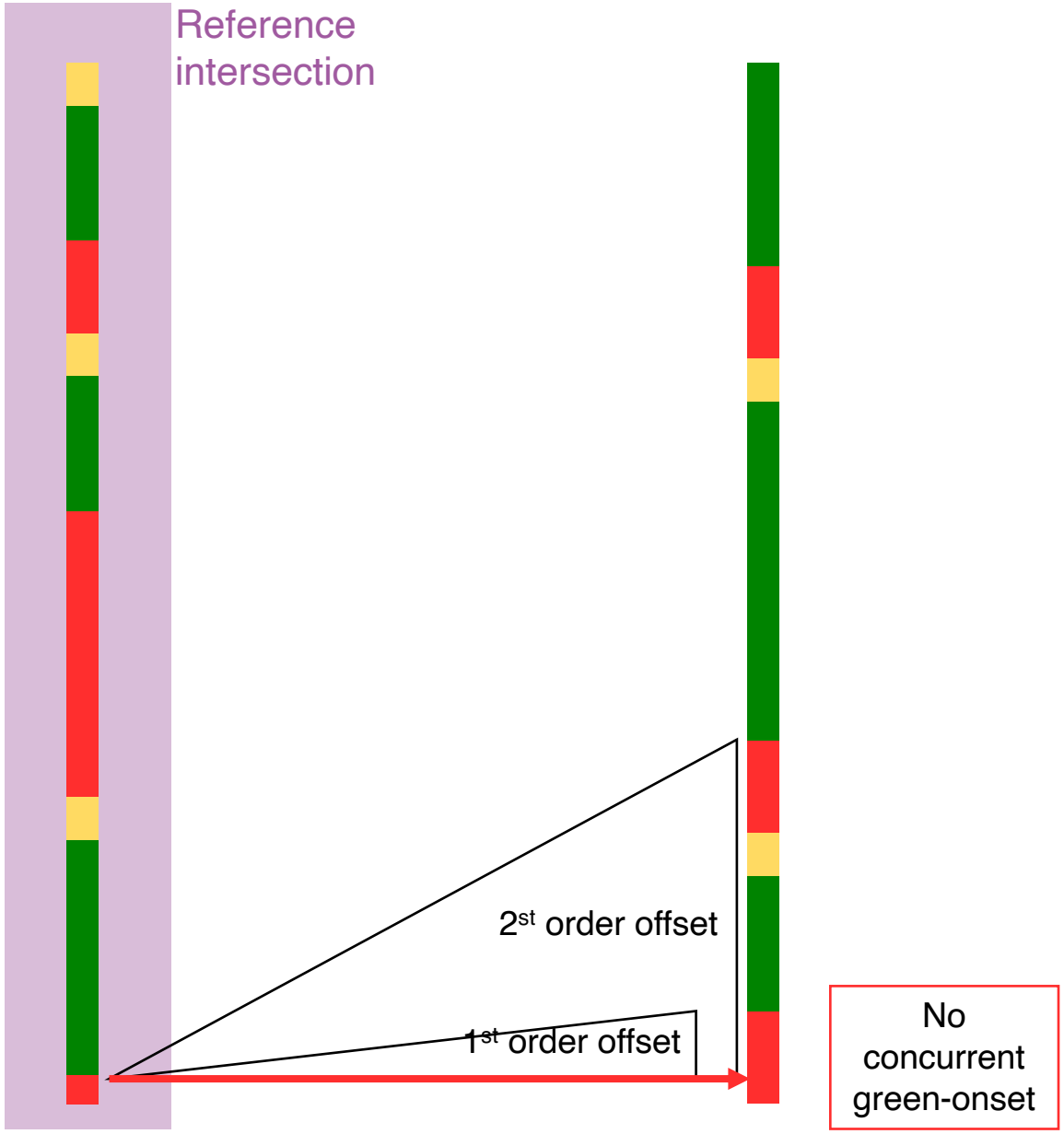
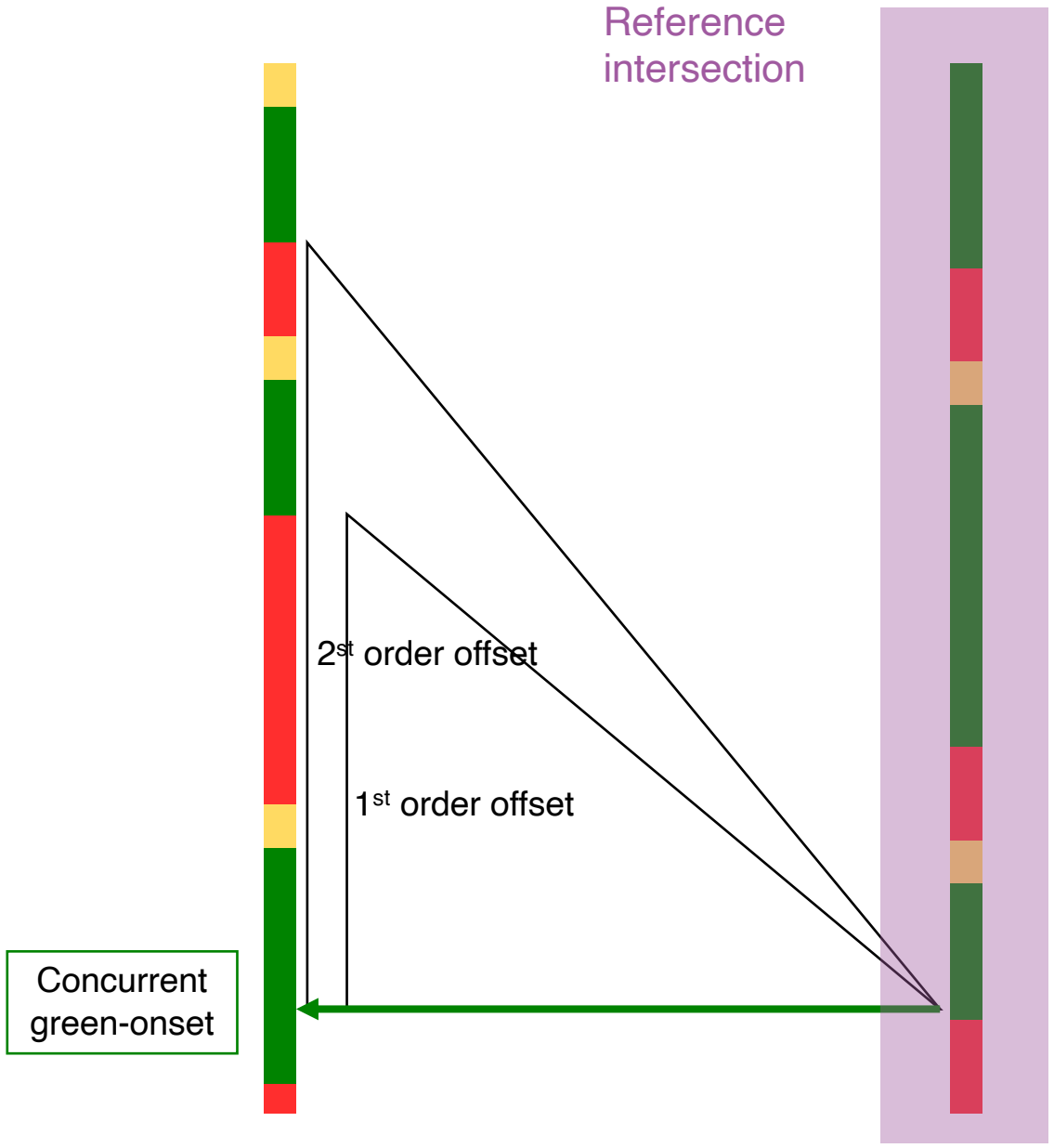
Offset evaluation for non-cyclic control of adjacent intersections

General

- Offset time, also called offset, is defined as the time difference between the green onsets of 2 adjacent intersections.
- Conventionally;
  - Offset time is travel time for driving from an intersection to the adjacent one at an assumed speed.
  - Onsets of green times of the two intersections are separated by the offset to establish green waves.
  - It is a-priori information (based on progressive speed) for signal coordination calculation: not a metric.
- In non-cyclic control, this value keeps changing.
  - It is seen as a metric here, and we would like to evaluate it.



No concurrent green-onset



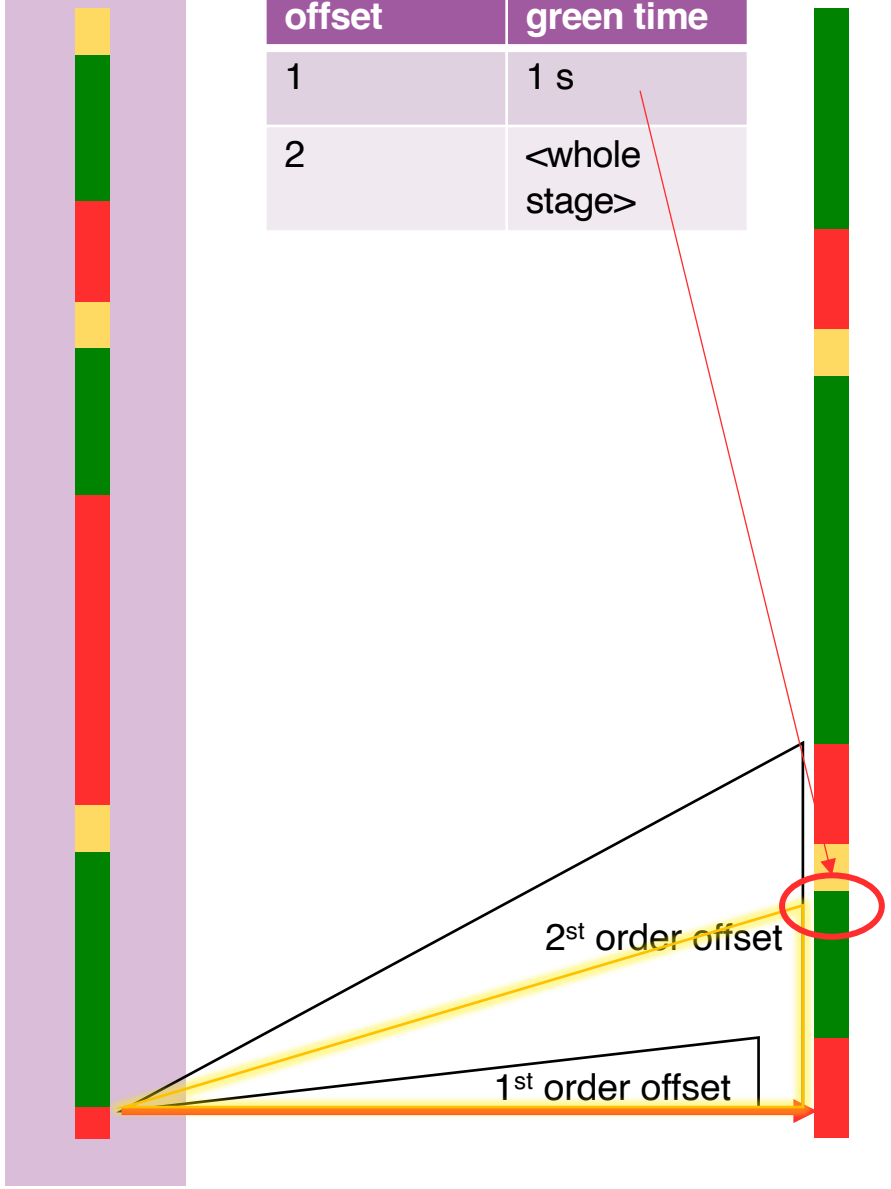
Concurrent green-onset

Additional

- An additional metric is setup for greater understanding of coordination
- This metric definition is based on the travel time (cyclic offset) between the two intersections at an assumed progressive speed.
- Usable green time is the remaining green time of the corresponding offset stage after the green wave arrives.

Reference intersection

Order of offset	Usable green time
1	1 s
2	<whole stage>

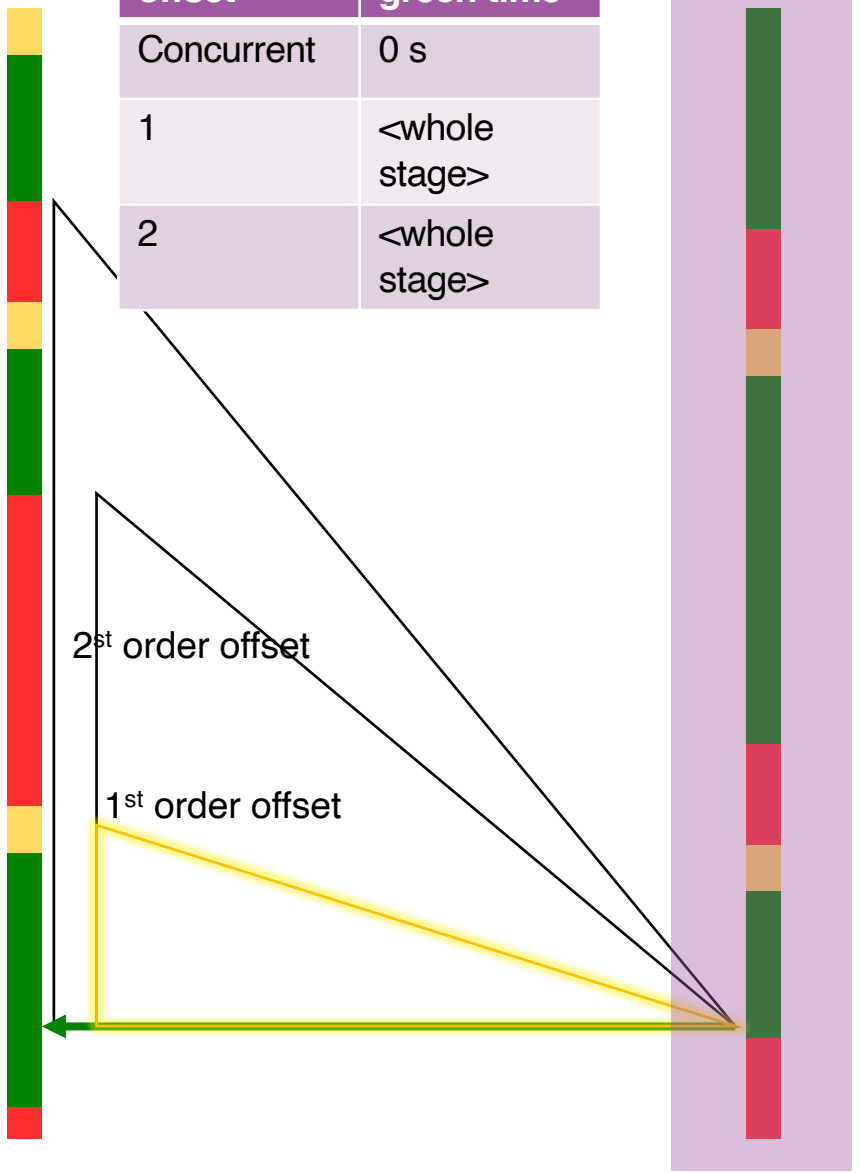


Not a concurrent green-onset

Cyclic offset: travel time at an a-priori progressive speed

Concurrent green-onset

Order of offset	Usable green time
Concurrent	0 s
1	<whole stage>
2	<whole stage>



Reference intersection