**Introduction**

PennDOT approved the use of Carsonite® sound barrier walls as an alternative to traditional concrete, metal, and wood sound barrier technologies. The Carsonite® barrier technology utilizes modular fiber-glass-reinforced polymer composite planks that are filled with recycled shredded tires. The filled planks can be stacked to various heights. The filled panel sections are lightweight (approx. 7.5 lbs/SF) and do not require heavy equipment for installation. A typical post and foundation modular design features 6 inch high by 15 feet wide by 2 inch deep panels that are vertically stacked, using approximately 20,800 waste tires per mile of barrier. Carsonite® sound barrier walls are rated by the American Association of State Highway and Transportation Officials and the US Department of Transportation sound-wall guidelines as effective as conventional concrete, metal, or wood walls in reducing highway noise.

**Summary of Projects**

**PROJECT 1:** PennDOT District 5-0 installed a Carsonite® sound barrier system on the I-78 Bridge, over Veracruz Road in Lehigh County. An approximately 215 linear feet system was installed, with an average height of 11 feet. Approximately 500 waste tires were utilized in this wall barrier system. Successful installation of the noise system did not require additional reinforcement to the bridge structure. The construction of the sound walls was completed within one month.

**PROJECT 2:** PennDOT District 8-0 installed a Carsonite® sound barrier system on a half-mile stretch of I-81 (southbound) between Colonial Road and Mountain Road. The system was constructed using 9 inch high panels. Approximately 14,000 waste tires were utilized in this wall barrier system.

**Project Update**

In 2020, the SRP performed a follow-up on the performance of these project. Both District 5-0 and 8-0 reported that the sound wall systems have performed as expected since erected in 2000 and 2001, respectively. However, since execution of this project Carsonite® removed these sound wall systems from production.

One Sound Wall system (Whisper Wall) is approved for use and listed in Bulletin 15, this system is constructed using recycled material. For more information on the Whisper Wall sound wall system see Bulletin 15.

**Did you Know?**

A better solution to the abandonment of worn tires is to have them properly recycled. Some uses of recycled tire include:
- Gravel Substitute
- Crumb Rubber
- Landfill Medium
- Water Treatment Filters
- Garden Mulch

**Contact Information:**

**Project Information:**
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**Project Contacts:**
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District 8-0 – John Bachman, Senior Project Manager

**For Additional Information:**
Go to the Strategic Recycling Program page on the PennDOT website at: https://www.penndot.gov/ProjectAndPrograms/RoadDesignEnvironment/Environment/PollutionPrevention/Pages/default.aspx, or send a request to PennDOTSRP@pa.gov.