



**ERGON**

Asphalt & Emulsions

SUCCESS STORY

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# Cape Seal Improves City of Malvern Street Network



## CHALLENGE

Treat aged, oxidized pavement, mass cracking and friction loss; Bring pavement network to a functional condition, reducing future maintenance costs.

## SOLUTION

Cape seal featuring a mass cracking and oxidation treatment utilizing eScrub rejuvenating scrub seal, followed by an application of eFlex premium micro surfacing for enhanced durability and friction.



### LOCATION

Arterial, collector and residential streets in Malvern, Arkansas



### DISTRESS

Aged, oxidized pavement; medium-to-high-density mass cracking; and friction loss



### TRAFFIC

Low, moderate and high-volume traffic



### AGENCY

City of Malvern, Arkansas



### CONTRACTOR

Missouri Petroleum



### SUPPLIERS

Ergon Asphalt & Emulsions (eScrub and eFlex)

### Background

There was a time when mass cracking, loss of friction and oxidation had the City of Malvern's street network on a path toward irreversible deterioration. And to make matters worse, resources within the City's maintenance budget were prioritized for the most pressing street issues individually. To improve its overall network condition, the City needed a proactive, cost-effective strategy to address these issues and achieve healthier streets that would require less expensive maintenance.

### Solution

The City first embraced a pavement management system to assess 100% of its pavement. Deployed in 2019, the assessment resulted in a plan to add 600 lane-mile-years of service to their network in 2021-2022. The recommended treatment to get the City's pavement to good working order was a cape seal featuring a rejuvenating scrub seal and premium micro surfacing. This would be the first cape seal treatment applied to the City's streets. Ergon Asphalt & Emulsions' eScrub and eFlex products were selected by the contractor awarded the project bid.

### Project Details

In preparation for the cape seal project, the City, along with the selected contractor, Missouri Petroleum, proactively communicated with impacted citizens and businesses using door hangers and social media, as well as the official City of Malvern webpage. To ensure public safety in and around work areas, Missouri Petroleum also provided wooden road barriers and road closure signs.

### Application Highlights

In 2020, the City was approved for a bond issue to meet the necessary investment to address isolated structural distresses before the cape seal project. In 2021, Missouri Petroleum applied a rejuvenating scrub seal using eScrub as the first layer of the cape seal to 12.3 miles of road.

During this process, eScrub, a polymer modified and rejuvenated asphalt binder, was applied over existing pavement at a shot rate of 0.30 gallons per square yard and then covered with a layer of Class 4 aggregate that was rolled and embedded into the modified binder. The use of a scrub broom forces the binder deep into the cracks, repairing mass cracking and revitalizing the pavement by returning asphaltenes into the original asphalt. The scrub seal was followed by the application of highly polymerized eFlex micro surfacing at 25 pounds per square yard. eFlex works to inhibit oxidation and provides an extremely durable wearing surface. Together, these treatments are expected to provide a minimum of 7-10 years of life extension for the treated streets.



# Cape seals combine the benefits of two treatments for **increased protection** of underlying road layers by **preventing water intrusion** and providing a **durable wearing** course.

The performance of treatments applied in 2021 and the public's positive response thereafter led to the City cape sealing another 17.7 miles of network streets in 2022.

## Results

The City of Malvern and the driving public are enjoying the finished result, including the look of freshly laid pavement and enhanced durability. "The applied combination of rejuvenating scrub seal and high-polymer micro surfacing has addressed the serious distresses our streets were experiencing and has held up well under snowplowing," said Jacob Wright, City of Malvern Street Department Superintendent. "The treatment has greatly improved the overall ride quality and has provided a surface capable of being maintained for the next 10 years. The City is extremely pleased with the finished product and now has another tool in its pavement maintenance toolbox."

## Cost Savings

The City was able to save millions of tax dollars using cape seal as opposed to the traditional mill-and-fill approach. In addition, by sealing the high level of cracking, the treatment is expected to perform much better than a mill and overlay, where reflective cracking would have returned in 2-5 years, incurring more expense.

## Long-Term Strategy

The City plans to continue to improve the overall health and safety of its streets by tracking the lane-mile-years of service life extension and documenting data within its pavement management program.

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In addition to eScrub and eFlex, Ergon A&E offers conventional and high-performance fog seal emulsions for various road needs. Visit [ergonasphalt.com/locations](https://ergonasphalt.com/locations) and contact one of our expert team members to learn how we can put our fog seal products to work for you.

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