GLOSSARY

Actuated Controller: A controller that receives information from vehicle and/or pedestrian detectors and provides signal timing accordingly.

Actuation: An output from the detector system to the controller unit of any type of detector indicating the presence of a vehicle or pedestrian.

All Red: A term referring to an interval during which all signal indications at an intersection display red indications. The Red Clearance interval is displayed on all signal indications.

Amplifier: See Detector Amplifier.

ANSI: American National Standards Institute.

Approach: All lanes of traffic that enter the intersection from the same direction.

Area Detection: The continuous detection of vehicles over a length of roadway wherein the call of a vehicle in the detection area is intended to be held for as long as the vehicle remains in the area of detection. Frequently referred to as “large-area detectors”, long-loop detectors, or presence detectors.

ASTM: American Society for Testing and Materials.

Auxiliary Equipment: Separate devices used to add supplemental features to a controller assembly.

AWG: American Wire Gauge. The standard measurement of wire size. It is based on the circular mil system. 1 Mil equals .001”

Cable: A group of separately insulated conductors wrapped together and covered with an outer jacket.

Call: A demand for right-of-way issued to a controller unit. The demand comes to the controller from a detector that has been actuated.

Change Interval: The yellow interval following the green signal indicating the change to a conflicting phase.

Clearance Interval: The combined yellow and red interval that is shown before allowing a conflicting green interval to be displayed.

Conductor: A medium for transmitting electrical current. A conductor usually consists of copper or other materials.

Conduit: A tube or enclosure for containing and protecting electrical wires or cables.

Conflicting Call: A demand for service, which occurs on a conflicting phase not having the right-of-way at the time the demand for service, is placed.

Conflicting Phases: Two or more traffic phases, which cannot operate concurrently without causing interfering (i.e., conflicting) traffic movements.

Controller: A device mounted in a cabinet that continually selects and times the signal display indications.

Crosswalk: A defined location within an intersection or at other points within a roadway that concentrates pedestrian walking areas.

Cycle: A complete sequence of all signal indications at an intersection. In an actuated controller, a complete cycle is dependent on the presence of detector calls on all phases.

Cycle Length: The time period in seconds required for a complete cycle. Cycle length is normally variable for actuated intersections unless they are part of a coordinated system.

Demand: The request for service, e.g., one or more vehicles desiring to use a given segment of roadway during a specified period of time.

Density: A measure of the concentration of vehicles usually stated as the number of vehicles per mile per lane.

Density Controller: An actuated controller that has timing adjustments for the selection of the allowable gap independent of the passage time.

Design Speed: The speed used by the designer of the detector/controller system in the analysis of the design. (In the absence of data, often the posted Speed Limit is used).

Detection Zone: That area of the roadway within which a vehicle will be detected by a vehicle detector. This area may also be called the “zone of detection” or “sensing zone.”

Detector: A device for indicating the presence or passage of vehicles or pedestrians. This is a general term and is usually supplemented with a modifier indicating type (e.g., loop detector, video detector, etc.); operation (e.g., point detector, presence detector, etc.); or function (e.g., calling detector, extension detector, etc.).

Detector Amplifier: A device that is capable of intensifying the electrical energy produced by a detector. For some detectors, the function of the detector amplifier is to translate detector signals to a form that can communicate with the controller.

Detector Memory: The retention of an actuation for future utilization by the controller. This is a controller feature.

Detector Mode: A term used to describe the operation “pulse” or “presence” of a detector channel output when the detection of a vehicle or pedestrian occurs.

Detector Setback: The longitudinal distance between stop line or the curb line extension of the cross street, and the detector.

Dilemma Zone: A distance or time interval related to the onset of the Yellow Change interval. The term describes a portion of the roadway in advance of the intersection which a driver can neither stop prior to the stop line nor clear the intersection after the initiation of the Yellow Change interval and before conflicting traffic is released.

Encapsulation: The processes of filling the saw slot with sealant to seal and sometimes to surround the wires in the slot.

Encasement: The loop wire is encased in a polyvinyl or polyethylene tube to provide protection for the wire against tensile fracture.

Epoxy: A resin used in bonding.

Extended Call Detector: When selected, this detector extends the output after the vehicle departs the zone of detection for a preset time.

Extension Detector: A detector that is arranged to register actuation at the controller only during the green interval for a given approach so *as to* extend the time for that approach to accommodate the actuating vehicles. It is not active during the red or yellow internals for that approach.

Extension Limit: The maximum length of time that the actuation on any traffic phase may retain the right-of-way after an actuation on an opposing traffic phase has been received by the controller. Also known as maximum green.

Fully Traffic Actuated Controller A type of traffic controller which provides for traffic actuation on all approaches in the intersection.

Gap: The time interval between the end of one vehicle detector actuation and the beginning of the next actuation.

Gap Out: The termination of a green phase due to an excessive time in between the actuation of vehicles arriving on the green.

Gap Reduction: A volume density control feature whereby the allowed timed gaps between successive vehicle actuation on the phase displaying the green are reduced during the extensible portion of the interval.

IMSA: The International Municipal Signal Association.

Inductance: That property of an electric circuit or of two neighboring circuits whereby an electromotive force is generated in one circuit by a change of current in itself or in the other; The ratio of the electromotive force to the rate of change of the current. Measured in micro henries (:h).

Initial Portion: The first timed portion of an actuated controller unit.

Interval: A part of the signal cycle during which signal indications do not change.

Isolated Intersection Control: A form of signal control for a single signalized intersection through which the flow of traffic is controlled without consideration of the operation of adjacent signalized intersections.

ITE: The Institute of Transportation Engineers.

Large Area Detector: A detector or series of detectors wired together in series, parallel, or series/parallel covering an area in the approach to an intersection. Detection area varies from 6'x 40' to 6' x 100' or larger. Other common configurations are four 6'x 6' loops spaced 10' apart for a length of 54'.

Lead-In Cable: The electrical cable, which serves to connect the loop or other field detector to the detector amplifier in the controller cabinet. Sometimes called "home-run cable".

Lead In: That portion of the loop wire that is between the physical edge of a loop detector and the connection to the lead-in cable. This section is composed of the same continuous section of loop wire that forms the loop, and is twisted at a specified rate from the edge of the loop to the cable connection.

Locking Detector Memory: A selectable feature of the controller. A feature that causes the call of a vehicle arriving on the red (or yellow) to be remembered or held by the controller after the vehicle leaves the detection area. The controller will retain the call until it has been satisfied by the display of a green interval to that phase called.

Loop Detector: A detector that senses a change in inductance of its inductive loop sensor caused by the passage or presence of a vehicle over the sensor.

Magnetic Detector: A detector that senses changes in the Earth's magnetic field caused by the movement of a vehicle near its sensor

Magnetometer Detector: A detector that measures the difference in the level of the Earth's magnetic forces caused by the passage or presence of a vehicle near its sensor.

Minimum Green Interval: The shortest green time of a phase.

NEMA: The National Electrical Manufacturers Association.

Non-Conflicting Phases: Two or more traffic phases that will not cause conflicting traffic movements if they are operated concurrently.

Non-Locking Detector Memory: A selectable feature of the controller A feature that causes the call of a vehicle arriving on the red (or yellow) to be forgotten or dropped by the controller as soon as the vehicle leaves the detection area.

Passage Time: The timing interval the time to travel from the detector to the intersection. The green phase may be terminated on expiration of the Vehicle Extension time.

Pedestrian Actuated Control: A feature at signalized intersection where intervals, such as "WALK" and "Pedestrian Clearance" intervals, can be added to or included in the controller cycle by the actuation of a pedestrian detector.

Pedestrian Clearance Interval: The first clearance interval following the pedestrian "WALK" indication, a flashing "DONT WALK".

Pedestrian Detector: Typically, a pushbutton detector installed near the roadway and operated by the pedestrian.

Pedestrian Phase: A phase allocated to pedestrian traffic which may provide a right-of-way indication either concurrently with one or more vehicular phases, or to the exclusion of all vehicular phases.

Phase: Phase has two different applications of use in traffic signal terminology. The controller timing unit may be called a "Phase". Phase may also be used to describe any part of a cycle allocated to any specific traffic movement receiving the right-of-way or to any combination of traffic movements receiving the right-of-way simultaneously during one or more intervals.

Phase Sequence: A predetermined order in which the phases of a cycle occur.

Point Detector: The detection of vehicles as they pass a specific point on the roadway using the “Pulse” mode. This type of installation is frequently called small area detection.

Presence Mode: The ability of a vehicle detector to register the presence of a vehicle for as long as the vehicle occupies the field of detection.

Presence Detector: A vehicle detector that registers the presence of a vehicle for as long as the vehicle occupies the field of detection. The sensor may *cover* a large area or be a series of small sensors tired together in series, parallel, or series/parallel.

Pressure Detector: These detectors consist of two metal plates separated by spacers. When a vehicle tire passes over the detector, it compressed the spacers and allowed the two plates to make contact, thereby closing an electrical circuit.

Progressive Movement: A type of coordinated operation where movement along an arterial from signal to signal at a given speed.

Pulse Mode: The ability of a vehicle detector to register the presence of a vehicle as a short output pulse when a vehicle enters the field of detection.

Queue Length: The number of vehicles that are stopped or slowly moving in a line.

Radar Detector: A vehicle detector installed above or adjacent to the roadway, which detects vehicles through emitted microwave energy.

Red Clearance Interval: A clearance interval, which may follow the yellow clearance interval that terminates a phase and where all conflicting phases do not have a green indication.

Semi-Actuated Control: A type of traffic control where traffic actuation is provided on one or more approaches, however not all approaches.

Signal Indication: A traffic signal lens or a combination of several traffic signal lenses that are illuminated at the same time.

Split: A division of the Cycle allocated to each of the various phases (normally expressed as a percentage).

Traffic Control Signal: A traffic control device, manually, electrically, or mechanically operated that alternately directs traffic to stop and permits traffic to proceed.

Variable Initial: A controller function consisting of the capability of adding initial green time to the “Minimum Green” interval.

Vehicle Extension: see Passage Time.

“Walk” Interval: An interval that permits pedestrians to leave the curb.

“Yellow Change” Interval: An interval indicating that the right of way is about to terminate and occurs immediately following the green interval for the phase.