# Highway Driving

Project meets the rubric criteria, and here are some details of the implementation.

- The car is speed limited to 49.5 mph, and acceleration is limited to 0.224 to avoid jerk
- We start by looking at the localization data to identify which lane the car is driving in (lines 89 to 99)
- Then we save the previous path (lines 101-109)
- Next we look at the sensor fusion data to identify if there are other vehicles on the road (lines 120 to 134)
- Ignore vehicles that are found on the other side of the highway dividing line (lines 136 to 138)
- Now look at the vehicle speed and lane information to decide whether there is a vehicle in front/left/right (lines 140 to 160)
- Based on this information, take an action such as slowing down or changing lanes (lines 163 to 186)
- While running the simulator, just like real life, there were a few times when the car moved to either the left or right lane and could not change into the middle lane for a long time because of many other vehicles in the middle lane. Therefore, I added code to move back to the middle lane when possible (lines 176 to 180) so that the car can move to either left or right lane and not get stuck on one side due to traffic.
- I used Spline library for future waypoints, and these are pushed into a vector (lines 225 to 236)
- Finally, the path points are filled using Spline (lines 269 to 292)