



Daniel D. Gee

Daniel D. Gee, president of Gee Asphalt Systems, acquired his family's pavement preservation business after graduating with a B.S. in Industrial Management from Abilene Christian University in 1980. He has since grown the company into a national contractor. For 37 years, Gee has been a hands-on leader in the business and an active member of the Asphalt Paving Association of Iowa.

Taking Care of Good Asphalt Pavements

Can you name the largest asset owned by taxpayers? It's infrastructure. Recent calculations value our highway system alone at nearly \$80 trillion!

What would the value to taxpayers be if we could make this asset last one more day? How about one more year? There has never been a better time to extend the normal lifecycle of this crucial asset. Now is also the time to spread the cost-effective philosophy into airport pavement programs.

Our roads and airfield pavements carry the country's most valuable and precious cargo. It transports our families, facilitates trade and commerce, supports military and civilian activities and literally conveys everything we do — every day, to and from every conceivable location. It is an integral part of what makes America a great world power. If you consider every taxpayer asset at its cost, nothing else comes close.

At first blush, this asset seems permanent. But research from the Federal Highway Administration (FHWA) shows that under current practices, the average lifespan between rehabilitation processes is 8 1/2 years. For runways, the span is a little longer. FHWA research also indicates that \$1 spent on timely and effective pavement preservation can save up to \$10.80 on future replacement costs.

Unfortunately, pavement preservation doesn't currently occur on a consistent, widespread basis. Truth is, our pavement infrastructure is aging and deteriorating faster than ever before. Many pressures reduce its lifecycle: weather and traffic, loads and even "low bid" practices.

There's also an extremely difficult economically driven challenge: Refineries divide crude oil into many components, one of which is asphalt cement — the binder that glues aggregates together into airfield pavements and roadways. Many new petroleum segments are being manufactured from crude that adversely affects the aging and adhesion qualities of asphalt.

With national budgets consistently falling short, and roads and airfield pavements falling farther behind in the rehabilitation process, the pavement preservation discussion rings true now more than ever. We have two choices: We keep doing what we

have been doing, getting further behind every day. Or we start a pavement preservation strategy that will help us dig ourselves out of this situation.

What is pavement preservation? Webster's definition of preservation: to keep alive, intact or free from decay; to save or keep from decomposition; to keep up for personal or special use. Oxidation and aging of asphalt pavement begins during the manufacturing process, even before the asphalt is constructed into a road or airport runway.


What can we do to extend the intervals between rehabilitation and when should we start a preservation process?

Pavement preservation addresses aging issues by beginning the lifecycle extension immediately after construction. Instead of waiting for damage to occur and the most desirable qualities to deteriorate and be lost forever, preservation keeps new pavements alive, intact and free from decay for many years.

Old school voices recommend waiting several years before taking action. When 100% of budget dollars are spent on the worst pavements, the good condition pavements harden and dry out. Soon they crack, pothole, alligator, surface ravel, spall, oxidize and eventually turn back to gravel. This cycle repeats, our infrastructure deteriorates over time and there is never enough money to catch up.

Why wait years and allow important assets to age into a condition that is much harder and more expensive to manage and maintain? Our lack of understanding about the basic mechanics of pavement may explain many poor strategies. Asphalt pavement's greatest strength is its flexibility. Instead of waiting and allowing the most valuable component (flexibility) to escape, start with a preservation strategy earlier in the lifecycle. Pavements last longer, perform at higher levels of service and provide safer infrastructure.

Logic and field data suggest borrowing a few dollars from the worst pavement budgets this year and spending it wisely on our best pavements to keep them in their best possible condition. This allows good pavements to last longer and gives us the opportunity to catch up in just a few years. Remember the data: \$1 for preservation reduces replacement cost by up to \$10.80.

The preservation concept is quite simple, with amazing results demonstrated by amazing research data. Take care of good pavement while it is in good condition, and the rest will take care of itself! 

Time Value of \$80 Trillion (interest only)

3.25%	One Day	\$7.1 billion
	One Year	\$2.6 trillion
	Five Years	\$13 trillion
6.0%	One Day	\$13.1 billion
	One Year	\$8.4 trillion
	Five Years	\$42 trillion

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