Assumptions:

1. All drivers will follow the road rules
2. We are able to tell the destination of the vehicles
3. We are able to tell whether the vehicle is an emergency vehicle, maintenance vehicle, civilian vehicle, civilian vehicle in an emergency, police vehicle, police vehicle in an emergency, or VIP vehicle
4. Civilians will not abuse the system and will use it responsibly

Let us take the standard road as being 4-lane. There are two lanes given to general use, one for VIP vehicles, maintenance vehicles, and police vehicles in a non-emergency situation. The fourth lane is left empty except for emergency vehicles, and police vehicles in the case of emergency cases.

In the case of maintenance being required on a lane, the general lanes are merged with the police/VIP lane, and the emergency lane is open to maintenance crew, and emergency vehicles.

This is for standard operation.

Possible critical sections:

-One-lane Roads

In the case of one-lane roads, a system similar to **priority scheduling** is used. Vehicles have a priority, with lowest priority value going first. This value deprecates according to a specific rate, per vehicle that moves into the single-lane. In the case of a tie, either vehicle goes.

Vehicle Type	Priority	Deprecation
Emergency/Police on Emergency	1	-
Police/Maintenance	2	0.125
VIP	2.5	0.1
Civilian	3	0.125
Civilian (Emergency)	1.5	0.25

-Crossing/Junctions

In the case of a junction, emergency vehicles, civilians in an emergency state, or police vehicles in an emergency situation are allowed to halt all other traffic and move through first. This is in standard cases, not in times of emergency.

-Times of Emergency (Such as Terrorist Attacks or Natural Disasters)

During times of emergency, the police/VIP lane is also designated as an emergency lane, with police, civilian emergency vehicles and emergency vehicles having access to the two lanes.

The same rules hold for junctions, but civilian and VIP priority deprecations are nullified for one-lane roads.