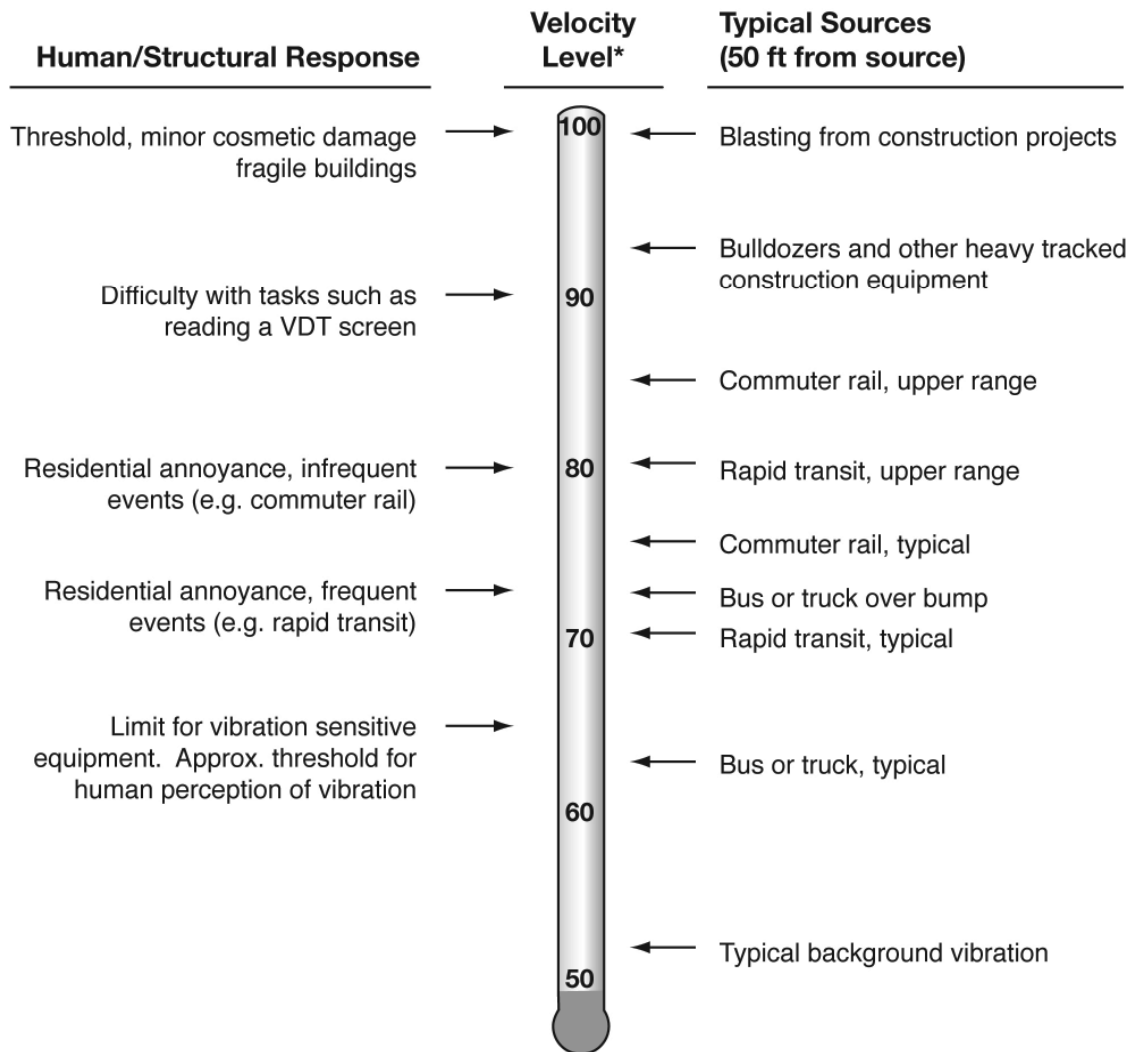


**Figure 3-20  
Typical Ground-Borne Vibration Levels and Criteria**



\* RMS Vibration Velocity Level in VdB relative to  $10^{-6}$  inches/second

### 3.6.1 Ground-Borne Vibration Criteria

The FTA ground-borne vibration impact criteria are based on land use and train frequency, as shown in **Table 3-25**. There are some buildings, such as concert halls, recording studios and theaters that can be very sensitive to vibration but do not fit into any of the three categories listed in **Table 3-25**. Due to the sensitivity of these buildings, they usually warrant special attention during the environmental assessment of a transit project. **Table 3-26** gives criteria for acceptable levels of ground-borne vibration for various types of special buildings.

It should also be noted that there are separate FTA criteria for ground-borne noise, the “rumble” that can be radiated from the motion of room surfaces in buildings due to ground-borne vibration. Such criteria are particularly important for underground transit operations. However, because airborne noise tends to mask ground-borne noise for above ground (i.e. at-grade or elevated) rail systems, ground-borne noise criteria are not applied to this project.