



# Stop and Safety Sign Module

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## PROJECT OVERVIEW

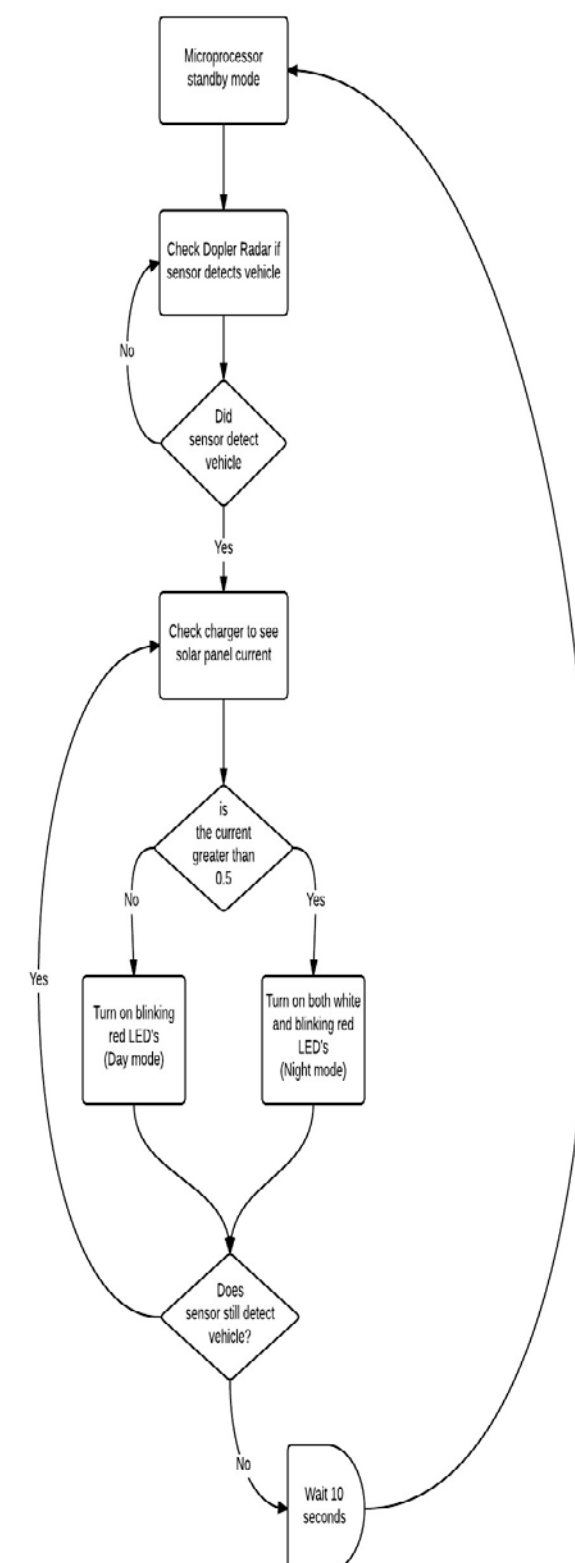
The purpose of this project was to design and build a low-cost, standalone alternative to a traffic light, by keeping current stop signs and increasing their visibility for oncoming drivers.

The constraints of the project included:

- Design must be compatible with existing Cal Trans standard stop signs
- Must detect an oncoming vehicle at a minimum of 80 feet
- Installation takes less than 120 minutes for a two man semi-trained team

The objectives of the project included:

- Provide an alternative to installing a traffic light at an intersection
- Be more visible than a standard stop sign in both daytime and nighttime
- Grid independent
- Inexpensive



## HOW IT WORKS

This module design implements a sensor and LED system creating the ability to blink the LED's when a vehicle is detected, increasing the visibility of the sign. It also implements a solar panel and battery system to provide a near-constant source of power.

Benefits of the sign module:

- Increases the visibility of the sign
- Fits on the current standard signs
- Easier installation than existing LED sign systems



## SENSOR SELECTION

A requirement of this project is to detect an oncoming vehicle at a minimum of 80 ft., while Department of Transportation standards call for a detection distance of 250 ft. if a car is traveling at 35 mph.

After a lot of searching, the Houston Radar: SS300 OEM Doppler Speed Radar sensor was found. This sensor can detect a compact vehicle more than 300 ft. away while only requiring a power input of 0.10 Watt.

## CURRENT TECHNOLOGY

The current Cal Trans standard stop sign is a rigid octagon bolted to a steel pole and anchored in a concrete footing, as shown below. The Stop and Safety Sign module will mount directly to the existing standard sized stop sign, discarding the need to replace the entire sign as current lighted models require.



## PROJECT OUTLOOK

The Stop and Safety Sign Module will be more visible than, while mounting easily to, existing standard stop signs. The solar panel and weather-proof exterior will allow it to serve it's purpose for prolonged periods of time.

