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Part 13 - APPENDIX**1300 GENERAL**

This Part will be used to provide additional or supplementary material that may be useful for those using this Manual. Copies of separate policies, guidelines and standard operating procedures referenced in other sections are included herein.

1301 DEFINITIONS**1301-1 General**

Generally, for traffic control purposes, the definitions found in the **OMUTCD** will apply. Also, for design purposes, there are additional definitions provided in the three volumes of the **L&D Manual**. Additional definitions, including explanations of various acronyms, have been provided in this section. For the convenience of the **TEM** users, some definitions found in the **L&D Manual** have been included; however, definitions found in the **OMUTCD** have not been repeated unless there is a difference noted between the way the term is used for traffic control purposes versus design purposes.

1301-2 Acronyms and Abbreviations

Some of these acronyms and abbreviations may not be used in the **TEM** at this time; however, they are provided here as a convenience since they may appear in other related references.

AAN - American Association of Nurserymen.

AASHTO - American Association of State Highway and Transportation Officials.

ACI - American Concrete Institute.

ADA - Americans with Disabilities Act.

AISC - American Institute of Steel Construction.

AISI - American Iron and Steel Institute.

ANSI - American National Standards Institute.

AREA - American Railway Engineering Association.

ASCE - American Society of Civil Engineers.

ASM - Application Standards Manual. A manual previously published by **OTE** which was incorporated into the **TEM**.

ASME - American Society of Mechanical Engineers.

ASTM - American Society of Testing and Materials.

ATSSA - American Traffic Safety Services Association.

AWG - American Wire Gauge.

AWS - American Welding Society.

AWWA - American Water Works Association.

AWPA - American Wood Preservers' Association.

CGM - **Construction Guidelines Manual**. A manual which was previously published by **OTE** which was incorporated into the **TEM**.

DDD - **ODOT District Deputy Director**.

CADD - Computer-Aided Drafting and Design. See **Section 1301-3** for additional information.

CMS - **Construction and Materials Specifications Book**. See **Part 1** for additional information.

EI - Edison Electric Institute.

EPA - Environmental Protection Agency.

FHWA - Federal Highway Administration, Department of Transportation.

FSS - **Federal Specifications and Standards** from the **General Services Administration**.

GLCT - Great Lakes Circle Tour. See **Part 2** for additional information.

GSDM - **Guide Sign Design Manual (also known as the Design Manual for Directional Guide Signs)**. A manual previously published by **OTE**. The information is now located in Appendix C of the **Sign Design Manual**, which is incorporated by reference into the **TEM**.

HCM - **Highway Capacity Manual**.

IEEE - Institute of Electrical and Electronic Engineers.

IES - Illuminating Engineering Society.

IMSA - International Municipal Signal Association.

IPCEA - Insulated Power Cable Engineers Association.

ISSA - International Slurry Seal Association.

ITS America - Intelligent Transportation Society of America

ITE - Institute of Transportation Engineers.

L&D Manual - **Location and Design Manual**. A three-volume set of design manuals published by the **Office of Roadway Engineering Services** (Volume One), the **Office of Structural Engineering** (Volume Two) and the **Office of Production** (Volume Three).

LECT - Lake Erie Circle Tour. See **Part 2** for additional information.

LOS - Level of Service. See *Section 1301-3* and the **L&D Manual Volume One**, for additional information.

L.C.L. - Light Center Length. See *Section 1301-3* for additional information.

LEO - Law Enforcement Officer.

LPA - Local Public Agency.

LTAP - Local Transportation Assistance Program. See *Section 1301-3* for additional information.

MUTCD - Manual on Uniform Traffic Control Devices. This manual, published by **FHWA**, is described in *Section 193-10*.

NCUTCD - National Committee on Uniform Traffic Control Devices. See *Section 1301-3* for additional information.

NEMA - National Electrical Manufacturers Association. See *Section 1301-3* for additional information.

OCA - Office of Construction Administration.

ODNR - Ohio Department of Natural Resources.

ODOT - Ohio Department of Transportation.

OMUTCD - Ohio Manual of Uniform Traffic Control Devices. See *Section 101* for additional information.

OPI - Ohio Penal Industries.

ORC - Ohio Revised Code.

ORDC - Ohio Rail Development Commission.

OSHA - Occupational Safety and Health Administration.

OTE - Office of Traffic Engineering.

O.L. - Overall Length. See *Section 1301-3* for additional information.

PIS - Plan Insert Sheets. See *Section 104* for additional information.

PS&E - Plans, Specifications & Estimates. See *Section 1301-3* for additional information.

RAM - Random Access Memory. See *Section 1301-3* for additional information.

REA - Rural Electrification Administration

ROM - Read Only Memory. See *Section 1301-3* for additional information.

RPM - Raised Pavement Marker. See *Section 1301-3* for additional information.

SCD - Standard Construction Drawing. See **Section 1301-3** for additional information.

SDM - **Sign Design Manual**. The **Standard Sign Design Manual** is described in **Section 295-2**.

SHS - **Standard Highway Signs**. This manual, published by **FHWA**, is described in **Section 193-15**.

SOP - Standard Operating Procedure.

SSPC - **Steel Structures Painting Council**.

SLD - Straight Line Distance. See **Section 1301-3** for additional information.

SLM - Straight Line Mileage. See **Section 1301-3** for additional information.

TCD - Traffic Control Device.

TCDIM - **Traffic Control Design Information Manual**. A manual previously published by **OTE** which has been incorporated into the **TEM**.

TCP - Traffic Control Plan.

TEM - **Traffic Engineering Manual**.

TODS - Tourist Oriented Directional Signs. See **Section 1301-3** and **Part 2** for additional information.

TRPM - Temporary Raised Pavement Marker.

UL - **Underwriters' Laboratories, Inc.**

1301-3 Words and Phrases

OMUTCD Section 1A.13 defines various terms used in that manual and herein. When the source of the definition is the **ORC** (usually **Section 4511.01**), the definition is shown in italics and the **ORC** section number is noted. The following list is intended to provide definitions of words and phrases not currently defined in the **OMUTCD**.

Some of the definitions in this section will be incorporated into the **OMUTCD**; however, most of them are more detailed than needed for the **OMUTCD**. The source for most of these definitions was the **Construction Guidelines Manual**, previously published by **OTE** and now incorporated into the **TEM**. When definitions have been taken from other sources, such as the national **Manual on Uniform Traffic Control Devices (MUTCD)** and the **ODOT L&D Manuals**, they have been identified by a cross-reference.

Also, some of the terms noted herein may have different meanings depending on the context in which they are used. Clarification has been provided as needed.

Adaptation - The process by which the retina becomes accustomed to more or less light than it was exposed to during an immediately preceding period.

Adjustable Signal - A signal head having the signal faces mounted in the support hardware so that each face may be adjusted or "aimed," as required to present the indication to approaching traffic.

Alternate Bid - A bid process in which both a generic bid and a proprietary bid are taken for the same item of equipment or work. The maintaining agency may choose which bid to accept; however, if the agency chooses the proprietary bid and it is higher than the generic bid, it must use its own funds for 100 percent of the cost difference.

Amplifier - A device that is capable of intensifying the electrical energy produced by a sensor.

Analog Controller - A controller with a method of timing that measures continuous variables such as voltage or current.

Arterial Highway (or Street) - For traffic engineering purposes (**ORC 4511.01 and OMUTCD**), any U.S. or State numbered route, controlled-access highway, or other major radial or circumferential street or highway designated by local authorities within their respective jurisdictions as part of a major arterial system of streets or highways.

For design purposes, a functional classification for a facility primarily used for through traffic, usually on a continuous route (**L&D Manual Volume One**).

Attenuator (Crash Cushion) - Protective device that prevents errant vehicles from impacting a fixed object by gradually decelerating or redirecting the vehicle (**L&D Manual Volume One**).

Auto-Manual Switch - See **Switch, Auto-Manual**.

Auxiliary Equipment - Separate control devices used to add supplementary features to a signal controller.

Balance Adjuster - A device used to permit alignment of the point of suspension with respect to the center of gravity of the signal head so that the signal will hang vertically.

Ballast - An auxiliary device used with vapor lamps, on multiple circuits, to provide proper operating characteristics. It limits the current through the lamp, and may also transform voltage.

Ballast Mounting - Ballast shall be mounted within the luminaire housing (integral).

Bandwidth - The amount of green time available to a platoon of vehicles in a progressive signal system. This is also referred to as through band.

Barrier - A longitudinal device used to shield drivers from natural or manmade obstacles along the roadway. Occasionally used to protect others (pedestrian, bicyclists, etc.) from vehicular traffic (**L&D Manual Volume One**).

Barrier (Compatibility Line) - A reference point in the preferred sequence of a multi-ring controller unit at which all rings are interlocked. Barriers assure there will be no concurrent selection and timing of conflicting phases for traffic movement in different rings. All rings cross the barrier simultaneously to select and time phases on the other side (NEMA).

Barrier Clearance - The distance required between the face of a barrier and the face of an obstacle to permit adequate shielding (**L&D Manual Volume One**).

Barrier Curb - See **Curb, Vertical**.

Base Plates - In sign support breakaway connections, plates welded onto each beam half with skewed notches for torqued bolts so as to permit the plates to part under vehicle impact.

Bead Flotation - The ability of glass beads to assume a hemispheric secured position when dispensed onto the surface of the freshly applied pavement markings.

Beam Candlepower - The intensity of a beam forming light source expressed in candelas measured in a given direction.

Beam Spread - The angle between the two directions in the plane in which candlepower is equal to a stated percent (usually 10 percent) of maximum candlepower in the beam.

Beam-Type Support - See **Support, Beam-Type**.

Bearing Plate - A formed steel plate installed between a flatsheet sign and its mounting post so as to reinforce the sign.

Bid, Alternate - See **Alternate Bid**.

Bid, Generic - See **Generic Bid**.

Bid, Proprietary - See **Proprietary Bid**.

Binder - Resins and liquids used to combine dry ingredients into a formulation of pavement marking materials.

Bleeding - A condition where asphalt pavement surfaces soften to a point where released oils appear as strains in the marking.

Bracket Arm - A signal bracket, for bracket-mount applications, of tubular construction through which wiring can be passed to provide electrical connection of the signal faces.

Breakaway Beam-Type Support - See **Support, Breakaway Beam-Type**.

Burning position - Physical positioning of the lamp in the traffic signal. Normally, traffic signal lamps are used in horizontal burning position.

Cable - A group of separately insulated wires in a common jacket.

Cable Entrance Adapter - A device of tubular construction which is used between the span wire hanger and the traffic signal to provide for passing signal cable into the head.

CADD (Computer-Aided Drafting and Design) - The preferred method of preparing construction plans for the ODOT. ODOT has adopted MicroStation as its standard CADD software package and has developed various CADD standards to ensure plan uniformity.

Call - A registration of demand for right-of-way by traffic (vehicular or pedestrian) at a signal controller.

Calling Detector - A detector that is installed in a selected location to detect vehicles which may not otherwise be detected, and whose output may be modified by the controller unit.

Calling Relay - A detector relay which will allow a detector actuation to be transferred to the controller only when certain signal displays are occurring.

Camber - An upward curve in horizontal structural members so that when erected and under dead weight a horizontal position or slightly upward curve will result.

Camshaft - A device consisting of a stack of programmed cams operated by a drive motor for intermittent advancement in increments to cause contacts to open or close, thus causing the required signals to be energized.

Candela (cd) - The unit of luminous intensity; one candela is defined as the luminous intensity of 1/60th of one square centimeter of projected area of a blackbody radiator operating at the temperature of solidification of platinum.

Candlepower - Luminous intensity expressed in candelas.

Cantilever Support - See **Support, Cantilever**.

Carryover (Extended) Output - The ability of a detector to continue its output for a predetermined length of time following an actuation.

Catch Basin - A structure for intercepting flow from a gutter or ditch and discharging the water through a conduit (**L&D Manual Volume Two**).

Centerline of Construction - The reference line used for construction of a project. Normally located at the median centerline on a divided highway or at the normal crown point location on an undivided highway (**L&D Manual Volume Three**).

Centerline of Right-of-Way - The reference line used for the right-of-way of a project. Normally located at the center of a highway's existing right-of-way (**L&D Manual Volume Three**).

Centerline of Survey - The reference line used in the field survey of a project. Although it is usually the same as the centerline of construction, it may be a separate survey line established for convenience. With modern surveying instruments, surveys are no longer completed based on a centerline of survey (**L&D Manual Volume Three**).

Center-Mount Support - See **Support, Center-Mount**.

Centralized Control Signal System - A system in which all control functions are controlled by a computer with direct communication to each local intersection controller without using the intermediate control and processing of a master controller.

City - A municipal corporation having a population of 5,000 or more persons (**ORC Section 703.1**).

Classification Detector - A detector that has the capability of differentiating among types of vehicles.

Clear Zone - The area along a highway beyond the edge of pavement and available for safe use by errant vehicles (**L&D Manual Volume One**).

The total roadside border area, starting at the edge of the traveled way, that is wide enough to allow an errant driver to stop or regain control of a vehicle. This area might consist of a shoulder, a recoverable slope, and/or a nonrecoverable, traversable slope with a clear run-out area at its toe (**OMUTCD**).

Cloverleaf Interchange - An interchange with loop ramps and outer ramps for directional movements. A full cloverleaf has ramps in every quadrant (**L&D Manual Volume One**).

Collector Highway (or Street) - A functional classification for a facility in an intermediate

functional category connecting smaller local road or street systems with larger arterial systems (**L&D Manual Volume One**).

A term denoting a highway that in rural areas connects small towns and local highways to arterial highways, and in urban areas provides land access and traffic circulation within residential, commercial and business areas and connects local highways to the arterial highways (**OMUTCD**).

Coefficient of Utilization (CU) - Ratio of luminous flux (lumens) received on the work area to the rated lumens emitted by the lamp.

Collector-Distributor (C-D) - A directional roadway adjacent to a freeway used to reduce the number of conflicts (merging, diverging and weaving) on the mainline facility (**L&D Manual Volume One**).

Commercial Activity - For purposes of defining Tourist Oriented Activity for the TODS program, this is defined as a farm market, winery, a bed and breakfast, lodging that is not a franchise or part of a national chain, antiques shop, craft store, or gift store.

Computed Initial Portion (Added Initial Portion, Variable Initial Portion) - An initial portion which is added to the minimum actuations on volume density timed controllers.

Computer - A device capable of accepting information, applying prescribed processes to the information and supplying results of these processes. It usually consists of input and output devices, storage, arithmetic and logic units, and a control unit.

Computer Program - A series of instruction or statements in a form acceptable to the computer which will achieve a certain result.

Concurrent timing - See **Dual-ring Controller**.

Conduit - An artificial or natural channel; usually a closed structure such as a pipe (**L&D Manual Volume Two**).

Condulet - A fitting connected to solid or flexible electrical conduit to direct the routing path and containing a removable cover for wire pulling.

Conflicting Phases - Two or more signal phases which will cause interfering, or conflicting, traffic movements if operated concurrently.

Congestion Detection - A system of hardware and software designed and operated to provide data on the level of traffic congestion in the area being detected.

Contact, Signal Circuit - A device arranged to energize or de-energize signal light circuits during a specified interval.

Continuous Presence Mode - Detector outputs continue if any vehicle (first or last remaining) remains in the field of influence.

Controller (Controller Assembly) - A complete electrical or electronic device mounted in a cabinet for controlling the operation of a traffic signal (**OMUTCD**).

Controller, Local Intersection - See **Local Intersection Controller**.

Controller, Master - See **Master Controller**.

Controller, Traffic-Actuated - See **Traffic-Actuated Controller**.

Construction Limits - Lines shown on a plan view that outline the lateral extent of the work. Typically placed 4 feet (1.2 meters) outside the point where the backslope touches the existing ground unless additional room is required for construction activities (**L&D Manual Volume Three**).

Controlled Access - Highway right-of-way where preference is given to through traffic. In addition to access connections with selected public roads, there may be some private drive connections (**L&D Manual Volume One**).

Controlled-Access Highway (Partial Control of Access) - Every highway, street or roadway in respect to which owners or occupants of abutting lands and other persons have no legal right of access to or from the same except at such points only and in such manner as may be determined by the public authority having jurisdiction over such highway, street or roadway (**ORC 4511.01 and OMUTCD**).

Converging Roadway - Separate and nearly parallel roadways or ramps which combine into a single continuous roadway or ramp having a greater number of lanes beyond the nose than the number of lanes on either approach roadways (**L&D Manual Volume One**).

Coordinator (Coordination Unit) - A device used to interrelate the timing of one controller to others in a traffic signal system.

Coordination - See **Signal Coordination**.

Crash Cushion - See **Attenuator**.

Crashworthy - A characteristic of a roadside appurtenance that has been successfully crash tested in accordance with a national standard such as the National Cooperative Highway Research Program Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features" (**MUTCD**).

Culvert - A structure, as distinguished from a bridge, which is usually covered with embankment and is composed of structural material around the entire perimeter, although some are supported on spread footings with the streambed serving as the bottom of the culvert. Also, a structure which is 20 feet (6.1 meters) or less in roadway centerline length between extreme ends of openings for multiple cell structures (**L&D Manual Volume Two**).

Curb, Sloping - Sloping curbs are designed so vehicles can cross them readily when the need arises. They are low with flat sloping faces. Total curb height should not exceed 6 inches (150 millimeters). Formerly called Mountable Curb (**AASHTO**).

Curb, Vertical - Vertical curbs may be either vertical or nearly vertical and are intended to discourage vehicles from leaving the roadway. The curb height ranges from 6 to 8 inches (150 to 200 millimeters). Formerly called Barrier Curb (**AASHTO**).

Cycle - Any complete sequence of signal indications.

Cycle Selection Switch - A device which when operated discontinues automatic selection of cycle unit with associated split(s) and offset(s) and permits manual selection of another cycle unit.

Daylight Reflectance - The measure of daylight reflected from a pavement marking for the enhancement of visibility.

Decoder - A mechanism for translating a code into its various components.

Decision Sight Distance - The distance required for a driver to detect an unexpected or otherwise difficult-to-perceive information source or hazard in a roadway environment that may be visually cluttered, recognize the hazard or its threat potential, select an appropriate speed and path, and initiate and complete the required maneuver safely (**L&D Manual Volume One**).

Dedicated Lines - Communication lines used solely to interconnect two or more intersections.

Delayed Output - The ability of a detector to delay its output for a predetermined length of time during an extended actuation.

Delay Relay - A detector relay which will provide an actuation only after the relay has been continuously energized for a set period of time.

Delineator - A retroreflective device mounted on the roadway surface or at the side of the roadway in a series to indicate the alignment of the roadway, especially at night or in adverse weather (**MUTCD**).

Demand - The need for service, e.g., the number of vehicles desiring to use a given segment of roadway during a specified unit of time.

Demountable Copy - Sign copy made up of separate letters, digits, symbols, shields and border sections which are riveted or bolted to the sign panel and which may be readily removed.

Density - A measure of the number of vehicles per unit length of roadway; a measure of the concentration of vehicles usually stated as the number of vehicles per mile (kilometer) per lane.

Department - The **Ohio Department of Transportation**.

Design Exception - A document which explains the engineering reasons for allowing certain design criteria to be relaxed in extreme unusual circumstances (**L&D Manual Volume One**).

Design Hour - The 30th highest hourly volume of the design year (**L&D Manual Volume One**).

Design Hourly Volume - The total volume of traffic in the design hour, usually a forecast of peak hour volume, measured in vehicles per hour (**L&D Manual Volume One**).

Design Speed - The maximum safe speed that can be maintained over a specified section of highway when conditions are so favorable that the design features of the highway govern (**L&D Manual Volume One**).

Destination Signs - Signs providing distance and/or directional information to a city, village or other objective.

Detectable - Having a continuous edge within 150 mm (6 in) of the surface so that pedestrians who have visual disabilities can sense its presence and receive usable guidance information (**MUTCD**).

Detections - The process used to identify the presence or passage of vehicles at a specific point or to identify the presence of one or more vehicles in a specific area.

Detector Modes - A term used to describe the duration of detector output when a detection occurs.

Diagnostic - (1) Pertaining to the detection, discovery and further isolation of a malfunction or mistake; (2) A program that facilitates computer maintenance by detection and isolation of malfunctions or mistakes.

Diamond Interchange - The simplest and most common type of interchange, formed when one-way diagonal ramps are provided in each quadrant and left turns are provided on the minor highway (**L&D Manual Volume One**).

Diffuser - A device to redirect or scatter the light from a source, primarily by the process of diffuse transmission.

Digital Controller - A controller wherein timing is based upon a defined frequency source such as a 60-hertz alternating power source.

Digital Timing - See **Timing, Digital**.

Dilemma Zone - The range of distances from the Stop Line within which drivers are indecisive as to whether to stop or proceed through the intersection when the traffic signal indication changes from green to yellow. Distances are dependent upon travel speed.

Directional Interchange - An interchange, generally having more than one grade separation, with direct connections for all movements (**L&D Manual Volume One**).

Direct Applied Copy - Sign copy cut from sheeting material and applied to the sign surface by a coated adhesive.

Direct Glare - Glare resulting from high brightnesses or insufficiently shielded light sources in the field of view or from reflecting areas of high brightness.

Direct Wire - A communications medium which uses hardware interconnect between the transmission and reception points.

Directional Detector (or Relay) - A detector that is capable of being actuated only by vehicles proceeding in one specified direction.

Directional Relay - A relay connected with detectors and designed to actuate only when traffic has crossed the detectors in a certain direction.

Disability Glare - Glare which reduces visual performance and visibility and which is often accompanied by discomfort.

Discomfort Glare - Glare which produces discomfort. It does not necessarily interfere with visual performance or visibility.

Disconnect Hanger - A mounting device for quick detachment or attachment of a signal head.

Distributed Control Signal System - A system in which all control functions are controlled by a master controller which is connected to all local intersections under its control. The master controller is typically located at an on-street location near the local intersection it controls. The master controller is connected to a computer to enable an operator to control, monitor and produce reports from each master controller database.

Divergence Angle - The angle at a reflective surface between a light ray striking the surface and an observer's line of sight.

Diverging Roadway - Where a roadway branches or forks into two separate roadways without the use of a speed change lane (**L&D Manual Volume One**).

Down Time - The time during which a device is unavailable for normal operation.

Drop-on Beads (Surface Applied Beads) - Glass beads dispensed concurrently with wet or molten marking material placement so that the beads are held on the surface to provide instantaneous reflectorization.

Dual Entry - See **Entry, Dual**.

Dual-ring Controller - A controller containing two interlocked rings which are arranged to time a preferred sequence and to allow concurrent timing of both rings, subject to the restraint in the Barrier (Compatibility Line).

Dummy Interval - A redundant interval in the cam switching mechanism incorporated so as to allow the total number of intervals in the cycle to correspond integrally with the total number of intervals provided on the cam switching mechanism.

Dwell - See **Rest**.

Edge of Pavement - See **Pavement Edge**.

Electromechanical Controller - A controller which is characterized by electrical circuits using relays, step switches, motors, etc.

Electromechanical Electronic Controller - A controller combining electromechanical components and electronic timing circuits comprised of vacuum electronic tubes, resistors, capacitors and inductors, etc.

Emergency-Traffic Signal - A special adaptation of a traffic control signal to obtain the right-of-way for an authorized emergency vehicle.

Encoder - A device which converts data into a form for transmission over the communication link between two points in a system.

Entrance Ramp Approach Signs - Signs at a freeway or expressway interchange providing state route identification and directional information.

Entry, Dual - A mode of operation (in a dual-ring controller) in which one phase in each ring must be in service. If a call does not exist in a ring when it crosses the barrier, a phase is selected in that ring to be activated by the controller in a predetermined manner.

Entry, Single - A mode of operation (in a dual-ring controller) in which a phase in one ring can be selected and timed alone if there is no demand for service in a non-conflicting phase on a parallel ring.

Epoxy Markings - A mixture of epoxy resin and polymeric curing agent blended in a nozzle and spray applied to the pavement.

Expressway - For purposes of the traffic control standards (**ORC 4511.01 and OMUTCD**), "a divided, arterial highway for through traffic with full or partial control of access with an excess of fifty percent of all crossroads separated in grade."

For design purposes (**L&D Manual Volume One**), “a divided, arterial highway with full or partial control of access and generally with grade separations at major intersections.”

Extendible Portion (Extensible Portion) - That portion of the green interval on an actuated phase following the initial portion which may be extended by traffic actuations.

Extension Detector - A detector that is arranged to register actuation at the controller only during the green interval for that approach so as to extend the green time of the actuating vehicles.

Extension Interval (Gap) - The timing interval during the extendible portion which is resettable by each detector actuation. The green right-of-way of the phase may terminate on expiration of the unit extension time.

Extension Limit - See **Limit, Extension**.

Extruded Markings - Pavement markings applied in a plastic state by means of a shaping die.

Extrusheet Sign - See **Sign, Extrusheet**.

Field Terminal Blocks - See **Terminal Blocks, Field**.

Filament - The electrical resistance element heated to incandescence by electric current.

Fill Slope - See **Foreslope**.

Filler - An ingredient adding bulk to the formulations of pavement marking materials.

Flash Control Switch - See **Switch, Flash Control**.

Flasher Controller - A complete electrical mechanism with cabinet for flashing a traffic signal or beacon.

Flatsheet Sign - See **Sign, Flatsheet**.

Footcandle (fc) - The unit of illumination when the foot is the unit of length; the illumination on a surface one square foot in area on which there is a uniformly distributed flux of one lumen. It equals one lumen per square foot.

Footlambert (fl) - The unit of brightness equal to the uniform brightness of a perfectly diffusing surface emitting or reflecting light at the rate of one lumen per square foot. On a roadway, it equals the illumination in footcandles multiplied by the reflection factor of the surface.

Force Account - The direct performance of highway construction work by a highway agency, a railroad company or a public utility company by use of labor, equipment, materials and supplies furnished by them and used under their direct control.

For a construction project, force account is defined as a basis of payment for the direct performance of highway construction work with payment based on the actual cost of labor, equipment and materials furnished.

Force Off - A command to the controller that will force the termination of the current right-of-way interval during the extendible portion.

Force Skip - See **Omit, Phase**.

Foreslope - The slope from the edge of the graded shoulder to the bottom of the ditch. Also, called Fill Slope (**L&D Manual Volume One**).

Freeway - For traffic control purposes (**ORC 4511.01 and OMUTCD**), "a divided multi-lane highway for through traffic with all crossroads separated in grade and with full control of access."

For design purposes (**L&D Manual Volume One**), "an expressway with full access control and no at-grade intersections."

Full-Actuated Controller - A type of actuated controller in which means are provided for traffic actuation on all approaches to the intersection.

Full-circle Tunnel Visor - A visor which encircles the entire lens.

Functional Classification - The grouping of highways by the character of service they provide (**L&D Manual Volume One**).

Fuse Plate - See **Plate, Fuse**.

Gap, Maximum - The maximum time on volume-density timed controllers allotted for vehicles to proceed through the intersection. The interval portion is decreased to a fixed minimum in proportion to traffic demands.

Gap, Minimum - The lower limit to which the extendible portion of the extension time may be decreased on volume-density timed controllers.

Gap Reduction - A feature in volume-density controllers whereby the unit extension in the phase having the green is reduced in the extendible portion of the interval in proportion to the time vehicles have waited on the phase(s) having the red.

General Notes - A portion of a highway plan containing those plan notes required to clarify construction items not adequately covered by the specifications or plan details (**L&D Manual Volume Three**).

General Summary - A portion of a highway plan used to summarize the total estimated quantities with complete pay item descriptions, item numbers and funding splits (**L&D Manual Volume Three**).

Generic (or Generic Bid) - Specified by a generalized material or performance specification without reference to a manufacturer's brand name or registered trademark.

Generic Motorist Service Signing - Symbolic or word message signs shown in the **OMUTCD** which indicate the type of service, but not the specific name of the facility.

Glare - The sensation produced by brightnesses within the visual field that are sufficiently greater than the luminance to which the eyes are adapted to cause annoyance, discomfort, or loss in visual performance and visibility.

Glare Screen - A device used to reduce the amount of headlight glare resulting from opposing traffic (**L&D Manual Volume One**).

Glare Shield - A nonreflective vertical extension of a sign designed to mask the direct rays of sign lighting fixtures from the eyes of drivers approaching on the opposing roadway.

Glass Beads - Small spheres which, when exposed on a pavement marking surface, act as refracting and reflecting elements which return light back to its source.

Glint - The reflection of light from a specular surface.

Gradation - The classification of particle size distribution of dry material as determined by the passage or retention of portions of a specimen on standard sieves.

Graded Shoulder - The area located between the edge of the pavement and the foreslope (**L&D Manual Volume One**).

Green Interval (Right-of-way) - The operation of a controller in causing traffic signals to display indications permitting vehicles or pedestrians to proceed in a lawful manner in preference to other vehicles or pedestrians.

Ground-Mounted Support - See **Support, Ground-Mounted**.

Headlight Sight Distance - The stopping sight distance required on an unlighted sag vertical curve (**L&D Manual Volume One**).

Headwall - The structural appurtenance placed at the end of a culvert to control an adjacent highway embankment and protect the culvert end from undercutting (**L&D Manual Volume Two**).

Hiding Power - The degree of opaqueness of a marking in masking underlying pavement shades.

Hinge Plate - See **Plate, Hinge**.

Hold - A command to the signal controller which causes it to retain the existing right-of-way interval.

Horizontal Sight Distance - The sight distance available in consideration of various horizontal alignment features, such as, degree of curvature and the horizontal distance to roadside obstructions (**L&D Manual Volume One**).

Hybrid Control Signal System - Incorporates features of both the Centralized and Distributed Control Signal Systems.

Illumination (Illuminance) (E) - The density of luminous flux incident on a surface; the quotient of the flux divided by the area of the surface, when the flux is uniformly distributed.

Impact Resistance - The toughness of a material in resisting deformation and fracture due to a striking blow.

Indicator Lights - Visual aides showing actuations and timing of intervals or phases on a controller for the purpose of programming inspection and maintenance.

Inherently Low Emission Vehicle (ILEV) - Any kind of vehicle that is certified by the U.S. Environmental Protection Agency and that because of inherent properties of the fuel system design, will not have significant evaporative emissions, even if its evaporative emission control system has failed.

Initial Portion - The first timed portion of the green interval in an actuated controller.

Inlaid Markings - Markings of preformed material pressed into the surface of newly placed asphalt concrete pavement.

In-mixed Beads (Premixed Beads) - Glass beads distributed uniformly through a pavement marking material to provide continuous reflectorization as the material wears away.

Interconnect - The traffic signal communication network connecting the system master with local intersection controllers.

Interconnected Controller - A controller which operates traffic signals under the supervision of a master controller.

Interface - A common boundary at which two separate systems or portions of each join or interact. An interface can be mechanical, as in adjoining hardware surfaces, or it can be electrical, as in signal level transformation points. Moreover, it can also refer to human and machine interface and the interaction between man and computer.

Interlock - A feature of electromechanical controllers which maintains the timing dial in step with the camshaft.

Intersection Sight Distance - The distance needed along the main roadway for a car entering from a cross road to make a left turn onto the main roadway while clearing traffic approaching from the left (**L&D Manual Volume One and TEM Part 2**).

Interstate - Those roadways on the Federal System which have the highest design speeds and the most stringent design standards (**L&D Manual Volume One**).

Interval Sequence - The order of appearance of signal indications during successive intervals of a cycle.

Interval Sequence Chart - A chart designating the order in which the phases of a cycle occur and the associated signal display for each interval.

Item Code - A nine-digit character used to catalogue pay item descriptions (**L&D Manual Volume Three**).

Item Master - A list of acceptable item codes and their corresponding pay item descriptions and units of measure (**L&D Manual Volume Three**).

Jack - A receptacle in a controller cabinet in which a plug-in device may be inserted.

Lamp - The part of the optical unit which, when energized electrically, provides the optical unit light source.

Lamp Lumen Depreciation Factor (LLD) - The multiplier to be used in illumination calculations to relate the initial rated output of light sources to the anticipated minimum rated output based on the relamping program to be used.

Lateral Clearance - The distance measured horizontally from the edge of pavement to the face of an object (parapet, abutment, pier, wall, etc.) (**L&D Manual Volume One**).

Lead-in Cable - The electric cable which serves to connect the sensor to the input of the detector unit.

Legal Speed - The legislated or agency authorized maximum speed limit on a section of roadway (**L&D Manual Volume One**).

Legend - Word messages or symbols used on signs to cover specific meanings.

Lens - That part of the optical unit through which light from the light source and reflector passes, and in so doing, is redirected into a prescribed pattern and is filtered to a prescribed color.

Level of Service (LOS) - A qualitative measure describing the operational flow of traffic (**L&D Manual Volume One**).

Light - A form of radiant energy (such as emitted by the sun). For purpose of illuminating engineering, the energy is evaluated according to its capacity to produce visual sensations. Measurements are based upon a unit of luminous intensity equal to the light emitted by a "standard candle" in a horizontal direction.

Light Center Length (L.C.L.) - The dimension, in inches (millimeters) from the center of the filament to the top of the base (including solder on the base eyelet).

Light Sensitive Detector - A detector that uses a light-sensitive device for sensing the passage of an object interrupting a beam of light directed at the sensor.

Lighting Pole - A support provided with necessary internal attachments for wiring and external attachments for bracket and luminaire.

Limit, Extension - The maximum time of the extendible portion for which actuations on any traffic phase may retain the right-of-way after actuation on an opposing traffic phase.

Limit, Maximum - The maximum green time after an opposing actuation, which may start in the initial portion.

Limited Access (Full Control of Access) - Highway right-of-way where rights of access of properties abutting the highway are acquired, such that all access to and from the highway are prevented except at designated locations (**L&D Manual Volume One**).

Limited Presence Mode - Detector output continues for a limited period of time if vehicles remain in field of influence.

Load Switch - A device used to switch power to the signal lamps.

Local Transportation Assistance (LTAP) Program - LTAP, or Technology Transfer (T2) Centers have been established in each of the states to provide for the transfer of transportation technology and technical assistance to rural and local governments. The mission of the **Ohio LTAP Center** is to provide training, technical assistance, advice and other resources to **Ohio's** local governments, which include cities, counties, townships and villages. The **Ohio LTAP Center** is funded through the **FHWA** and **ODOT**.

Local Intersection Controller - The complete electrical mechanism mounted in a cabinet for controlling signal operation by selecting and timing the various signal head displays. The local intersection controller is located at the individual intersection site.

Local Road - A functional classification used for rural roadways whose primary function is to provide access to residences, businesses or other abutting properties (**L&D Manual Volume One**).

Local Street - A functional classification used for urban roadways whose primary function is to provide access to residences, businesses or other abutting properties (**L&D Manual Volume One**).

Logo Sign Panel - A reflectorized sign mounted on the **Specific Service Sign** showing the trademark logo, non-trademark logo, legend message or combination thereof for a motorist service available on a crossroad at or near an interchange.

LOGO Program - The Ohio Logo Signing Program, also known as the Specific Service Sign Program, permits eligible businesses which provide gas, food, lodging, or camping services to drivers to have their logos placed on specific service (logo) signs. See **Part 2** for additional information.

Longitudinal Joint - A pavement joint, in the direction of traffic flow, used to control longitudinal cracking on a rigid pavement or the joint formed between adjacent passes of a paver on a flexible pavement (**Pavement Design & Rehabilitation Manual**).

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

Lumen (lm) - The unit of luminous flux; equal to the flux in a unit solid angle (one steradian) from a uniform point source of one candela. Traffic signal lamp output is rated in lumens.

Luminance (brightness) RATIO - The ratio between the luminances of any two areas in the visual field.

Luminaire - The complete lighting unit consisting of a lamp or lamps together with the parts designed to distribute the light, to position and protect the lamps, and to connect the lamps to the power supply.

Luminaire Dirt Depreciation Factor (LDD) - The multiplier to be used in illumination calculations to relate the initial illumination provided by clean new luminaires to the reduced illumination that they will provide due to direct collection on the luminaires at the time at which it is anticipated that cleaning procedures will be instituted.

Luminaire Efficiency - The ratio of the luminous flux leaving a luminaire to that emitted by the lamp or lamps used therein.

Luminaire Support - A bracket or mast arm attachment to a lighting pole from which a luminaire is suspended.

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.

Maintenance Factor (MF) - The product of the lamp lumen depreciation factor and the luminaire dirt depreciation factor ($MF = LLD \times LDD$).

Manual Operation - The operation of a controller assembly by means of a hand-operated device(s) (manual pushbutton).

Manual Pushbutton - An auxiliary device for hand operation of a controller.

Mast Arm - A structural support over the roadway extending from a pole, for the purpose of supporting signal heads.

Mast Arm, Flexible Mount - A mast arm mount where the signal head is attached to the mast arm by a flexible joint and connector to permit "free swinging" between the signal and the mast arm.

Mast Arm, Rigid Mount - A mast arm mount where the signal head is rigidly affixed to the mast arm to prevent any relative movement between the signal and the arm.

Master Control - Centrally located equipment designed to supervise a number of intersections and used to select programs on secondary control equipment to best suit traffic needs.

Master Controller - An automatic device for supervising a system of secondary controllers, maintaining definite time interrelationship, selecting among alternate available modes of operations or accomplishing other supervisory functions.

Master Coordinator - A coordinator used to provide synchronization and selection of programs on secondary coordinators or pretimed controllers to maintain a traffic system.

Master-secondary Controller - A controller for operating a traffic signal and for providing supervision of other interconnected (secondary) controllers.

Maximum Green - The maximum time right-of-way can be extended by actuation on a phase provided an actuation has been registered on a conflicting phase.

Maximum Initial Portion - The limit of the computed initial portion on volume density timed controllers.

Maximum Limit - See **Limit, Maximum**.

Memory, Locking - The retention of an actuation for future utilization by the controller.

Memory, Nonlocking - A mode of actuated-controller operation which does not require detector memory.

Mercury Vapor Luminaire - A lighting unit containing a mercury vapor lamp mounted within a housing with a metal frame, glass lens and a reflector.

Microprocessor - A device which uses the flexibility of computer electronics on a limited scale. Microprocessors are basically microminiaturized CPUs (Central Processing Units).

Minimum Green - (1) The shortest time for which the right-of-way shall be given to a non-actuated phase; (2) The shortest time for which the right-of-way shall be given to an actuated phase provided an actuation has been registered for that phase.

Minimum "Initial" Lumens - A minimum value of initial light output below which no more than a specified percentage of individual lamps will be permitted.

Minimum Initial Portion (Fixed Initial Portion) - A fixed preset first interval portion of the right-of-way on volume-density controllers.

Minor Movement Controller - A device that can be used with a controller unit to provide subordinate phase timing.

Modular - Equipment which is designed such that functional sections are plug-in circuit boards and can be readily exchanged with similar units.

Modular Controller, by Function - Controllers constructed so that additional functional capabilities may be provided by the addition of hardware modules. A single module provides a function(s) for one or more phases in the controller.

Modular Controller, by Phase - A controller constructed so that each timing module is associated with only one independent phase. The addition or removal of modules associated with one phase will not affect the operation of the controller with respect to the other phases.

Motorist Services - Signing for the LOGO program (gas, food, lodging or camping), emergency hospitals, generic motorist services (gas, diesel, food, lodging, camping), tourist information centers, law enforcement agencies and motorist assistance.

Mountable Curb - see **Curb, Sloping**.

Mounting Height (MT. HT.) - The vertical distance in feet (meters) between the roadway surface and the center of the light source in the luminaire.

Movement - The travel direction and destination of a lane or lanes of vehicles at an intersection, i.e. left turn, through or right turn.

Multiplexing - A communications technique which allows more than one item of information to be transmitted or received at essentially the same time.

Municipal Corporation - A city or village.

National Committee on Uniform Traffic Control Devices (NCUTCD) - A private organization of 150 to 200 experts who are involved in the daily operation of highways or streets. The committee meets twice a year to discuss proposed changes to the national **MUTCD**, develop comments, and submit them to **FHWA** for consideration. Its current members are employees of State and local agencies directly involved with traffic engineering activities, or representatives of other organizations who have a major interest in traffic control issues.

National Electrical Manufacturers Association (NEMA) - A national association of signal equipment and electrical component manufacturers that has produced specification standards on traffic signal control equipment to promote compatibility and interchangeability of signal equipment among different manufacturers.

No-Tracking Condition - The degree of solidification of a newly applied marking at which no pickup by vehicle tires occurs.

Noise - Random variations of one or more characteristics of any entity such as voltage, current and data. Generally tending to interfere with the normal operation of a device or system.

Non-actuated Phase - A controller phase with no means for receiving actuations from vehicles and pedestrians.

Non-conflicting Phases - Two or more traffic phases which will not cause interfering traffic movements if operated concurrently.

Nonadjustable Signal (Fixed-faced Signal) - A signal having the faces mounted in a casting so that the indications are presented as a fixed angle.

Noninterconnected (Isolated) Controller - A controller for operating traffic signals not under master supervision.

Normal Design Criteria - The criteria used for the design of new or reconstructed projects (all projects that do not qualify as 3R) (**L&D Manual Volume One**).

Object Marking - A marking intended for use on obstructions within or adjacent to the roadway.

Occupancy - The percentage of roadway occupied by vehicles at an instant in time. In general use it is a measurement based upon the ratio of vehicle presence time (as indicated by a presence detector) over a fixed period of total time.

Occupant - A person driving or riding in a car, truck, bus or other vehicle (**MUTCD**).

ODOT-maintained Highways - All highways under **ODOT's** jurisdiction for which **ODOT** has responsibility for the maintenance.

Offset - The number of seconds or percent of the cycle length that a defined time-reference point (normally the start of major street green) at a traffic signal occurs after the time-reference point of a master controller or an adjacent traffic signal.

Offset Interrupter - A device which will distribute over two or more cycles the time required for large offset changes.

Offset Selection - Choosing one of several possible offsets manually or automatically either by time of day or in response to some directional characteristic of traffic flow.

Omit, Phase (Special Skip, Force Skip) - A command that causes omission of a phase due to lack of an actuation on that phase.

Open-bottom Tunnel Visor - A visor which encircles the entire lens except a segment equal to approximately 2 inches (50 millimeters) of circumference at the bottom of the lens.

Optical Unit - An assembly of lens, reflector, light source, and other components if required, with the necessary supporting parts to be used for providing a single indication.

Optically Programmed Signal - A signal head containing optical units projecting an indication which is selectively veiled as to be visible only within desired viewing boundaries.

Overall Length (O.L.) - The total distance from the tip of the bulb to the tip of the base, including solder on the base eyelet (does not apply to PAR type lamps).

Overlap - A right-of-way indication when the right-of-way is assigned to two or more traffic phases.

Overlay Sign - See **Sign, Overlay**.

Overpass Structure-Mounted Support - See **Support, Overpass Structure-Mounted**.

Panel - A board within the controller cabinet upon which are mounted field terminals, fuse receptacles or circuit breakers and other portions of the controller assembly not included in the controller unit or auxiliary devices.

Parking Control Zone - Part of a roadway in which parking is legally prohibited, restricted or

regulated, as indicated by Regulatory Signs, pavement or curb markings.

Passage (Passage Time) - (1) The time allowed for a vehicle to travel at a given speed from the detector to the nearest point of conflicting traffic; (2) A term functionally equal to and often used interchangeably with **Unit Extension**.

Passage Detection - The ability of a vehicle detector to detect the passage of a vehicle moving through the detection zone and to ignore the presence of a vehicle stopped within the detection zone.

Passing Sight Distance - The visible length of highway required for a vehicle to execute a normal passing maneuver as related to design conditions and design speed (**L&D Manual Volume One**).

Pattern - A unique set of traffic parameters (cycle, split and offset) associated with each signalized intersection within a predefined group of intersections (a section or subzone).

Pavement Edge (Edge of Pavement) - For design purposes, the intersection of the treated or turf shoulder and the mainline pavement (**L&D Manual Volume One**).

Peak Hour - The maximum traffic volume hour of the day (**L&D Manual Volume One**).

Pedestal - A vertical support on top of which the signal or controller cabinet is mounted.

Pedestal Mount - A signal head or controller cabinet mounted on top of a pedestal.

Pedestrian-Actuated Controller - A controller in which intervals such as pedestrian Walk and clearance intervals can be added to or included in the controller cycle by the actuation of a pedestrian detector (pushbutton).

Pedestrian Facilities - A general term denoting improvements and provisions made to accommodate or encourage walking.

Pedestrian Clearance Time - The time provided for a pedestrian crossing in a crosswalk, after leaving the curb or shoulder, to travel to the center of the farthest traveled lane or to a median (**MUTCD**).

Pedestrian Interval (Walk Interval) - A traffic interval allocated to pedestrian traffic which provides a pedestrian right-of-way indication either concurrently with one or more vehicular phases or to the exclusion of all vehicular phases.

An interval during which the Walk (symbol or word) signal indication is displayed. When a verbal message is provided at an accessible pedestrian signal, the verbal message is "walk sign" (**OMUTCD**).

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

Pedestrian Recycle - Any start of pedestrian service after the start of the associated phase GREEN.

Phase - Those right-of-way and clearance intervals in a cycle assigned to any independent movement(s) of vehicle traffic or pedestrians.

Phase Diagram - A diagram illustrating the sequence of phases at an intersection with movement arrows indicated for each phase and showing overlaps, concurrent timing, etc.

Phase Omit - See **Omit, Phase**.

Phase Overlap - Refers to a phase which operates concurrently with one or more other phases.

Phase Sequence - (1) The order in which a controller cycles through all phases; (2) A predetermined order in which the phases of a cycle occur.

Photoelectric Control - An automatic switch controlled by ambient skylight intensity to turn sign or highway lighting on or off according to the changes of night or day.

Pigment - Fine solid insoluble particles which impart color and hiding power to the formulation of marking materials.

Plate, Fuse - In breakaway connections, a plate with notches for torqued bolts positioned over the point where the beam is sawed so that under vehicle impact the bolts will slip out of the notches to allow the beam to bend at the hinge plate on the opposite side.

Plate, Hinge - In breakaway connections, a plate positioned on the opposite side of the beam from the fuse plate and which bends under vehicle impact.

Point Detection - The detection of a vehicle as it passes a point or spot on a street or highway.

Polyester Markings - A mixture of polyester resin and catalyst applied by intermingling sprays to the pavement.

Post-Type Support - See **Support, Post-Type**.

Power Line Switch - See **Switch, Power Line**.

Preferred Sequence - The normal order of signal phase selection within a ring with calls on all phases.

Preemption Control - The transfer of the normal control of signals to a special control mode which may be required by railroad trains at crossings, emergency vehicles, mass transit equipment or other special needs.

Preemption Emitter - A device located on an approaching vehicle that emits a signal that, when detected by the preemption receiver, will change the normal operation of the traffic signals to provide a special sequence of signal displays for the approaching vehicle. The emitters have typically used optics, sound or radio as the signaling form.

Preemption Receiver - A device located at the signalized intersection that receives the preemption emitter signal from an approaching vehicle. In conjunction with a phase selector in the controller cabinet, the received signal causes the intersection controller to change to a predetermined signal display for the approaching vehicle.

Preformed Material - Flexible tape and sheet materials applied to the pavement by an adhesive.

Premarking - The procedure whereby the planned location of pavement marking is referenced or established by offset guide lines to assure correct placement.

Premixed Beads - See **In-Mixed Beads**.

Presence Detection - The ability of a vehicle detector to sense that a vehicle, whether moving or stopped, has appeared in its field.

Pressure Sensitive Detector - A detector that is capable of sensing the pressure of a vehicle passing over the surface of its sensor.

Pretimed Controller - A controller for the operation of traffic signals with predetermined and fixed cycle length(s), interval duration(s) and interval sequence(s).

Probe - The sensor form that is commonly used with a magnetometer-type detector.

Program Selection - The process of selecting the appropriate program for a given set of conditions. It can be accomplished manually or automatically either by time-of-day or in response to some characteristic or traffic flow.

Programmable Read Only Memory (PROM) - A device that stores data which cannot be altered by computer instructions. Data is stored ("burned") into this device externally by an electronic process. Some PROM's can be erased and programmed through special physical processes.

Proprietary Item (or Proprietary Bid) - Specified by reference to a single manufacturer's brand name or registered trademark.

PS&E (Plans, Specifications & Estimate) - A step between plan completion and construction in which ODOT obtains federal authorization to proceed to advertise for receipt of bids.

Pulse Mode - Detector produces a short output pulse when detection occurs.

Radar Detector - A detector that is capable of sensing the passage of a vehicle through its field of emitted microwave energy.

Radio Interference Suppressor - A device inserted in the power line in the controller cabinet that minimizes the radio interference transmitted back into the power supply line, which interference may be generated by the controller unit or other mechanism in the cabinet.

Raised Pavement Marker (RPM) - A nodular iron casting snow plowable in the two opposing longitudinal directions and equipped with a replaceable prismatic retroreflector with one or two prismatic reflective faces. See **CMS Item 721**.

Rake - The initial adjustment of a strain pole out of plumb so that it will be drawn to a vertical position under the span wire tensioning.

Random Access Memory (RAM) - A storage device with both read and write capabilities which will allow random access to stored data.

Rated "Initial" Lumens - The average amount of luminous flux (light) produced by a statistically acceptable sample of lamps on operation at rated voltage after having been seasoned to one-half to one percent of rated life.

Rated Life - The (arithmetic mean) average of burning hours for a sample number of lamps operated at rated volts and defined operating conditions.

Rated Voltage - The nominal or design operating voltage of the lamp; the voltage at which rated

watts, lumens and life are determined.

Rated Watts - The average initial power (watts) consumed when the lamp is operated at rated volts.

Read Only Memory (ROM) - A storage device not alterable by computer instructions, e.g., magnetic core storage with a lockout feature or punched paper tape. ROM requires a masking operation during production to permanently record programs or data patterns in it. Synonymous with nonerasable storage, permanent storage and read-only storage.

Recall - An operational mode for an actuated intersection controller whereby a phase, either vehicle or pedestrian, is displayed each cycle whether demand exists or not. Usually a temporary or emergency situation.

Recall, Maximum Vehicle - With the control activation, right-of-way is returned to the phase for the maximum green limit once during each cycle without the necessity for an actuation.

Recall, Minimum Vehicle - With the control activation, right-of-way is returned to the phase once during each cycle without the necessity of an actuation. Timing is for at least an initial interval portion and may be extended by succeeding vehicles.

Recall, Pedestrian - With the control activation, pedestrian walk and clearance intervals for the phase are timed once during each cycle without the necessity of a pushbutton actuation.

Recall Switch - A manual switch which shall cause the automatic return of the right-of-way to a normally actuated phase regardless of the absence of actuation on that phase.

Reflector - A device used to redirect the luminous flux from a source by the process of reflection

Reflectorization - The enhancement of the night visibility of pavement markings by means of reflective glass beads.

Reflector Unit - A thin plastic unit with rear surface indented so as to redirect light by reflection.

Refraction - The process by which the direction of a ray of light changes as it passes obliquely from one medium to another in which its speed is different.

Refractor - A device used to redirect the luminous flux from a source or a reflector, primarily by the process of refraction

Responsive Mode - A system operation wherein the selection of signal timing programs is based on current traffic data as input by vehicle sensors within the network.

Rest - The interval portion of a phase when present timing requirements have been completed.

Resurfacing, Restoration and Rehabilitation (3R) - Improvements to existing roadways, which have as their main purpose the restoration of the physical features (pavement, curb, guardrail, etc.) without altering the original design elements (**L&D Manual Volume One**).

Resurfacing, Restoration, Rehabilitation and Reconstruction (4R) - Much like 3R, except that 4R allows for the complete reconstruction of the roadway and alteration of certain design elements (i.e., lane widths, shoulder widths, Stopping Sight Distance, etc.) (**L&D Manual Volume One**).

Reverse Screen - A silk screen with openings such that the sign background is deposited and

the legend is not.

Rigid Overhead-Type Support - See **Support, Rigid Overhead-Type**.

Roadside - The area between the outside edge of the graded shoulder and the right-of-way limits (**L&D Manual Volume One**).

Roadway - For traffic control purposes (**ORC 4511.01 and OMUTCD**), "that portion of a highway improved, designed, or ordinarily used for vehicular travel, except the berm or shoulder. If a highway includes two or more separate roadways the term "roadway" means any such roadway separately but not all such roadways collectively."

For design purposes (**L&D Manual Volume One**), "the portion of a highway for vehicle use measured either between the outside edges of the graded shoulders or face to face of guardrail."

Roundabout Intersection - A circular intersection with yield control of all entering traffic, channelized approaches, and appropriate geometric curvature, such that travel speeds on the circulatory roadway are typically less than 30 mph (50 km/h) (**MUTCD**).

Route Markers - Signs which display a Township, County, State, U.S. or Interstate Route number or Bicycle Symbol, designed to be displayed alone or in an assembly, used to identify and mark numbered highway routes; includes various auxiliary markers used in junction assemblies, route turn assemblies and directional assemblies, etc.; also includes signs which incorporate cardinal direction and/or directional information in the body of the sign.

Route Shields - Signs which display a Township, County, State, U.S. or Interstate Route number, designed to be affixed to Guide Signs.

Sag - The amount of deflection at the lowest point of span wire used for the mounting of signal heads.

Sampling Detector - Any type of vehicle detector used to obtain representative traffic flow information.

Sealing Primer - A coating applied to surface areas prior to the placement of pavement markings to obtain proper adhesion.

Secondary Controller (Slave) - A controller which operates traffic signals under the supervision of a master controller.

Secondary Coordinator - A device used to supervise the cycle of an associated traffic actuated controller to permit synchronization and operation allowing passage of platoons of vehicles in a progressive traffic system.

Semi-Actuated Controller - A type of actuated controller in which means are provided for traffic actuation on one or more but not all approaches to the intersection.

Sensor - The sensing element of a detector.

Sequential Timing - See **Timing, Sequential**.

Serviceable Conflicting Call - A call which: (1) Occurs on a conflicting phase not having the right-of-way at the time the call is placed; (2) Occurs on a conflicting phase which is capable of responding to a call; or (3) When occurring on a conflicting phase operating in an occupancy

mode, remains present until given its right-of-way.

Service Road - Sometimes referred to as a Frontage Road or Access Road, it is a roadway, generally running parallel to the mainline, which provides access to commercial, residential or farm areas (**L&D Manual Volume Three**).

Sheeting - A flexible film of synthetic resin in various colors. The film of reflective sheeting encapsulates a layer of glass spheres or cube-corner prisms to redirect light by retroreflection. The film of nonreflective sheeting does not contain reflective elements.

Side Mount - A signal mounting arrangement where the signal head is mounted parallel to the vertical axis of a pole.

Sign, Extrusheet - A sign assembled of horizontal sections formed of aluminum sheet and spot welded extrusions, covered with sheeting and bearing a legend.

Sign, Flatsheet - A sign cut from a single sheet of material into the proper geometrical shape, covered with sheeting and bearing a legend.

Sign, Overlay - A sign which is fastened over an extrusheet sign and which consists of a sheet of material covered with sheeting and with or without copy.

Signal Circuit Contact - See **Contact, Signal Circuit**.

Signal Shut-Down Switch - See **Switch, Signal Shut-Down**.

Signal System, Centralized Control - See **Centralized Control Signal System**.

Signal System, Distributed Control - See **Distributed Control Signal System**.

Signal System, Hybrid Control - See **Hybrid Control Signal System**.

Single-ring Controller - A controller containing two or more sequentially timed and individually selected conflicting phases so arranged as to occur in an established order.

Skip Phasing - The ability of a controller to omit a phase from its cycle of operation in the absence of demand or as directed by a master control.

Silk Screened Copy - The copy deposited on the surface of a flatsheet sign by the transmission of paste through silk screen openings.

Silk Screen Paste, Opaque - A viscous paint used to form the legend on a flatsheet sign by the silk screen method.

Silk Screen Paste, Transparent - A fluid used to form a transparent colored background (or copy) on the reflective sheeting of a flatsheet sign by the silk screen method.

Single Entry - See **Entry, Dual**.

Skins - Undesirable fragments of solidified marking material.

Slipfitter - A mounting bracket which is used on the top of a pedestal.

Softening Point - The temperature at which a solid material exhibits a condition of plasticity while

being heated.

Solid Spreader - See **Spreader, Solid**.

Solid State Device - a device characterized by electrical circuits, the active components of which are semiconductors to the exclusion of electromechanical devices or vacuum tubes.

Sonic Detector - A detector that is capable of sensing the presence of a vehicle through its field of emitted ultrasonic energy.

Span Support - See **Support, Span**.

Span Wire Hanger - A mounting bracket for supporting a signal head by clamping onto a span wire.

Span Wire Mount - A signal head suspended over the roadway on messenger wire.

Span Wire Support - See **Support, Span Wire**.

Special Skip - See **Omit, Phase**.

Specific Service Sign - A rectangular sign panel that includes: the words "GAS," "FOOD," "LODGING" or "CAMPING," directional information, and one or more logo sign panels.

Specific Service Sign Program (LOGO Program) - The Ohio Logo Signing Program.

Speed, Legal - See **Legal Speed**.

Speed Zoning - The process of establishing reasonable and safe speed limits for sections of roadway where the statutory speed limits do not fit the road and traffic conditions. Speed Zones are intended to aid motorists in adjusting their speeds to those conditions.

Split - A division of the cycle length allocated to each of the various phases (normally expressed in percent).

Split Phase - That portion of a traffic phase that is separated from the primary movement to provide a special phase that is related to a parent phase and characterized by the inability to rest in a minor phase.

Split Selection Switch - A device on solid state controller units which when operated discontinues automatic selection of split changes which are independent of cycle length changes and permits hand selection of such split changes.

Spray Applied Markings - Pavement markings applied in the form of liquid droplets by means of a pressurized nozzle.

Spreader, Solid - A signal bracket having solid arms radiating from a hub through which wiring can be passed to provide electrical interconnection of the signal faces supported by the signal bracket.

Spreader, Tubular - A signal bracket having tubular arms radiating from a hub through which wiring can be passed to provide electrical interconnection of the signal faces supported by the signal bracket.

Staged Review Process - The process by which all reviews are accomplished at essentially three levels (stages) of development (**L&D Manual Volume Three**).

Standard Construction Drawings - Detail drawings, identified by a specific number, published by ODOT, of items which are frequently used in plans and would otherwise require redrawing for each plan and have been pre-approved for general use (**L&D Manual Volume Three**).

Standard Pay Item - An item whose requirements are defined by the Standard Construction Drawings and the Construction and Materials Specifications or Supplemental Specifications (**L&D Manual Volume Three**).

Station - A point or position on a measured line using 100-foot (1 kilometer) increments as a base of reference (**L&D Manual Volume Three**).

Straight Line Distance (SLD) - A system used to identify a location on the state highway system to the nearest thousandth of a kilometer, measured from west to east or south to north from the county line or from when the route begins within that county (**L&D Manual Volume Three**).

Straight Line Mileage (SLM) - A system used to identify a location on the state highway system to the nearest hundredth of a mile, measured from west to east or south to north from the county line or from where the route begins within the county, as the route is viewed across the entire state (**L&D Manual Volume Three**).

Stopping Sight Distance - The cumulative distance traversed from the time a driver sees a hazard necessitating a stop, actually applies the brakes, and comes to a stop (**L&D Manual Volume One**).

Strain Pole - A vertical support to which messenger wire and hardware are attached for supporting traffic signals.

Stop Timing - Provision within a controller to suspend timing operation upon assertion of an external command.

Superelevation - The cross-slope of the pavement used to compensate for the effect of centrifugal force on a horizontal curve (**L&D Manual Volume One**).

Supplemental Specifications - Detailed specifications for items which are in the development stage or are used only occasionally. These specifications supplement or supersede the **Construction and Material Specifications (L&D Manual Volume Three)**.

Support, Beam-Type - A ground-mounted support consisting of flanged steel beams embedded in concrete.

Support, Breakaway Beam-Type - A ground-mounted support consisting of flanged steel beams with a slip-plane joint near the ground line, with the lower stub embedded in concrete and the sign bearing portion containing a fuse and hinge plate near the lower edge of the sign.

Support, Cantilever - An overhead support consisting of a single vertical tubular member with attached arms at one side which may be single or dual.

Support, Center-Mount - A support which may be semi-overhead or of traffic clearing overhead height consisting of a single vertical tubular member with attached arms which may be symmetrical or eccentric to the vertical member.

Support, Ground-Mounted - Single or multiple posts or beams driven into the earth or embedded in concrete for the support of signs.

Support, Overpass Structure-Mounted - A skewed or flush-mounted support for attaching signs to an overpass structure, the type being determined by the overpass angle to the roadway.

Support, Post-Type - A ground-mounted support of steel single channels, channels bolted back to back, or square tubes, and normally driven into the earth.

Support, Rigid Overhead-Type - Support for a major sign or signs mounted on anchor bolt foundations and located off the berm or spanning the roadway.

Support, Span - A rigid overhead support spanning the roadway consisting of a box truss supported by single plane truss end frames.

Support, Span Wire - A support consisting of span wires connected to roadside strain poles mounted on anchor bolt foundations or embedded in concrete.

Switch, Auto-Manual - A device which, when operated, discontinues normal signal operation and permits manual operation.

Switch, Flash Control - A device which, when operated, discontinues normal signal operation and causes the flashing of any predetermined combination of signal indications.

Switch, Power Line - A manual switch for disconnecting power to the controller assembly and traffic signals.

Switch, Signal Shut-Down - A manual switch to discontinue the operation of traffic signals without affecting the power supply to other components in the controller cabinet.

Switch, Time - See **Time Switch**.

Synchronous-Motor Controller - A controller operated by a synchronous motor which maintains a constant speed determined by the frequency of the alternating current power supply.

Temporary Pavement - Any pavement whose purpose is to temporarily maintain traffic during construction, after which it is normally removed (**L&D Manual Volume Three**).

Temporary Road - Any roadway, requiring earthwork to construct and whose sole purpose is to temporarily maintain traffic during construction, after which it is normally removed (**L&D Manual Volume Three**).

Terminal Blocks, Field - Devices for connecting all wires entering the controller cabinet.

Thermoplastic Markings - Hot plastic markings applied to pavements by an extrusion or spraying process.

Time Switch - A device for the automatic selection of modes of operation of traffic signals in a manner prescribed by a predetermined time schedule.

Timer Gear - One of a set of different diameter gears determining the cycle time of a timer dial when inserted into the drive train.

Timing Analog - Pertaining to a method of timing that measures continuous variables such as

voltage or current.

Timing Concurrent - A mode of controller operation whereby a traffic phase can be selected and timed independently and simultaneously with another traffic phase.

Timing Control - A calibrated device that provides a time setting for an interval or portion of an interval.

Timing Dial - That part of a controller which times one cycle length and its associated split(s) and offset(s).

Timing, Digital - pertaining to a method of timing that operates by counting discrete units usually based on the frequency of the power source.

Timing, Sequential - The arrangement of phases at multi-phase intersection into a sequence in which the phases will occur consecutively.

Tourist Information Center - A place where information of interest to tourists is provided as a free service to the public.

Tourist Oriented Directional Signs (TODS) - Signs used to identify **Tourist Oriented Activities** and conforming to the specifications contained in **OMUTCD Chapter 2G**, and **Rules 5501:2-8-01 to 5501:2-8-10 of the Ohio Administrative Code**.

Tourist Oriented Activity - For purposes of the **TODS** program, any lawful cultural, historical, recreational, educational, or **Commercial Activity**, a major portion of whose income or visitors is derived during the normal business season from motorists not residing within 10 miles of the activity, and attendance at which is no less than two thousand in any consecutive twelve month period.

Traffic-Actuated Controller - A controller for supervising the operation of traffic control signals in accordance with the varying demands of traffic as registered with the controller by detectors or pushbuttons.

Traffic Adjusted System - See **Traffic Responsive System**.

Traffic Control Plan - A portion of a highway plan dedicated to signing, signalization, pavement marking and other traffic control details (**L&D Manual Volume Three**).

Traffic Responsive Signal Control - The feature of a traffic signal control system that changes intersection signal timing based on information received from system roadway sensors.

Traffic Responsive System - A system in which a master controller (analog or digital) specifies cycle and offset based on the real-time demands of traffic as sensed by vehicle detectors.

Traffic Signal Preemption (Priority Control) - An interruption in the normal signal operation of a signalized intersection to provide predetermined signal displays to the various intersection approaches. Examples of traffic signal preemption are railroad activated, emergency preemption through direct wiring to a fire station, emergency vehicle activated, and transit vehicle activated.

Traffic Surveillance and Control System - An array of human, institutional, hardware and software components designed to monitor and control traffic, and to manage transportation on streets and highways and thereby improve transportation performance, safety, fuel efficiency and air quality.

Trailblazing Signs - Signs provided to indicate the preferred route to the Interstate or another state highway from non-state highways or streets within the city or village. Trailblazing signs are supplemental to entrance ramp approach signs.

Transmission - The process by which incident flux leaves a surface or medium on a side other than the incident side.

Transverse Joint - A pavement joint perpendicular to the centerline alignment of the pavement, designed to control cracking, provide for load transfer, and allow for the contraction and expansion of the pavement (**Pavement Design & Rehabilitation Manual**).

Treated Shoulder - That portion of the graded shoulder which has some type of surface treatment (**L&D Manual Volume One**).

Tree Lawn - The space between the face of the curb and the sidewalk for the purpose of providing snow storage, a buffer between vehicles and pedestrians, a place for signs, and to improve aesthetics (**L&D Manual Volume One**).

Trumpet Interchange - A Semi-directional T interchange (**L&D Manual Volume One**).

Tubular Spreader - See **Spreader, Tubular**.

Uniformity - Illumination on roadways is usually expressed as a ration of average illumination to minimum illumination at any point on the roadway.

Unit Extension - See **Passage**.

Vertical Clearance - The distance, measured vertically, from the surface (pavement, shoulder, ground, etc.) to a fixed overhead object (bridge superstructure, sign, signal, etc.) (**L&D Manual Volume One**).

Village - A municipal corporation having a population of less than 5,000 persons.

Visibility - The quality or state of being perceivable by the eye. In outdoor applications, visibility is defined in terms of the distance at which an object can be just perceived by the eye.

Visual Acuity - The ability to distinguish fine detail. Quantitatively, the reciprocal of the angular size in minutes of the critical detail which is just large enough to be seen.

Visual Angle - The angle which an object or detail subtends at the point of observation. It usually is measured in minutes of arc.

Visual Field - The locus of objects or points in space which can be perceived when the head and eyes are kept fixed. The field may be monocular or binocular.

Visual Surround - All portion of the visual field except the visual task.

Visual Task - Those details and objects which must be seen for the performance of a given activity, including the immediate background of the details or objects

Volume-Density Controller - A controller used with detectors located a sufficient distance in advance of the intersection which makes use of vehicle actuation quantities and time-of-waiting of the initial vehicle to vary green interval portions for increased capacity and minimized delays.

Walk Interval - See **Pedestrian Interval**.

Warning Light - A portable lens-directed, enclosed yellow light normally battery powered, which may be used in a steady or flashing mode.

Weekly Programmer - A device used to determine the time of operation of programs on traffic control equipment according to a weekly schedule which may be preset to vary from day to day.

Work Limits - The extreme longitudinal limits of the contractor's responsibility, including all temporary and incidental construction (except temporary traffic control devices). Identified by the "Work Limit" station on the centerline of construction on the mainline and on the centerline of all side roads, cross roads, and other construction generally running perpendicular to the project or separated from the project (**L&D Manual Volume Three**).

Work Zone Pavement Markings - Markings placed for a limited time to direct traffic movement during project construction.

Yield - The action of allowing a semi-actuated controller, or a full-actuated controller operating in the semi-actuated mode, to terminate the main street phase so as to begin satisfying existing cross street demand.

Yellow-Red Flash Terminals - Terminals which are wired to give the option of flashing either yellow or red on each traffic signal face by rearranging jumpers and/or field wires.

Zone of Detection - That area of the roadway within which a vehicle is detected by a vehicle detector system.

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1305 FREQUENTLY ASKED QUESTIONS (FAQs)

A page will be developed for the **OTE** website for a list of frequently asked questions (FAQs) and their answers. Suggestions for items to include in this list should be forwarded to the **OTE Standards Section**.

For reference, copies of items developed for this web page will also be included herein. Each item will be included as a separate numbered section. They will be shown as they are intended to be presented on the FAQ web page, i.e., other **TEM** style/formatting rules are suspended.

The following are drafts of two items expected to be among the first posted on the **OTE** FAQ web:

What Are the Requirements for Multiway Stop Installations?

As noted in Section 2B.07 of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD), "Multiway stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multiway stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multiway stop control is used where the volume of traffic on the intersecting roads is approximately equal."

Generally, multiway stop installations should be used sparingly because of the significant increases in delays and operating costs that can result from requiring all of the vehicles using the intersection to stop. Also, unnecessary stops, when the intersection is clear of conflicting movements, can lead to general disrespect for STOP signs.

Any decision to install multiway stop control should be based on an engineering study. OMUTCD Section 2B.05 addresses restrictions on the use of STOP signs that also apply to multiway stop applications. Section 2B.07 of the manual contains criteria that should be considered as part of the engineering study

How Do I Get a Traffic Signal Installed?

Many people seem to believe that traffic signals are the answer to all traffic problems at intersections. If this were true, no traffic engineer in his right mind would deny a request for a traffic signal.

Traffic signals should be installed when they will alleviate more problems than they will create. This must be determined on the basis of an engineering study.

A warranted traffic signal which is properly located and operated may provide for more orderly movement of traffic and may reduce the occurrence of certain types of accidents. On the other hand, an unwarranted traffic signal can result in increased delay, congestion and accidents.

The first step in getting a traffic signal installed is to determine the governmental agency that has jurisdiction for the intersection and contact that agency.

If the Ohio Department of Transportation (ODOT) has jurisdiction, then contact the Transportation Planning and Programs Administrator in your local District Office with your request.

The District will then perform a warrant analysis. The warrants for a traffic signal are listed in the Ohio Manual of Uniform Traffic Control Devices, Chapter 4C. If the intersection meets any one of these warrants, then the next step is to use sound engineering judgement to determine if the signal should be installed. There are cases that because of poor geometry, proximity to existing signals, etc. a location may meet the warrants but not be signalized.

If a traffic signal can be installed without negatively impacting other intersections or the traveling public, then the traffic signal should be designed and constructed.

As per the Ohio Revised Code, ODOT can only install and operate traffic signals at public streets. If a private development warrants a traffic signal, then the development must enter into an agreement with the Ohio Department of Transportation, pay for the installation of the traffic signal and pay a yearly maintenance/operating fee to ODOT.

The need for traffic signals should be based on competent engineering study.

1310 ODOT DIRECTIVES

Various **ODOT Directives** have been established. These **Directives** primarily address administrative concerns; however, since they do include information about worker safety issues, and in keeping with our mission to use this Manual to provide a convenient reference, a listing of the them has been included. The individual **Directives** are posted on the **ODOT O-Drive** in the file "Directvs."

<u>Number</u>	<u>Subject</u>	<u>Number</u>	<u>Subject</u>
D - DIRECTIVE		SA - SAFETY	
D-101	Directive Distribution	SA-101	Motorists - Stranded
D-201	Panhandle Rail Lease	SA-102	Accidents
D-301	EEO Policy	SA-103	Field Work
F - FISCAL		SA-104	Safety
F-101	Time Sheets	SA-105	Emergency Evacuation
F-102	Travel	SA-106	Injury/Occupation Disease
F-103	Purchasing	SA-201	Safety (Employee)
F-104	Taxes, Federal/State	SA-202	Driver's License
F-201	Inventory	SA-203	Fire Prevention
F-202	Invoices	SE - SERVICES	
F-203	Accounts Receivable	SE-101	Mail
F-204	PO-Fiscal Year End	SE-102	Records Management
P - PERSONNEL		SE-201	Training
P-101	Employment Applications	WR - WORK RULES	
P-102	Certification	WR-101	Disciplinary Actions
P-103	Probationary Periods	WR-102	Suspension/Removal
P-104	Performance Evaluations	WR-201	Ethics
P-105	Co-ops	WR-202	Political Activity
P-106	Leave and Holidays	WR-203	Stolen Property
P-201	Working Hours	WR-204	Smoking
P-202	Step Increases	WR-301	Subpoenas
P-203	Disability/Worker's Compensation	WR-302	Court of Claims
P-204	Disability Leave	WR-303	Records/Public
P-205	Layoff	WR-304	Death of Employee

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1311 OTHER OTE POLICIES, GUIDELINES & STANDARD PROCEDURES

At times, there may be a need for the **Office of Traffic Engineering (OTE)** to issue a separately numbered formal **ODOT Policy, Guideline or Standard Procedures (SOPs or SPs)** separate from the text of the **TEM**. As noted in the index below, two policies have been issued. These policies are available on the Intranet under "ODOT Transportation Policies." For the convenience of **TEM** users, copies of these policies have been included in **Section 1399**.

<u>No.</u>	<u>Subject / Title</u>	<u>Date</u>
Policies		
516-002(P)	INSTALLATION OF TRAFFIC CONTROL SIGNALS AND INTERSECTION CONTROL BEACONS ON STATE HIGHWAYS	July 22, 1998
516-003(P)	TRAFFIC MANAGEMENT IN WORK ZONES INTERSTATE AND OTHER FREEWAYS	July 18, 2000
Guidelines		
Standard Procedures		

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1312 OTHER ODOT POLICIES, GUIDELINES & STANDARD PROCEDURES

There are various **ODOT Policies, Guidelines and Standard Procedures (SOPs and SPs)** issued by other **ODOT** offices that have been, or will be, referenced in the **TEM** text. These are (will be) listed in the index below. The six **Policies** and the **Standard Procedure** are available on the Intranet under "ODOT Transportation Policies." The "**ODOT Standard**" is available through the **ODOT** website for the **Office of Urban and Corridor Planning** under "Functional Class," as well as through the Intranet under the **Office of Urban and Corridor Planning**. Copies of the documents listed are also available from the **OTE Standards Section**. For the convenience of **TEM** users, copies of the **Policies** listed have been included in **Section 1399**.

<u>No.</u>	<u>Responsible Division or Office</u>	<u>Subject / Title</u>	<u>Date</u>
Policies			
22-007(P)	Highway Operations	Preventive Maintenance Policy	Sep. 24, 2001
25-005(P)	Local Projects	Transportation Enhancement Program	Jan. 25, 1999
27-005(P)	Construction Management	Construction and Materials Specification Development Policy	August 1, 2001
310-002(P)	Local Projects	State Scenic Byway Program Policy	Sep. 1, 1998
322-001(P)	Roadway Engineering Services	Policy on the Use of Rumble Strips on Shoulders	Dec. 18, 1996
519-002(P)	Roadway Engineering Services	Curb Ramps Required in Resurfacing Plans	April 18, 1996
Guidelines			
Standard Operating Procedures			
ODOT Standard	Urban and Corridor Planning	Procedures for Processing Revisions to Highway Functional Classification, Federal-aid Systems, and Urban/Urbanized Area Boundaries	Dec 20, 1999
510-005(SP)	Construction Management	Construction and Materials Specification: Development Standard Procedure	August 1, 2001

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1313 OTE FORMS

Various forms developed by the **Office of Traffic Engineering (OTE)** in support of procedures described in this **Manual** have been included in earlier chapters. Forms developed in the future, if not shown in the applicable chapter(s), will be included in **Section 1396**.

Full-size versions of **OTE** forms (standard letter-size sheet without the **TEM** header and footer) will be available on the **OTE** web page; however, paper and electronic copies of these forms are also available from the **OTE Standards Section**.

1314 OTHER ODOT FORMS

Other **ODOT** forms used in support of procedures described in this **Manual** have been (or will be) referenced and/or shown in earlier sections. If a form is not shown in the chapter in which it is mentioned or in **Section 1396** of this chapter, if needed, please contact the responsible **ODOT** Office or their website for a copy. (At this time, there are no forms shown in **Section 1396**.)

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1396 FORMS INDEX - no forms at this time

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1399 INDEX OF RESOURCE MATERIALS INCLUDED

For the convenience of **TEM** users, copies of various separate **Policies**, **Guidelines** and **Standard Procedures** are (or will be) provided in this section. Forms have not been included because of the quantities involved. The eight **Policies** and the **Standard Procedure** are available on the Intranet under "ODOT Transportation Policies." The "**ODOT Standard**" is available through the **ODOT** website for the **Office of Urban and Corridor Planning** under "Functional Class," as well as through the Intranet under the **Office of Urban and Corridor Planning**. Copies of the **Policies** and **Standard Procedures** are also available from the **OTE Standards Section**

The following material is not numbered as pages of the **TEM**; therefore, an index has been provided herein to help locate the material.

<u>No.</u>	<u>Subject / Title</u>	<u>Date</u>
Policies		
22-007(P)	Preventive Maintenance Policy	Sep. 24, 2001
25-005(P)	Transportation Enhancement Program	Jan. 25, 1999
27-005(P)	Construction and Materials Specification Development Policy	August 1, 2001
310-002(P)	State Scenic Byway Program Policy	Sep. 1, 1998
322-001(P)	Policy on the Use of Rumble Strips on Shoulders	Dec. 18, 1996
516-002(P)	Installation of Traffic Control Signals and Intersection Control Beacons on State Highways	July 22, 1998
516-003(P)	Traffic Management in Work Zones Interstate and Other Freeways	July 18, 2000
519-002(P)	Curb Ramps Required in Resurfacing Plans	April 18, 1996
Guidelines		
Standard Operating Procedures		
ODOT Standard	Procedures for Processing Revisions to Highway Functional Classification, Federal-aid Systems, and Urban/Urbanized Area Boundaries	
510-005(SP)	Construction and Materials Specification: Development Standard Procedure	August 1, 2001

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