

# MUNICIPALITIES TURN TO MICRO-SURFACING FOR PREVENTATIVE MAINTENANCE OF ROADS

by Doug Rada

**A** looming nightmare for cash-strapped municipalities is discovering that road maintenance costs will skyrocket due to much-needed rehabilitation.

To avoid a catastrophic hit on budgets, more and more Missouri municipalities are turning to preventative maintenance in the form of a paving product developed in Germany in the 1960s - micro-surfacing. It's a mere three-eighths of an inch surface application to roads, but communities are finding that it can prolong the life of roads by as much as 10 years, avoiding a convergence of major road repairs in any one fiscal year. Like investing in a yearly dental checkup, communities such as Branson, Joplin, Osage Beach, Clayton, Creve Coeur, St. Charles and more have opted for corrective measures to extend the life cycle of pavement. For every dollar spent on micro-surfacing, a city can save four to five dollars in major road rehabilitation costs in the future.

In considering micro-surfacing as a preventative maintenance solution, municipalities must first evaluate the conditions of their roads. The pavement should be in relatively good to very good condition. Roads are rated on a scale of one to 10. Those suitable for micro-surfacing should rate at least six or better. Roads with significant cracking or sunken sections that are accelerating to the end of its life cycle and likely to undergo a sub-grade failure, require a more intense overhaul and is not suitable for micro-surfacing.

For roads in sufficiently good condition, micro-surfacing is an effective sealant to protect the road and its sub grade. Comprised of a dense-graded aggregate, water, asphalt emulsion and mineral filler, it is applied in the following manner:

- The surface must be prepared and cleaned of debris and oil spots and any vegetation working its way into pavement;



- Significant cracks three-eighths of an inch or larger must be filled to ensure water won't penetrate the pavement; and
- The micro-surfacing product is then mixed into a specialty paver and applied to the surface. No compacting is required.

If applied properly, the pavement should be open to traffic within one hour. A mile of micro-surfacing can be done in approximately three hours in the morning with the road open to traffic around noon. That's a far better prospect for citizens who sometimes

have to navigate a month-long detour or longer for a complete pavement overhaul. In addition to extending the life cycle of the road by another seven to 10 years, micro-surfacing provides other advantages, such as:

- Improved driving conditions, including increased skid resistance;
- Controlled oxidation, providing a clean, "newly paved," look; and
- Prevention of gravel from chip and seal projects from damaging vehicles.

In addition, micro-surfacing also is an effective strategy for municipal airports, extending the runway life cycle while improving skid-resistance and mitigating loose gravel that can damage engines.

In using micro-surfacing as part of long-range budget planning, cities typically rate their roads to properly sequence micro-surfacing as a remedy to put off complete rehabilitation. For example, a municipality with 15 roads to maintain might have five rated six to seven, another five rated eight to 10, and another five rated only fair at five or less. While those roads rated five or less will have to be rehabilitated, municipal leadership can plan to adopt a micro-surfacing schedule that addresses roads in poorer condition soonest, and address the roads in better condition as needed in the future.

Road rehabilitation is often a burdensome cost for municipalities. But by extending the life cycle of roads by seven to 10 years through micro-surfacing, municipalities can avoid fiscal crisis when several roads need to be overhauled in any one year. □

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