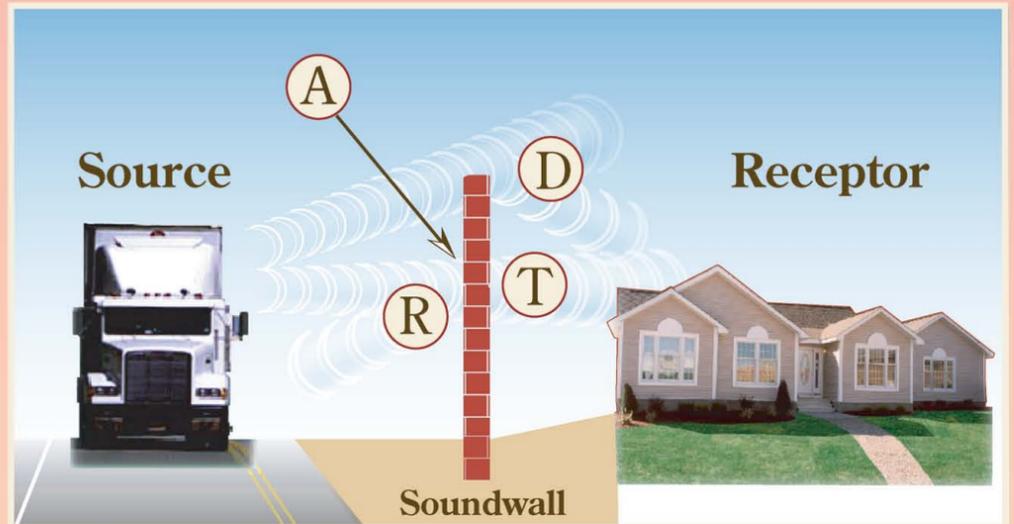


# South Stockton 6-Lane

## Reflected Noise Patterns

**When a soundwall is inserted between a noise source and receiver, the direct noise path is interrupted. The sound then moves in four ways.**



Some noise can be absorbed (A) by the soundwall

Some noise is diffracted (D) over the soundwall

Less than 1% is transmitted (T) through the soundwall

Some noise is reflected (R) off the soundwall back into traffic

Many recent studies on the phenomenon of reflected noise recognize that residents may perceive a change in the sound they hear after a soundwall is constructed, but none of the studies show a perceptible (3 decibel) increase in loudness of noise due to reflection.

It is important to note that weather conditions (especially wind) can have a relatively large effect on sound levels (up to 10 decibels\*).

# South Stockton 6-Lane

## Noise Measurement

The noise meter is calibrated to a known sound level with a calibrator “tuned” to 94 dBA. The noise meter is placed at 5 feet in height to simulate a normal receptor height. The noise meter is placed at a known distance from the centerline of the near lane of traffic. It is then relatively easy to predict the noise level at any distance from the highway traffic, since noise diminishes (drops off) at 4.5 dBA per distance doubled on a soft site (grass and trees) and at 3 dBA per distance doubled on a hard site (rocks and paving). After the noise level has been recorded, the meter is again checked with the calibrator.

Decibels (dB) is a logarithmic measure of sound. dBA indicates decibels measured on the A scale, calibrated for the human response to sound. On this scale, a level of 70 decibels and a level of 80 would be 4 times as loud.

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
<u>Jet Fly-over at 300m (1000 ft)</u>	<b>110</b>	<u>Rock Band</u>
<u>Gas Lawn Mower at 1 m (3 ft)</u>	<b>100</b>	
<u>Diesel Truck at 15 m (50 ft), at 80 km (50 mph)</u>	<b>90</b>	<u>Food Blender at 1 m (3 ft)</u>
<u>Noisy Urban Area, Daytime</u>	<b>80</b>	<u>Garbage Disposal at 1 m (3 ft)</u>
<u>Gas Lawn Mower, 30 m (100 ft)</u>	<b>70</b>	<u>Vacuum Cleaner at 3 m (10 ft)</u>
<u>Commercial Area</u>	<b>60</b>	<u>Normal Speech at 1 m (3 ft)</u>
<u>Heavy Traffic at 90 m (300 ft)</u>	<b>50</b>	<u>Large Business Office</u>
<u>Quiet Urban Daytime</u>	<b>40</b>	<u>Dishwasher Next Room</u>
<u>Quiet Urban Nighttime</u>	<b>30</b>	<u>Theater, Large Conference Room (Background)</u>
<u>Quiet Suburban Nighttime</u>	<b>20</b>	<u>Library</u>
<u>Quiet Rural Nighttime</u>	<b>10</b>	<u>Bedroom at Night, Concert Hall (Background)</u>
<u>Lowest Threshold of Human Hearing</u>	<b>0</b>	<u>Broadcast/Recording Studio</u>
		<u>Lowest Threshold of Human Hearing</u>

