Journal of Transportation Safety & Security ›
Volume 12, 2020 - Issue 6



Review Article

# Policies for operating enforcement cameras

Michael Dreyfuss & Mali Sher

Pages 746-763 | Published online: 24 Jan 2019

Cite this article https://doi.org/10.1080/19439962.2018.1552638



## Abstract

This study analyzes the current Israeli public–private partnership (PPP) project of automatic enforcement cameras. There are fewer cameras than poles in Israeli law enforcement; therefore, the cameras are moved between the poles. First, the authors present a linear programming approach (mobility model) to determine the optimal allocation of cameras on the poles based on road crash data and geographical constraints. Second, the authors determine the optimal number of cameras to buy and number of movements required (camera-movement tradeoff model). Third, the authors use a Monte–Carlo simulation of the camera failures to define an optimal inventory policy (inventory model). The authors demonstrate that applying the outcomes of the mobility model results in a 25% enhancement (from 55% to 80%) of road crash coverage. The results of the camera-movement tradeoff model indicate that when the movements are relatively inexpensive (a movement costs less than 10% of the price of a camera), it is not worthwhile to buy new cameras. Finally, the results of the inventory

model show that a repair period of 1 or 2 months does not seriously decrease the road crash coverage, and thus, for any future PPP project, it is unnecessary to insist that the repairs be completed within 2 months.

Keywords:

optimization | enforcement cameras | speeding | road crashes | public–private partnerships | traffic police