



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Kody N. Nerhan	Project Number J1123
Project Title Rubberized Asphalt: A Sound Idea	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The research and testing attached attempts to explain the effectiveness of rubberized asphalt as a traffic noise mitigation measure.</p> <p>Methods/Materials Decibel measurements were made by setting up two stations, one Station 'A' located on the rubberized asphalt (RAC) portion of the roadway and the other Station 'B' on the standard asphalt concrete (AC) portion. Reading were simultaneously taken each minute for a twenty minute period three times per day at each station. These measurements were taken on three separate days. Also a traffic count was taken to establish the sound relation to the number of vehicles.</p> <p>Results The test data determined that the rubberized asphalt portion of the roadway reduced the sound levels by 4 to 9 decibels. The rubberized asphalt was an effective method of attenuation at each of the tested times during the day. Certain traffic conditions such as amount of heavy trucks, speed and flow, influenced the decibel readings however, the reduction of noise created by the rubberized asphalt remained constant throughout the testing.</p> <p>Conclusions/Discussion The results from the test concluded that the use of rubberized asphalt resulted in the decrease of noise by an average of 6.5 decibels. This is an 80% reduction in sound making rubberized asphalt beneficial as a traffic noise mitigation measure. Using rubberized asphalt will reduce the dependency on traditional traffic sound barriers such as walls, berms and vegetatino strips.</p>	
Summary Statement This project tests the sound levels emitted by traffic traveling over rubberized asphalt vs standard asphalt concrete.	
Help Received Caltrans engineers, Maurice El Hage and Nilesh Pandya supplied maps, information and allowed me onto the highway right of way. Mother manned one decibel meter since readings needed to be taken simultaneously, Teacher, Mr. Dolyniuk loaned the decibel meters.	