According to a recent study by the National Highway Traffic Safety Administration (NHTSA), nearly 80% of automobile related accidents are caused by some form of driver distraction.

Our project consists of three sub-systems that attempt to reduce the number of accidents by increasing driver awareness on the road.

**Rapid Deceleration Warning**
This system will measure the deceleration of the vehicle and flash the brake lights if the vehicle decelerates quickly to alert following vehicles. An accelerometer measures the acceleration of the vehicle and a microcontroller determines whether or not to flash the brake lights.

**Driver Awareness Sensor**
This system will monitor the driver and alert the driver if it detects signs of drowsiness. A camera sends images to the microprocessor, which determines whether the driver is drowsy by tracking the driver’s eyes. A facial illuminator composed of IR LEDs illuminates the face in poor lighting conditions.

**Speed Limit Indicator**
This system will display the speed limit of the current road to the speedometer of the vehicle. A GPS determines the location of the vehicle and a microcontroller selects the speed limit to display from a database in memory.