

CHAPTER 143
TRAFFIC SIGNAL SYNCHRONIZATION

761—143.1(364) Definitions. The following definitions apply to these rules:

“*Arterial street*” means any U.S. or state numbered route, controlled access highway, or other major street or highway designated by the city within its respective jurisdiction as a part of a major arterial system of streets or highways.

“*Controller*” means a supervisory device that controls the sequence and duration of indications displayed by traffic signals.

“*Coordination*” means the establishment of a definite timing relationship between adjacent traffic signals.

“*Cycle*” means any complete sequence of traffic signal indications (phases).

“*Detector*” means a device that senses vehicular or pedestrian demand and transmits an impulse to a controller.

“*Local controller*” means a controller supervising the operation of traffic signals at a single or two closely spaced intersections.

“*Master controller*” means a controller supervising the operation of several local controllers.

“*Phase*” means a portion of the cycle during which an assignment of right-of-way is made to a traffic movement or combination of traffic movements.

“*Traffic signal*” means any permanently installed, electrically powered traffic control device by which traffic is alternately directed to stop and to proceed.

“*Traffic signal system*” means two or more traffic signals operating in a coordinated manner. Types of coordinated systems:

1. “*Computerized system*” means a system in which controllers are supervised by a computer.
2. “*Interconnected master-controlled system*” means a system in which local controllers are supervised by a master controller through a communications link (wire/radio). The master establishes a base line condition; the local then operates its intersection in a predetermined relationship with the base line.
3. “*Noninterconnected system*” means a system in which timing relationships between individual local controllers are coordinated by manual settings, without physical interconnection between the controllers.
4. “*Time-based coordinated system*” means a noninterconnected system in which the local controllers use a very accurate programmable digital timing and control device (time-based coordinator) to maintain coordination.
5. “*Traffic responsive system*” means a system in which a master controller specifies cycle timings based on the real time demands of traffic as sensed by vehicle detectors.

761—143.2(364) Applicability. This chapter applies to all cities with more than three traffic signals within the corporate limits.

761—143.3(364) Traffic signal inventory. Rescinded IAB 9/4/02, effective 10/9/02.

761—143.4(364) Required synchronization.

143.4(1) Unless a traffic engineering study documents that it is not practical, traffic signals within one-half mile of each other along an arterial street or in a network of intersecting arterial streets shall be operated in coordination; preferably in a computerized, interconnected master-controlled, time-based coordinated, or traffic responsive system.

143.4(2) Reserved.

143.4(3) Timing and operational plans developed for traffic signals shall be developed by application of traffic engineering principles to provide maximum traffic flow efficiencies and safety.

143.4(4) All traffic signal installations and operations shall meet the requirements of the “Manual on Uniform Traffic Control Devices,” as adopted in 761—Chapter 130.

761—143.5(364) Reporting requirements. Rescinded IAB 9/4/02, effective 10/9/02.

This chapter is intended to implement Iowa Code section 364.24.

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