

# Noise Mitigation Doesn't Have to be Expensive!

## *Noise Mitigation Is about Value...*

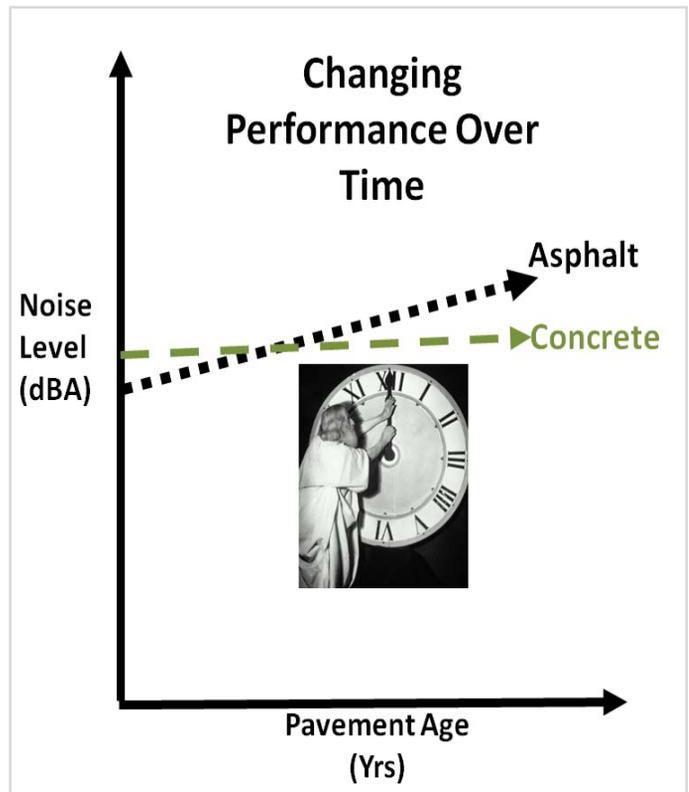
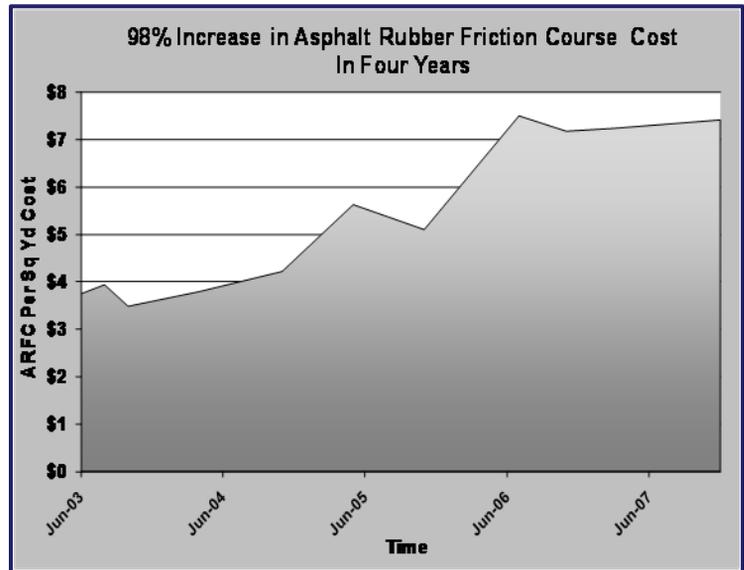
The greatest long-term solution for traffic-noise mitigation are noise or sound walls.

Where pavement surfaces are looked at for reducing tire-road, concrete surfaces provides the most permanent surfacing solution. Unlike typical asphalt or more costly-special noise surfaces, a concrete texture retains its acoustic properties over a much longer time, providing consistent performance and other benefits. It also does not have to be replaced frequently like the other surfaces.

Many types of concrete pavement surface textures have been developed to reduce highway noise-related problems. Excellent low-noise concrete textures include:

- ✓ Longitudinal tining
- ✓ Turf-drag
- ✓ Diamond grinding

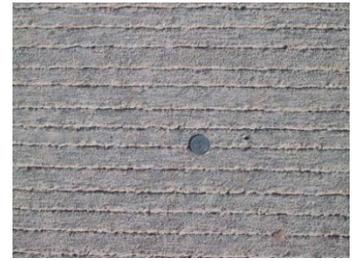
The challenge to today's engineers is to specify surfaces that balance noise considerations with life-cycle costs, along with the traditional requirements of adequate surface friction (i.e., safety), pavement durability (including long-term structural, noise mitigation and safety characteristics), and ride quality.



## Low-Noise Concrete Surfaces

In 1979, the Federal Highway Administration (FHWA) first mandated a single surface texture (transverse tining) for concrete pavements.

These surfaces were usually loud and produced a noticeable (and sometimes annoying) whine. In 2007, the FHWA recognized the need to change their recommended surface texture and revised their Technical Advisory T5040.36. The new advisory recognizes longitudinal tining, diamond grinding and turf-drag as viable low-noise, optimized textures. Diamond grinding is for new construction and mitigating existing noisy concrete surfaces, while longitudinal tining and turf drag are just for new construction.



**Longitudinal Tining**



**Diamond Grinding**

## Maintenance Dollars Down a Porous Drain

In Europe, where porous asphalt surfaces were tried earlier than in the United States for noise mitigation, many countries have learned that the pores clog and require maintenance to keep the roads safe and quiet (although never quite as quiet as when they are new).

In the Netherlands, for example, officials have expressed concerns about the loss of acoustic benefits due to clogging, which begins after as little as 6 months. A loss of 1 to 2 dB quickly occurs, requiring cleaning twice per year with high-pressure water-blasting and vacuuming.

The cost of semi-annual cleaning must be factored in along with the periodic replacement of the surfaces to get a picture of the long-term cost. Coupled with the escalating inflation of asphalt prices, porous asphalt surfacing is a high-cost alternative compared to diamond grinding or longitudinal tining.

