

**Request for Proposals NO. 049-001**  
**Questions & Answers**  
**Issue #7**  
**31 July 2009**

**Hydrogen Station Acoustic Specification**

The following questions were asked:

**Questions:**

Can you please provide a profile of the ambient noise level in the park? The specification calls for an acoustic level not to exceed 35 dba at a distance of 75 m. There is difficulty for us to measure this level at our facility because the ambient noise level exceeds 35 dba. Would it be possible specify a higher acoustic level at a closer distance (perhaps at 10 m)?

We submitted the questions to the park service acoustic specialist who provided the following response:

**Response:**

Yes, in most instances, it would be possible to measure the noise level of the target system at a closer distance. However, we ultimately want assurance that the target noise source(s) will not result in a level higher than 35 dBA at 75 m.

In general, we want to minimize the influence of the ambient noise level (everything but the target system) on the measurement by ensuring that the target system, when operating, is a minimum of 10 dB higher than the measured ambient noise level, when the target system is not operating. This can be ensured by measuring the ambient noise level sufficiently close, immediately before and after target system operation, and observing to verify that there are no significant changes in the ambient noise level during all measurements.

If the aforementioned conditions are satisfied and spherical spreading occurs (resulting in approximate 6 dB loss per doubling of distance), a target system that does not exceed 55.6 dBA at 7 m, for example, will produce a level that does not exceed 35 dBA at 75 m. However, if a sound barrier is used or the measurement is too close, spherical spreading may not be a correct assumption, depending on the size of the barrier and distance from the source. In more complex cases such as this, an acoustician should model the barrier or other propagation loss to ensure that 35 dBA can be achieved at 75 m.