

Appendix C

Noise Monitoring

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Noise Measurement in the I-93/I-95 Interchange Area

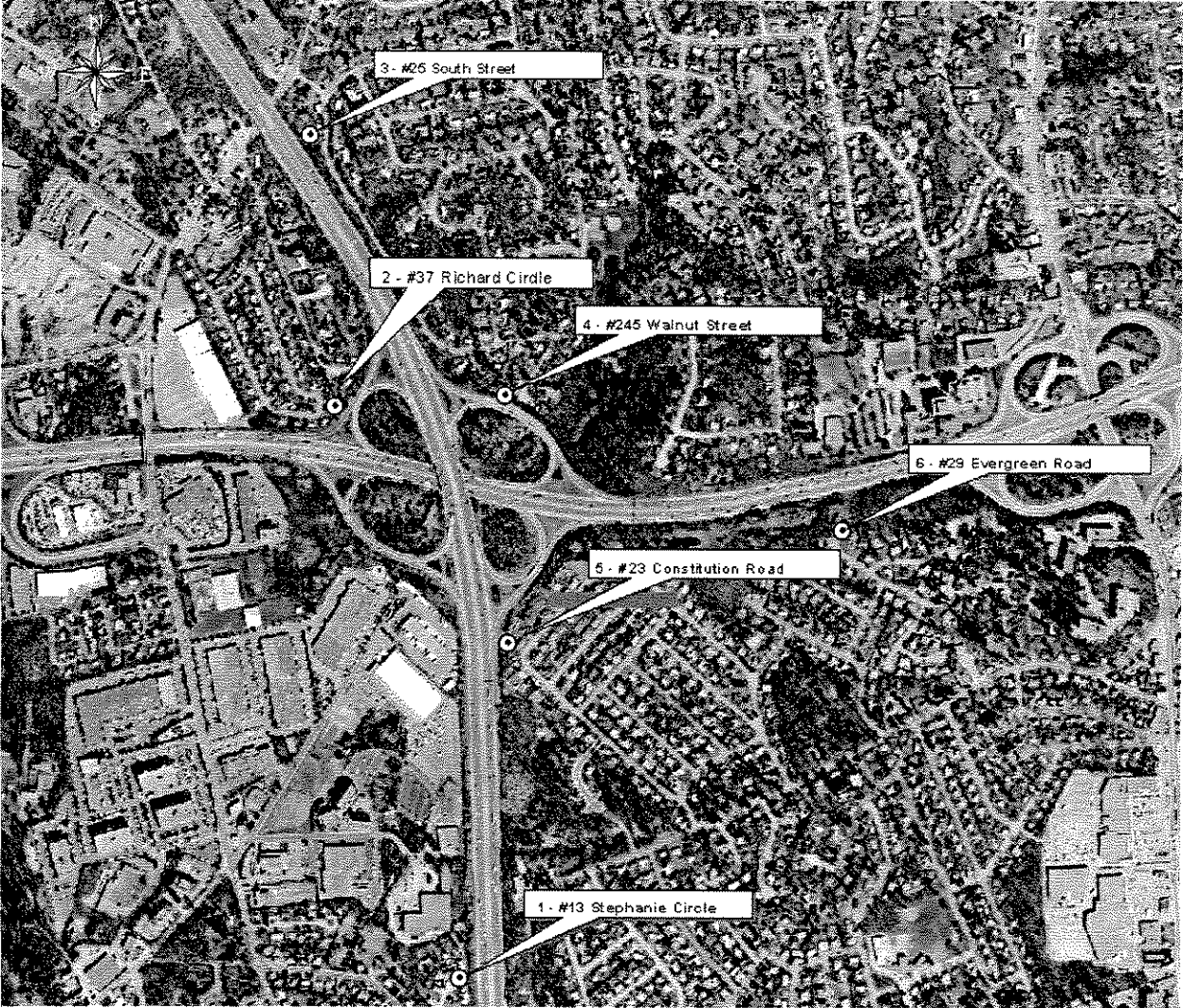
In order to establish existing conditions near the interchange, 24-hour noise measurements were made at six locations in December 2004. The noise meters at each location summed up (integrated) noise each hour, giving a noise level that can be compared with Federal Highway Administration and MassHighway noise abatement criteria. Although events during each hour may be louder, for example, when a truck passes, the integrated noise measurements provide a standardized basis for comparison. The measurements were conducted on days without snow on the ground and when traffic conditions were typical.

In accordance with FHWA and MHD guidelines, a noise impact condition exists when the loudest hour traffic noise levels approach (within 1 dB), equal, or exceed the FHWA's Noise Abatement Criteria of 67 dBA Leq(h) for residential receptors, or 72 dBA Leq(h) for commercial receptors. In addition, MHD also has a relative noise criterion where a traffic noise impact condition also exists when the traffic noise levels exceed the loudest hour noise level by 10 dB or more. Decibels are a unit of sound energy. Locations with highway noise levels that exceed the FHWA's Noise Abatement Criteria can be considered for federally funded noise barriers ("noise abatement").

There are two types of noise barrier programs. Type I noise barriers apply to new construction and would be applicable if major changes are recommended and approved for the I-93/I-95 interchange. This type of noise abatement is provided as part of highway construction.

The Type II Program is a voluntary effort by state highway departments (including MassHighway) to construct noise barriers along existing Interstate roadways where reasonable and feasible and as funding priorities allow. MassHighway's Type II noise abatement program is providing barriers at qualifying locations; however, funding is limited and there are many locations that qualify, so it may take several years to provide noise relief at the I-93/I-95 interchange.

More information about MassHighway's noise abatement programs can be found at <http://www.mhd.state.ma.us/barriers/barriers.htm>



Noise Monitoring Sites

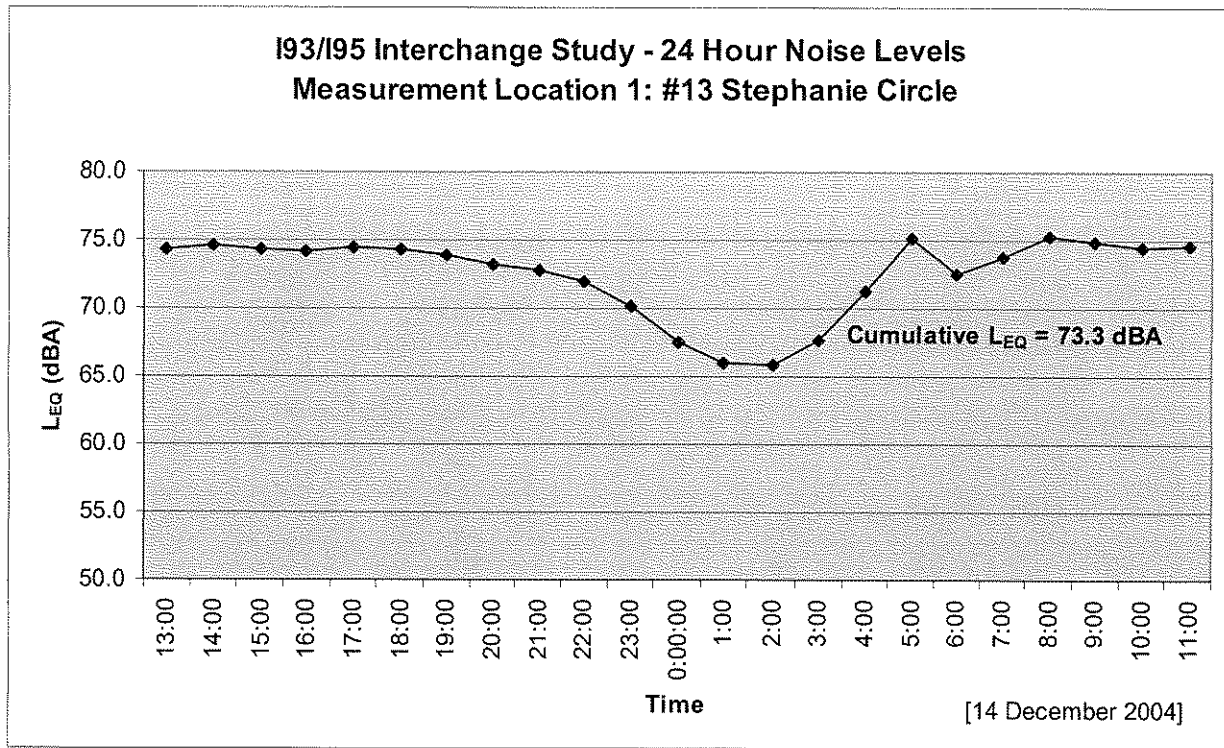


Figure 1: 24 Hour L_{EQ} at Measurement Location 1: #13 Stephanie Circle, Woburn

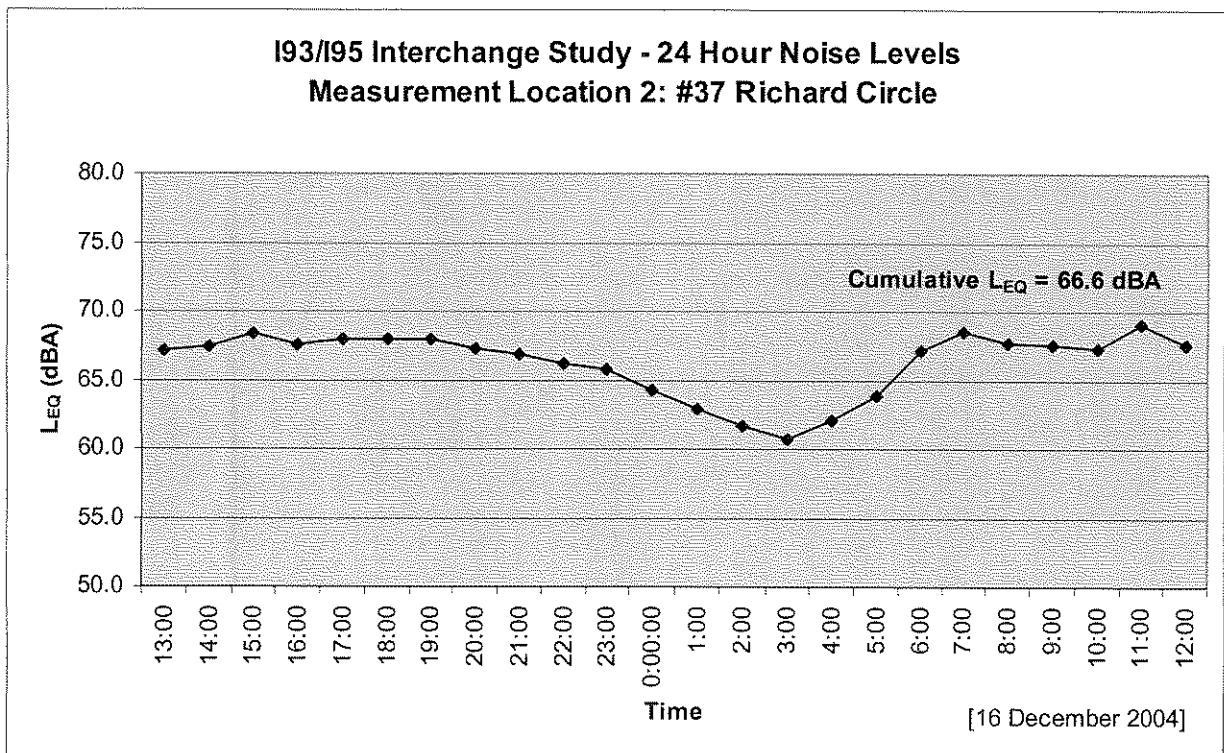


Figure 2: 24 Hour L_{EQ} at Measurement Location 2: #37 Richard Circle, Woburn

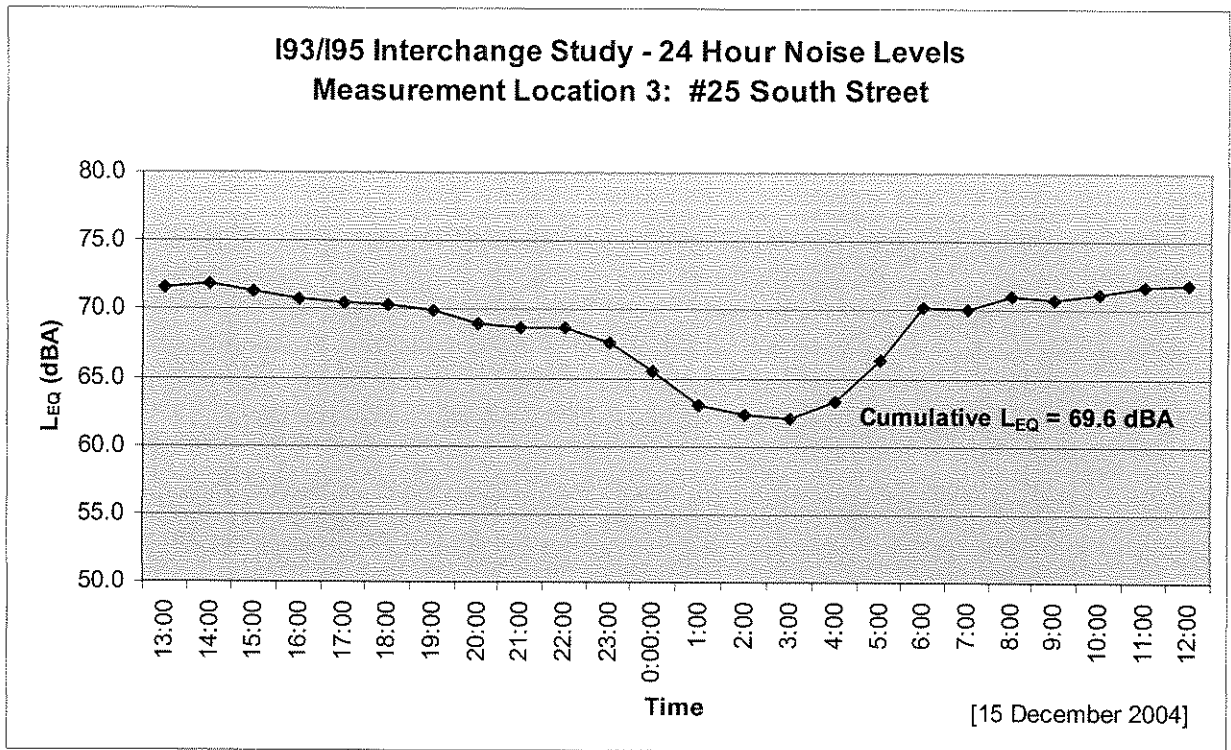


Figure 3: 24 Hour L_{EQ} at Measurement Location 3: #25 South Street, Reading

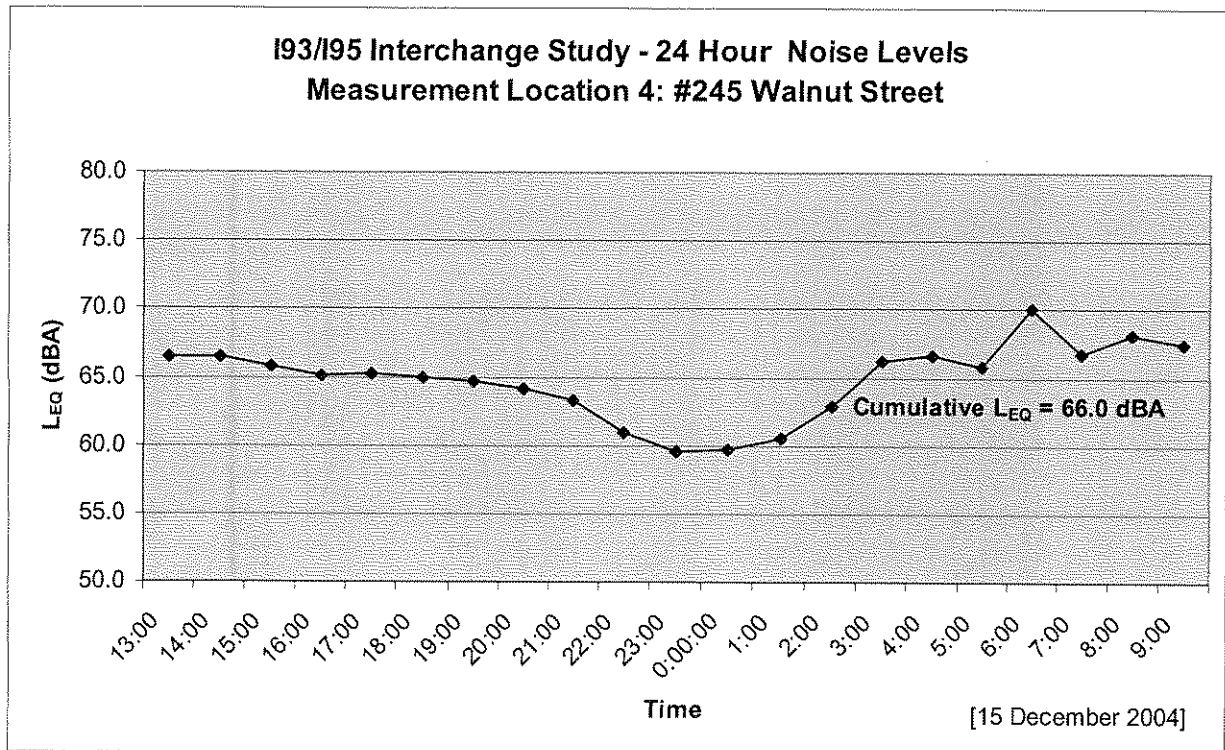


Figure 4: 24 Hour L_{EQ} at Measurement Location 4: #245 Walnut Street, Reading

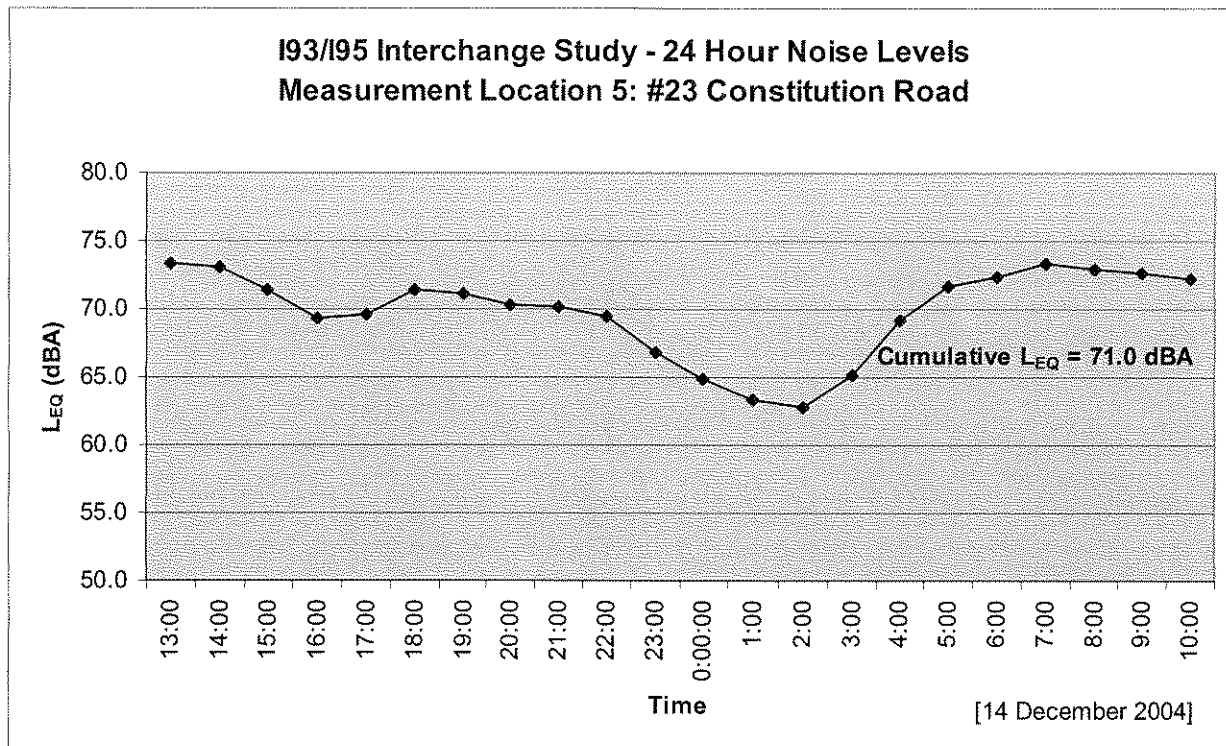


Figure 5: 24 Hour L_{EQ} at Measurement Location 5: #23 Constitution Road, Stoneham

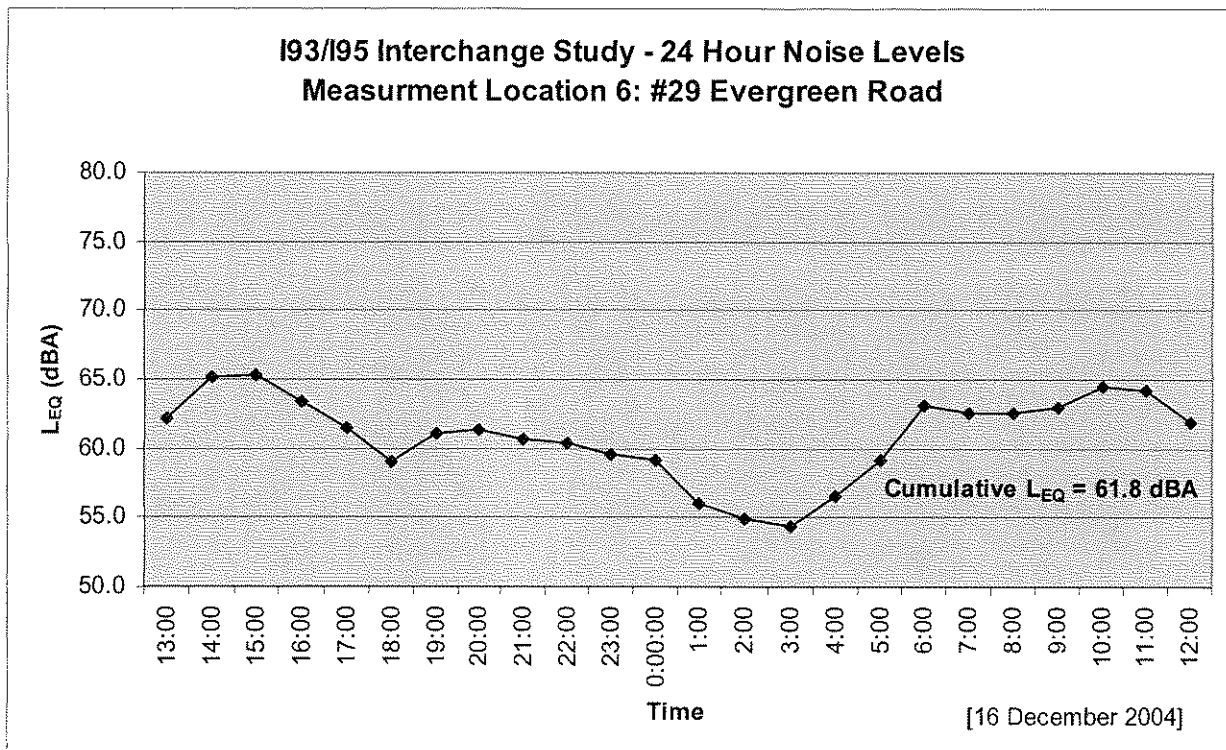


Figure 6: 24 Hour L_{EQ} at Measurement Location 6: #29 Evergreen Road, Stoneham