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IFMATM
International Facility Management Association

WWW.IFMA.ORG/FMJ | MAY/JUNE 2016

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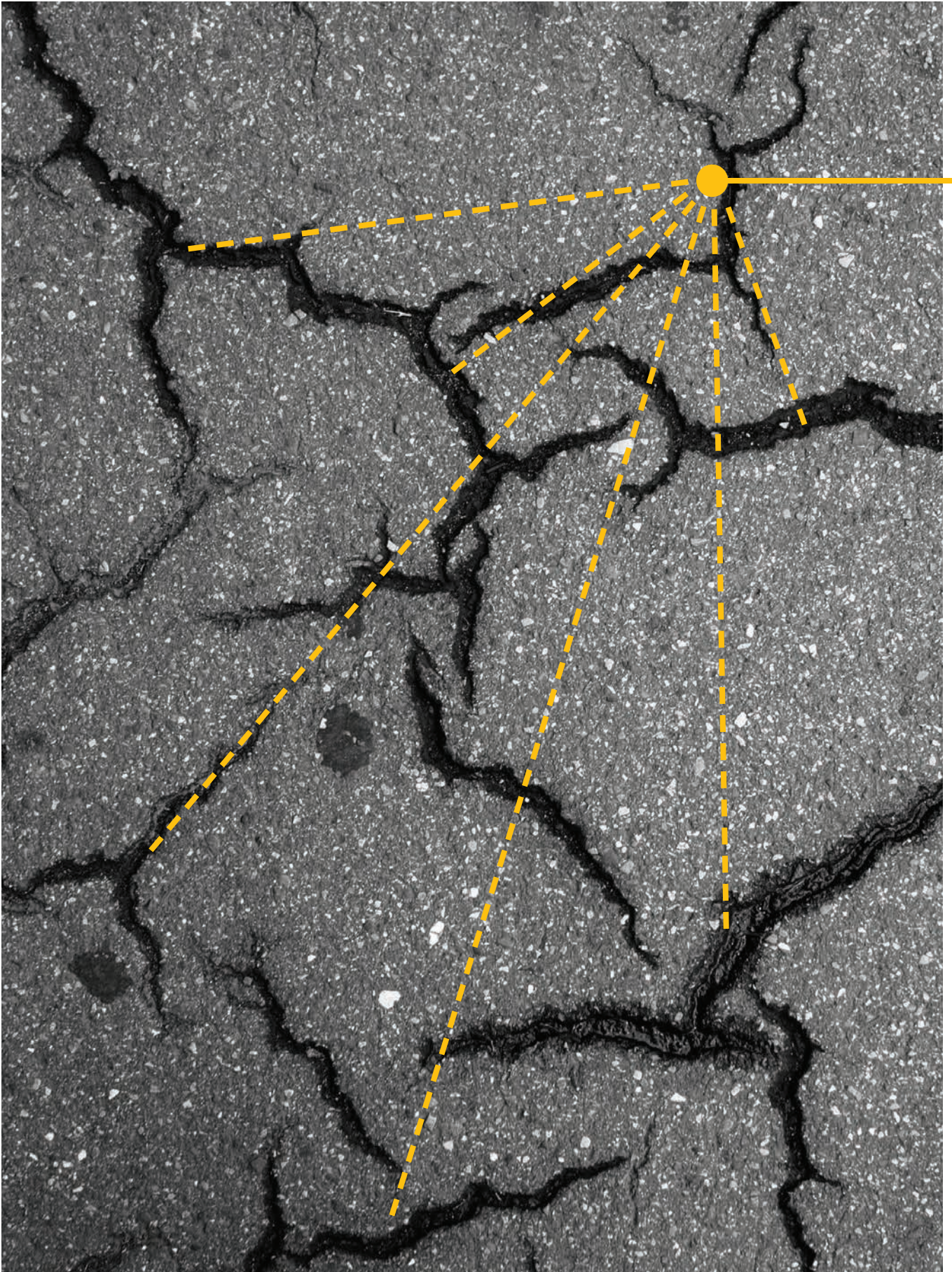
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PROACTIVE PAVEMENT MANAGEMENT

BY TOM SOVEL

Imagine driving onto a corporate campus or headquarters for the first time, excited to meet with your new design team, financial planner, advertising consultant or other professional. You see beautiful buildings basking in the sunshine and impeccable landscaping with the hustle and bustle of employees, clients and customers all around, but before you enter the building, what do you see first?

A crumbling parking lot. Potholes filled with asphalt heaps. Snaking cracks streaked with sealant. Curbs eaten by weather and traffic. Suddenly, you're not feeling so enthusiastic.

Why is it that building owners spend so much on building maintenance, but not on pavement maintenance? Unfortunately, pavement concerns are usually way down the list. The path to quality roads and surfaces is paved with good intentions, but it should be paved with a sound plan for maintenance and repair. It's just like the old adage: failing to plan is planning to fail — and pavement care is no exception.

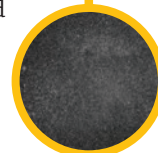
Pavement maintenance pitfalls

The concept of pavement management is not new; however, like other assets, maintenance tends to be more reactive than proactive. When repairs are done only after pavement failures,

rehabilitation expenses can cost ten times what they may have cost if there had been a plan in place.

Pavement, including roads, parking lots, parking deck surfaces, sidewalks and pathways, has a life cycle. It won't last forever. But crisis-point spending can be astounding on a seemingly simple repair.

Pavement with alligator cracks — those “spider webbing” cracks sometimes filled in with black sealant — can cost US\$5 per square foot or more to replace. If the same pavement were maintained with a plan and budget in place, the



repair cost could be reduced to roughly 10 cents per square foot every few years by sealing the pavement and filling cracks. Undertaking a cut-and-patch maintenance approach may save money in the short term, but it is hit and miss and will only prolong the inevitable.

And, once pavement is beyond the point of repair, reconstruction costs may be one of the largest capital expenses an organization may incur. Not only that, but cut-and-patch work may not even address the underlying problem, which could be moisture problems in the subgrade, surface drainage conditions or a host of other possibilities. This approach will lead to the inevitable recurrence of the pavement failing in a short time if the root cause is not remedied.

More often than not, pavement maintenance is handled by setting a site budget that forces the facilities team or a consultant to pick and choose what to repair. Inevitably in these scenarios, due to budget inadequacy, repairs are

focused solely near the front door, because it is the most high-profile area.

There are two common mistakes made when it comes to pavement management. The first is when the preventive maintenance program only concentrates on keeping pavement in a fair to good condition by sealing cracks and applying seal coating, while letting pavement that is in poor condition deteriorate further. The second mistake is to fix poor condition pavement in crisis mode and ignore the fair condition pavement altogether — a recipe for the good to go bad.

So what's an organization to do? Every organization should have a sound plan of action for maintaining pavement. In fact, it's easier than you think. A critical function of any pavement management program is strategy: develop short- and long-term budgets that allocate funds between maintenance and capital projects. The key is the right approach to address current conditions and plan for future needs.

Developing a pavement management program

A solid pavement management program consists of the following components:

- Identification of current pavement conditions
- Prioritization of various pavement segments
- Computer analysis to generate repair options
- Development of five- or 10-year plans and budgets to achieve goals
- Development of repair plans
- Implementation of repairs

Pavement is assessed using a standard condition rating system, such as the Pavement and Surface Evaluation Rating System. The property owner and/or FM team provides input on the desired average condition rating across the network (areas) of paving. A software program can then run an analysis based on existing conditions and priorities, and recommend long-range plans and budgets.

The program can be condition based, calculating how much should be spent each year to achieve the desired result, or budget based, which will provide repair plans based on the available budget even though the target condition may not be met. Software tools can also analyze repair backlogs, review budget forecasting and adjust for future repair scenarios.

However, developing the right pavement management program involves more than simple data analysis. Organizations may have many divisions and departments, all potentially with a say in who needs what first: typically, they prioritize what is best for them. When developing a pavement maintenance strategy, a consultant can help make sure that decisions are network based, meaning that all areas of the pavement are considered in the scenario, not just the bad ones.

As an impartial third party, a consultant can help balance the priorities of various teams. This prevents one area or department from making a one-way decision that may not be beneficial to the entire pavement network. This provides an objective analysis by an independent body, removing opportunities for bias and giving your team a solid response to the inevitable question, “Why did you fix that parking lot first and not the one where I park?”

A good pavement management plan is like a diet — it won’t work unless you are proactive in undertaking and sticking to it. The real failure is when a team completes the planning process and then the maintenance program is not followed. Another failure can occur when there is a lack of follow up with the team and/or consultant after program implementation.

Pavement management should be treated as a living program that is updated as property improvements are made, maintenance budgets shift and as needs expands in future years. By predicting the path that the pavement will follow as it ages, you can beat the game. Ultimately, this type of planning can result in less expensive repairs that will extend the life of the pavement.



Pavement management and long-range planning at Northville Public Schools in Northville, Michigan, USA

Accessibility

Another important component of a sound pavement management program is to ensure that proper regulatory guidelines are followed for barrier-free parking and accessibility. Almost without exception, parking lots that were constructed several years ago fall short on accessibility requirements, either with parking areas that are too steep, parking spaces that are not the proper size or signs that do not meet height requirements. In addition, access routes, including sidewalks and ramps, are often not in compliance.

It is important to consider these items in a pavement program, since costs can be high if extensive corrective measures that require reconstruction and regrading of the parking lot are needed. If sidewalks are non-compliant and funds are required to reconstruct them, this may significantly impact the budget.

Case study: Proactive planning at EMU

Large corporate headquarters can be very similar to educational campuses. As a proactive institution, Eastern Michigan University (EMU), located in Ypsilanti, Michigan, USA, recognized the need to maintain its pavement, one of the university’s largest assets.

Pavement was important to the school for many reasons: public safety, accessibility compliance, financial value and, quite literally, curb appeal. EMU wanted to make the best possible first impression on potential students and visitors while undertaking a solid maintenance program. The university

had an annual budget of US\$1,000,000 but found that deciding what should be repaired, and when, was a daunting task. Ultimately, EMU sought help from a consultant to craft and implement its pavement plan.

The detailed plan allowed for the creation of five-year budgets, comparing costs between timely repairs and deferred capital maintenance while maintaining consistency across the entire pavement network. With the help of the consultant, EMU implemented a plan would make any facility management professional and business manager proud.

The bottom line

Planning and implementing a smart pavement management program should be an integral part of any corporate budget. Technology, a common-sense approach and a commitment to follow through are crucial to maximizing the investment of this essential part of an organization’s infrastructure. The goal is to push the pavement deterioration curve out and extend the life of parking lots by performing less expensive preventive maintenance measures.

Don’t let your roadways be pulled out from underneath you. You can’t avoid every bump in the road ahead, but you can make them more cost effective to repair. **FMJ**



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