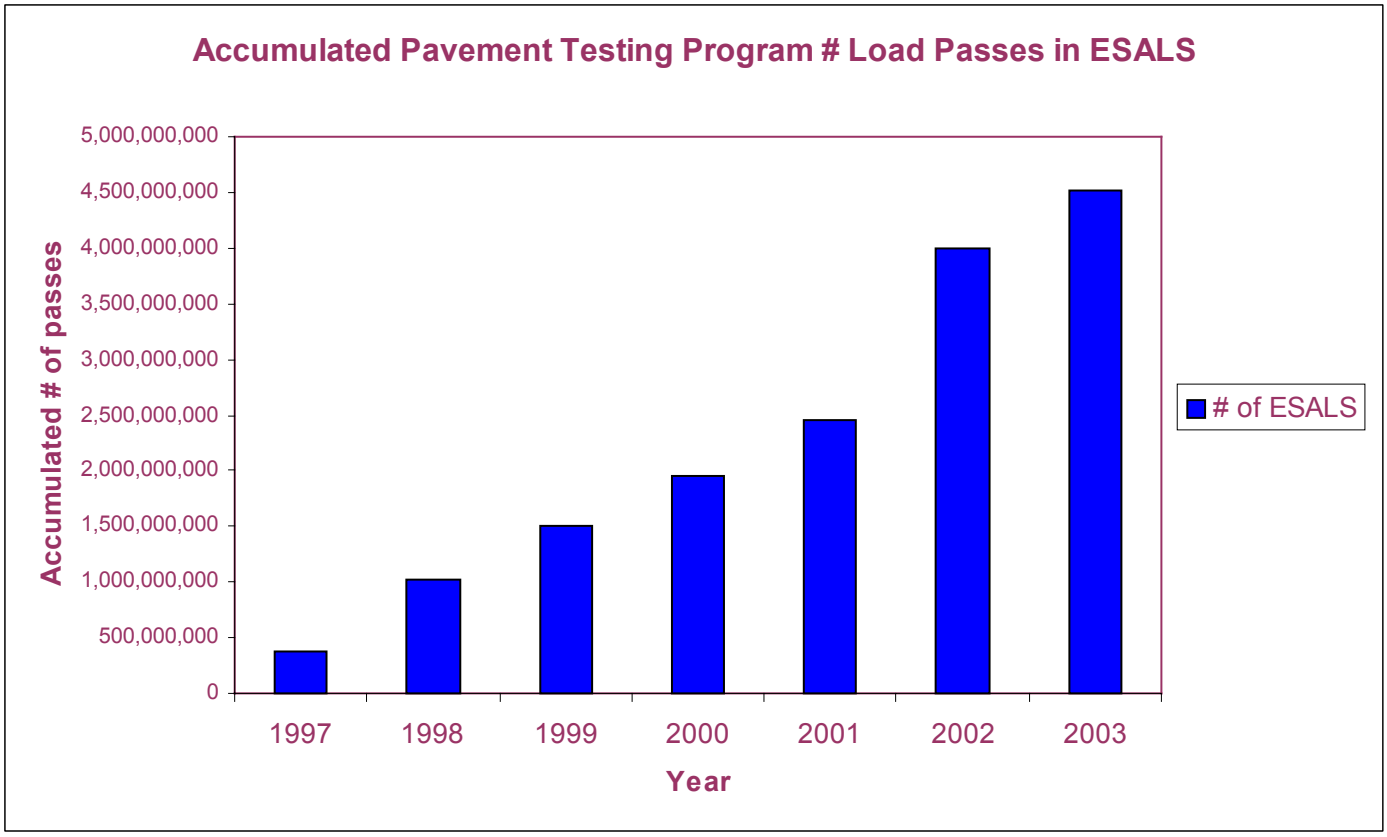
Accelerated Pavement Testing

The Accelerated Pavement Testing (APT) facility at the INDOT Division of Research has been in operation for more than nine years. This facility is located in a 186 square-meter, environmentally controlled building comprising of a test pit, loading mechanism, and control and monitoring equipment. In studying the ability of asphalt and concrete mixtures to resist permanent deformations, the combination of slow speed and high temperature control simulates the effect of millions of ESALs in just a few days. Some major projects conducted with the INDOT APT facility are listed below:

The APT consolidates the effect of several years of in-service traffic conditions in just few days, in an environmentally controlled facility. Now, testing of new materials/mixes, rehabilitation techniques, and new pavement specifications can be accomplished quickly and cost-effectively without having to resort to expensive field trials. APT projects, consequently, result in tremendous savings by improving the quality, durability, and performance of Indiana pavements.

In addition to bringing research funds from other transportation departments and industry into Indiana to address shared research needs, visitors from more than 18 countries and 30 states have toured the APT favility. The APT allows INDOT to construct and quickly evaluate the performance of new pavement materials and designs in a controlled, automated environment prior to placing expensive sections in the field. Since it opened in 1997, more than 4 million load passes have been made on various mix designs, reducing the time it takes to determine their effectiveness.



The Accelerated Pavement Testing Program is a program to evaluate the ability of pavement mixtures to resist permanent deformation or rutting using half of a standard truck axle in combination with speed and temperature control. Using this approach, in an environmentally controlled facility, the effects of 25 million Equivalent Single Axle Loads (ESAL) can be compressed into just a few days. This represents the effect of several years of in-service pavement traffic.