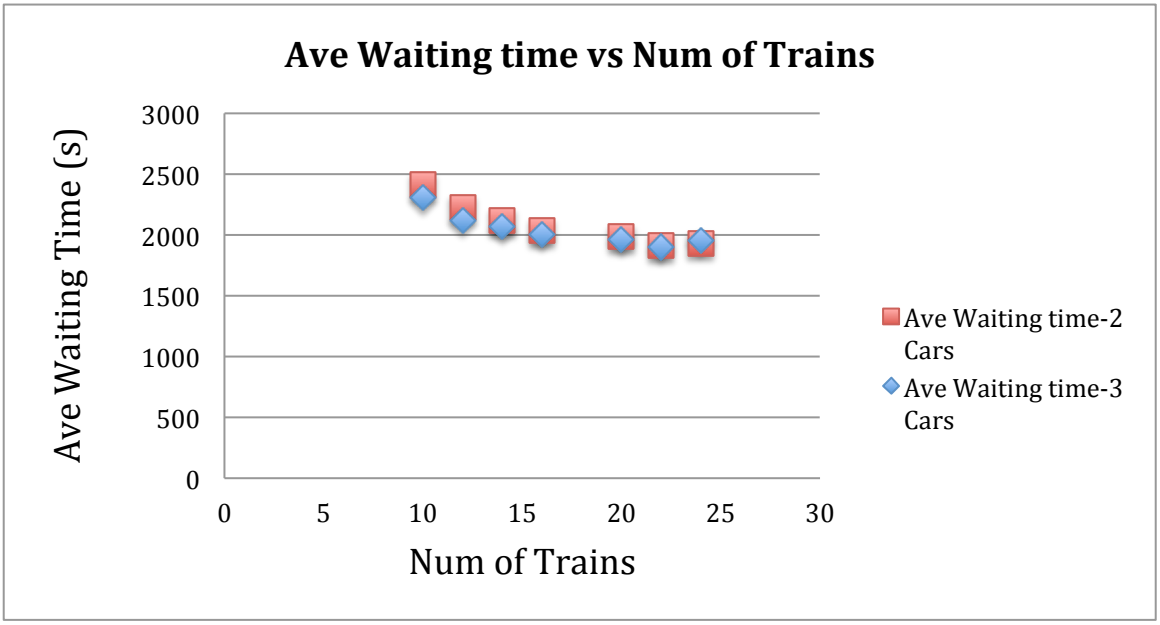

Figure 1 Average waiting time vs. number of trains

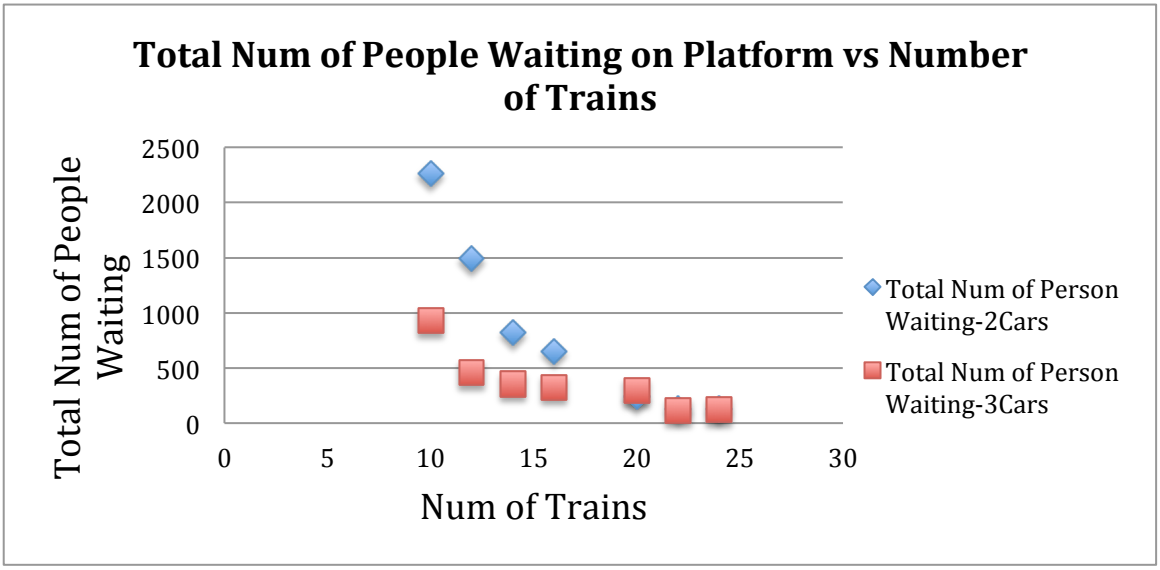

Figure 2 Total Num of People Waiting on Platform vs Number of Trains

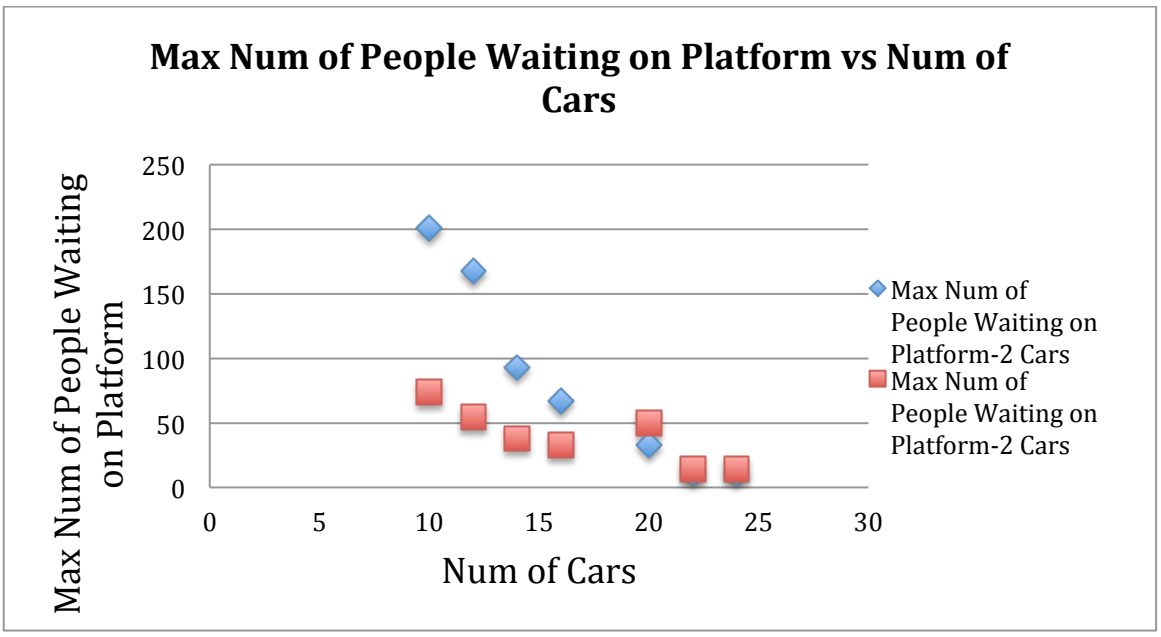

Figure 3 Max Number of People Waiting on Platform vs. Number of Cars

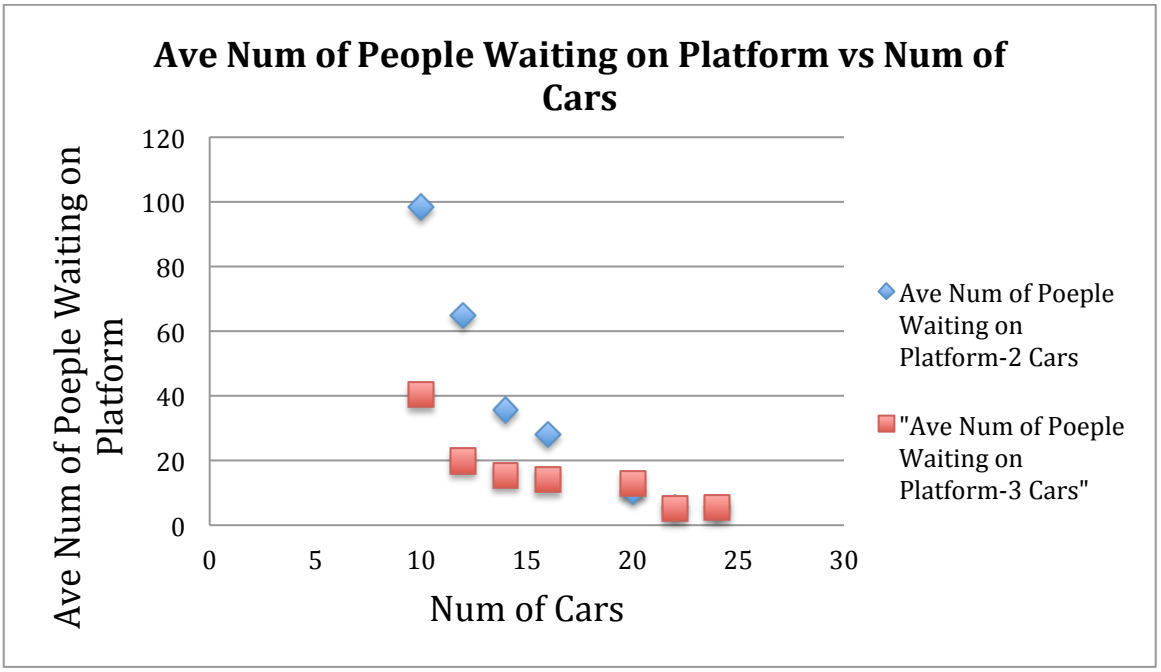

Figure 4 Average Numbers of People Waiting on Platform vs. Number of Cars

Analysis and recommendation

According to the figures, average waiting time for each passenger decreases when more trains are scheduled into service. It remains at constant if more than 22 trains in service. The time spent by passenger who didn't finish the trip was not included in the calculation. But this is reflected by Figure 2, 3, and 4.

Usually the downtown station is more crowded than normal stations. Adding more trains could provide enough spots for passengers. And by concluding the Figure 1, 2, 3 and 4, an arrangement with 22 to 24 trains and 2 cars in each train is recommended. Less than 20 trains could cause the passenger accumulation in stations and adding a third car might ease the traffic pressure as well as there are more than 16 trains in service. The data in table 2 shows that there would be about 650(2 cars) and 330 (3 cars) passengers waiting for trains if only 16 trains in service and passenger will aggregates on the stations in middle of the route because the capacity is filled by passenger who get into the train at downtown stations.

If there are not enough trains on the railway, adding the third car could be a solution. As we can see from Figure 3 and 4, adding a third car can significantly evacuate the platforms. But if there are more than 20 trains, there should be enough spaces for passengers on platforms. According to Figure 2, if there are more than 22 trains in service, there would be no passenger accumulation on each station. There should be no more than 130 passengers waiting for transportation, which is, there are about 5 passengers in each station. The passengers could always find a seat in next coming train.