

## Input Data

### Offline Data

FD parameters for through, left, and right movements

- saturated flow rate
- critical density
- jam density

Possible phases

### Real-time Data

Queue length estimation

- queue length (all downstream and upstream lanes)

Arrival flow estimation (Appendix B)

## Control Method

### Phase Time Calculation

Estimate the saturated green time for all movements [Eq. 7]



Find the minimum saturated green time in each possible phase [Eq. 8]



Select the phase with the maximum effective outflow rate among all possible phases



### Phase Improvement

Find set of possible phases with higher number of movements compared to the selected phase



Select the phase with the maximum effective outflow rate and total queue length among the selected phases



Facilitate the movement continuity: if a movement receives green in both the previous and current phase, adjust the interphase to allow continuity of flow

## Output Data

### Ideal Phase (Control Decision)

phase time

phase

interphase

Urban Network

