

## APPENDIX A – ACRONYM LIST

3R / 3-R	Resurfacing, Restoration, and Rehabilitation
4R / 3-R	Resurfacing, Restoration, Rehabilitation, and Reconstruction
AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
AC	Asphalt Concrete
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AEE	Association of Engineering Employees
AGC	Association of General Contractors of America
ASAP	As Soon As Possible
ASCE	American Society of Civil Engineers
ATE	Associate Transportation Engineer
ATR	Automatic Traffic Recorders
ATS	Advanced Transportation Systems (subcommittee of AASHTO)
ATSSA	American Traffic Safety Service Association
BLM	Bureau of Land Management
BMP	Beginning Mile Point
BMP	Best Management Practice
BMS	Bridge Management System (ISTEA)
BNRR	Burlington Northern Railroad
CAC	Citizens Advisory Committee
CAD / CADD	Computer Aided Drafting and Design
CalTrans	California Department of Transportation
CAT	Countermeasure Analysis Tool
CBD	Commercial Business District
CCA(A)	Clean Air Act (Amendment)
CFS	Cubic Feet per Second
CMS	Changeable Message Sign(s) (see VMS – preferred)
CMS	Congestion Management System (ISTEA)
CP	Cathodic Protection
CPM	Critical Path Method (method of scheduling)
CTWLTL	Continuous Two-Way Left Turn Lane, “Twiddle”
DBA	Doing Business As
DEQ	Department of Environmental Quality
DHV	Design Hourly Volume
Dia.	Diameter
DLCD	Division of Land Conservation and Development
DM	District Manager
DMS	Dynamic Message Sign (see VMS)
DMV	Driver and Motor Vehicle Services
DUII	Driving Under the Influence of Intoxicants
E&C	Engineering and Contingencies
EA	Environmental Assessment
EA	Expenditure Account
EAC / HMAC	Emulsified Asphalt Concrete / Hot Mix Asphalt Concrete
EB	Eastbound
ECL	East City Limits
EIS	Environmental Impact Statement
EMP	Ending Mile Point
EMS	Emergency Medical Services

EP	Edge of Pavement
EPA	Environmental Protection Agency
ES	Edge of Shoulder
FAA	Federal Aviation Administration
FAQ	Frequently Asked Questions
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
GIS	Geographic Information System
GPS	Global Positioning System
HCM	Highway Capacity Manual
HEP	Hazard Elimination Program
HOV	High Occupancy Vehicle
I/D	Incentives / Disincentives
ID	Inside Diameter
IGA	Inter-Governmental Agreement
ISTEA	Intermodal Surface Transportation and Efficiency Act
ITE	Institute of Transportation Engineers (formerly Traffic)
ITIS	Integrated Transportation Information System
ITS	Intelligent Transportation System
kg	Kilogram
km	Kilometer
km/h	Kilometers per Hour
LCDC	Land Conservation and Development Commission (Oregon)
LL	Live Load
LMC	Latex Modified Concrete
LOS	Level of Service
m	Meter
MCTD	Oregon Motor Carrier Transportation Division
MHz	Megahertz (millions of cycles per second)
mm	Millimeter
MP	Milepoint, Milepost
MPO	Metropolitan Planning Organization
MUTCD	Manual on Uniform Traffic Control Devices
NB	Northbound
NCHRP	National Cooperative Highway Research Program
NCL	North City Limits
NEPA	National Environmental Protection Act
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration
NIMBY	Not in My Backyard
NTS	Not to Scale
OAR	Oregon Administrative Rules
OD	Outside Diameter
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
ORS	Oregon Revised Statutes
OSHA	Occupational Safety and Health Administration (U.S.)
OSP	Oregon State Police

OSU	Oregon State University
OTC	Oregon Transportation Commission
OTIA	Oregon Transportation Investment Act
OTP	Oregon Transportation Plan
OVWS	Overheight Vehicle Warning System
Oxing	Overcrossing
PCC	Portland Cement Concrete
PCE	Passenger Car Equivalents
PCMS	Portable Changeable Message Sign
PDT	Project Development/Design Team (also PT for Project Team)
PE	Preliminary Engineering
PE	Professional Engineer (registered)
PIN	Personal Identification Number
PM	Project Manager
PMC	Polymer-modified Concrete
PS&E	Plans, Specs, and Estimates
PSF	Pounds per Square Foot
PSI	Pounds per Square Inch
PT / PDT	Project Team / Project Development Team
PUC	Public Utility Commission
PVMS	Portable Variable Message Sign
QA	Quality Assurance
QPL	Qualified Products List
R&D	Research and Development
R/W	Right of Way
RAME	Region Access Management Engineer
RATS Team	Region and Technical Services Team
RDWY	Roadway
REA	Revised Environmental Assessment
Rev.	Revised, Revision Date
RFP	Request for Proposal
RIG	Resource Issues Group
RFQ	Request for Qualifications
ROD	Record of Decision
RR	Railroad
RTP	Regional Transportation Plan
RWIS	Roadside Weather Information Sign
SB	Southbound
SCL	South City Limits
SF	Square Feet, ft <sup>2</sup>
SH, Shld	Shoulder
SHPO	State Historic Preservation Office
SI	Le Systeme International d'Unites (Metric System)
SOV	Single Occupant Vehicle
SPIS	Safety Priority Index System
SPRR	Southern Pacific Railroad
SRCM	Soils and Rock Classification Manual (ODOT)
SSD	Stopping Sight Distance
STA	Special Transportation Area
STE	State Traffic Engineer

STIP	Statewide Transportation Improvement Plan
STIP-SIP	Statewide Transportation Improvement Program – Safety Investment Program
STR	Section, Township, and Range (surveying)
SU	Single Unit Truck
T&E	Threatened and Endangered
TAC	Technical Advisory Committee
TAG	Technical Advisory Group
TCD	Traffic Control Devices
TCM	Traffic Control Measures
TCP	Traffic Control Plan
TCPE	Traffic Control Plans Engineer
TCS	Traffic Control Supervisor
TDB	Transportation Development Branch
TDM	Transportation Demand Management
TE	Transportation Engineer
TEA-21	Transportation Equity Act for the 21 <sup>st</sup> Century
TEOS	Traffic Engineering and Operations Section
TGM	Transportation Growth Management
Thk	Thick, Thickness
TIP	Transportation Improvement Plan
TIS	Transportation Impact Study
TMA	Truck Mounted Impact Attenuator
TMP	Traffic Management Plan
TP & DT	Temporary Protection & Direction of Traffic
TPAU	Transportation Planning Analysis Unit
TRB	Transportation Research Board
TS&L	Type, Size, and Location
TSP	Transportation System Plan
TSRM	Technical Services Resource Manager
TSS	Temporary Sign Support
TSSU	Traffic Systems Services Unit
TTC	Temporary Traffic Control
TTI	Texas Transportation Institute
TVT	ODOT's Transportation Volume Tables
TWLTL	Two-Way Left-Turn Lane
U of O	University of Oregon
UBA	Urban Business Area
UGB	Urban Growth Boundary
UP	University of Portland
UPRR	Union Pacific Railroad
USDOT	United States Department of Transportation
V/C	Volume to Capacity Ratio
VE	Value Engineering
VMS	Variable Message Sign
VMT	Vehicle Miles of Travel (Vehicle Miles Traveled)
w/	With
w/o	Without
WB	Westbound
WCL	West City Limits

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WIM	Weigh in Motion
WS	Wearing Surface
WSDOT	Washington State Department of Transportation
Wt.	Weight
WYSIWYG	What-You-See-Is-What-You-Get, "Wizzy Wig"
Xing	Crossing

## APPENDIX B – GLOSSARY OF TERMS

TERM	DEFINITION
3-R Project	A project involving resurfacing, restoration, or rehabilitation of an existing highway.
4-R Project	A project involving reconstruction of an existing highway.
AASHTO	American Association of State Highway and Transportation Officials.
Abutment	Supports at the end of the bridge used to retain the approach embankment and carry the vertical and horizontal loads from the superstructure. Current terminology is bent or end bent.
Access Control	The condition where the legal right of owners or occupants of abutting land to access a highway is fully or partially controlled by the Department of Transportation.
Access Management	Measures regulating physical connections to streets, roads, and highways from public roads and private driveways.
ADT (Average Daily Traffic)	The average number of vehicles passing a certain point each day on a highway, road, or street.
Advance Plans	90% complete plans including special provisions normally sent at 15 weeks.
Advance Review	Complete review prior to final approval. All of PS&E must be provided and nearly complete.
Advertisement	The period of time between the written public announcement inviting proposals for projects and the opening of the proposals (bid or letting date).
Aggregate	Rock of specified quality and gradation.
Aggregate, Coarse	Aggregates predominantly retained on the No. 4 sieve for Portland cement concrete and those predominantly retained on the 1/2" for asphalt concrete.
Aggregate, Dense Graded	A well-graded aggregate so proportioned as to contain a relatively small percentage of voids.
Aggregate, Fine	Those aggregates which entirely pass the 3/8" sieve.
Aggregate, Open Graded	A well-graded aggregate containing little or no fines, with a relatively large percentage of voids.
Aggregate, Well-Graded	An aggregate possessing proportionate distribution of successive particle sizes.
Air-Entraining Agent	A substance used in concrete to increase the amount of entrained air in the mixture. Entrained air is present in the form of minute bubbles and improves the workability and frost resistance.
Alignment	Geometric arrangement of a roadway (curvature, etc.).
Allowable Headwater	The maximum elevation to which water may be ponded upstream of a culvert or structure as specified by law or design.
Alternative Modes	Modes such as rail, transit, carpool, walking, and bicycle which provide transportation alternatives to the use of the single-occupancy automobiles.
Approach	[OAR 734-020-0420(1)] All lanes of traffic moving toward an intersection or mid-block location from one direction.
Approach Road	A roadway or driveway connection between the outside edge of the shoulder or curb line and the right-of-way line of the highway, intended to provide vehicular access to and from said highway and the adjoining property.
Apron	The paved area between wingwalls at the end of a culvert.
Asphalt	Asphalt cement.
At-Grade Crossing	A crossing of two highways or a highway and a railroad at the same level.
Asphalt Concrete	A mixture of asphalt cement, graded aggregate, mineral filler, and additives, as required.
Average Daily Traffic (ADT)	Average Daily Traffic (ADT) – The average 24-hour volume of traffic, being the total during a stated period divided by the number of days in that period. Unless otherwise stated, the period is a year.
Award	Written notification to the bidder that the bidder has been awarded a contract.
Axle Load	The load borne by one axle of a traffic vehicle.
Backfill	Material used to replace or the act of replacing material removed during construction; also may denote material placed or the act of placing material adjacent to structures.
Backwater	The water upstream from an obstruction in which the free surface is an elevation above the normal water surface profile.
Ball-bank Indicator	A curved level which is used to determine the safe speed around a curve, as indicated by trial speed runs. The indicator measures the centrifugal force on the vehicle. The ball-bank indicator is designed to show the combined effect of the vehicle body roll angle, the centrifugal force, and the superelevation angle of the roadway.
Base Course	The layer of specified material of designed thickness placed on a subbase or a subgrade to support a surface course.
Bedrock	The solid rock underlying soils or other superficial formation.
Bench Mark	A relatively permanent material object bearing a marked point whose elevation above or below an adopted datum is known.
Bench Repair	Repairs made to signal control equipment by the Traffic Systems Services Unit (TSSU).
Best Management Practices	Techniques which reflect current thinking on a specific subject.
Bid Schedule	The list of bid items, their units of measurement, and estimated quantities bound in the proposal booklet. (When a contract is awarded, the Bid Schedule becomes the Schedule of Contract Prices.)
Bidder	Any qualified individual or legal entity submitting a proposal in response to an advertisement.
Biennium	For the State of Oregon, a two-year period, always odd numbered years, starting July 1 and ending two years later on June 30.
Bleeding (Concrete)	The movement of mixing water to the surface of freshly placed concrete.
Borrow	Material lying outside of planned or required roadbed excavation used to complete project earthwork.
Box Culvert	A culvert of rectangular or square cross-section.

TERM	DEFINITION
Breakaway	A design feature that allows a device such as a sign support to yield or separate upon impact. The release mechanism may be a slip plane, plastic hinges, fracture elements, or a combination of these.
Bridge End Panel	A reinforced concrete slab placed on the approach embankment adjacent to, and usually resting upon, the abutment back wall; the function of the approach slab is to carry wheel loads on the approaches directly to the abutment, thereby eliminating any approach roadway misalignment due to approach embankment settlement.
Bridge Railing	A longitudinal barrier whose primary function is to prevent an errant vehicle from going over the side of the bridge structure.
Bushings	A lining used to reduce friction and/or insulate mating surfaces usually on steel hanger plate bearings.
Buttress	A rock fill placed at the toe of a landslide in order to resist further slide movement. The slide toe is excavated to below the zone of sliding before placing rock fill.
Capacity	The maximum number of vehicles (vehicle capacity) or passengers (person capacity) that can pass over a given section of roadway or transit line in one or both directions during a given period of time under prevailing roadway and traffic conditions.
Cast-in-Place	The act of placing and curing concrete within formwork to construct a concrete element in its final position.
Catch Basin	A receptacle, commonly box shaped and fitted with a grided inlet and a pipe outlet drain, designed to collect the rain water and floating debris from the roadway surface and retain the solid material so that it may be periodically removed.
Cathodic Protection	A means of preventing metal from corroding; this is done by making the metal a cathode through the use of impressed direct current and by attaching a sacrificial anode.
Centerline	A defined alignment from which specific information is identified.
Change Order	A written order issued by the Engineer to the contractor modifying work required by the contract and establishing the basis of payment for the modified work.
City Street	A public road which is owned and operated by a city government intended for use of the general public for vehicles or vehicular traffic.
Clear Zone	Roadside border area starting at the edge of the traveled way that is available for safe use by errant vehicles. Establishing a minimum width clear zone implies that rigid objects and certain other hazards with clearances less than the minimum width should be removed and relocated outside the minimum clear zone or remodeled to make breakaway, shielded, or safely traversable.
Cobbles	Particles of rock, rounded or not, that will pass a 12" square opening and be retained on a 3" sieve.
Cofferdam	A barrier built in the water so as to form an enclosure from which the water is pumped to permit free access to the area within.
Cohesionless Soil	A soil that, when unconfined, has little or no strength when air-dried and that has little or no cohesion when submerged.
Cohesive Soil	A soil that, when unconfined, has considerable strength when air-dried and that has significant cohesion when submerged. Clay is a cohesive soil.
Commercial Vehicle	A vehicle that is used for the transportation of persons for compensation or profit, or designated or used primarily for the transportation of property.
Compaction	The process of densifying a layer of soil or rock material by using static or vibratory rollers made specifically for this purpose.
Concept Plans	Plans to determine the basic features of a project including alignments, typical sections, slopes, preliminary drainage, and TS&L bridge plans.
Concrete Overlay	1.5" to 2" of concrete placed on top of the deck, used to extend the life of the deck and provide a good riding surface.
Continuous Two-Way Left-Turn Lane	A traversable median that is designed to accommodate left-turn egress movements from opposite directions; Abbreviated as "TWLTL" and often pronounced, "Twiddle"
Contract	The written agreement between the Division and the contractor describing the work to be done and defining the obligations of the Division and the contractor.
Contract Plans	Detailed drawings and diagrams usually made to scale showing the structure or arrangement, worked out beforehand, to accomplish the construction of a project and/or object(s).
Contract Time	The number of calendar days shown in the proposal which is allowed for completion of the work.
Contractor	The individual or legal entity that has entered into a contract with ODOT.
Coordinates	Linear or angular dimensions designating the position of a point in relation to a given reference frame. It normally refers to the State Plane Coordinate System.
Core	A cylindrical sample of concrete removed from a bridge component for the purpose of destructive testing.
County Road	A public road which is owned and operated by a county government intended for use by the general public for vehicles or vehicular traffic.
Course	A specified surfacing material placed in one or more lifts to a specified thickness.
Crash Cushion	An impact attenuator device that prevents an errant vehicle from impacting fixed object hazards by gradually decelerating the vehicle to a safe stop or by redirecting the vehicle away from the hazard.
Crash Tests	Vehicular impact tests by which the structural and safety performance of roadside barriers and other highway appurtenances may be determined. Three evaluation criteria are considered, namely (1) structural adequacy, (2) impact severity, and (3) vehicular post-impact trajectory.
Creep	Time dependent inelastic deformation under elastic loading of concrete or steel resulting solely from the presence of stress.
Cross Section	The exact image formed by a plane cutting through an object, usually at right angles to a central axis or alignment.
Crossover	A technique used to shift live traffic from one side of a divided roadway either into the median or onto the remaining half of the highway not under construction. Also called an "on-site diversion", it may also cross traffic out onto a temporary roadway running parallel to the work area.
Crosswalk	Any portion of a roadway at an intersection or elsewhere that is distinctly indicated for pedestrian crossing by lines or other markings on the surface of the roadway that conform in design to the standards established for crosswalks.
Crown Section	Roadway section with the height of the center of the roadway surface above its gutters.

TERM	DEFINITION
Culvert	A pipe, a reinforced concrete box, or a series of pipes or boxes that provide an opening under the ground for passage of water or other uses.
Curb	A vertical or sloping member along the edge of a pavement or shoulder forming part of a gutter, strengthening or protecting the edge, and clearly defining the edge of vehicle operators.
Curing	The preparation of a material by chemical or physical processing for keeping or use; treating concrete by covering its surface with some material to prevent the rapid evaporation of water.
Delamination	Subsurface separation of concrete into layers.
Deliverables	Engineering work to be submitted.
Demand	The number of users desiring service on the highway system.
Design Speed	A speed determined by traffic volumes, the geographic characteristics of the area, geometric layout of the existing facility, number of traffic lanes, and the posted speed for use in designing a project. Within the TCP discipline, Design Speed equates to the Pre-construction Posted Speed of the roadway facility.
Design Volume or Design Hourly Volume	A volume determined for use in design representing traffic expected to use the highway. Unless otherwise stated, it is an hourly volume. ODOT uses the 30 <sup>th</sup> highest hour as its design hour.
Deviation	A departure from an access management standard.
DLCD	Department of Land Conservation and Development.
“Doghouse” (signal head)	A five indication, traffic control signal display used for control of P/P left turn lanes consisting of a single, circular red indication centered at the top with circular and arrow indications for yellow and for green in the middle and lower portion of the display, respectively.
E&C	<i>Engineering &amp; Contingencies</i> are ODOT’s costs to administer the construction contract. In addition, Contingencies are unforeseen costs due to design changes, construction, extra work price agreements or types of problems caused by weather, accidents, etc. by the contract pay item.
Environmental Classes	Class I Environmental Impact Statement: Projects that normally involve significant changes in traffic capacities and patterns. These projects generally involve major right-of-way acquisitions. Both draft and final Environmental Impact Statements are required. Class II Categorical Exclusions: Projects that normally involve the improvement of payment conditions on traffic safety but little, if any, change in traffic capacities or patterns. Right-of-way requirements must be minor. These projects are categorically excluded from further environmental documentation, unless permit requirements indicate otherwise. Class III Environmental Assessment: Projects that do not clearly fall within Class I or Class II. These projects require assessments to determine their environmental significance.
Erosion Control Designer	The person assigned to specify the proper methods for control of the flow of particulates and sedimentation for a given project.
Expansion Joint	A joint in concrete that allows expansion due to temperature changes, thereby preventing damage to the surface.
Expressway	Highways that provide for safe and efficient high speed and high volume traffic movements.
Extra Work	Work not included in any of the contract items as awarded but determined by the Engineer necessary to complete the project according to the intent of the contract. This may be paid on a negotiated price, force account, or established price basis.
Failsafe System	Failsafe system is hard wired to the signal controller and operates independently of any other signal function. The default state of a failsafe system is flashing mode.
Falsework	A temporary construction on which permanent work is wholly or partially supported until it becomes self-supporting. For cast-in-place concrete or steel construction, it is a structural system to support the vertical and horizontal loads from forms, reinforcing steel, plastic concrete, structural steel, and placement operations.
FHWA	Federal Highway Administration.
Final Review	The last in the review process; PS&E must be complete.
Fiscal Year	For the State of Oregon, July 1 through June 30 of the next year.
Flood Plain	An area that would be inundated by a flood.
Forms	A structural system constructed of wood or metal used to contain the horizontal pressures exerted by plastic concrete and retain it in its desired shape until it is hardened.
Freeway	A fully access controlled throughway.
Freeway Median	The space between inside shoulders of the separated one-way roadways of a divided highway.
Functionally Obsolete Bridges	Those bridges which have deck geometry, load carrying capacity, clearance, or approach roadway alignment which no longer meets the usual criteria for the system of which they are a part as defined by the Federal Highway Administration.
Geotextiles	Sheets of woven or non-woven synthetic polymers or nylon used for drainage and soil stabilization.
Glare Shield	A device used to shield a driver’s eye from the headlights of an oncoming vehicle.
Grade Separation	A crossing of two highways or a highway and a railroad at different levels.
Green Concrete	Concrete that has set but not appreciably hardened.
Grout	A mixture of cementitious material and water having a sufficient water content to render it a free-flowing mass, used for filling (grouting) the joints in masonry, for fixing anchor bolts, and for filling post-tensioning ducts.
High Speed	When the posted speed on a roadway is $\geq 45$ mph.
Highway	(ORS 801.305) Every public way, road, street, thoroughfare and place, including bridges, viaducts and other structures within the boundaries of this state, open, used or intended for use of the general public for vehicles or vehicular traffic as a matter of right.
Highway Capacity Manual (HCM)	The Highway Capacity Manual is the standard “Bible” for most traffic analysis; however, the HCM does not provide procedures that are appropriate for work zone analysis.
HOV Lanes	High-Occupancy Vehicle lanes, special road lanes which can only be used by vehicles with more than one occupant.

TERM	DEFINITION
Hydration	The process by which cement combines with water to form a hard binding substance.
Hydrodemolition	Process to abrade or remove a surface, such as concrete, by streams of water ejected from a nozzle at high velocity.
Incidental Work	Work necessary for fulfillment of the contract but which is not listed as a pay item in the contract and for which no separate or additional payment will be made.
Intermodal connectors	Short lengths of roads that connect intermodal facilities to the state highway system.
International System of Units (SI)	The modernized metric system.
Intersection	The area of the roadway created when two or more roadways join together at any angle.
ISTEA	Intermodal Surface Transportation Efficiency Act, passed by Congress in 1991.
ITS	Intelligent Transportation System.
Key Number	Number assigned to a project by Program Section to identify it in the Project Control System (PCS). All structures in a project have the same key number; bridges are numbered separately.
Lane Closure Restrictions	ODOT often limits the hours that work zone traffic lanes and roads may be closed in an effort to reduce motorist delay, inconvenience and crash potential.
Leveling	A course of construction to restore horizontal and vertical uniformity to existing pavements, normally continuous throughout the project limits.
Lift	The nominal compacted thickness of material placed by equipment in a single pass.
Live Load	Force of the applied moving load of vehicles and/or pedestrians.
LOS	Level of Service – a range of operating conditions defined for each type of facility and related to the amounts of traffic that can be accommodated at each level.
Low Speed	When the posted speed on a roadway is $\leq 40$ mph.
Low Volume Road	Any roadway with an AADT $< 400$ vehicles.
Mandatory Source	A material source provided by ODOT from which the contractor shall obtain materials.
Manual Classification of Traffic Counts	Federal Government directed vehicle classification that breaks the class of vehicles into 16 types. Traffic counts with vehicles broken down into their 16 types are necessary for most ODOT project work.
Manual Traffic Counts	Performed by ODOT personnel and available from ODOT Traffic Data Section in the Transportation Development Branch. Traffic counts used for analysis should be close to the work area and on the same type of highway designation and should also have been taken in the last three years.
Material	Any natural or man-made substance or item specified for use in the construction of the project.
Median	A continuous divisional island which separates opposing traffic and may be used to separate left turn traffic from through traffic in the same direction as well. Medians may be designated by pavement markings, curbs, guideposts, pavement edge or other devices.
Median Pedestrian Island	A non-traversable median section designed to provide an area where pedestrians can take refuge while crossing the traffic stream approaching from the left, and then the traffic stream approaching from the right.
Micro Silica (Silica Fume) (MC)	Very fine non-crystalline silica used as an admixture in concrete to improve the strength, permeability, and abrasion resistance.
Mode of Transportation	A means of moving people and/or goods.
Modular Expansion Joints	Multiple, watertight joint assemblies for bridges requiring expansion movements greater than 4".
MPO	Metropolitan Planning Organization – a planning body in an urbanized area of over 50,000 population which has responsibility for developing transportation plans for that area.
Mylars	Drawings on Mylar. The final "legal" drawing used for signatures and printing contract plans.
NHS	National Highway System – a system of Statewide and Interstate Highways and intermodal connectors meeting federal criteria (approximately 155,000 miles total), designated by Congress in the National Highway System Designation Act of 1995.
Non-traversable Median	A median which, by its design, physically discourages or prevents vehicles from crossing it except at designated openings which are designed for turning or crossing movements and are designed to impede traffic from crossing the median. Examples include curbed medians or concrete barrier medians, also included are depressed grass or landscaped medians.
OAR	Oregon Administrative Rules – Rules written by a government agency intended to clarify the intent of an adopted law.
Occupancy	The amount of time motor vehicles are present in a detection zone expressed as a percent of total time. This parameter is used to describe vehicle density, a measure of highway congestion. The number of passengers in a vehicle which, when used in conjunction with vehicular volume, provides information on the total number of persons accommodated on a transportation link or within a transportation corridor.
Operating Rating (Permit Loads)	The absolute maximum permissible stress level to which a structure may be subjected. It is that stress level that may not be exceeded by the heaviest loads allowed on the structure. Special permits for heavier than normal vehicles shall be issued only if such loads are distributed so as to not produce stress in excess of the operating stress.
OR Route	A route system established and regulated by the Oregon Transportation Commission to facilitate travel on main highways throughout the state.
ORS	Oregon Revised Statutes – The laws that govern the State of Oregon.
OTC	Oregon Transportation Commission – ODOT's governing body; the Commission has five members appointed by the Governor.
Outer Separation	The area between the traveled ways of a through traffic roadway and a frontage road or street.

TERM	DEFINITION
Pavement	Asphalt concrete or Portland cement concrete placed for vehicular use on highway, road and street traveled ways, shoulders, auxiliary lanes, and parking areas.
Peak Hour	Hour of the day with the most traffic, usually during morning and evening commute times. Generally not the design hour.
Pedestrian	A person on foot, in a wheelchair, or walking a bicycle.
Pile	A long, slender piece of wood, concrete, or metal to be driven, jetted, or cast-in-place into the earth or river bed to serve as a support or protection.
Plastic Deformation	Deformation of material beyond the elastic range.
Preliminary Plans	75% complete plans, normally sent at 20 weeks.
Preliminary Review	In the review process, plans should be approximately 75% complete.
Prestressed Concrete	Concrete in which there have been introduced internal stresses (normally pretensioned steel) of such magnitude and distribution that the stresses resulting from given external loadings are counteracted to a desired degree.
Pretensioned	Any method of prestressing in which the strands are tensioned before the concrete is placed.
Principal Arterial (Urban, Controlled Access)	A street or highway in an urban area which has been identified as unusually significant to the area in which it lays in terms of the nature and composition of travel it serves. The principal arterial system is divided into three groups: Interstate freeways, other freeways and expressways, and other principal arterials (with no control of access). Principal arterials should form a system serving major centers of activity, the highest traffic volume corridors, and the longest trip desires and should carry a high proportion of the total urban area travel on a minimum of mileage.
Project Manager	The Engineer's representative who directly supervises the engineering and administration of a contract.
Proposal	A written offer by a bidder on forms furnished by the Division to do stated work at the prices quoted.
Plans Specifications and Estimates (PS&E)	Plans, Specifications, and Estimates: Usually it refers to the time when the plans, specifications, and estimates on a project have been completed and referred to FHWA for approval. When the PS&E has been approved, the project goes to bidding.
Pumping	The ejection of mixtures of water, clay, and/or silt along or through transverse or longitudinal joints, crack or pavement edges, due to vertical movements of the roadway slab under traffic.
Queue	A line of vehicles waiting to be served by the highway system. The queue can be determined graphically, as shown in the WZ Traffic Analysis Guide, Chapter 2.
Raised Median	A non-traversable median where curbs are used to help delineate the boundary between the median and the adjacent traffic lane and to elevate the surface of the median above the surface of the adjacent traffic face.
RAME	Region Access Management Engineer – An individual, who is a registered professional engineer and who, by training and experience, has comprehensive knowledge of ODOT's access management standards, policies, and procedures and has professional expertise in traffic engineering concepts which underlie access management principles.
Realignment	Rebuilding an existing roadway on a new alignment where the new centerline shifts outside the existing right-of-way and where the existing road surface is removed, maintained as an access road, or maintained as a connection between the realigned roadway and a road that intersects the original alignment.
Redline	Marked up drawing, typically in red pencil, with review comments or changes proposed.
Region Traffic Engineer/Manager	Registered Professional Engineer, or person working under direct supervision of a Registered Professional Engineer, responsible for traffic operations in the Region. Actual position titles may vary from region to region.
Right-of-Way	A general term denoting publicly-owned land, property or interest therein, usually in a strip acquired or devoted to transportation purposes. The entire width between the exterior right-of-way lines including the paved surface, shoulders, ditches, and other drainage facilities in the border area between the ditches or curbs and right-of-way line.
Riprap	A facing of stone used to prevent erosion. It is usually dumped into place, but is occasionally placed by hand.
Road Designer	The person assigned to specify the project requirements for the road portion of a given project.
Roadside Barrier	A longitudinal barrier used to shield roadside obstacles or non-traversable terrain features. It may occasionally be used to protect pedestrians from vehicle traffic.
Roadway	That portion of a highway improved, designed, or ordinarily used for vehicular travel, exclusive of the berm or shoulder. If a highway includes two or more separate roadways, the term "roadway" refers to any such roadway separately, but not to all such roadways collectively.
Rubble	Irregularly shaped pieces of varying size stone in the undressed condition obtained from a quarry.
Sand	Particles of rock that will pass a No. 4 sieve and be retained on a No. 200 sieve.
Scaffolding	Temporary elevated walkway or platform to support workmen, materials and tools.
Scarify	To loosen, break up, tear up, and partially pulverize the surface of soil or of a road.
Scour	Erosion of a river bed area caused by water flow.
Screeding	The process of striking off excess material to bring the top surface to proper contour and elevation.
Seal	A concrete mass poured under water in a cofferdam that is designed to resist hydrostatic uplift. The seal facilitates construction of the footing in dry conditions.
Seasonal Adjustments	Adjusting the traffic count data so that it reflects the time of year during which construction will take place, if different from the traffic count date.
Seed File	A CAD file which has been set up with certain generic parameters. Typically they come with certain reference files attached.
Shoofly	Detour alignment of temporary roadway around a fixed object, such as a railroad track or bridge. Very similar to an on-site diversion, yet often less formal in its design and anticipated duration.
Shotcrete	Mortar or concrete pneumatically projected at high velocity onto a surface.

TERM	DEFINITION
Shoulder(s)	[ORS 801.480] The portion of a highway, whether paved or unpaved, contiguous to the roadway that is primarily used by pedestrians, for the accommodation of stopped vehicles, for emergency use and for lateral support of base and surface courses, exclusive of auxiliary lanes, curbs, and gutters.
Shrinkage	Contraction of concrete due to drying and chemical changes, dependent on time.
Shy Distance (E-Distance)	The distance from the edge of the traveled way beyond which a roadside object will not be perceived as an immediate hazard by the typical driver, to the extent that the vehicle's placement or speed will be changed. Often it is an extra 2' added to the right shoulder where roadside barriers are used. The left shoulder is increased only when the shoulder is 10' or more.
Sight Distance	The length of roadway ahead visible to the driver.
Silt	Soil, passing a No. 200 sieve, that is non-plastic or exhibits very low plasticity.
Slope	The degree of inclination to the horizontal. Usually expressed as a: <ul style="list-style-type: none"> <li>● ratio, such as 25:1, indicating 1 unit rise in 25 units of horizontal distance or run, i.e. run/rise ratio,</li> <li>● decimal fraction (0.04),</li> <li>● degree (2°) or</li> <li>● percent (4%).</li> </ul>
Slope Paving	Pavement placed on the slope in front of an abutment to prevent soil erosion.
Special Event	Any planned activity that brings together a community or group of people for an expressed purpose including, but not limited to, parades, bicycle races, road runs and other activity that result in changes to traffic volumes on the state highway creating total or partial closure of state highways or state highway sections.
Special Provisions	The specifications for a project that augment and have authority over the standard and supplemental specifications. They are commonly referred to as "specials".
Specifications	The body of directions, provisions, and requirements, together with written agreements and all documents of any description, made or to be made, pertaining to the method or manner of performing the work, the quantities, and the quality of materials to be furnished under the contract.
Standard Detail	A detail which can be copied from one project to another and can be modified to fit the project needs.
Standard Drawings	Detailed drawings for work or methods of construction that are selectively included in a project book.
Standard Specifications	Detailed specifications for project work, found in the Oregon Standard Specification Construction Book.
State Highway	The State Highway System as designated by the Oregon Transportation Commission, including the Interstate system.
State Highway Index Number	An Oregon Transportation Commission approved identifier assigned to a highway. Every state highway has a state highway index number, commonly referred to as a State Highway Number.
State Highway Name	An Oregon Transportation Commission approved name used in conjunction with a State Highway Index Number to identify a state highway.
State Highway System	Public roads owned and operated by the State of Oregon through the Oregon Department of Transportation.
State Plane Coordinates	The plane-rectangular coordinate system established by the United States Coast and Geodetic Survey. Plane coordinates are used to locate geographic position.
Station	A distance of 100 feet measured horizontally.
Stirrup	Vertical U-shaped or rectangular shaped bars placed in concrete beams to resist the shearing stresses in the beam.
Structures	Bridges, retaining walls, endwalls, cribbing, buildings, culverts, manholes, catch basins, drop inlets, sewers, service pipes, underdrains, foundation drains, and other like or similar features which may be encountered in the work.
Subbase	A course of specified material of specified thickness between the subgrade and a base.
Subgrade	The top surface of completed earthwork on which subbase, base, surfacing, pavement, or a course of other material is to be placed.
Sufficiency Rating	A method of evaluating data by calculating four separate factors to obtain numeric value which is indicative of bridge sufficiency to remain in service. The result of this method is a percentage in which 100% would represent an entirely sufficient bridge and 0% would represent an entirely insufficient or deficient bridge.
Superelevation	The difference in elevation between the inside and outside edges of a roadway in a horizontal curve; required to counteract the effects of centrifugal force.
Superstructure	Those parts of a structure above the substructure, including bearing devices.
TEA-21	The Transportation Equity Act for the 21 <sup>st</sup> century.
Tining	Used on finished concrete deck or slab surfaces to provide friction and reduce hydroplaning. Grooves are placed in the plastic concrete or cut into the hardened concrete.
Traffic Control Device (TCD)	Any sign, signal, marking, or device placed, operated or erected for the purpose of guiding, directing, warning or regulating traffic. Any device that remotely controls another traffic control device by electrical, electronic, sound or light signal. Any sign that is held or erected by a highway maintenance or construction crew working in the highway.
Traffic Lane	That part of the traveled way marked for moving a single line of vehicles.
Traveled Way	That part of the roadway for moving vehicles, exclusive of shoulders and auxiliary lanes.
Traversable Median	A median that by its design does not physically discourage or prevent vehicles from entering upon or crossing it and are typically built to provide a separation between opposing traffic but do not impede traffic from crossing the median. Such medians include painted medians and continuous two-way left-turn lanes.
Typical Section	A cross-section established by the plans which represents in general the lines to which the contractor shall work in the execution of the contract.
UGB	Urban Growth Boundary – The area surrounding an incorporated city in which the city may legally expand its city limits.

TERM	DEFINITION
US Route	A route system established by the US Congress to facilitate travel on main highway throughout the nation. This route system is regulated by an AASHTO committee.
Utility	A line, facility, or system for producing, transmitting, or distributing communications, power, electricity, heat, gas, oil, water, steam, waste, storm water not connected with highway drainage, or any other similar commodity which directly or indirectly serves the public. The term utility shall also mean the utility company, district, or cooperative, including any wholly owned or controlled subsidiary.
V/C Ratio	Volume to Capacity Ratio – A measure of roadway congestion, calculated by dividing the number of vehicles passing through a section of highway during the peak hour by the capacity of the section. V/C is the mobility criteria for Oregon highways, as defined in the 1999 Oregon Highway Plan.
VMT	Vehicle Miles of Travel – Miles traveled per vehicle multiplied by the total number of vehicles.
Warning Lights	Portable, lens-directed, enclosed lights. The color of the light emitted shall be yellow. They may be used in either a steady-burn or flashing mode. Refer to MUTCD, Section 6F.72.
Warrants	The criteria by which the need for a safety treatment or improvement can be determined.
Water/Cement Ratio	The weight of water divided by the weight of cement in a concrete; ratio controls the strength of the concrete.
Wearing Surface	The top layer of a pavement designed to provide structural values and a surface resistant to traffic abrasion.
Weep Hole	A drain hole through a wall to prevent the building up of hydraulic pressure behind the wall.
Wet Signature	Final Mylar plots requiring the signature of the responsible professional and must be signed by hand. Electronic versions of professional stamps are acceptable, but signatures are not.
Work Zone (WZ)	An area of a highway with construction, maintenance or utility work activities. It extends from the first warning sign to the “End Road Work” sign or the last traffic control device.
WZ Traffic Analysis Request Form	The form requesting to have WZ Traffic Analysis performed for a project. Most commonly filled out by TCP Designers or Project Leaders and sent to a WZ Traffic Analyst. A copy of the ODOT Request Form is included in Appendix C.

## APPENDIX C – FORMS



## Decision Tree

### Evaluate Separation Opportunities, Other WZ Concepts, WZ Devices

Print Form

I-5: That Big Interchange Reconstruction Sec. (Unit 6)  
 Project Name (Section) CON05555  
Contract No.

I-5 (Pacific Highway)  
 Highway 12345  
Key No.

Buddy Stillhere  
 Project Leader / Project Manager Region 1  
Region

J. M. Incharge  
 Agency Project Manager

Will B. Ontimeandunderbudget  
 Contractor

**Instructions:** For each phase, work through each opportunity on this "decision tree." Add other project-specific decisions as needed. (Add more instructions as needed.)

Phase:  Scoping  Project Initiation to DAP  DAP to Advance Plans  Construction

Opportunities to Evaluate	Possible	Impacts	Stakeholders	Decision
Full road closure	With Governor approval	A very, very long list.	Half the State of Oregon, and the OTA, too.	Not recommend pursuing further
Partial road closure	Some ramps. Do you mean part of a road (e.g. lane?), or part of a lane? Or, one direction at a time?			
Full detour	Again, one direction at a time? "Directional Detour"?			
Partial detour	Need to add "On-site Diversion" - in case we want to build a temporary road to the right and not cross over the median.			
Cross-overs				
Temporary barrier				
Increased clear space				
Decrease exposure time				
Accelerate/time incentives				
Law enforcement OT hours				
Construction Speed Zone Reduction				
Use drums and cones to close lane				
Use automated flagging station				
Use temporary transverse RS upstream of flagging station				
Use additional PCMS upstream to communicate with drivers				
Other:				

ADD ANOTHER ITEM



**WORK ZONE SPEED REDUCTION REQUEST FORM**

Complete this form to request a speed reduction in a work zone on an Oregon State Highway. **The presence of one or more factors from Section 6 of this form may not necessarily result in a reduced speed.** Traffic Engineering staff will determine if a speed reduction is needed from a review of the construction scope of work and the traffic control plan. Some conditions may benefit better from temporary traffic control measures other than a speed reduction.

The request must be reviewed and signed by the Construction Project Manager, Traffic Control Plan Designer, and Region Traffic Manager before submitting to the Traffic-Roadway Section for a Letter of Support or Construction Speed Zone Order. With a State Traffic Engineer Letter of Support and no changes to the traffic control plan, only the Construction Project Manager review and signature is required before resubmitting the Form to the Traffic-Roadway Section for a Construction Speed Zone Order. For permit projects, only the District Manager review and signature is required before submittal.

Submit this form and a copy of the Traffic Control Plan to the ODOT Traffic-Roadway Section (Attn: Kathi McConnell) for review. Please allow 10 business days for review and response of the request.

For help and instructions, see the Form's Instructions and Definitions document. Work zone speed zone reductions are generally not warranted when:

- Activities are more than ten feet from the edge of the traveled way; or,
- Activities are an intermittent or mobile operation on the shoulder.

**SECTION 1 - PROJECT INFORMATION**

PROJECT NAME	CONTRACT, KEY, BUNDLE #	BID DATE	START WORK DATE
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
HIGHWAY [?]	PROJECT START MP	PROJECT END MP	COUNTY
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
REQUESTING A:		CONST. SPEED ZONE ORDER REQUESTS	REQUEST DATE
<input type="checkbox"/> State Traffic Engineer Letter of Support <input type="checkbox"/> Construction Speed Zone Order <input type="checkbox"/> Amend Existing Const. SZ Order		<input type="checkbox"/> Have STE Letter of Support <input type="checkbox"/> No changes to Traffic Control Plan	<input type="text"/>

**SECTION 2 - EXISTING CONDITIONS**

EXISTING POSTED SPEED [?]	AADT (VEH/DAY) [?]	SPIS PERCENTILE [?]	
<input type="text"/>	<input type="text"/>	<input type="text"/>	
Describe in detail any unique site conditions that may conflict with normal driver expectancy (e.g.: limited sight distance due to changes in horizontal/vertical alignments, etc.)			
<input type="text"/>			

**SECTION 3 - DESCRIPTION OF NEED**

Describe in detail the scope of work, and condition or operation which would merit a construction speed reduction. Identify the portion(s) of the traffic control plan that impacts normal driver expectancy and would benefit from a speed reduction. If more than one condition or operation, describe in separate paragraphs.

**SECTION 4 - LOCATION**

Describe the operation's or condition's location. Include beginning and ending milepoints. Include the requested speed limit for each operation or condition. If other than milepoints, please describe using the Traffic Control Plan. If more than one condition or operation, describe in separate paragraphs.

**WORK ZONE SPEED REDUCTION REQUEST FORM**

PROJECT:  
DATE:

HIGHWAY: , MP - MP  
COUNTY:

**SECTION 5 - TIMING**

*Describe when the operation or condition will be in place using stage/phase, specific activity, project milestone, or time of day, etc. If more than one condition or operation, describe in separate paragraphs.*

**SECTION 6 - FACTORS**

*Select the work type and factor(s) for the construction speed zone reduction and explain. Work type definitions and diagrams are located in the Form's Instructions and Definitions. **The presence of one or more factors does not necessarily result in a reduced speed.** Some conditions may benefit better from temporary traffic control measures other than a speed reduction.*

<b>GENERAL CONDITIONS</b>	
<input type="checkbox"/>	Temporary horizontal curve is designed and includes an advisory speed >10 mph below pre-construction posted speed.
<input type="checkbox"/>	Reduced safe speed for stopping sight distance.
<input type="checkbox"/>	Condition conflicts with normal driver expectancy.
<b>SHOULDER ACTIVITIES</b>	
<input type="checkbox"/>	Uninterrupted traffic flow with workers present for extended periods, within 10 feet of the traveled way, unprotected by barrier.
<b>LANE ENCROACHMENTS, CENTERLINE ENCROACHMENTS, OR LANE CLOSURES</b>	
<input type="checkbox"/>	Uninterrupted traffic flow with workers present for extended periods, within 10 feet of the traveled way or in a closed lane, unprotected by barrier.
<input type="checkbox"/>	Barrier within 2 feet of the traveled way.
<input type="checkbox"/>	Pavement edge drop-off (>2 inches) within 2 feet of the traveled way.
<input type="checkbox"/>	Lane width reduction resulting in a lane width of ≤11 feet on freeways, ≤10 feet on non-freeways.
<b>TEMPORARY ON-SITE DIVERSION</b>	
<input type="checkbox"/>	Temporary on-site diversion lane widths ≤11 feet.
<input type="checkbox"/>	Advisory speed for temporary on-site diversion's horizontal curvature >10 mph below the pre-construction posted speed.

**SECTION 7 - SIGNATURES**

*The request must be reviewed and signed by the Construction Project Manager, Traffic Control Plan Designer, and Region Traffic Manager before submitting to the Traffic-Roadway Section for a Letter of Support or Construction Speed Zone Order. With a State Traffic Engineer Letter of Support and no changes to the traffic control plan, only the Construction Project Manager review and signature is required before resubmitting the Form to the Traffic-Roadway Section for a Construction Speed Zone Order. For permit projects, only the District Manager review and signature is required before submittal.*

REQUESTED BY	EMAIL	PHONE
CONSTRUCTION PROJECT MANAGER'	SIGNATURE	DATE
	X	
TRAFFIC CONTROL PLANS DESIGNER**	SIGNATURE	DATE
	X	
REGION TRAFFIC MANAGER**	SIGNATURE	DATE
	X	

\*For permit work: District Manager  
\*\*Not needed for permit work



**OREGON DEPARTMENT OF TRANSPORTATION**  
 Traffic-Roadway Section  
 Traffic Standards & Asset Management Unit MS#5  
 4040 Fairview Industrial Drive SE  
 Salem, Oregon 97302-1142

## Work Zone Speed Reduction Request Form Instructions and Definitions

### Purpose

The purpose of the Work Zone Speed Reduction Request Form is to identify and document reasons for requesting a reduced posted speed through a construction work zone on a state highway.

### Background

The 2009 MUTCD<sup>1</sup>, Section 6C.01 states that *“Reduced speed zoning (lowering the regulatory speed limit) should be avoided as much as practical because drivers will reduce their speeds only if they clearly perceive a need to do so.”* National research<sup>2</sup> has shown that retaining the pre-construction posted speed (i.e., no speed reduction) through work zones may result in fewer crashes. Research<sup>2,3</sup> and the MUTCD agree that if a reduced speed is needed, it *“should be used only in the specific portion of the TTC zone where conditions or restrictive features are present.”*

The ODOT methodology to determine if a reduced work zone speed is appropriate is based on research and recommendations found in National Cooperative Research Program (NCHRP) Report 3-41(2) titled *Effectiveness and Implementability of Procedures for Setting Work Zone Speed Limits*<sup>2</sup>. The report identifies a procedure to set work zone speed limits in order to maximize work zone safety. The procedure classifies work zones by potential hazards, as represented by the location of work activities or traffic control in relation to the traveled way. Seven common work types are addressed, and maximum speed limit reductions are suggested. The procedure recommends that speed reductions should only be implemented if warranted by the presence of certain factors, listed in the table below.

#### NCHRP Guidelines for Determining Work Zone Speed Limit Reduction

Work Type	Maximum Speed Limit Reduction	Factors That Justify a Speed Limit Reduction
Roadside activity (greater than 10 ft from travel lanes)	None	None
Shoulder activity (2 to 10 ft from travel lanes)	10 mph	Workers present for extended periods within 10 ft of travel lane(s) not protected by barriers Horizontal curvature that might increase vehicle encroachment rate
Lane encroachment (from edge to within 2 ft of travel lanes)	10 mph	Workers present for extended periods within 2 ft of travel lane(s) not protected by barriers Horizontal curvature that might increase vehicle encroachment rate Barrier or pavement edge drop-off within 2 ft of travel lane(s) Reduced design speed for stopping sight distance Unexpected conditions
Moving activity on shoulder	None	None
Lane closure (between center line and edge line)	10 mph	Workers present for extended periods in the closed lane unprotected by barriers Lane width reduction of 1 ft or more with a resulting lane width of less than 11 ft TCDs encroaching on a lane open to traffic or in a closed lane within 2 ft of the edge of the open lane Reduced design speed for taper length or speed change lane length Barrier or pavement edge drop-off within 2 ft of travel lane(s) Reduced design speed for horizontal curve Reduced design speed for stopping sight distance Traffic congestion created by a lane closure Unexpected conditions
Temporary diversion	10 mph	Lane width reduction of 1 ft or more with a resulting lane width of less than 11 ft Reduced design speed for detour roadway or transitions Unexpected conditions
Center line or lane line encroachment	10 mph	Workers present on foot for extended periods in the travel or closed lanes unprotected by barriers Remaining lane plus shoulder width is less than 11 ft Reduced design speed for taper length or speed change lane length Barrier or pavement edge drop-off within 2 ft of travel lane(s) Reduced design speed for horizontal curve Reduced design speed for stopping sight distance Traffic congestion created by a lane closure Unexpected conditions

TCDs = traffic control devices.

### Request Process

The State Traffic Engineer has the authority to set a reduced speed in a work zone or other temporary condition on State Highways<sup>4</sup>. The request form must be reviewed and signed by the Construction Project Manager, Traffic Control Plans Designer, and Region Traffic Manager before submitting to the Traffic-Roadway Section for review. For permit projects, only the District Manager review and signature is required before submittal. Send requests to the Traffic-Roadway Section and include the Request Form and a copy of the project's traffic control plan.

Requesting a work zone speed reduction is a 2-stage process:

1. Request a State Traffic Engineer Letter of Support, and
2. Request a Work Zone Speed Zone Order.

#### Letter of Support

Requesting a Letter of Support should be done around the Preliminary Plans stage of project development since the Letter of Support will be based on the traffic control plans. The Letter of Support is not a Speed Zone Order and cannot be used to place speed signs on the project<sup>4</sup>. The intent of a Letter of Support is to:

- Let the Traffic-Roadway Section, project manager, and Region traffic manager know of an upcoming project that may have a reduced posted speed before a formal Order is requested;
- Begin dialog between TCP designers and the Traffic-Roadway Section on the use of a Work Zone Speed Reduction and alternative temporary traffic control measures;
- Improve the design of Work Zone Speed Reductions;
- Provide a means to estimate reduced speed sign quantities in the project estimate; and
- Accelerate the Order request process when an order is needed during construction.

Allow 10 business days for review and response of the Letter of Support request.

#### Work Zone Speed Zone Order

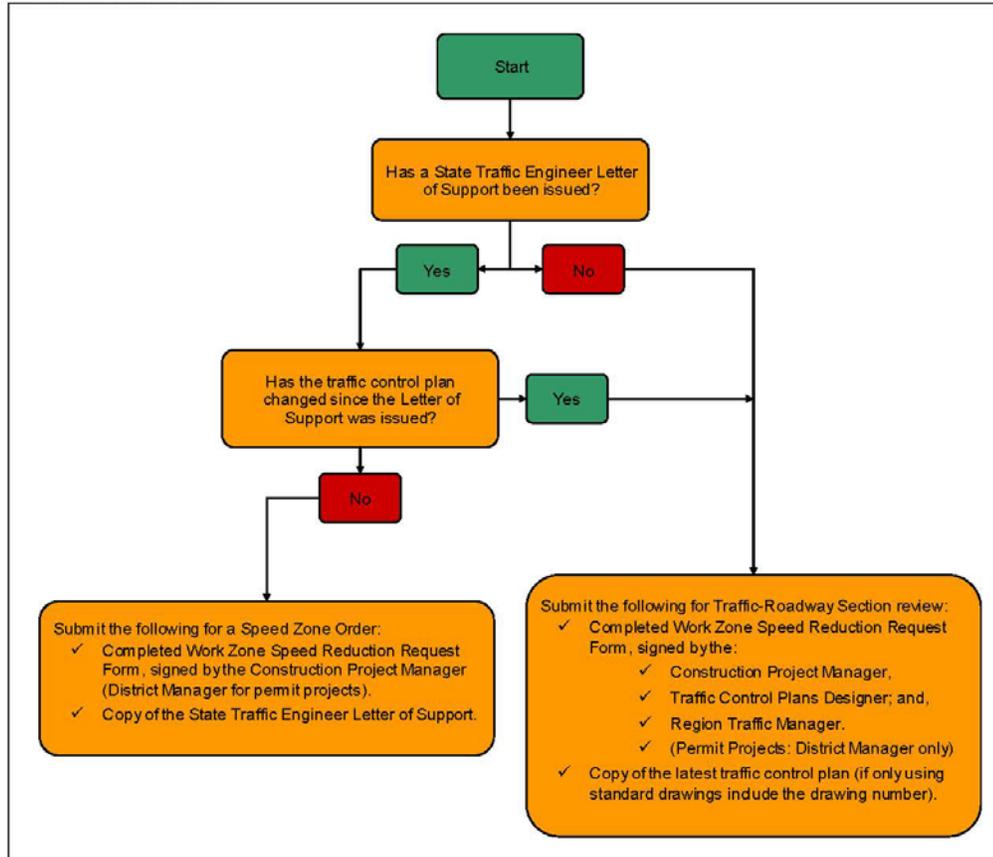
A Work Zone Speed Zone Order should be requested after the contract is awarded and the contractor and project manager (or District Manager for permit projects) have agreed on project staging and traffic control. Allow 10 business days for review and response of the request.

If a State Traffic Engineer Letter of Support has been issued and there have been no changes to the traffic control plan since the Letter of Support was issued, the Construction Project Manager (or District Manager for permit projects) need only review and sign the request form before re-submitting to the Traffic-Roadway Section for a speed zone order.

Traffic Engineering staff will determine if a speed reduction is needed from a review of the proposed construction operation and the traffic control plans. Speed zone orders for a work zone are written specifically for the conditions present in the work zone. The presence of one or more conditions or factors from Section 6 of the Form may not necessarily result in a reduced speed. Some conditions may be better mitigated with temporary traffic control measures other than a speed reduction.

Use the flow chart on the next page to determine what needs to be submitted for Traffic-Roadway Section review.

**Submittal Checklist**



✓ Submit the request to Kathi McConnell at:

[kathleen.e.mcconnell@odot.state.or.us](mailto:kathleen.e.mcconnell@odot.state.or.us)

or

Kathi McConnell  
 Oregon Department of Transportation  
 Traffic-Roadway Section, MS#5  
 4040 Fairview Industrial Drive SE  
 Salem, Oregon 97302-1142

## Work Zone Speed Reduction Request Form

Complete the Work Zone Speed Reduction Request Form to request a speed reduction for a work zone. The following explains required fields in the Form and includes related website links for more information.

### Section 1 – Project Information

Complete this section with general information about the project, the project location, and what is being requested.

- **Project Name** – Enter the full project name.
- **Contract, Key, Bundle #** – Enter the project's contract number, key number, or bundle number, if known.
- **Bid Date** – Enter the project's bid date. If the project is still in design, estimate the month and year the project will go to bid.
- **Start Work Date** – Enter the date work will actively begin at the project site. If the project is still in design, estimate the month and year work will actively begin at the project site.
- **Highway** – Enter the ODOT highway number the project is predominantly located on from the pull-down menu ([Route-State Highway Cross Reference Table](#)).
- **Project Start MP** – Enter the beginning milepoint of the project's limits.
- **Project End MP** – Enter the ending milepoint of the project's limits.
- **County** – Enter the county the project is predominantly located in from the pull-down menu.
- **Requesting** – Select what this request is for. Typically, a Letter of Support is requested during design, and a Speed Zone Order is requested during construction.
- **Const. Speed Zone Order Requests** – This area is for Construction Speed Zone Order requests only (not a Letter of Support). If a Letter of Support has been issued, select "Have STE Letter of Support." If the Traffic Control Plan has not changed since the Letter of Support was issued, select "No changes to Traffic Control Plan."
- **Request Date** – Enter the date of the request.

### Section 2 – Existing Conditions

Complete this section with general information about the existing conditions at the project site.

- **Existing Posted Speed** – Enter the existing posted speed at the project site (not an advisory speed). To check existing speed zone orders, visit the [Speed Zoning Program website](#).
- **AADT** – Enter the most recent existing Annual Average Daily Traffic at the project site from the ODOT Traffic Counting Program's [Transportation Volume Tables](#). Select an AADT that best characterizes the project site.
- **SPIS Percentile** – Enter the highest, most recent Safety Priority Index System (SPIS) percentile at the project site from the most recent statewide [SPIS report](#). If you are not an ODOT employee, contact the [Region SPIS Contact](#) for this information ([ODOT Region Map](#)).
- Describe in detail any unique site conditions that may conflict with normal driver expectancy such as limited sight distance due to changes in horizontal or vertical alignments, etc.

### Section 3 – Description of Need

Complete this section with detailed information on the scope of work, and the condition or operation causing this speed reduction request. Answer this question: *why* is a speed reduction needed?

**Section 4 – Location**

Complete this section with detailed information on the location of the condition or operation causing this speed reduction request. Include the beginning and ending milepoints and the requested speed limit for each operation or condition. If more than one condition or operation needs a speed reduction, describe in separate paragraphs. Answer this question: *where* is a speed reduction needed?

**Section 5 – Timing**

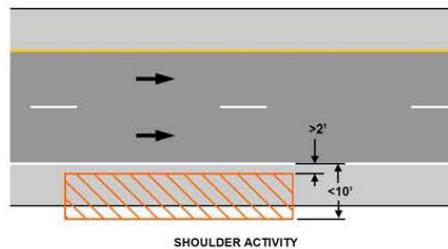
Complete this section with detailed information on when the condition or operation causing this speed reduction request will be in place. Use stage/phase, specific activity, project milestone, or time of day to describe the time. If more than one condition or operation needs a speed reduction, describe in separate paragraphs. Answer this question: *when* is a speed reduction needed?

**Section 6 – Factors**

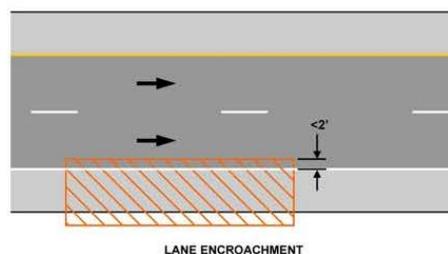
Complete this section by selecting the work type and factor(s) for the speed reduction request and explain each factor. Work types are the section headers in the table and include the following:

**General Conditions** – These conditions are general considerations that are common to several work types.

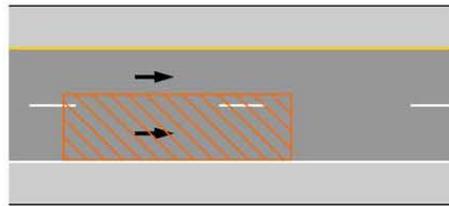
**Shoulder Activities** – Shoulder activities are activities that encroach on the area closer than 10 feet, but not closer than 2 feet, to the edge of the traveled way. Work activities encroach on the shoulder but not on the traveled way. These activities have an effect on traffic, but not as much effect as activities at the edge of the traveled way. Typical applications include culvert extensions, guardrail repair, structural work, and shoulder repair.



**Lane Encroachments** – Lane encroachments are activities that encroach on the area from the edge of the traveled way to 2 feet from the edge of the traveled way. These activities are on the roadway shoulder very close to or just upon the traveled way. Typical activities for this condition are utility work, guardrail maintenance, and shoulder work.

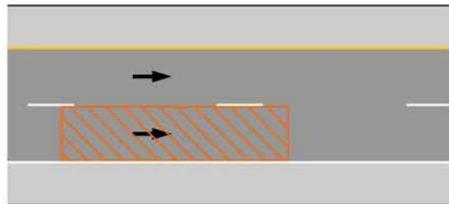


**Centerline Encroachments** – A centerline or lane line encroachment is an activity that encroaches on the area on both sides of a centerline of a roadway or lane line of a multilane highway. These include stationary activities that close a lane and encroach on an adjacent lane, or stationary activities that involve unprotected workers on foot in the traveled way.



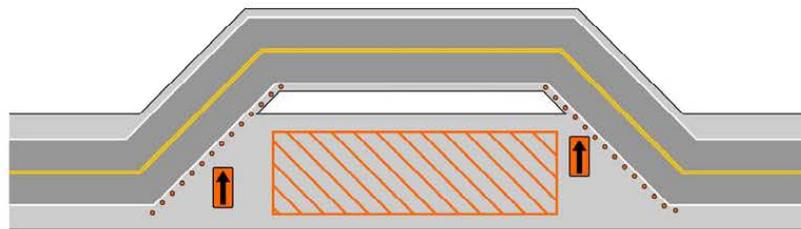
CENTERLINE OR  
LANE LINE ENCROACHMENT

**Lane Closures** – Lane closures are activities that encroach on the area between the centerline or lane line and the edge of the traveled way. Lane closures are critical because they directly interfere with existing traffic patterns.



LANE CLOSURE

**Temporary On-Site Diversion** – A temporary on-site diversion is a temporary alignment within the project right-of-way to divert traffic around the work area. A diversion can be built to accommodate all the existing lanes of traffic or a reduced number of lanes. Single lane diversions controlled by a temporary traffic typically do not need a speed reduction.



Temporary On-Site Diversion

Speed reduction factors are listed under each work type. These speed reduction factors are based on findings in NCHRP Report 3-41(2)<sup>2</sup>. Select the checkbox next to each factor that matches the field condition or operation and explain in detail what the condition is, where it is located, when it will be in place, and why it cannot otherwise be mitigated.

### Section 7 –Signatures

The work zone speed reduction request must be reviewed and signed by the Construction Project Manager, Traffic Control Plan Designer, and Region Traffic Manager before submitting to the Traffic-Roadway Section for review. For permit projects, only the District Manager review and signature is required.

If a State Traffic Engineer Letter of Support has been issued and there have been no changes to the traffic control plan since the Letter of Support was issued, the Construction Project Manager (or District Manager for permit projects) need only review and sign the request form before re-submitting to the Traffic-Roadway Section for a speed zone order.

Submit the request to Kathi McConnell at:

[kathleen.e.mcconnell@odot.state.or.us](mailto:kathleen.e.mcconnell@odot.state.or.us) or Kathi McConnell  
Oregon Department of Transportation  
Traffic-Roadway Section, MS#5  
4040 Fairview Industrial Drive SE  
Salem, Oregon 97302-1142

### References

- (1) *Manual on Uniform Traffic Control Devices (MUTCD)*. 2009 ed. Washington, D.C.: U.S. Department Of Transportation, Federal Highway Administration, 2009.
- (2) Migletz, James, Jerry L. Graham, Brian D. Hess, Ingrid B. Anderson, Douglas W. Harwood, and Karin M. Bauer. *NCHRP Report 3-41(2): Effectiveness and Implementability of Procedures for Setting Work Zone Speed Limits*. Washington, D.C.: Transportation Research Board, 1998.
- (3) Finley, Melisa D. "Field Evaluation of Motorist Reactions to Reduced Work Zone Speed Limits and Other Work Zone Conditions." *Transportation Research Record: Journal of the Transportation Research Board Online* 2258 (2011): 40-48.  
<http://trb.metapress.com/content/tw2934753t1077144/fulltext.pdf> (accessed January 27, 2012).
- (4) *ODOT Traffic Manual*. Revision 3. Salem, Oregon: Oregon Department of Transportation, 2009.  
[http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/docs/pdf/Traffic\\_Manual\\_09.pdf?ga=t](http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/docs/pdf/Traffic_Manual_09.pdf?ga=t) (accessed January 27, 2012).



**TEMPORARY TRANSVERSE RUMBLE STRIP REQUEST FORM**

TRAFFIC CONTROL PLANS UNIT USE ONLY	
Received By:	Date Received:
Assigned To:	Date Completed:

Complete this form to request Temporary Transverse Rumble Strips (TTRS) in a work zone on an Oregon State Highway. The State Traffic Engineer must approve all TTRS applications on State Highways. Traffic Engineering staff will determine if using TTRS is acceptable from a review of the construction scope of work and the traffic control plan.

The request must be reviewed and signed by the Construction Project Manager and Traffic Control Plan Designer before submitting to the Traffic-Roadway Section for a State Traffic Engineer Approval Letter. For permit projects, only the District Manager review and signature is required before submittal.

Submit this form and a copy of the Traffic Control Plan to the ODOT Traffic-Roadway Section (Attn: Scott McCanna) for review. Please allow 15 business days for review and response of the request.

TTRS are meant to attract the driver's attention to highly unusual conditions, such as conditions requiring a stop when one is not expected. Some conditions may benefit better from temporary traffic control measures other than TTRS. Studies have shown that TTRS are generally not effective as speed control devices. Generally, TTRS should not be placed:

- On sharp horizontal or vertical curves;
- Through pedestrian crossings;
- On bicycle routes; or
- On roadways used by bicyclists unless a minimum clear path of 4 feet is provided:
  - at each edge of the roadway, or
  - on each paved shoulder as described in AASHTO's "Guide to the Development of Bicycle Facilities."

**SECTION 1 - PROJECT INFORMATION**

PROJECT NAME	CONTRACT KEY NUMBER	START WORK DATE	REQUEST DATE
HIGHWAY [?]	PROJECT START MP	PROJECT END MP	COUNTY

**SECTION 2 - EXISTING CONDITIONS**

POSTED SPEED [?]	AADT (VEH/DAY) [?]
Describe in detail any unique site conditions that may conflict with normal driver expectancy (e.g.: a required stop or abrupt alignment change when one is not expected, etc.)	

**SECTION 3 - DESCRIPTION OF NEED**

Describe in detail the scope of work, and condition or operation which would benefit from transverse rumble strips. If more than one condition or operation, describe in separate paragraphs. Answer this question: why are TTRS needed?
--

**SECTION 4 - LOCATION**

Describe the operation's or condition's location. Include beginning and ending milepoints. If other than milepoints, describe using the Traffic Control Plan. If more than one condition or operation, describe in separate paragraphs. Answer this question: where are TTRS needed?
--

**TEMPORARY TRANSVERSE RUMBLE STRIP REQUEST FORM**

PROJECT:  
DATE:

HIGHWAY: , MP - MP  
COUNTY:

**SECTION 5 - TIMING**

*Describe when the operation or condition will be in place using stage/phase, specific activity, project milestone, or time of day, etc. If more than one condition or operation, describe in separate paragraphs. Answer this question: when are TTRS needed?*

**SECTION 7 - SIGNATURES**

*The request must be reviewed and signed by the Construction Project Manager and Traffic Control Plan Designer before submitting to the Traffic-Roadway Section for a State Traffic Engineer Approval Letter. For permit projects, only the District Manager review and signature is required before submittal.*

REQUESTED BY	EMAIL	PHONE
TRAFFIC CONTROL PLANS DESIGNER*	SIGNATURE	DATE
	X	
CONSTRUCTION PROJECT MANAGER**	SIGNATURE	DATE
	X	

\*Not needed for permit work

\*\*For permit work: District Manager

**BORDERING STATE PROJECTS LETTER**

# Oregon

John A. Kitzhaber, M.D., Governor

**Department of Transportation**

{Address}

{Telephone}

{FAX}

DATE: {Date}

TO: (Name)  
(Title)  
(Organization)  
(Address, Phone #)

RE: {Project Name, Highway, County, KN}

ODOT is presently preparing contract plans for the (Project Name) Project. This will be a (Project Description) project. ODOT anticipates the need for advance warning signing and traffic control to extend into the State of (State). This project is scheduled to be open for contractor bidding on (Month, Day, Year).

ODOT will be using Standard Drawing RDXXX for temporary traffic control during the construction of this project. The detail that we propose to use on Standard Drawing RDXXX will be the "(Detail Title)". This Standard Drawing has been included for your reference.

ODOT will also be requiring that the Contractor include the State of (State), the (State DOT formal title), the (State) Director of Transportation, officers, and employees of the State of Idaho as additional insured named on insurance policies issued for this project, or furnish an additional insured endorsement naming the same as Additional Insured but only with respect to the Contractor's activities to be performed under this contract.

ODOT requests the authority to install and maintain temporary traffic control signs and devices, within the state of (State) right-of-way for the duration of this project. Please advise regarding the lead time and other permit information required.

Your timely reply to this request will be appreciated. If you have any questions regarding this project please feel free to contact (Designer name) at (503) (Designer Phone #) or (Name) at (503) (Phone #)

Sincerely,

(Manager's Name)  
(Managing Engineer's Title)

<b>Traffic Analysis Work Request Form</b>		
Key No: _____	Prefix: _____	County: _____
Project Name: _____		
Hwy. Name: _____	Hwy. No.: _____	
Beginning MP: _____	End MP: _____	
Requested by: _____	Phone: _____	
Section: _____		
Request Date: _____	Due Date: _____	Date Out: _____
<b>Job Field Options</b>		
<input type="checkbox"/> Project Analysis	<input type="checkbox"/> Cost Analysis	
<input type="checkbox"/> Interchange Analysis	<input type="checkbox"/> Detour Analysis	
<input type="checkbox"/> Signal Analysis	<input type="checkbox"/> Work Zone	
<input type="checkbox"/> Storage Analysis		
<b>Projected Work Required</b>		
<input type="checkbox"/> Two Way - One Lane	<input type="checkbox"/> Chip Seal	
<input type="checkbox"/> Daily Lane Closures	<input type="checkbox"/> Left Turn Storage	
<input type="checkbox"/> Extended Lane Closures	<input type="checkbox"/> Signals	
<input type="checkbox"/> Limited Total Closures/Blasting	<input type="checkbox"/> Slow Downs	
<input type="checkbox"/> Full Closures/Detour	<input type="checkbox"/> Extra Closure Lengths	
<b>Brief Project Summary:</b>		



## APPENDIX D - TRAFFIC CONTROL PLANS CHECKLIST

Traffic Control Task/Item	Notes	
This list is an attempt to capture all of the items included in Traffic Control Plan Development and is by no means comprehensive.		
<a href="#">Transportation Management Plan</a>	See the FHWA Publication Developing and Implementing TMP for Work Zones - Appendix A for TMP Checklist	<input type="checkbox"/>
<b>Project Description</b>		
<u>Project Background</u>		<input type="checkbox"/>
<u>Project Type</u>		<input type="checkbox"/>
<u>Project Area/Corridor</u>		<input type="checkbox"/>
<u>Project Goals and Constraints</u>		<input type="checkbox"/>
Permit Requirements		<input type="checkbox"/>
<u>Proposed Construction Phasing/Staging</u>		<input type="checkbox"/>
<u>General Schedule and Timeline</u>		<input type="checkbox"/>
<u>Related Projects</u>		<input type="checkbox"/>
<b>Existing Conditions</b>		
<u>Roadway Characteristics</u>		<input type="checkbox"/>
Pre-Construction Posted Speed		<input type="checkbox"/>
<u>Traffic Data (volumes, speed, capacity, etc)</u>		<input type="checkbox"/>
<u>Traffic Operations</u>		<input type="checkbox"/>
<u>Crash Data</u>		<input type="checkbox"/>
<u>Community Input</u>		<input type="checkbox"/>
<b>Project Conditions</b>		
<u>Roadway Characteristics</u>		<input type="checkbox"/>
Vertical/Horizontal Clearances		<input type="checkbox"/>
Abrupt Edges		<input type="checkbox"/>
<u>Traffic Projections</u>		<input type="checkbox"/>
<u>Mobility</u>		<input type="checkbox"/>
Delay		<input type="checkbox"/>
Motor Carrier Notification and Coordination		<input type="checkbox"/>
<u>Traffic Operations</u>		<input type="checkbox"/>
Temporary or Portable Signals		<input type="checkbox"/>
Haul Routes & Waste Sites		<input type="checkbox"/>
<u>Traffic Analysis</u>		<input type="checkbox"/>
Lane Allowances and Restrictions		<input type="checkbox"/>
Local Events		<input type="checkbox"/>
Holidays & Weekends		<input type="checkbox"/>
<u>Community Input</u>		<input type="checkbox"/>
<u>Construction Approach/Phasing/Staging Strategy</u>		<input type="checkbox"/>
Utility Operations		<input type="checkbox"/>
Alternative Contracting Methods		<input type="checkbox"/>

<b>Temporary Traffic Control Strategies</b>		
<u>Traffic Control Strategies</u>		<input type="checkbox"/>
Speed Zone Reduction (Temporary), STE Approval		<input type="checkbox"/>
Traffic Signal (Temporary), STE Approval		<input type="checkbox"/>
Shoulder Closure		<input type="checkbox"/>
Lane Closure(s)		<input type="checkbox"/>
Full Closure		<input type="checkbox"/>
Detour		<input type="checkbox"/>
<i>Weight Restrictions</i>		<input type="checkbox"/>
<i>Vertical/Horizontal Clearances</i>		<input type="checkbox"/>
<i>Detour Signs/Striping - Both Directions</i>		<input type="checkbox"/>
<i>Geometrics</i>		<input type="checkbox"/>
<i>Local government/community notification and input</i>		<input type="checkbox"/>
<i>Access - Business/Residential</i>		<input type="checkbox"/>
<i>Non motorized user detours</i>		<input type="checkbox"/>
<i>Emergency/Public Transit/School/Mail impacts</i>		<input type="checkbox"/>
<i>Detour Agreement</i>		<input type="checkbox"/>
Crossover		<input type="checkbox"/>
Rolling Slowdown		<input type="checkbox"/>
Diversion		<input type="checkbox"/>
Extended Traffic Queue's		<input type="checkbox"/>
Night Work		<input type="checkbox"/>
Flaggers/Pilot Cars		<input type="checkbox"/>
Lane Shift		<input type="checkbox"/>
Blasting Traffic Control - closure		<input type="checkbox"/>
<u>Traffic Control Devices</u>		<input type="checkbox"/>
Temporary Signs (see TCP Cost Estimator for list of signs)		<input type="checkbox"/>
Temporary Striping		<input type="checkbox"/>
Channelization Devices		<input type="checkbox"/>
Rumble Strips, STE Approval		<input type="checkbox"/>
Pavement Markers		<input type="checkbox"/>
Barricades		<input type="checkbox"/>
Barrier (Concrete & Guardrail)		<input type="checkbox"/>
Glare Shields		<input type="checkbox"/>
Temporary Barrier Panels		<input type="checkbox"/>
Impact Attenuators		<input type="checkbox"/>
Sequential Arrow Signs		<input type="checkbox"/>
Portable Changeable Message Signs		<input type="checkbox"/>
Temporary Traffic Signals (Portable)		<input type="checkbox"/>
Flagger Station Lighting		<input type="checkbox"/>
Portable Traffic Management System		<input type="checkbox"/>
Steel Plates in Roadway		<input type="checkbox"/>

<i>Traffic Control Bid Items(Check TCP Cost Estimator)</i>	
TEMPORARY PROTECTION AND DIRECTION OF TRAFFIC	
TEMPORARY WORK ZONE TRAFFIC CONTROL, COMPLETE	
TEMPORARY SIGNS	
TEMPORARY BARRICADES, TYPE II or III	
TEMPORARY GUARDRAIL, TYPE 2A, 3, or 4 REFLECTORIZED	
TEMPORARY GUARDRAIL TERMINALS, FLARED or NON-FLARED	
TEMPORARY GUARDRAIL TRANSITION	
TEMPORARY BRIDGE CONNECTIONS	
TEMPORARY CONCRETE BARRIER, REFLECTORIZED	
TEMPORARY CONCRETE BARRIER, TALL, REFLECTORIZED	
MOVING TEMPORARY CONCRETE BARRIER	
TEMPORARY IMPACT ATTENUATOR	
MOVING TEMPORARY IMPACT ATTENUATORS	
TEMPORARY IMPACT ATTENUATOR, TRUCK MOUNTED	
TEMPORARY GLARE SHIELDS	
MOVING TEMPORARY GLARE SHIELDS	
REFLECTIVE BARRIER PANELS	
PEDESTRIAN CHANNELIZING DEVICES	
REPAIR TEMPORARY IMPACT ATTENUATOR	
SURFACE MOUNTED TUBULAR MARKERS	
REPLACE SURFACE MOUNTED TUBULAR MARKERS	
TEMPORARY PLASTIC DRUMS	
TEMPORARY DELINEATORS	
TEMPORARY REFLECTIVE PAVEMENT MARKERS	
TEMPORARY FLEXIBLE PAVEMENT MARKERS	
TEMPORARY REMOVABLE TAPE	
TEMPORARY NON-REMOVABLE TAPE	
TEMPORARY NON-REFLECTIVE TAPE	
TEMPORARY STRIPING	
TEMPORARY PAVEMENT LEGENDS	
TEMPORARY PAVEMENT BARS	
TEMPORARY TRANSVERSE RUMBLE STRIPS	
STRIPE REMOVAL	
LEGEND REMOVAL	
TEMPORARY ILLUMINATION	
TEMPORARY TRAFFIC SIGNAL	
PORTABLE TRAFFIC SIGNAL	
SEQUENTIAL ARROW SIGNS	
PORTABLE CHANGEABLE MESSAGE SIGNS	
OVERHEIGHT VEHICLE WARNING SYSTEM	
PORTABLE TRAFFIC MANAGEMENT SYSTEM MOBILIZATION	
PORTABLE TRAFFIC MANAGEMENT SYSTEM	
FLAGGERS	
FLAGGER STATION LIGHTING	
AUTOMATED FLAGGER ASSISTANCE DEVICE	
TRAFFIC CONTROL SUPERVISOR	
PILOT CARS	

<b>Public Information Strategies</b>		
<u>Public Awareness Strategies</u>		<input type="checkbox"/>
Business Access Delineation & Signing		<input type="checkbox"/>
Pilot Car Local Residence/Business Notification		<input type="checkbox"/>
<u>Motorist Information Strategies</u>		<input type="checkbox"/>
Portable Traffic Management Systems		<input type="checkbox"/>
Use of Permanent VMS		<input type="checkbox"/>
<b>Transportation Operations Strategies</b>		
<u>Demand Management Strategies</u>		<input type="checkbox"/>
Emergency Vehicles		<input type="checkbox"/>
<u>Corridor/Network Management Strategies</u>		<input type="checkbox"/>
<u>Work Zone Safety Management Strategies</u>		<input type="checkbox"/>
Positive Protection for Workers		<input type="checkbox"/>
<u>Traffic/Incident Management and Enforcement Strategies</u>		<input type="checkbox"/>
Work Zone Enforcement		<input type="checkbox"/>
Tow Truck		<input type="checkbox"/>
<b>Contract Deliverables</b>		
<u>Specifications</u>		<input type="checkbox"/>
Standard Specifications		<input type="checkbox"/>
Boilerplate Special Provisions		<input type="checkbox"/>
Unique Special Provisions		<input type="checkbox"/>
Custom Special Provision		<input type="checkbox"/>
<u>Plans</u>		<input type="checkbox"/>
Standard Drawings		<input type="checkbox"/>
Traffic Control Details		<input type="checkbox"/>
Traffic Control Plans - Stage and Phase Plans		<input type="checkbox"/>
Detour Plan		<input type="checkbox"/>
Cross Sections		<input type="checkbox"/>
<u>Estimate</u>		<input type="checkbox"/>



## **APPENDIX E**

### **TRAFFIC CONTROL PLAN DESIGN**

#### ***PUBLICATION RESOURCES***

- FHWA – *Applying the Americans with Disabilities Act in Work Zones: A Practitioner Guide*



## APPENDIX F - DESIGN CONVERSION CHARTS

### METRIC AND ENGLISH UNITS

Sizing Increments	
English (Inches)	Metric (mm)
3	76
6	152

Sign Letter Heights	
English (Inches)	Metric (mm)
4	102
5	127
6	152
8	203
10	254
10 2/3	271
12	305
13 1/3	339
15	381
16	406
18	457

Border / Radius Sizes	
English (Inches)	Metric (mm)
½	13
1	25
1 ½	38
2	51
3	76
6	152
9	229
12	305

Arrow Sizes	
English (Inches)	Metric (mm)
4 X 6	102 X 152
5 X 7	127 X 178
6 X 9	152 X 229
8 X 12	203 X 305
10 X 16	254 X 406
15 1/8 X 24 ¼	384 X 616
18 ¼ X 29 ¼	464 X 743
22 ¼ X 35 5/8	565 X 905



## APPENDIX G

### TCP UNIT – MEMBER ROLES and RESPONSIBILITIES

#### STATE WORK ZONE ENGINEER

- Manages the statewide temporary traffic control plan design program. Oversees functions and activities within the ODOT Traffic Control Plans Unit.
- Responsible for developing, updating, teaching and interpreting statewide design standards and practices used in the development of temporary traffic control plans for long and short-term highway construction projects and maintenance operations.
- Oversees the development of Standard Specifications, Special Provision language and Standard Drawings used in the development of temporary traffic control plans.
- Provides technical support to ODOT Region Design offices, consulting engineering firms, City and County agencies, private utility companies, and contractors in the development of traffic control plans, selecting appropriate traffic control measures, solving project-specific challenges, or crafting project-specific special provision contract language.
- Provides technical support for Region Construction personnel in exploring traffic control plan modifications; the interpretation of specification language; implementation of temporary traffic control measures; or, addressing work zone traffic operational issues.
- Provides technical support and responses to members of the public through inquiries made through ODOT's *Ask ODOT* website.
- Manages and publishes the ODOT *"Traffic Control Plans Design Manual"*.
- Manages and publishes the *"Oregon Short Term Traffic Control Handbook for Operations of 3 Days or Less"*.
- Coordinates and publishes the annual ODOT *"Work Zone Review Summary Report"*.
- Manages and participates in the maintenance of Sections 00220 and 00225 of the *Oregon Standard Specifications for Construction*.
- Delivers ODOT's 2-day *Traffic Control Plan Design Workshop* training course.
- Leads quarterly meetings of the O7DOT Statewide Work Zone Action Group (SWAG) of Region Traffic Control Plan Designers. Meetings are used to maintain statewide work zone and traffic control design consistency and application of statewide standards and practices; and, to exchange discipline information and current developments/technologies.

## TCP UNIT – MEMBER ROLES and RESPONSIBILITIES

### WORK ZONE STANDARDS ENGINEER

- Responsible for development, maintenance, interpretation of temporary traffic control plans design practices and standards, standard specifications, special provisions, standard drawings, and cost estimate data.
- Researches, develops and recommend new/modified statewide standards, specifications, and procedures related to temporary traffic control plan design. Reviews and recommends exceptions to statewide design standards, specifications and design procedures.
- Provides technical assistance to Region Traffic Control Plans Designers, City and County Public Works agencies and consulting firms in the design of Traffic Control Plans.
- Participates as a member of the Qualified Products List Committee. Provides input to the committee regarding the testing, application, approval or disapproval of temporary traffic control devices and products submitted by vendors.
- Assists in the delivery of ODOT's 2-day *Traffic Control Plan Design Workshop* training course.
- Provides technical support to ODOT Region Design offices, consulting engineering firms, City and County agencies, private utility companies, and contractors in the development of traffic control plans, selecting appropriate traffic control measures, solving project-specific challenges, or crafting project-specific special provision contract language.
- Provides technical support for Region Construction personnel in exploring traffic control plan modifications; the interpretation of specification language; implementation of temporary traffic control measures; or, addressing work zone traffic operational issues.
- Assists the Work Zone Engineer in leading quarterly meetings of the ODOT Statewide Work Zone Action Group (SWAG) of Region Traffic Control Plan Designers.

## TCP UNIT – MEMBER ROLES and RESPONSIBILITIES

### WORK ZONE TRAFFIC ANALYST

- Manages the statewide Work Zone Traffic Analysis discipline as part of the Traffic Control Plans Unit. Responsible for the development, maintenance, and use of ODOT’s *Work Zone Traffic Analysis* web-based tool; and, publication of the ODOT *Work Zone Traffic Analysis Manual*.
- Manages the curriculum for, and delivers ODOT’s two-day “Work Zone Traffic Analysis” class.
- Researches, develops and recommends new/modified statewide standards, specifications, and procedures related to work zone traffic analysis. Reviews and recommends exceptions to traffic analysis and operation-related design standards, specifications and procedures.
- Provides technical support to ODOT Region Design offices, consulting engineering firms, City and County agencies, private utility companies, and contractors in the development of traffic control plans, selecting appropriate traffic control measures, solving project-specific challenges, or crafting project-specific special provision contract language.
- Provides technical support for Region Construction personnel in exploring traffic control plan modifications; the interpretation of specification language; implementation of temporary traffic control measures; or, addressing work zone traffic operational issues.
- Assists in the delivery of ODOT’s 2-day *Traffic Control Plan Design Workshop* training course.
- Assists the Work Zone Engineer in leading quarterly meetings of the ODOT Statewide Work Zone Action Group (SWAG) of Region Traffic Control Plan Designers.

## REGION TRAFFIC CONTROL PLANS DESIGNERS

- Play a key role in determining work area mobility impacts and communicating that information to ODOT Motor Carrier Transportation Division's Freight Mobility Representatives and the local Regional Mobility Manager
- Responsible for developing Traffic Control Plans for ODOT highway construction projects within their Region. TCPs typically include:
  - Traffic Control plan sheets
  - Project-specific Special Provisions
  - A TCP-related cost estimate

Projects vary in complexity. Roadway types vary from freeways to urban arterial highways to rural, two-lane highways. Project scopes of work range from:

- Modernization upgrades or capacity improvements
  - New facility construction
  - Facility reconstruction or rehabilitation
  - Transit system retrofits; or even,
  - Emergency repairs or corrections
- Review and comment on consultant-designed TCPs for ODOT projects and local agency projects
  - Attend ODOT Project Development Team meetings, working with team members to refine TCPs
  - Visit project sites to obtain vital physical data to be used in the development of their TCPs
  - Conduct (or involved with) work zone traffic analysis used to develop Lane Restrictions for highway construction contracts
  - Provide post-award TCP construction support to Region Construction personnel
  - Participate in quarterly meetings of the ODOT Statewide Work Zone Action Group (SWAG) of Region Traffic Control Plan Designers.