The Facts

When a vehicle travels on any type of pavement surface, there will be noise. The sound level is primarily a function of the surface finish and not the material of which it’s constructed.

There is variability in the sound produced from all surface textures. Different concrete pavement textures vary within a range of sound levels up to 16 dBA. This is quite significant considering that when sound increases by 10 dBA, it seems twice as loud to the human ear.

Concrete pavements are adaptable and capable of reducing noise pollution as well as environmental pollution. Virtually any surface texture can be created to minimize traffic noise while ensuring the roads maintain the friction necessary for handling the different driving conditions that inclement weather can produce.

According to Federal Highway Administration (FHWA) Environmental Policy, two ways that can permanently influence noise are:

- Barriers such as sound walls, and
- Distancing the source of the noise from home and businesses abutting the roadway.

Note: At greater than 500 feet, the noise difference in pavement type is indistinguishable (<3 dBA) to the human ear.

The challenge for roadway engineers is to balance noise considerations with life-cycle costs and traditional requirements of adequate surface friction (safety), pavement durability, and ride quality.

Noise Mitigation with Concrete Pavements

In previous decades the FHWA required transverse tined textures for concrete pavements. This texturing technique produced tonal spikes, recognized as “tire whine.” Today, the FHWA allows for other concrete surface textures that can reduce tire whine. In addition, concrete pavement contractors routinely exceed stringent smoothness requirements established by state agencies.
The excellent low-noise concrete textures include:

- Longitudinal tining
- Turf-drag
- Diamond grinding

Drivers across the nation can enjoy a safe, comfortable, and quiet ride on concrete pavements with just about any texturing technique. Moreover, because of concrete’s durability, drivers can enjoy these pavements for many years before maintenance is necessary.

Taxpayers and property owners need to be assured that they are getting permanent solutions and not just short-term solutions that quickly lose their effectiveness.