IDEA 1

Internet Connectivity for the Smart sign board for road safety application employs an esp32 board that enables remote control and easy real time access to the system. There are several parameters that can be considered for a road safety system among which weather plays a major role. Real-time weather characteristics such as humidity, precipitation, temperature etc.,can be monitored by using the industrial standard sensors. These sensors are interconnected as a sensor network. A city can be divided into many zones and the sensors will be placed in different locations. Data from all the zones is sent to the cloud and appropriate preprocessing of the data will be done followed by further analysis of data in order to make the weather prediction.Based on the data acquired and the analyzed result the speed limit for the different areas will be automatically updated. The traffic signals employ a camera that continuously monitors the traffic and intelligently changes the signal depending upon the intensity of the traffic on each side. In addition, a sensor is attached to all the vehicles to monitor the condition of the road. The road condition is updated to the cloud and depending on the condition, the diversions are introduced in the path.

IDEA 2

APIs let your product or service communicate with other products and services without having to know how they're implemented.By using weather API, we can get the data about past climatic conditions, and make some ambiguous future predictions about the climatic conditions using various prediction models. According to the predicted results, we can give an alert sign in the smart sign board.So, using such APIs for gathering information will be a reliable form of previous,past and future data.

In addition to that, we can use a reliable camera for detecting traffic conditions(providing traffic signs accordingly), the camera can also be used for detecting signs like zebra crossing(for providing speed limit signs).APIs such as ArcGIS API may also be used to

obtain information about adjacent school or hospital zones, analyze the information, and display speed restriction signs accordingly. So, these are some of the ideas which can be implemented in smart sign boards.

IDEA 3

Google Maps API may be used to acquire access to information about traffic congestions, and information from the traffic layer can be used to gain access to real-time traffic information.This inturn assists us in dividing and diverting the traffic and also comes in handy when dealing with emergency situations.For example, if an ambulance needs to get to a hospital swiftly, traffic information may be utilized to discover faster routes, reducing time delays and allowing patients to be delivered in the shortest possible amount of time.Google APIs can also be used to locate the nearest hospitals and all the possible routes to reach the same.

IDEA 4

Sign boards can be used to indicate school zones and hospital zones and thereby alter the speed range using location information. From the web application, we can get the speed limitations which updates automatically to the driver. We may also acquire information about any construction on the road and during fatal situations, the diversion signs are displayed. The pedestrians are given access to control the crossing sign by pressing a button when required. When a pedestrian presses the button the traffic is sensed on each side and if less traffic is detected the red signal is given for the vehicles. In this way the workload on the camera in the traffic signal can be reduced .