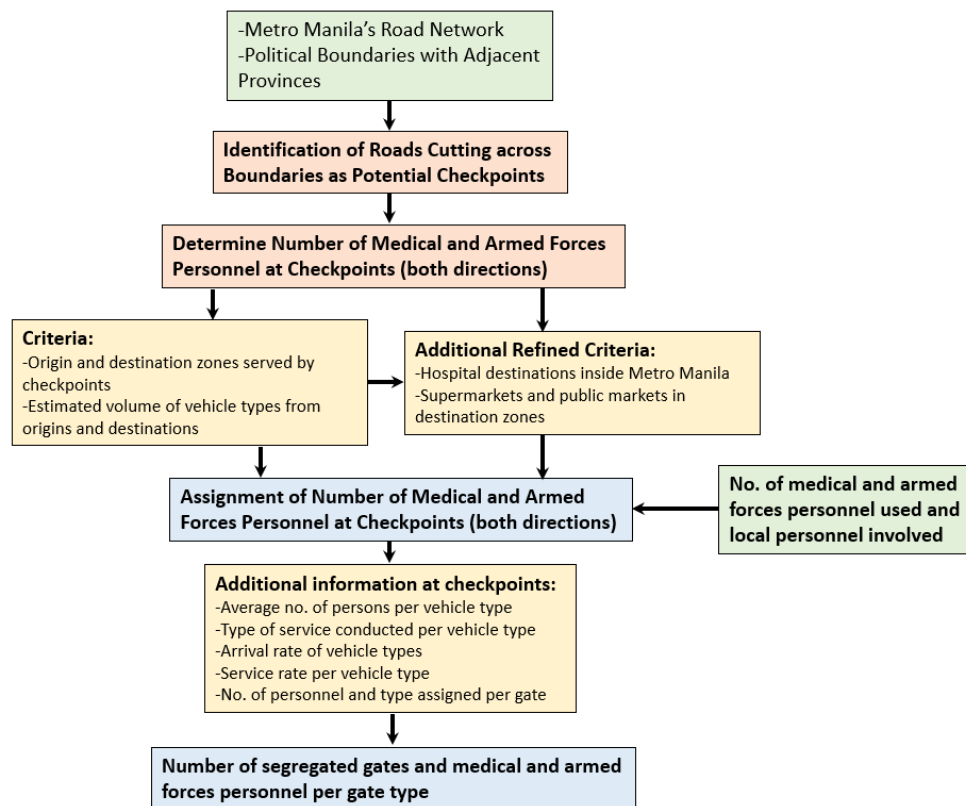


Optimal Locations and Allocation of Personnel (OLAP) at Checkpoints during the Coronavirus Lockdown and Manual Development for the Preparation of Future Pandemics in Metro Manila and other Regions

Submitted for funding to DOST-PCIEERD by Dr. Alexis Fillone, Dr. Joel Ilao and Dr. Robert Billones

This study looks at how to optimally allocate both healthcare and security personnel at checkpoints surrounding Metro Manila and to develop guidelines on this subject in preparation for future pandemics in the country. The specific objectives include: (1) To classify checkpoints in terms of the volume of potential vehicles and commuters of the checkpoints, (2) To determine the extent each checkpoint is serving areas or pre-defined zones of Metro Manila, (3) To determine the extent each checkpoint is serving important facilities (key hospitals, public markets, supermarkets, government centers currently in operation during the lockdown) in Metro Manila, (4) To determine vehicle and pedestrian behavior and characteristics at checkpoints in Metro Manila, (5) To determine the service rate or processing time of vehicles and pedestrian at checkpoints in Metro Manila, and (6) To provide recommendations on the improvement and efficiency of checkpoints in Metro Manila.



Methodological Process

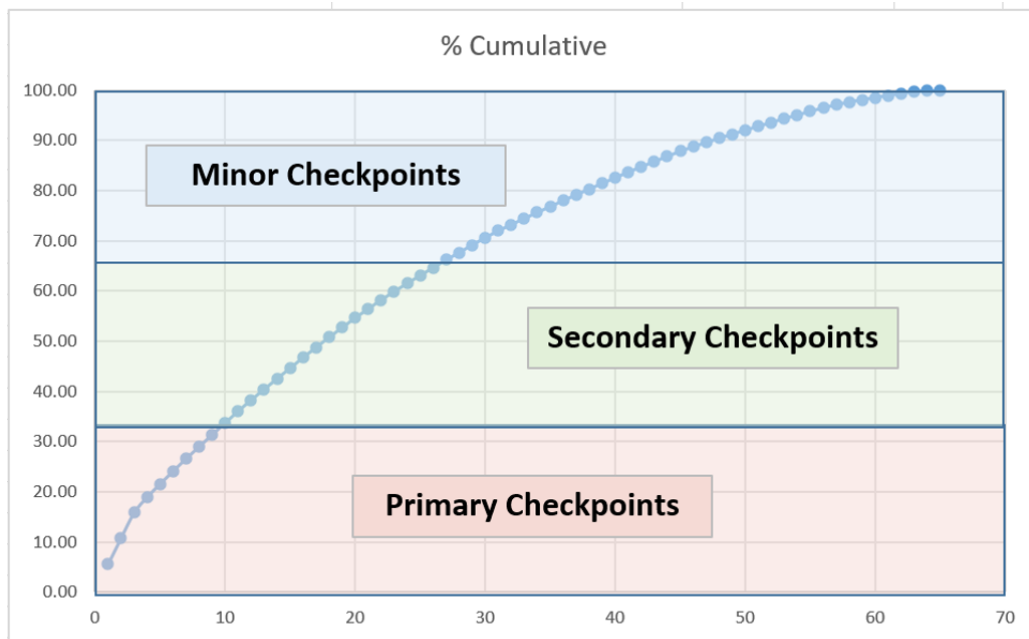
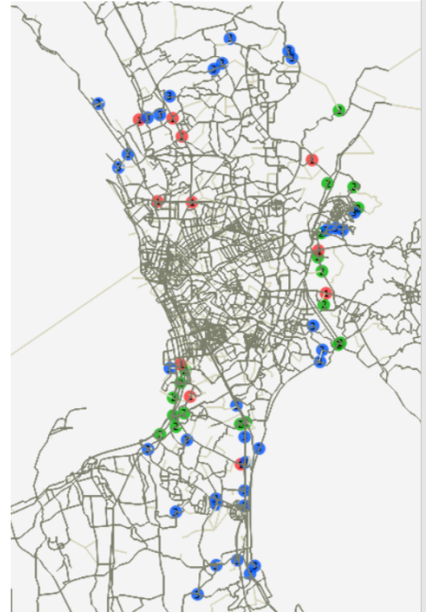
INITIAL FINDINGS

For Objective No. 1*

The following are the initial recommendations of this study:

1. The checkpoints or gates in the boundary of Metro Manila with neighboring provinces can be divided into three types:
 - a. **11 Primary Checkpoints** (Estimated vehicular flow is **5,000 veh trips and above per day** for both directions)
 - b. **19 Secondary Checkpoints** (Estimated vehicular flow is **3,000 to 4,999 veh trips per day** for both directions)
 - c. **35 Minor Checkpoints** (Estimated vehicular flow is **less than 3,000 veh trips per day** for both directions)

* This is the better approach in dividing the type of checkpoints.



Cumulative ranking the estimated vehicular flows passing the checkpoints (both directions) from highest percentages to the lowest