

## I-25 Construction Noise Control

*Areg Gharabegian*  
*Parsons Engineering Science – Pasadena,, California*  
*Phone: (626) 440-6047*  
*E-mail: [Areg.Gharabegian@parsons.com](mailto:Areg.Gharabegian@parsons.com)*

The I-25 Transportation Expansion Project in Denver, Colorado, also known as T-REX, is the next step in the evolution from an aging, outdated transportation system to a modern integrated network of highway and light rail options. The \$1.67 billion design/build project is funded without any new or increased taxes. Southeast Corridor Constructors (SECC), a joint venture of Parsons and Kiewit was selected as the design/build team for this project. The design started in June of 2001 and the construction work began early fall of 2001 and is anticipated to last approximately 7 years.

The major construction activities include bridge demolition, bridge bent construction, bridge deck construction, excavation and grading, drainage and utilities, asphalt and concrete road surface removal and paving, embankment preparation, and building demolitions.

Demolition of overpasses of I-25 and retaining walls can only be safely conducted late at night when I-25 can be closed to traffic. The highway must also be closed for the excavation of the steep embankments and some of other the construction activities. Therefore, these activities must also be conducted during nighttime. Denver's noise ordinance prohibits construction noise levels that exceed 50 dBA or the ambient noise level whichever is higher between 9 PM and 7 AM. A noise variance is required to enable the construction activities during nighttime. In granting the variance, City of Denver put strict construction noise control requirements for the project. These control measures include:

- Nighttime Construction Activity noise levels shall not exceed an hourly Leq of 78 dBA and Lmax of 86 dBA measured at the nearest property line adjacent to project right-of-way.
- Construction activities shall not occur for more than five consecutive nights at a particular location. Any construction activity at a particular location of five consecutive nights shall be followed by at least two consecutive nights where noise emitted by any construction-related activities is at or below background levels.
- Pile driving will not be performed during Nighttime Hours.
- Construction equipment at the T-REX Project site will be certified at the beginning of construction activity and recertified at regular increments of six months.
- Backup alarms for all project machinery or equipment shall be equipped with either audible self-adjusting ambient-sensitive backup alarms or manually adjustable alarms.
- Nighttime construction activities near residential areas shall be conducted behind existing soundwalls, new soundwalls, noise curtains, or mobile soundwalls.
- Not less than 72 hours prior to commencement of nighttime bridge demolition, notify individual residents located within a 2500-foot radius of the expected activity.
- Establish a 24-hour noise hotline to receive possible complaints.
- Perform sufficient nighttime noise monitoring to demonstrate compliance with the requirements of the noise variance.

Procedures that are used during nighttime to meet the strict noise variance requirements will be presented.