



## Traffic Signal Design Manual

ORIGINATOR Director, Bureau of Traffic Operations		3-4-2
CHAPTER 3	Project Scoping Process & Geometric Design Considerations	
SECTION 4	Operational Considerations and Needs	
SUBJECT 2	Right Turn Control	

Right turn control at signalized intersections *should* be studied very thoroughly taking into account such factors as the volume of right turning vehicles (300-400 vph), queue length, number of pedestrians, turn radii, cross street geometrics, channelizing islands, vehicular speeds, etc. Typically it is preferred to use a less restrictive method and increase the degree of control as volumes, safety, number of pedestrians, and geometric conditions dictate.

### FREE FLOW (No control)

- Right turn lane **shall** be channelized. The higher the right turn speed, the larger the channelizing island.
- The receiving approach **shall** have a designated traffic lane (acceleration lane) to be used exclusively for the right turning vehicles. It is recommended to extend the channelizing island to separate the right turn acceleration lane from the adjacent through lanes.
- Use only when no to very low volume of pedestrians using the right turn area.
- Requires larger amount of right of way.

### YIELD CONTROL

- Right turn lane **shall** be channelized.
- Channelized right turns *should* be brought in as near as perpendicular as possible for vision to the left.
- Recommended when no to very low volume of pedestrians using the right turn area.

## STOP CONTROL

- Right turn lane **shall** be channelized.
- Channelized right turns **shall** be brought in as near as perpendicular as possible for vision to the left.
- Periodic enforcement *may* be needed to ensure drivers are obeying the stop sign.

## SIGNAL CONTROL

### Unchannelized right turn only lanes

- No channelizing island (porkchop). This layout is not the most desirable if there is a significant volume of conflicting pedestrians.
- Generally, a 3-section head (red, yellow and green ball) *should* be used.
- A5-section head (red, yellow and green ball, yellow right arrow and green right arrow) configuration for the near and far right indications *may* be used.
- The right turn arrow *should not* be used when there is a conflicting pedestrian crossing.

### Channelized right turn lanes

- Per the Wisconsin MUTCD, two signal faces **shall** be installed.
- A 3-section head configuration (red ball, yellow right arrow, and green right arrow) *should* be used when there is an opposing protected left turn.
- A 5-section head (yellow right arrow and green right arrow) *may* be used when there is an opposing permissive left turn. Refer to Figure 6 in TSDM 6-1-2.
- Red right arrows **shall not** be used because of the possibility of motorist confusion of whether a right turn on red is permissible.
- In cases of multiple right turn lanes, “NO TURN ON RED” signing *may* be required at the discretion of the Regional Traffic Engineer. For control of dual right-turn movements, refer to State Statute 346.37(1)(c)3 regarding right turn on red from left most right-turn lane.
- Pedestrian crossings *should* be designed to direct the pedestrians from the radius to the channelizing islands (porkchops) and not the median. Refer to TSDM 3-3-8 Figure 1. This will allow for the possibility of utilizing a right turn overlap situation.

For geometric guidance for right turn lanes, refer to TSDM 3-3-6 and the FDM 11-25-10, Right Turn Lanes.