CLAIMS

What is claimed is:

1. A method for managing traffic comprising:

receiving a traffic detection input of a presence of at least one of a vehicle, a driver, a passenger, a mobile device user, a pedestrian, a bicyclist, and a drone;

calculating a traffic demand in at least one direction approaching at least one junction;

prioritizing one of a first vehicle approaching a junction against a second vehicle approaching the junction by comparing a priority level score of the first vehicle and a priority level score of the second vehicle, the priority level score of each vehicle variable and based on at least one of a numerical count of the vehicle, vehicle score, a driver score, a vehicle class, a vehicle specification, a navigation score, a utilization score, and a boost score of at least one of the first and the second vehicle;

providing a first vehicle with a green traffic signal for a duration of time allowing the first vehicle to pass the green traffic signal, wherein the duration of time is based on multiple detection instances of at least the first vehicle approaching the at least one junction, a priority level of at least the first vehicle, and a relative traffic demand of at least one other direction of the at least one junction; and

operating in a mode to execute at least one of a vehicle-optimal mode, a system-optimal mode, and a vehicle-system optimal mode,

wherein the priority level is determined by a priority level score,

wherein the relative traffic demand is determined by an expected value calculation of at least one of traffic detected and traffic configured to provide an identification, and

wherein the vehicle-system optimal mode executes a vehicle-optimal mode for vehicles with a priority level above a minimum priority level, and executes a system-optimal mode for vehicles with a priority level below the minimum priority level.

2. The method of claim 1 wherein the minimum priority level is variable among a set of fixed minimum priority levels.
3. The method of claim 1 wherein the minimum priority level varies with at least one traffic demand.
4. The method of claim 1 further comprising prioritizing one of a traffic demand approaching a

first direction of the junction against a traffic demand approaching a second direction of the junction based on the traffic demands of the first and the second junction directions.

5. The method of claim 1 further comprising sorting at least one group of vehicles approaching a junction of two or more road segments, by at least one of the priority level of each vehicle and the priority level of each group of vehicles.
6. The method of claim 1 further comprising sorting a set of junctions by a junction weighting of a first junction compared with a junction weighting of a second junction, to prioritize a traffic demand approaching at least one direction of the first junction and a traffic demand approaching at least one direction of the second junction.
7. The method of claim 1 further comprising routing a set of vehicles to travel a same direction on a common road segment for at least part of a route of each vehicle.
8. The method of claim 1 further comprising routing a set of vehicles traveling in a same direction on a common road segment to travel on separate road segments for at least part of a route of each vehicle.
9. The method of claim 1 further comprising isolating a set of junctions and road segments from other traffic for at least one vehicle to travel at least part of a route of the at least one vehicle, wherein each traffic signal is provided as a green light in a direction of travel of the at least one vehicle at least until the at least one vehicle has passed the traffic signal.
10. The method of claim 1 further comprising predicting a location of at least one vehicle during a time period and a probability of the location of the at least one vehicle at approximately an end of the time period.
11. A system for detecting traffic based on detection input from remote mobile sources, the system comprising:

a detector card configured to receive at least one detection signal from a computer network and transmit the at least one detection signal to a traffic signal controller;

the computer network further configured to communicate with and remotely receive location information from at least one of a mobile device, a motor vehicle, a drone, and a bicycle,

wherein the location information is communicated to the computer network, the computer network calculates when to transmit the at least one detection signal to the detector card, and the detector card is configured to provide the at least one detection signal to a traffic signal

controller,

wherein the system is configured to operate in a mode to execute at least one of a vehicle-optimal mode, a system-optimal mode, and a vehicle-system optimal mode, wherein the vehicle-system optimal mode executes a vehicle-optimal mode for vehicles with a priority level above a minimum priority level, and executes a system-optimal mode for vehicles with a priority level below the minimum priority level.

12. The system of claim 11 wherein the variable ratio of the at least one detection signal provided to the traffic signal controller is based on a priority level of the detected vehicle.

13. A system for adaptively controlling traffic control devices comprising:

a traffic signal system;

a computing network;

a communication system, and

a mobile device, wherein

the traffic signal system is configured to be in communication with the computing network through the communication system, the mobile device is configured to be in communication with the computing network through the communication system, and the computing network adaptively controls the traffic signal system using a location of the mobile device,

wherein the system is configured to operate in a mode to execute at least one of a vehicle-optimal mode, a system-optimal mode, and a vehicle-system optimal mode, wherein the vehicle-system optimal mode executes a vehicle-optimal mode for vehicles with a priority level above a minimum priority level, and executes a system-optimal mode for vehicles with a priority level below the minimum priority level.