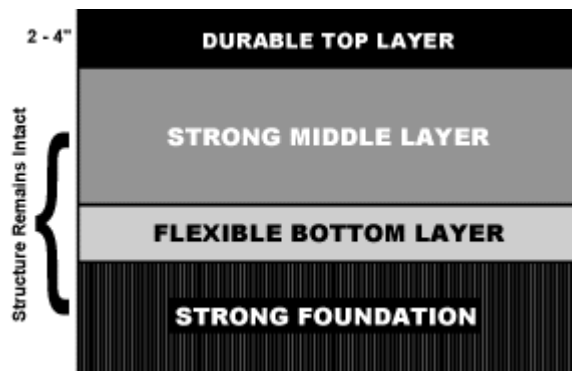


## Rehabilitation

A Perpetual Pavement provides a durable, safe, smooth, long-lasting roadway without expensive, time-consuming and traffic-disrupting reconstruction or major repair.

Possible Surface Distresses	Solutions
<ul style="list-style-type: none"><li>• Top-Down Cracking</li><li>• Thermal Cracking</li><li>• Raveling</li></ul>	<ul style="list-style-type: none"><li>• Mill and Fill</li><li>• Thin Overlay</li></ul>



## Major Advantages

When scheduled surface restoration is performed, Perpetual Pavements can be maintained easily and cost-effectively without removing the road structure for reconstruction, saving time and money while keeping motorists happy. Asphalt is recyclable, providing further cost savings and environmental benefits. Asphalt has a proven safety record as a driving surface, offering stronger visual contrast with center stripes and other markings. Among other advantages can include reduced noise, reduced splash and spray, and greater skid resistance.

## Safety

### For Driving Public:

- Stronger visual contrast with center stripes and other markings
- Greater skid resistance
- Reduced rainwater splash and spray
- Reduces paving time and resultant road closures, traffic delays, opportunities for accidents, etc.
- Speedy asphalt paving work quickly restores smooth traffic flow, minimizing danger to both highway work crews and motorists
- Asphalt pavement helps keep pavements clear of snow and ice

### For Workers:

- Reduces paving time and resultant periods of exposure to risk
- "Stealth Contractors" work at night, during low traffic periods, minimizing hazards to workers

## Asphalt Facts, Absolutely!

## Perpetual Pavement Fact Sheet

- Keeps traffic running smoothly for 50 years or more.
  - Limits repairs to the easily serviced top layer, eliminating the need for costly and disruptive reconstruction.
  - Keeps motorists happy with a consistently smooth, quiet driving surface.
- 
- Dramatically reduces life-cycle costs.
  - Provides a safer and smoother driving surface
- 
- Reduces tire-to-pavement noise.
  - Offers additional cost advantages through recycling.
  - Conserves nonrenewable natural resources and landfill space through recycling.
  - Enhances efficiency of public road-building and maintenance programs.

## Concept Paper

A Concept Paper by  
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The concept of perpetual pavements, or long-lasting asphalt pavements, is not new. Actually, full-depth and deep-strength asphalt pavement structures have been constructed since the 1960s.

Full-depth pavements are constructed directly on subgrade soils, and deep-strength sections are placed on relatively thin granular base courses. One of the chief advantages of these pavements is that the overall section of the pavement is thinner than those employing thick granular base courses. As a result, the potential for traditional fatigue cracking may be reduced, and pavement distress may be confined to the upper layer of the structure. Both are advantages to perpetual pavements. Thus, when surficial distress reaches a critical level, an economical solution is to remove the very top layer and replace it to the same level.

Recent efforts in materials selection, mixture design, performance testing, and pavement design offer a methodology to obtaining long-lasting performance from asphalt pavement structures (greater than 50 years) while periodically replacing the pavement surface.

Thrust is the use of a three-layered pavement: Durable Base Layer; Rut Resistant Intermediate Layer; and Wear Resistant Top Layer (Figure 1. Perpetual Pavement Design Concept).

Though the use of a perpetual pavement is focused at high-volume traffic, the justification may be made for medium- and low-volume roads as well. The criteria used in Maryland and California for high-volume traffic is discussed below. Maryland incorporates a thick asphalt structure surfaced with a stone matrix asphalt (SMA) on roads where the posted speed limit is 55 mph or greater, and the traffic is at 2000 equivalent single axle load (ESAL)/day or greater. California uses such designs when the truck traffic exceeds 15,000 vehicles/day or the average daily traffic is greater than 150,000 vehicles/day.

Thus, it is conceivable, that with the right design approach, the use of perpetual pavements could become common on medium- and low-volume roads as well.

