review Topics

- Impacts
- Mechanical and radiative durability
- Test methods and metrics
- Weathering procedures



# Pavement Stakeholder Interviews

- Industry & Associations
  - GAF
  - CoolSeal
  - ePave
  - Western Colloid
  - Asphalt Institute
  - National Ready Mixed Concrete Association
  - National Asphalt Paving Association
- General Interest
  - US EPA
  - US Green Building Council
  - National Concrete Pavement Technology Center
  - MIT Concrete Sustainability Hub
  - UC Davis Pavement Research Center
  - City of Phoenix
  - City of San Antonio
  - Miami-Dade County

# Interview Findings

- Strong support for third-party ratings to increase credibility and level the playing field
- Pavement SRI values frequently requested, most commonly for LEED credits
- “Other than trees, cool pavements have the greatest UHI reduction potential”

# Rationale

- In line with the CRRC's Mission Statement and part of Strategic Plan (see [coolroofs.org/about](https://coolroofs.org/about))
- Expand CRRC's financial base of Members, Licensees and Products
- Will bring in new stakeholders and bring more attention to CRRC's existing rating programs
- No credible third-party data available

# Rationale

## **The CRRC's Mission:**

To bring objective, scientific information related to cool surfaces to critical discussions and informed decisions about the impacts of heat islands, extreme heat, and energy use in the built environment.

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# Rationale

- Paving is roughly 30% of urban surface
- Dark, heat-trapping surfaces contribute to the Urban Heat Island Effect



# Rationale



**City of Phoenix**

**CITY OF SAN ANTONIO**

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**PUBLIC WORKS DEPARTMENT**  
sa.Gov Home > Public Works Department > Projects > Cool Pavement Program

**COOL PAVEMENT PROGRAM**

CINCINNATI

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OFFICE OF ENVIRONMENT & SUSTAINABILITY

Office of Environment & Sustainability / News / New Project to Decrease Asphalt Surface Temperatures

## New Project to Decrease Asphalt Surface Temperatures

Aug 25, 2023

CINCINNATI – New CoolSeal Project introduced to decrease asphalt surface temperatures. Paved surfaces such as parking lots, roads, and sidewalks absorb heat during the day and release this heat overnight, creating higher temperatures. This phenomenon is known as the Urban Heat Island effect. The product CoolSeal is a heat reflective coating that can decrease typical asphalt surface temperatures by up to 10-20°F, which can help reduce the Urban Heat Island effect.

CoolSeal was applied to the parking lot of LeBlond Recreation Center and thermometer readings will be recorded to measure temperature differences. If this project yields successful results, the goal would be to apply CoolSeal to other recreation center parking lots and to expand to various City facility parking lots as well. Initial readings were taken at various locations around LeBlond Recreation Center and TM Berry Friendship Park and the results can be seen here. Updates will be posted to the OES website here.



UNITED STATES CONGRESSMAN  
**MIKE THOMPSON**  
Representing California's Fourth District

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## Thompson Announces \$24 Million for City of Davis Cool Pavement Project

April 8, 2024 Press Release

### Davis to Receive Critical Funding to Improve Roadways and Guard Against Impacts of Extreme Heat

Washington – Today, Rep. Mike Thompson (CA-04) announced that the City of Davis will receive \$24 million in federal funds to install cool pavement technologies and replace roadway underlayment to rehabilitate several portions of roadways across the city.



# Los Angeles



**Cool Pavement**

San Antonio can get hot. Some parts of the city, especially those with a lot of built-up area, can get even hotter – sometimes, by as much as 20 degrees.



09 AUG, 2023 | WRITE COMMENT

### City of Los Altos Receives \$125K Grant to Pilot Cool Pavement Program



**EXTREME HEAT ACTION PLAN**

MIAMI-DADE COUNTY  
OFFICE OF RESILIENCE

NEWS WEATHER WE ARE AUSTIN SPORTS GAME CENTER WATCH LIVE

## Austin tests "cool pavement technology" to reduce city temperatures

by Bettie Cross | Fri, July 28th 2023 at 6:19 PM



A record-breaking heat wave has Austin evaluating an innovative technology to see if it can lower city temperatures. Cool pavement technology is already being used in Phoenix and San Antonio and now a pilot project is underway in Austin to assess if it can reduce the "heat island" effect and lower temperatures. (Photo: Bettie Cross)

# Open Questions

- Would a CRRC Rating Program measure other properties beyond radiative?
  - carbon intensity
  - durability
  - porosity
  - traction/skid resistance



# Open Questions

- Are there any unintended consequences from greater deployment of cool pavements?
  - public reaction
  - glare
  - reflected radiation
  - impacts to urban forestry



# Pavement Steering Committee Activities

- Conduct additional stakeholder interviews
- Develop Pavement Program Information Packet
- Conduct Letter of Interest Campaign



# Letters of Interest

- Arkema
- City of Columbia, South Carolina
- City of Dallas, Texas
- Climate Resolve
- CoolSeal
- Dow
- ePave
- MACOMA Environmental Technologies
- Pavement Surface Coatings
- Siplast
- Smart Surfaces Coalition
- SWARCO - Colorado Paint Company
- Thermacote
- Western Colloid

# Next Steps

- Membership vote to expand the organization's scope
- Fundraising campaign
- Proposal to CRRC Board of Directors
- Possible technical research project



# Potential Technical Research

- Develop a way to determine aged performance of pavement materials
  - climate
  - site use type (e.g. street, sidewalk, parking lot, etc.)
  - changes over time
  - many different component combinations (aggregate, cement, binder, slag, fly ash, etc.)



# Potential Pavement Rating Program

- Pavement Rating Program will be self-funded
- Pavement Ratings Steering Committee will oversee exploration of a possible program
  - Technical requirements
  - Financial feasibility
  - Stakeholder interest
- CRRC Board of Directors must vote to approve a program if deemed viable