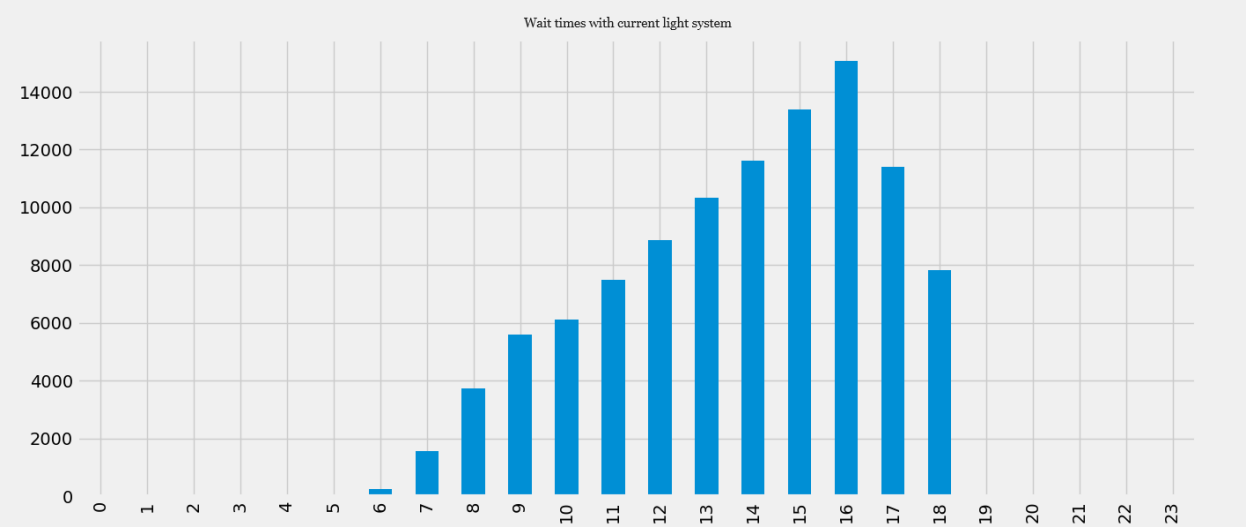
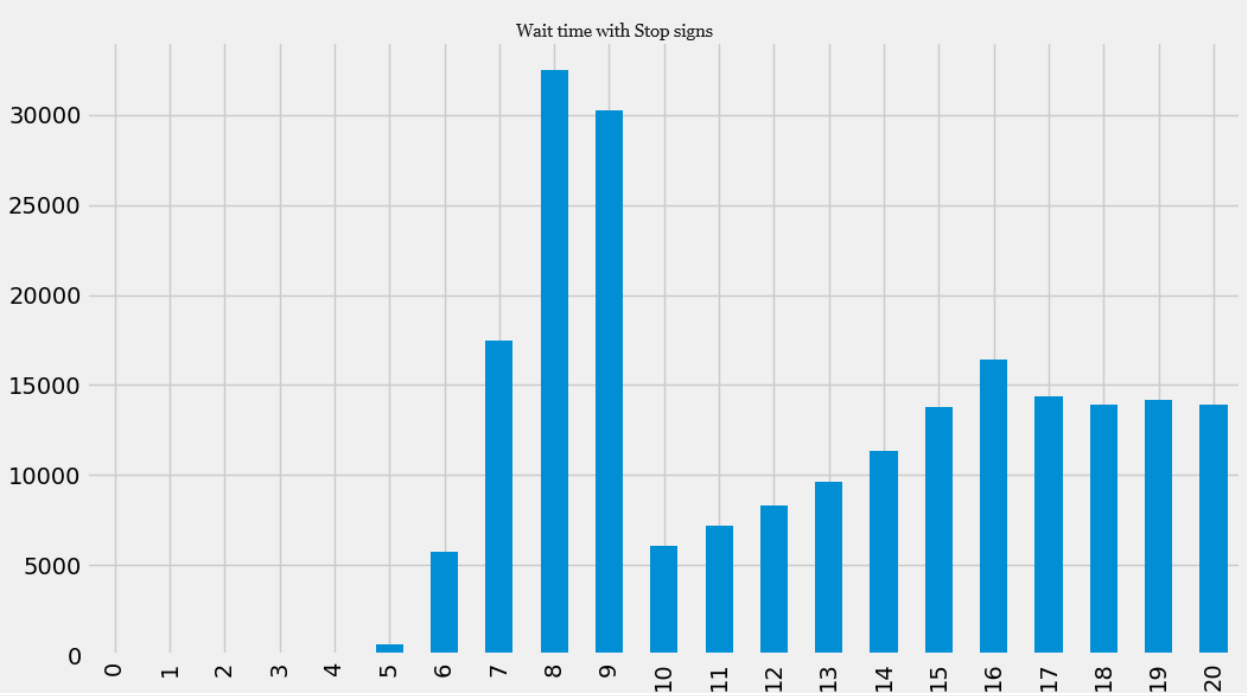
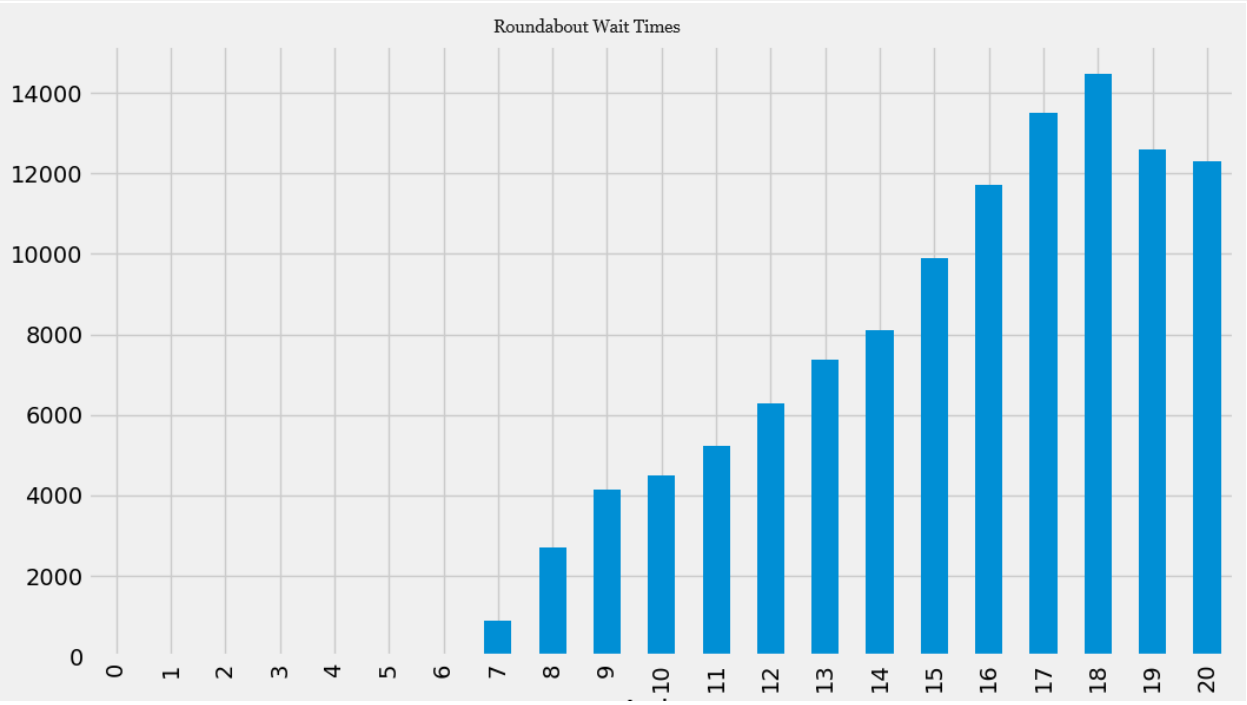
My study was of the Hwy 50/I-80 intersection (simulation information located here: https://replit.com/join/hmylgtsebn-m1551ngl1nk), due to the high number of accidents we get down here. It falls under Omaha jurisdiction, but I couldn't find documented statistical information. I calculated the average of the traffic that goes through the 72nd and 84th St exchanges provided here: https://publicworks.cityofomaha.org/images/September_30_2021.pdf, and used that as the data for the Hwy 50 interchange down here, since the central business district in this area is fairly similar in traffic flow, and is continuing to grow following the addition of the Facebook datacenter, the Amazon warehouse, and soon to include the Google datacenter.

Due to the current business congestion in the area, adding new lanes would be nearly impossible without causing a significant impact to the local economy during the construction process. Several buildings would have to be demolished in order to make room for the new lanes, meaning those businesses would need to either relocate or close down permanently.

With this report, 15000 seconds is the longest wait for the current light system, which could cause significant issues. The wait times would be significantly longer if the lights were switched to stop signs, and the likelihood of a collision or a rollover would increase if changed to a roundabout, as most traffic is semis.







The implementation of separate lanes for semis and cars could help reduce the risk of collisions and the damage caused by rollovers. The cost to make this change could be minimal, potentially even less than adding a lane. Signs could be posted or lines painted, designating one of the existing lanes as being for trucks only, or trucks only during certain hours.

Information located here: https://highways.dot.gov/public-roads/septemberoctober-2005/issues-financing-truck-only-

lanes#:~:text=Poole%20and%20Samuel%20estimate%20that,land%20acquisition%20costs%2C%20if%20applicable. states that it could cost about $2.5 million/lane mile to add an additional lane for this purpose, but the redesignation of existing lanes didn't have estimated costs that I could find.