

**Acronyms**

**Glossary of Terms**

## Acronyms

AADT	Annual average daily traffic	HSS	Highways of Statewide Significance
ACT	Alternatives Comparison Table	ICD	Inscribed circle diameter
ADA	Americans with Disabilities Act of 1990	<u>ICE</u>	<u>Intersection Control Evaluation</u>
ADT	Annual daily traffic	ITS	Intelligent transportation systems
ALJ	Administrative law judge	L/A	Limited access
AOS	Apparent opening size	LOS	Level of service
APS	Accessible pedestrian signal	MEF	Maximum extent feasible
<u>ARR</u>	<u>Access Revision Report</u>	MOU	Memorandum of Understanding
AWDVTE	Average weekday vehicle trip ends	MPO	Metropolitan Planning Organization
B/C	Benefit / cost	NEPA	National Environmental Policy Act
BLM	Bureau of Land Management	NHS	National Highway System
BOD	Basis of Design	PAR	Pedestrian access route
BRT	Bus rapid transit	PCP	Pedestrian circulation path
BST	Bituminous surface treatment	PEL	Planning and Environmental Linkage
CAR	<u>Crash Analysis Report</u>	PF	Project File
CE	Categorical Exemption (SEPA)	PoDI	Project of Division Interest (FHWA)
CE	Categorical Exclusion (NEPA)	PS	Project Summary
CFA	Contributing Factors Analysis	PSF	Pounds per square foot
CFR	Code of Federal Regulations	PS&E	Plans, Specifications, and Estimates
CGT	Continuous Green "T" intersection	<u>QOL</u>	<u>Quality of Service</u>
CIPP	Capital Improvement and Preservation Program	R/W	Right of way
CPMS	Capital Program Management System	RCUT	Restricted Crossing U Turn
CRT	Controlled releasing terminal post	RCW	Revised Code of Washington
CSS	Context sensitive solutions	RFP	Request for Proposal
CTR	Commute Trip Reduction	ROD	Record of Decision
CVISN	Commercial Vehicle Inf. System and Networks	RTIP	Regional Transportation Improvement Program
DDHV	Directional design hour volume	RTPO	Regional Transportation Planning Organization
DDI	Diverging Diamond Interchange	SEPA	[Washington] State Environmental Policy Act
DDP	Design Documentation Package	SHS	Sustainable Highway Safety
DHV	Design hourly volume	SHSP	Strategic Highway Safety Plan
DLT	Displaced Left Turn	SIMMS	Signal Maintenance Management System
DNS	Determination of Nonsignificance (SEPA)	SOV	Single-occupant vehicle
DS	Determination of Significance (SEPA)	SRA	Safety rest area
E&EP	Environmental & Engineering Programs Division	SPUI	Single Point Urban Interchange
EA	Environmental Assessment (NEPA)	STIP	Statewide Transportation Improvement Program
EIS	Environmental Impact Statement	STP	Surface Transportation Program
ERS	Environmental Review Summary	TIA	Traffic Impact Analysis
FGTS	Freight and Goods Transportation System	TIP	Transportation Improvement Program
FHWA	Federal Highway Administration	TMA	Transportation Management Area
FONSI	Finding of No Significant Impact (NEPA)	TMP	Transportation management plan
FTA	Federal Transit Administration	TWLTL	Two-way left-turn lane
GIS	Geographic Information System	UPO	[Central Puget Sound] Urban Planning Office
GMA	Growth Management Act	USC	United States Code
HCM	Highway Capacity Manual	VE	Value engineering
HCP	Highway Construction Program	VECP	Value Engineering Change Proposal
HMA	Hot mix asphalt	VIC	Visitor Information Center
HOT	High-occupancy toll	VPH	Vehicles per hour
HOV	High-occupancy vehicle	WAC	Washington Administrative Code
HQ	WSDOT's Headquarters in Olympia	WIM	Weigh in motion
HSM	Highway Safety Manual	WSDOT	Washington State Department of Transportation
HSP	Highway System Plan	WSPMS	Washington State Pavement Management System
		WTP	Washington Transportation Plan

## Glossary of Terms

A B C D E F G H I J K L M N O P Q R S T U V W Y Z

### A

**access** A means of entering or leaving a public road, street, or highway with respect to abutting property or another public road, street, or highway.

**access break** Any point from inside or outside the state limited access right of way limited access hachures that crosses over, under, or physically through the plane of the limited access, is an access break or “break in access,” including, but not limited to, locked gates and temporary construction access breaks.

**access connection** An access point, other than a public road/street, that permits access to or from a managed access highway on the state highway system.

**access connection permit** A written authorization issued by the permitting authority for a specifically designed access connection to a managed access highway at a specific location; for a specific type and intensity of property use; and for a specific volume of traffic for the access connection based on the final stage of the development of the applicant’s property. The actual form used for this authorization is determined by the permitting authority.

**access control** The limiting and regulating of public and private access to Washington State’s highways, as required by state law. A *design control* (see [Chapter 1103](#)) – there are two categories of controlling access to state highways *limited access* and *managed access*.

**Access Control Tracking System Limited Access and Managed Access Master Plan** A database list, related to highway route numbers and mileposts, that identifies either the level of limited access or the class of managed access: [www.wsdot.wa.gov/design/accessandhearings](http://www.wsdot.wa.gov/design/accessandhearings)

**access density** The number of access points (driveways) per mile.

**access design analysis** A design analysis (see [Chapter 300](#)) that authorizes deferring or staging acquisition of limited access control, falling short of a 300-foot requirement, or allowing an existing access point to stay within 130 feet of an intersection on a limited access highway. Approval by the Director & State Design Engineer, Development Division, or designee, is required (see [Chapter 530](#)).

**access hearing plan** A limited access plan prepared for presentation at an access hearing.

**access management** The programmatic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway.

**access point** Any point that allows private or public entrance to or exit from the traveled way of a state highway, including “locked gate” access and maintenance access points.

**access point revision** A new access point or a revision of an existing interchange/ intersection configuration. Locked gates and temporary construction breaks are also access point revisions.

**access point spacing** On a managed access highway, the distance between two adjacent access points on one side of the highway, measured along the edge of the traveled way from one access point to the next (see also [corner clearance](#)).

**access revision report (ARR)** A technical report which documents specific analyses in order to approve or reject a proposed revision to freeway access. See [Chapter 550](#).

**access report plan** A limited access plan prepared for presentation to local governmental officials at preliminary meetings before preparation of the access hearing plan.

**access rights** Property rights that allow an abutting property owner to enter and leave the public roadway system.

**accessible** Usable by persons with disabilities (ADA compliant). (ADA term)

**accessible pedestrian signal (APS)** A device that communicates information about the “WALK” phase in audible and vibrotactile (vibrating surface that communicates information through touch, located on the accessible pedestrian signal button) formats. (ADA term)

**accessible route** See [pedestrian access route](#). (ADA term)

**ADA** An abbreviation for the Americans with Disabilities Act of 1990. The ADA is a civil rights law that identifies and prohibits discrimination based on disability. Title II of the ADA requires public entities to design new pedestrian facilities or alter existing pedestrian facilities to be accessible to and usable by people with disabilities. (ADA term)

**adaptive lighting system** A lighting system with a control system connected, allowing for dimming, on/off operation by time of night, and independent scheduling of individual lights for select hours of operation during nighttime hours.

**affidavit of publication** A notarized written declaration stating that a notice of hearing (or notice of opportunity for a hearing) was published in the legally prescribed manner.

**affidavit of service by mailing** A notarized written declaration stating that the limited access hearing packet was mailed at least 15 days prior to the hearing and entered into the record at the hearing.

**alteration** A change to a facility in the public right of way that affects or could affect access, circulation, or use. Alterations include, but are not limited to: renovation; rehabilitation; reconstruction; historic restoration; resurfacing of circulation paths or vehicular ways; or changes or rearrangement of structural parts or elements of a facility. Alterations *do not* include: Spot pavement repair; liquid-asphalt sealing, chip seal (bituminous surface treatment), or crack sealing; or lane restriping that does not alter the usability of the shoulder. (ADA term)

**alternative(s)** Possible solutions to accomplish a defined purpose and need. These include local and state transportation system mode and design options, locations, and travel demand management and transportation system management-type improvements such as ramp metering, mass transit, and high-occupancy vehicle (HOV) facilities.

**Alternatives Comparison Table (ACT)** A table that documents and presents the tradeoffs among those performance metrics identified for each alternative under consideration on a project. The ACT is used to assist in analyzing the baseline and contextual performance tradeoffs and ultimately to select an alternative. It is a supplemental document to the “Alternatives Analysis” section of the *Basis of Design*.

**ancillary services** Those secondary services, also considered amenities, provided at safety rest areas that include, but are not limited to, vending machines, picnic areas, interpretive signing, telephones, recreational vehicle (RV) sanitary disposal facilities, trails, scenic viewpoints, commercial and public information displays, and visitor information centers.

**annual average daily traffic (AADT)** The total volume of traffic passing a point or segment of a highway facility in both directions for one year divided by the number of days in the year. Normally, periodic daily traffic volumes are adjusted for hours of the day counted, days of the week, and seasons of the year to arrive at average annual daily traffic.

**annual daily traffic (ADT)** The average 24 hour volume, being the total volume during a stated period divided by the number of days in that period. Normally, this would be periodic daily traffic volumes over several days, not adjusted for days of the week or seasons of the year.

**approach** An access point, other than a public road/street, that allows access to or from a limited access highway on the state highway system.

**approach and access connection** These terms are listed under the specific access section to which they apply. The first section below is for limited access highways and uses the term approach. The second section below is for managed access highways and uses the term access connection. Approaches and access connections include any ability to leave or enter a highway right of way other than at an intersection with another road or street.

(a) **limited access highways: approach** An access point, other than a public road/street, that allows access to or from a limited access highway on the state highway system. There are five types of approaches to limited access highways that are allowed:

- **Type A** An off and on approach in a legal manner, not to exceed 30 feet in width, for the sole purpose of serving a single-family residence. It may be reserved by the abutting owner for specified use at a point satisfactory to the state at or between designated highway stations. This approach type is allowed on partial and modified control limited access highways.
- **Type B** An off and on approach in a legal manner, not to exceed 50 feet in width, for use necessary to the normal operation of a farm, but not for retail marketing. It may be reserved by the abutting owner for specified use at a point satisfactory to the state at or between designated highway stations. This approach type is allowed on partial and modified control limited access highways. This approach type may be used for wind farms when use of the

approach is limited to those vehicles necessary to construct and maintain the farm for use in harvesting wind energy.

- **Type C** An off and on approach in a legal manner, for a special purpose and width to be agreed upon. It may be specified at a point satisfactory to the state at or between designated highway stations. This approach type is allowed on partial and modified control limited access highways and on full control limited access highways where no other reasonable means of access exists, as solely determined by the department.
- **Type D** An off and on approach in a legal manner, not to exceed 50 feet in width, for use necessary to the normal operation of a commercial establishment. It may be specified at a point satisfactory to the state at or between designated highway stations. This approach type is allowed only on modified control limited access highways.
- **Type E** This type is no longer allowed to be constructed because of the requirements that there be only one access point per parcel on a limited access state highway.
- **Type F** An off and on approach in a legal manner, not to exceed 30 feet in width, for the sole purpose of serving a wireless communication site. It may be specified at a point satisfactory to the state at or between designated highway stations. This approach type is allowed only on partial control limited access highways. (See WAC [468 58 080\(vi\)](#) for further restrictions.)

(b) **managed access highways: access connection** An access point, other than a public road/street, that permits access to or from a managed access highway on the state highway system. There are five types of access connection permits:

- **conforming access connection** A connection to a managed access highway that meets current WAC and WSDOT location, spacing, and design criteria.
- **grandfathered access connection** Any connection to the state highway system that was in existence and in active use on July 1, 1990, and has not had a significant change in use.
- **joint-use access connection** A single connection to a managed access highway that serves two or more properties.
- **nonconforming access connection** A connection to a managed access highway that does not meet current WSDOT location, spacing, or design criteria, pending availability of a future conforming access connection.
- **variance access connection** A connection to a managed access highway at a location not normally allowed by current WSDOT criteria.

(c) **managed access connection category** There are four access connection permit categories for managed access connections to state highways: Category I, Category II, Category III, and Category IV (see [Chapter 540](#)).

**area of influence** The area that will be directly impacted by the proposed action: freeway main line, ramps, crossroads, immediate off-system intersections, and state and local roadway systems.

**articulated bus** A two-section bus that is permanently connected at a joint.

**auxiliary aids and services** (1) Qualified interpreters, notetakers, transcription services, written materials, telephone handset amplifiers, assistive listening devices, assistive listening systems, telephones compatible with hearing aids, open and closed captioning, telecommunications devices for persons with hearing or speech difficulties (TDDs), videotext displays, or other effective methods for making aurally delivered materials available to individuals with hearing limitations; (2) Qualified readers, taped texts, audio recordings, Brailled materials, large print materials, or other effective methods for making visually delivered materials available to individuals with visual impairments; (3) Acquisition or modification of equipment or devices; (4) Other similar services and actions; and (5) Providing and disseminating information, written materials, and notices in languages other than English, where appropriate.

**auxiliary lane** The portion of the roadway adjoining the through lanes for parking, speed change, turning, storage for turning, weaving, truck climbing, and other purposes supplementary to through-traffic movement.

**average light level** The average of all light intensities within the design area.

**average weekday vehicle trip ends (AWDVTE)** The estimated total of all trips entering plus all trips leaving a road approach on a weekday for the final stage of development of the property served by the road approach.

## **B**

**backslope** A sideslope that goes up as the distance increases from the roadway (cut slopes).

**barrier terminal** A crash-tested end treatment for longitudinal barriers that is designed to reduce the potential for spearing, vaulting, rolling, or excessive deceleration of impacting vehicles from either direction of travel. Barrier terminals include applicable anchorage.

**baseline** The approved time phased plan (for a project, a work breakdown structure component, a work package, or a schedule activity), plus or minus approved project scope, cost, schedule, and technical changes. Generally refers to the current baseline, but may refer to the original or some other baseline. Usually used with a modifier (e.g., cost baseline, schedule baseline, performance measurement baseline, technical baseline).

**baseline performance metric** A description of need in terms that can be measured or assessed in both the existing and proposed (future) state.

**baseline performance need** The primary reason a project has been proposed. It refers to the threshold determination at the project location resulting from a statewide biennial prioritization and funding process. It may also be the specific issue to be addressed by the project described by a partnering agency that is providing the funding.

**basic number of lanes** The minimum number of general purpose lanes designated and maintained over a significant length of highway.

**Basis of Design (BOD)** A document and template used to record information, decisions, and analysis needed in the development of a project design, including all factors leading to the development and selection of a project alternative, and the selection of design elements associated with that alternative.

**benefit/cost analysis** A method of valuing a proposition by first monetizing all current expenditures to execute—cost—as well as the expected yields into the future—benefit, then dividing the total benefit by the total cost, thus providing a ratio. Alternatives may be rendered and compared in this fashion where, typically, a higher ratio is preferable, indicating a better return on investment.

**bicycle** Any device propelled solely by human power upon which a person or persons may ride, having two tandem wheels, either of which is 16 inches or more in diameter, or three wheels, any one of which is more than 20 inches in diameter.

**bicycle route** A system of facilities that is used or has a high potential for use by bicyclists or that is designated as such by the jurisdiction having the authority. A series of bicycle facilities may be combined to establish a continuous route and may consist of any or all types of bicycle facilities.

**bike lane** A portion of a highway or street identified by signs and pavement markings as reserved for bicycle use.

**buffer** A space measured from the back of the curb to the edge of the sidewalk that could be treated with plantings or alternate pavement, or be used for needs such as drainage treatment or utility placement. (ADA term)

**buffer-separated HOV lane** An HOV lane that is separated from the adjacent same direction general-purpose freeway lanes by a designated buffer.

**bus** A rubber-tired motor vehicle used for transportation, designed to carry more than ten passengers.

**business access transit (BAT) lanes** A transit lane that allows use by other vehicles to access abutting businesses.

**bus pullout** A bus stop with parking area designed to allow transit vehicles to stop wholly off the roadway.

**bus rapid transit (BRT)** An express rubber tired transit system operating predominantly in roadway managed lanes. It is generally characterized by separate roadway or buffer-separated HOV lanes, HOV direct access ramps, and a high-occupancy designation (3+ or higher).

**bus shelter** A facility that provides seating and protection from the weather for passengers waiting for a bus.

**bus stop** A place designated for transit vehicles to stop and load or unload passengers.



## C

**capacity** The maximum sustainable flow rate at which vehicles or persons can reasonably be expected to traverse a point or uniform segment of a lane or roadway during a specified time period under given roadway, geometric, traffic, environmental, and control conditions. Capacity is usually expressed as vehicles per hour (vph), passenger cars per hour (pcph), or persons per hour (pph).

**Capital Improvement and Preservation Program (CIPP)** WSDOT's program of projects developed each biennium that delivers capital investments in highway, marine, and rail facilities that have been funded in part or in whole by the state Legislature. The CIPP is submitted to the Governor and, ultimately, by the Governor to the Legislature.

**Categorical Exclusion (CE) (NEPA) or Categorical Exemption (CE) (SEPA)** Actions that do not individually or cumulatively have a significant effect on the environment.

**central island** The area of the roundabout, including the truck apron, surrounded by the circulating roadway.

**central island diameter** The diameter of the central island, including the truck apron (see [Chapter 1320](#)).

**circulating lane** A lane used by vehicles circulating in the roundabout.

**circulating roadway** The traveled lane(s) adjacent to the central island and outside the truck apron, including the entire 360° circumference of the circle.

**circulating roadway width** The total width of the circulating lane(s) measured from inscribed circle to the central island (see [Chapter 1320](#)).

**clear run-out area** The area beyond the toe of a nonrecoverable slope available for use by an errant vehicle.

**clear width** The unobstructed width within a pedestrian circulation path. The clear width within a pedestrian circulation path must meet the accessibility criteria for a pedestrian access route. (ADA term)

**clear zone** The total roadside border area, available for use by errant vehicles, starting at the edge of the traveled way and oriented from the outside or inside shoulder (in median applications) as applicable. This area may consist of a shoulder, a recoverable slope, a nonrecoverable slope, and/or a clear run-out area. The clear zone cannot contain a critical fill slope, fixed objects, or water deeper than 2 feet.

**climate change vulnerability** The risk a transportation facility will be impacted by the effects of climate change.

**climbing lane** An auxiliary lane used for the diversion of slow traffic from the through lane.

**collector** A context description of a roadway intended to provide a mix of access and mobility performance. Typically low speed, collecting traffic from local roads and connecting them with destination points or arterials. This term is used in multiple classification systems, but is most commonly associated with the *Functional Classification System*.

**collector-distributor road (C-D road)** A parallel roadway designed to remove weaving from the main line and reduce the number of main line entrances and exits.

**collector system** Routes that primarily serve the more important intercounty, intracounty, and intraurban travel corridors; collect traffic from the system of local access roads and convey it to the arterial system; and on which, regardless of traffic volume, the predominant travel distances are shorter than on arterial routes ([RCW 47.05.021](#)).

**Commercial Vehicle Information Systems and Networks (CVISN)** A network that links intelligent transportation systems (ITS) to share information on commercial vehicles. When in operation at a weigh site, it can enable commercial vehicles to clear the facility without stopping.

**complex ramp alignment and grade** As related to [Chapter 1040 Illumination](#). The exit advisory speed is 35 mph or lower than the posted main line speed, or there is a 6% or greater change in grade from existing main line grade to the ramp grade.

**conflict point** A point where road user paths cross, merge, or diverge.

**consider** To think carefully about, especially in order to make a decision. The decision to document a consideration is left to the discretion of the engineer.

**construction impact zone** The area in which an alteration to an existing facility takes place (also known as the project footprint). If a crosswalk (marked or unmarked) will be reconstructed, paved (overlay or inlay), or otherwise altered as part of a project, then the curb ramps that serve that crosswalk are within the construction impact zone. (ADA term)

**context** Refers to the environmental, economic, and social features that influence livability and travel characteristics. Context characteristics provide insight into the activities, functions, and performance that can be influenced by the roadway design. Context also informs roadway design, including the selection of design controls, such as target speed and modal priority, and other design decisions. See [Chapter 1102](#).

**context categories** The naming convention used to describe either a land use or transportation context (see [Chapter 1102](#)).

**context characteristic** A distinguishing trait within a context, either land use or transportation. [Chapter 1102](#) lists several common characteristics that help distinguish between one type of context versus another. There may be additional traits not covered in the chapter.

**contextual performance metric** A restatement of a contextual performance need in terms that can be measured or assessed in both the existing and proposed (future) state.

**contextual performance need** A statement of need that applies to a project location which has not been identified as a baseline need.

**contiguous parcels** Two or more pieces of real property, under the same ownership, with one or more boundaries that touch and have similarity of use.

**continuous load** The electrical load on a circuit that lasts for a duration of three or more hours on any day.

**contributing factors** Those operational conditions, human factors, context conditions, design elements, design controls, or actions identified by data, engineering judgment, or the community that contribute to a performance need under evaluation.

**controlled releasing terminal (CRT) post** A standard-length guardrail post that has two holes drilled through it so it might break away when struck.

**conventional traffic signal** A permanent or temporary installation providing alternating right of way assignments for conflicting traffic movements. At least two identical displays are required for the predominant movement on each approach.

**corner clearance** On a managed access highway, the distance from an intersection of a public road or street to the nearest access connection along the same side of the highway. The minimum corner clearance distance (see [Chapter 540](#)) is measured from the closest edge of the intersecting road or street to the closest edge of the traveled way of the access connection, measured along one side of the traveled way (through lanes) (see also [access point spacing](#)).

**corridor sketch** An information source that describes the attributes of a state highway corridor, its current and future function, as well as its performance expectations. It will ultimately identify cost-effective strategies for future consideration. A completed corridor sketch may have information that is valuable at the project level in determining contextual performance needs, and project alternatives. A corridor sketch is not a substitute for detailed planning and analysis, nor is it a list of investments or projects.

**corridor vision** The future transportation context from a regional perspective. Practical Design considers and accounts for the contextual needs of the longer section of highway in the development and evaluation of alternatives to ensure a favorable outcome for the greater system.

**counter slope** The slope of the gutter or roadway at the foot of a curb ramp or landing where it connects to the roadway, measured along the axis of the running slope extended. (ADA term)

**countermeasure** An action taken to counteract an existing or anticipated condition.

**court reporter** A person with a license to write and issue official accounts of judicial or legislative proceedings.

**Crash Analysis Report (CAR)** A template that is used for [documenting required analysis for I-2 CAL/CAC/IAL projects](#), as described in [Chapter 321](#).

**critical fill slope** A slope on which a vehicle is likely to overturn. Slopes steeper than 3H:1V are considered critical fill slopes.

**cross slope** The slope measured perpendicular to the direction of travel. (ADA term)

**crossroad** The minor roadway at an intersection. At a stop-controlled intersection, the crossroad has the stop.

**crosswalk** A marked or unmarked pedestrian crossing, typically at an intersection, that connects the pedestrian access routes on opposite sides of a roadway. A crosswalk must meet accessibility criteria. A crosswalk is also defined as:

- "...the portion of the roadway between the intersection area and a prolongation or connection of the farthest sidewalk line or in the event there are no sidewalks then between the intersection area and a line ten feet therefrom, except as modified by a marked crosswalk" (RCW 46.04.160).
- "(a) That part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or in the absence of curbs, from the edges of the traversable roadway, and in the absence of a sidewalk on one side of the roadway, the part of the roadway included within the extension of the lateral lines of the sidewalk at right angles to the center line; (b) any portion of a roadway at an intersection or elsewhere distinctly indicated as a pedestrian crossing by lines on the surface, which might be supplemented by contrasting pavement texture, style, or color" (MUTCD, 2003; *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, AASHTO, 2004). (ADA term)

**curb extension** A curb and sidewalk bulge or extension out into the parking lane used to decrease the length of a pedestrian crossing and increase visibility for the pedestrian and driver. (ADA term)

**curb ramp** A combined ramp and landing to accomplish a change in level at a curb. This element provides street and sidewalk access to pedestrians with mobility impairments. (ADA term)

- **parallel curb ramp** A curb ramp design where the sidewalk slopes down to a landing at road level with the running slope of the ramp in line with the direction of sidewalk travel
- **perpendicular curb ramp** A curb ramp design where the ramp path is perpendicular to the curb and meets the gutter grade break at a right angle.

**curb section** A roadway cross section with curb and sidewalk.

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**D**

**decision sight distance** The distance needed for a driver to detect an unexpected or difficult-to-perceive condition, recognize the condition, select an appropriate maneuver, and complete the maneuver based on design conditions and design speed.

**deflection** (in respect to roundabouts) The change in the path of a vehicle imposed by the geometric features of a roundabout resulting in a slowing of vehicles.

**delineation** Any method of defining the roadway operating area for the driver.

**deliverable** Any unique and verifiable product, result or capability to perform a service that must be produced to complete a process, phase, or project.

**Design Analysis** A process and tool to record design element changes where the dimensions chosen do not meet the value, or lie within the range of values, provided for that element in the *Design Manual*. (see Chapters [300](#) and [1106](#)).

**Design Approval** Documented approval of the design at this early milestone locks in design policy for three years. Design approval becomes part of the Design Documentation Package (see [Chapter 300](#).)

**design-bid-build** The project delivery method where design and construction are sequential steps in the project development process ([23 CFR 636.103](#)).

**design-build contract** An agreement that provides for design and construction of improvements by a consultant/contractor team. The term encompasses design-build-maintain, design-build-operate, design-build-finance, and other contracts that include services in addition to design and construction. Franchise and concession agreements are included in the term if they provide for the franchisee or concessionaire to develop the project that is the subject of the agreement ([23 CFR 636.103](#)).

**design-builder** The firm, partnership, joint venture, or organization that contracts with WSDOT to perform the work.

**design controls** Key parameters that critically shape design decisions and effect calculated dimensions for some design elements. Design controls are conscientiously selected and work together with the context characteristics to achieve a particular outcome (see [Chapter 1103](#))

**Design Clear Zone** The minimum clear zone target value used in highway design.

**Design Documentation Package (DDP)** See [Project File](#).

**design element** Any component or feature associated with roadway design that becomes part of the final product. Examples include lane width, shoulder width, alignment, and clear zone (see [Chapter 1105](#).)

**designer** This term applies to WSDOT design personnel. Wherever “designer” appears in this manual, design-build personnel shall deem it to mean: Engineer of Record, Design Quality Assurance Manager, design-builder, or any other term used in the design-build contract to indicate design-build personnel responsible for the design elements of a design-build project, depending on the context of information being conveyed.

**design hourly volume (DHV)** Computed by taking the annual average daily traffic times the K-factor. It can only be accurately determined in locations where there is a permanent traffic recording device active 365 days of the year. It correlates to the peak hour (see [peak hour](#)), but it is not equivalent. In some circumstances, it is necessary to use the peak hour data instead of DHV because peak hour can be collected using portable traffic recorders.

**design speed** A design control; the speed used to determine the various geometric design features of the roadway.

**design up** An approach to developing project alternatives utilizing the smallest dimensions that meet the need by providing the desired performance.

**design users** A broad term intended to capture all modal users that currently utilize or are legally permitted on a roadway segment or node.

**design variance** Same as Design Analysis.

**design vehicle** See [intersection design vehicle](#).

**design year** The forecast year used for design as described in [Chapter 1103](#). See also [horizon year](#).

**desirable** Design criteria that are recommended for inclusion in the design.

**detectable warning surface** A tactile surface feature of truncated dome material built into or applied to the walking surface to alert persons with visual impairments of vehicular ways. Federal yellow is the color used on WSDOT projects to achieve visual contrast. Colors other than federal yellow that meet the light-on-dark/dark-on-light requirement may be used on projects where cities have jurisdiction. (Detectable warning surfaces are detailed in the [Standard Plans](#).) (ADA term)

**Determination of Nonsignificance (DNS) (SEPA)** The written decision by the Regional Administrator that a proposal will not have a significant impact and no EIS is required.

**Determination of Significance (DS) (SEPA)** A written decision by the Regional Administrator that a proposal could have a significant adverse impact and an EIS is required.

**directional design hour volume (DDHV)** The traffic volume for the design hour in the peak direction of flow, in vehicles per hour. For example, if during the design hour, 60% of the vehicles traveled eastbound and 40% traveled westbound, then the DDHV for the eastbound direction would be the DHV x 0.60.

**divided multilane** A roadway with two or more through lanes in each direction and a median that physically or legally prohibits left turns, except at designated locations.

**document** (verb) The act of including a short note to the Design Documentation Package that explains a design decision.

**dooring** Describes a conflict with a parked vehicle door opening into a roadway bike facility.

**driveway** A vehicular access point that provides access to or from a public roadway.

## E

**easement** A documented right, as a right of way, to use the property of another for designated purposes.

**element** An architectural or mechanical component or design feature of a space, site, or public right of way.

**emergency escape ramp** A roadway leaving the main roadway designed for the purpose of slowing and stopping out-of-control vehicles away from the main traffic stream.

**emergency vehicle signal** A special adaptation of a conventional traffic signal installed to allow for the safe movement of authorized emergency vehicles. Usually, this type of signal is installed on the highway at the entrance into a fire station or other emergency facility. The signal ensures protected entrance onto the highway for the emergency vehicle. When not providing for this movement, the signal either operates continuously (consistent with the requirements for a conventional traffic signal) or displays continuous green, which is allowed at non-intersection locations only. At least two identical displays are required per approach.

**enforcement observation point** A place where a law enforcement officer may park and observe traffic.

**entry angle** The angle between the entry roadway and the circulating roadway measured at the yield point (see [Chapter 1320](#)).

**entry curve** The curve of the left edge of the roadway that leads into the circulating roadway (see [Chapter 1320](#)).

**entry width** The width of an entrance leg at the inscribed circle measured perpendicular to travel (see [Chapter 1320](#)).

**Environmental Assessment (EA)** (NEPA) A document prepared for federally funded, permitted, or licensed projects that are not categorical exclusions (CE), but do not appear to be of sufficient magnitude to require an EIS. The EA provides enough analysis to determine whether an EIS or a FONSI should be prepared.

**Environmental Impact Statement (EIS)** A detailed written statement of a proposed course of action, project alternatives, and possible impacts of the proposal.

**Environmental Review Summary (ERS)** (see [Project Summary](#)) Part of the Project Summary document, the ERS identifies environmental permits and approvals. It is prepared in the region and is required for Design Approval.

**expressway** A divided highway that has a minimum of two lanes in each direction for the exclusive use of traffic and that may or may not have grade separations at intersections. A transportation context characteristic that is designated for a divided highway with limited access that provides regional mobility.

**extrude** A procedure for applying marking material to a surface by forcing the material through a die to give it a certain shape.

## F

**facility** All or any portion of buildings, structures, improvements, elements, and pedestrian or vehicular routes located in a public right of way.

**feature** A component of a pedestrian access route, such as a curb ramp, driveway, crosswalk, or sidewalk.

**Federal Highway Administration (FHWA)** The division of the U.S. Department of Transportation with jurisdiction over the use of federal transportation funds for state highway and local road and street improvements.

**Federal Transit Administration (FTA)** The division of the U.S. Department of Transportation with jurisdiction over the use of federal funds for financial assistance to develop new transit systems and improve, maintain, and operate existing systems.

**final design** Any design activities following preliminary design; expressly includes the preparation of final construction plans and detailed specifications for the performance of construction work ([23 CFR 636.103](#)). Final design is also defined by the fact that it occurs after NEPA/SEPA approval has been obtained.

**Finding of No Significant Impact (FONSI) (NEPA)** A federal document indicating that a proposal will not significantly affect the environment and an EIS is not required.

**findings and order** A document containing the findings and conclusions of a limited access hearing approved by the Assistant Secretary, Engineering & Regional Operations (see [Chapter 210](#)).

**findings and order plan** A limited access plan, prepared after a limited access hearing, which is based on the hearing record.

**fixed feature (object to be mitigated)** A fixed object, a side slope, or water that, when struck, can result in impact forces on a vehicle's occupants that may result in injury or place the occupants in a situation that has a high likelihood of injury. A fixed feature can be either constructed or natural.

**flangeway gap** The gap for the train wheel at a railroad crossing. The space between the inner edge of a rail and the pedestrian crossing surface. (ADA term)

**flare** The widening of the approach to the roundabout to increase capacity and facilitate natural vehicle paths.



**flyer stop** A transit stop inside the limited access boundaries.

**footcandle (fc)** The illumination of a surface one square foot in area on which a flux of one lumen is uniformly distributed. One footcandle equals one lumen per square foot.

**foreslope** A sideslope that goes down as the distance increases from the roadway (fill slopes and ditch inslopes).

**freeway** A divided highway that has a minimum of two lanes in each direction for the exclusive use of traffic and with full control of access.

**frontage road** An auxiliary road that is a local road or street located beside a highway for service to abutting property and adjacent areas and for control of access.

**functional classification** The grouping of streets and highways according to the character of the service they are intended to provide.

## G

**geocomposites** Prefabricated edge drains, wall drains, and sheet drains that typically consist of a cusped or dimpled polyethylene drainage core wrapped in a geotextile. The geotextile wrap keeps the core clean so that water can freely flow through the drainage core, which acts as a conduit. Prefabricated edge drains are used in place of shallow geotextile-wrapped trench drains at the edges of the roadway to provide subgrade and base drainage. Wall drains and sheet drains are typically placed between the back of the wall and the soil to drain the soil retained by the wall.

**Geographic Information System (GIS)** A computerized geographic information system used to store, analyze, and map data. Data may be used with GIS if the data includes the Accumulated Route Mile (ARM) or State Route Milepost (SRMP) programs. Global Positioning System (GPS) technology provides a means of collecting data and is an alternative to ARM and SRMP. WSDOT's primary desktop tool to view and analyze GIS data is ArcGIS software. GIS is used to gather and analyze data to support the purpose and need as described in the Project Summary (<http://wwwi.wsdot.wa.gov/gis/supportteam/default.asp>).

**geogrids** A polymer grid mat constructed either of coated yarns or a punched and stretched polymer sheet. Geogrids usually have high strength and stiffness and are used primarily for soil reinforcement.

**geomembranes** Impervious polymer sheets that are typically used to line ponds or landfills. In some cases, geomembranes are placed over moisture-sensitive swelling clays to control moisture.

**geonets** Similar to geogrids, but typically lighter weight and weaker, with smaller mesh openings. Geonets are used in light reinforcement applications or are combined with drainage geotextiles to form a drainage structure.

**geosynthetic erosion control** The minimizing of surficial soil particle movement due to the flow of water over the surface of bare soil or due to the disturbance of soil caused by construction activities under or near bodies of water. This is the primary function of geotextiles used as silt fences or placed beneath riprap or other stones on soil slopes. Silt fences keep eroded soil particles on the construction site, whereas geotextiles placed beneath riprap or other stones on soil slopes prevent erosion from taking place at all. In general, the permanent erosion control methods described in [Chapter 630](#) are only used where more natural means (like the use of biodegradable vegetation mats to establish vegetation to prevent erosion) are not feasible. These functions control some of the geosynthetic properties, such as apparent opening size (AOS) and permittivity, and in some cases load-strain characteristics. The application will also affect the geosynthetic installation conditions. These installation conditions influence the remaining geosynthetic properties needed, based on the survivability level required.

**geosynthetic filtration** The passage of water through the geosynthetic relatively unimpeded (permeability or permittivity) without allowing passage of soil through the geosynthetic (retention). This is the primary function of geotextiles in underground drainage applications.

**geosynthetic survivability** The ability of the geosynthetic to resist installation conditions without significant damage, such that the geosynthetic can function as intended. Survivability affects the strength properties of the geosynthetic required.

**geotextiles (nonwoven)** A sheet of continuous or staple fibers entangled randomly into a felt for needle-punched nonwovens and pressed and melted together at the fiber contact points for heat-bonded nonwovens. Nonwoven geotextiles tend to have low-to-medium strength and stiffness with high elongation at failure and relatively good drainage characteristics. The high elongation characteristic gives them superior ability to deform around stones and sticks.

**geotextiles (woven)** Slit polymer tapes, monofilament fibers, fibrillated yarns, or multifilament yarns simply woven into a mat. Woven geotextiles generally have relatively high strength and stiffness and, except for the monofilament wovens, relatively poor drainage characteristics.

**gore** The area downstream from the intersection of the shoulders of the main line and exit ramp. Although generally referring to the area between a main line and an exit ramp, the term may also be used to refer to the area between a main line and an entrance ramp.

**gore nose** At an exit ramp, the point at the end of the gore area where the paved shoulders of the main line and the ramp separate (see [Chapter 1360](#)) or the beginning of traffic barrier, not including any impact attenuator. Also, the similar point at an entrance ramp.

**grade break** The intersection of two adjacent surface planes of different grade. (ADA term)

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**H**

**hearing** An assembly to which the public is invited and at which participation is encouraged. Types of hearings include:

- **administrative appeal hearing** A formal process whereby a property owner may appeal WSDOT's implementation of access management legislation. The appeal is heard by an administrative law judge (ALJ), who renders a decision. (See [Chapter 540](#) for administrative appeal hearing procedures.)
- **combined hearing** A hearing held when there are public benefits to be gained by combining environmental, corridor, design, and/or limited access subjects.
- **corridor hearing** A formal or informal hearing that presents the corridor alternatives to the public for review and comment before a commitment is made to any one route or location. This type of hearing is beneficial for existing corridors with multiple Improvement projects programmed over a long duration.
- **design hearing** A formal or informal hearing that presents the design alternatives to the public for review and comment before the selection of a preferred alternative.
- **environmental hearing** A formal or informal hearing documenting that social, economic, and environmental impacts have been considered and that public opinion has been solicited.
- **formal hearing format** A hearing conducted by a moderator using a formal agenda, overseen by a hearing examiner, and recorded by a court reporter, as required by law. Limited access hearings require the use of the formal hearing format (see [Chapter 210](#)).
- **informal hearing format** A hearing where oral comments are recorded by a court reporter, as required by law. An informal hearing often uses the "open house" format (see [Chapter 210](#)). A formal agenda and participation by a hearing examiner are optional.
- **limited access hearing** A formal hearing that gives local public officials, owners of abutting properties, and other interested persons an opportunity to be heard about the limitation of access to the highway system.

**hearing agenda** An outline of the actual public hearing elements, used with formal hearings. (See [Chapter 210](#) for contents.)

**Hearing Coordinator** The HQ Access and Hearings Section Manager: (360) 705-7266.

**hearing examiner** An administrative law judge from the Office of Administrative Hearings, or a WSDOT designee, appointed to moderate a hearing.

**hearing script** A written document of text to be presented orally by department representatives at a hearing.

**hearing summary** Documentation prepared by the region and approved by Headquarters that summarizes environmental, corridor, and design hearings. (See [Chapter 210](#) for content requirements.)

**hearing transcript** A document prepared by the court reporter that transcribes verbatim all oral statements made during the hearing, including public comments. This document becomes part of the official hearing record.

**high-occupancy toll (HOT) lane** A managed lane that combines a high-occupancy vehicle lane and a toll lane.

**high-occupancy vehicle (HOV)** A vehicle that meets the occupancy requirements of the facility as authorized by [WAC 468-510-010](#).

**high pavement type** Portland cement concrete pavement or hot mix asphalt (HMA) pavement on a treated base.

**highway** A general term denoting a street, road, or public way for the purpose of vehicular travel, including the entire area within the right of way.

**Highway Construction Program (HCP)** A comprehensive multiyear program of highway Improvement and Preservation projects selected by the Legislature.

**Highway System Plan (HSP)** A WSDOT planning document that addresses the state highway system element of the Washington Transportation Plan (WTP). The HSP defines the service objectives, action strategies, and costs to maintain, operate, preserve, and improve the state highway system for 20 years. The HSP is the starting point for the state highway element of the CIPP and the state Highway Construction Program. It is periodically updated to reflect completed work and changing transportation needs, policies, and revenues. It compares highway needs to revenues, describes the “constrained” costs of the highway programs, and provides details of conceptual solutions and performance in the improvement program.

**Highways of Statewide Significance (HSS)** Include interstate highways and other principal arterials that are needed to connect major communities in the state. The designation helps assist with the allocation and direction of funding. (<http://www.wsdot.wa.gov/planning/HSS>)

**Horizon year** Typically considered to be 20 years from the year construction is scheduled to begin, as described in [Chapter 1103](#). See also design year.

**HOV direct access ramp** An on- or off-ramp exclusively for the use of HOVs that provides access between a freeway HOV lane and a street, transit support facility, or another freeway HOV lane without weaving across general-purpose lanes.

**HOV facility** A priority treatment for HOVs.

## I

**impact attenuator system** A device that acts primarily to bring an errant vehicle to a stop at a deceleration rate tolerable to the vehicle’s occupants or to redirect the vehicle away from a fixed feature.

**incorporated city or town** A city or town operating under [RCW 35](#) or [35A](#).

**inscribed circle** The outer edge of the circulating roadway.

**inscribed circle diameter (ICD)** The diameter of the inscribed circle (see [Chapter 1320](#)).

***inner corridor access*** a means of entering or leaving a roadside area inside of the state limited access right of way without crossing over, under, or physically through the plane of limited access.

***intelligent transportation systems (ITS)*** An integrated system of advanced sensor, computer, electronics, and communication technologies and management strategies, used to increase the safety and efficiency of the surface transportation system.

***interchange*** A system of interconnecting roadways, in conjunction with one or more grade separations, providing for the exchange of traffic between two or more intersecting highways or roadways.

***intermediate pavement type*** Hot mix asphalt pavement on an untreated base.

***intersection*** An at-grade access point connecting a state highway with a road or street duly established as a public road or public street by the local governmental entity.

***intersection angle*** The angle between any two intersecting legs at the point the centerlines intersect.

***intersection area*** The area of the intersecting roadways bounded by the edge of traveled ways and the area of the adjacent roadways to the farthest point: (a) the end of the corner radii, (b) through any marked crosswalks adjacent to the intersection, (c) to the stop bar, or (d) 10 feet from the edge of shoulder of the intersecting roadway (see [Chapter 1310](#)).

***Intersection, at grade*** The general area where a roadway or ramp terminal is met or crossed at a common grade or elevation by another roadway.

- ***four-leg intersection*** An intersection formed by two crossing roadways.
- ***split tee*** A four-leg intersection with the crossroad intersecting the through roadway at two tee intersections offset by at least the width of the roadway.
- ***tee (T) intersection*** An intersection formed by two roadways where one roadway terminates at the point it meets a through roadway.
- ***wye (Y) intersection*** An intersection formed by three legs in the general form of a “Y” where the angle between two legs is less than 60°.

***intersection control beacon (also flashing beacon)*** A secondary control device, generally suspended over the center of an intersection, that supplements intersection warning signs and stop signs. One display per approach may be used; however, two displays per approach are desirable. Intersection control beacons are installed only at intersections that control two or more directions of travel.

***intersection leg*** Any one of the roadways radiating from and forming part of an intersection.

- ***entrance leg*** The lanes of an intersection leg for traffic entering the intersection.
- ***exit leg*** The lanes of an intersection leg for traffic leaving the intersection.

**Note:** Whether an intersection leg is an entrance leg or an exit leg depends on which movement is being analyzed. For two-way roadways, each leg is an entrance leg for some movements and an exit leg for other movements.

**intersection density** The ratio of intersections per mile.

**intersection design vehicle** A specific selection of the vehicle to be used to dimension intersection design elements at an individual intersection.

**intersection sight distance** The length of roadway visible to the driver of a vehicle entering an intersection.

**Interstate System** A network of routes designated by the state and the Federal Highway Administration (FHWA) under terms of the federal-aid acts as being the most important to the development of a national system. The Interstate System is part of the principal arterial system.

**island** A defined area within an intersection, between traffic lanes, for the separation of vehicle movements or for pedestrian refuge.

## J

**justify** Preparing a memo to the DDP identifying the reasons for the decision: a comparison of advantages and disadvantages of all options considered. A more rigorous effort than document.

## K

**K-factor** The proportion of AADT occurring in the analysis hour is referred to as the K-factor, expressed as a decimal fraction (commonly called “K,” “K30,” or “K100”). The K30 is the thirtieth (K100 is the one-hundredth) highest peak hour divided by the annual average daily traffic. Normally, the K30 or K100 will be in the range of 0.09 to 0.10 for urban and rural areas. Average design hour factors are available on the web in the [Transportation Data, GIS & Modeling Office’s Annual Peak Hour Report](#).

## L

**lamp lumens** The total light output from a lamp, measured in lumens.

**lane** A strip of roadway used for a single line of vehicles.

**lane control signal** (reversible lanes) A special overhead signal that permits, prohibits, or warns of impending prohibition of lane use.

**lane width** The lateral design width for a single lane, striped as shown in the [Standard Plans](#) and the [Standard Specifications](#). The width of an existing lane is measured from the edge of traveled way to the center of the lane line or between the centers of adjacent lane lines.

**landing** A level paved area, within or at the top and bottom of a stair or ramp, designed to provide turning and maneuvering space for wheelchair users and as a resting place for pedestrians. (ADA term)

**lateral clearance** The distance from the edge of traveled way to a roadside object.

**layered networks** Roadway network arrangement where the objective is to separate modes onto different facilities with planned interconnection locations.

**lead agency** The public agency that has the principal responsibility for carrying out or approving a project.

**left-cross** Describes the intersection conflict between a motor vehicle left-turn and bicycle through movement in the opposing direction.

**legal road approach** A road approach that complies with the requirements of [Chapter 530](#) for limited access facilities and [Chapter 540](#) for managed access facilities.

**length of need** The length of a traffic barrier used to shield a fixed feature.

**level of service (LOS)** LOS is based on peak hour, except where noted. LOS assigns a rank (A – F) to facility sections based on traffic flow concepts like density, delay, and/or corresponding safety performance conditions. (See the Highway Capacity Manual and AASHTO’s Geometric Design of Highways and Streets ["Green Book"] for further details.)

**life cycle cost** The total cost of a project or item over its useful life. This includes all of the relevant costs that occur throughout the life of a project or item, including initial acquisition costs (such as right of way, planning, design, and construction), operation, maintenance, modification, replacement, demolition, financing, taxes, disposal, and salvage value as applicable.

**light emitting diode (LED)** A two-lead semiconductor light source.

**limited access (L/A)** Full, partial, or modified access control is planned and established for each corridor and then acquired as the right to limit access to each individual parcel (see [Chapter 520](#)).

- **acquired limited access control** Access rights have been purchased.
- **established limited access control** An access hearing has been held and the Assistant Secretary, Engineering & Regional Operations, has adopted the findings and order, which establishes the limits and level of control.
- **planned limited access control** Limited access control is planned for some time in the future; however, no access hearing has been held.

**Limited Access and Managed Access Master Plan** A map of Washington State that shows established and planned limited access highways: [www.wsdot.wa.gov/design/accessandhearings](http://www.wsdot.wa.gov/design/accessandhearings)

**limited access highway** All highways listed as “Established L/A” on the Limited Access and Managed Access Master Plan and where the rights of direct access to or from abutting lands have been acquired from the abutting landowners.

- **full access control** This most restrictive level of limited access provides access, using interchanges, for selected public roads/streets only, and prohibits highway intersections at grade.
- **partial access control** The second most restrictive level of limited access. At grade intersections with selected public roads are allowed, and there may be some crossings and some driveway approaches at grade. Direct commercial access is not allowed.

- **modified access control** The least restrictive level of limited access. Characteristics are the same as for partial access control except that direct commercial access is allowed.

**local roads** Non-state highways that are publicly owned.

**long tunnel** A tunnel, lid, or underpass that is greater than 80' in length and has a length to vertical clearance ratio greater than 10:1.

**low pavement type** Bituminous surface treatment (BST).

**lumen** The unit used to measure luminous flux.

**luminaire** A complete lighting unit comprised of a light bulb or light emitting Diode (LED) module, wiring, and a housing unit.

**luminance** The quotient of the luminous flux at an element of the surface surrounding the point and propagated in directions defined by an elementary cone containing the given direction, by the product of the solid angle of the cone and area of the orthogonal projection of the element of the surface on a plane perpendicular to the given direction. The luminous flux may be leaving, passing through, and/or arriving at the surface.

**luminous flux** The time rate of the flow of light.

## M

**M2D2** Multimodal Development and Delivery

**managed access highway** Highways where the rights of direct access to or from abutting lands have not been acquired from the abutting landowners.

**managed lane** A lane that increases efficiency by packaging various operational and design actions. Lane management operations may be adjusted at any time to better match regional goals.

**managing project delivery** A WSDOT management process for project delivery from team initiation through project closing.

**maximum extent feasible (MEF)** From the U.S. Department of Justice, [28 CFR Part 36.402](#), Alterations. The phrase "to the maximum extent feasible" applies to "the occasional case where the nature of an existing facility makes it virtually impossible to comply fully with applicable accessibility standards through a planned alteration." This phrase also refers to a stand-alone piece of design documentation that WSDOT uses to record its reasons for not being able to achieve full ADA compliance in alteration projects (called a Maximum Extent Feasible document). (ADA term)

**maximum uniformity ratio** The average light level within the design area divided by the minimum light level within the design area (see [Chapter 1040](#)).

**maximum veiling luminance ratio** The maximum veiling luminance divided by the average luminance over a given design area for an observer traveling parallel to the roadway centerline (see [Chapter 1040](#)).



***mcd/m<sup>2</sup>/lux*** Pavement marking retroreflectivity is represented by the coefficient of retroreflected luminance ( $R_L$ ) measured in millicandelas per square meter.

***Measures of Effectiveness (MOEs)*** In the context of [Chapter 320](#), examples are: speed, delay, density, LOS, QOS, person or vehicle throughput, cost vs. benefit, and queue. (See FHWA's MOE List.)

***median*** The portion of a divided highway separating vehicular traffic traveling in opposite directions.

***median functions*** one or more reason(s) for a median as described in [Chapter 1239](#).

***median opening*** An opening in a continuous median for the specific purpose of allowing vehicle movement.

***Memorandum of Understanding (MOU) for a road approach permit*** There is a MOU (Highways Over National Forest Lands) between the United States Forest Service (USFS) and WSDOT that requires the USFS to obtain a road approach permit for new access to a state highway that is crossing Forest Service land.

***metering signal*** A signal used to control the predominant flow rate of traffic at an at-grade facility.

***Methods and Assumptions Document*** A mandatory document developed at the beginning of the ARR phase to record ARR assumptions, methodologies, criteria, and decisions (see [Chapter 550](#)).

***Metropolitan Planning Organization (MPO)*** A lead agency designated by the Governor to administer the federally required transportation planning process in a metropolitan area with a population over 50,000. The MPO is responsible for the 20 year long-range plan and Transportation Improvement Program (TIP).

***midblock pedestrian crossing*** A marked pedestrian crossing located between intersections. (ADA term)

***minimum average light level*** The average of all light intensities within the design area, measured just prior to relamping the system (see [Chapter 1040](#)).

***minimum light level*** The minimum light intensity of illumination at any single point within the design area measured just prior to relamping the system (see [Chapter 1040](#)).

***minor arterial system*** A rural network of arterial routes linking cities and other activity centers that generate long distance travel and, with appropriate extensions into and through urban areas, form an integrated network providing interstate and interregional service ([RCW 47.05.021](#)).

***minor operational enhancement projects*** These projects usually originate from the Q2 component of the Q Program and are quick responses to implement low-cost improvements. They are typically narrow in scope and focus on improvements to traffic operations and modifications to traffic control devices. Guidance on the type of work included in the Q subprograms is in the Chart of Accounts.

***modal compatibility*** An assessment to determine which mode(s) need to be considered strictly based on the context characteristics present or planned. The assessment is independent of whether any

particular mode is present on the segment, and intended to guide strategic investment opportunities on a segment.

**modal priority** Mode(s) that will be prioritized when making design decisions for the project, guided by the outcome of the modal compatibility assessment.

**mode** A specific type or form of transportation. Typically for roadway design the modes are: automobiles, transit, truck freight, pedestrians, skateboards, and bicycles.

**monument** As defined in [Chapter 410](#), a monument is any physical object or structure that marks or references a survey point. This includes, but is not limited to, a point of curvature (P.C.), a point of tangency (P.T.), a property corner, a section corner, a General Land Office (GLO) survey point, a Bureau of Land Management (BLM) survey point, and any other permanent reference set by a governmental agency or private surveyor.

**monument removal or destruction** The physical disturbance or covering of a monument such that the survey point is no longer visible or readily accessible.

**mounting height – luminaire** The vertical distance between the surface of the design area and the center of the light source of the luminaire. Note: This is not to be confused with pole height (H1), but is the actual distance that the luminaire is located above the roadway edge line.

**movable bridge signal** (also drawbridge signal) A signal installed to notify traffic to stop when the bridge is opened for waterborne traffic. Movable bridge signals display continuous green when the roadway is open to vehicular traffic.

**multimodal connection** The point where multiple types of transportation activities occur; for example, where transit buses and van pools drop off or pick up passengers (including passengers with bicycles).

## **N**

**National Highway System (NHS)** The NHS was developed by the U.S. Department of Transportation (DOT) in cooperation with the states, local officials, and metropolitan planning organizations (MPOs).

The NHS includes the following subsystems of roadways (note that a specific highway route may be on more than one subsystem):

- **Interstate** The Eisenhower Interstate System of highways retains its separate identity within the NHS.
- **Other Principal Arterials** These are highways in rural and urban areas that provide access between an arterial and a major port, airport, public transportation facility, or other intermodal transportation facility.
- **Strategic Highway Network (STRAHNET)** This is a network of highways that are important to the United States' strategic defense policy and that provide defense access, continuity, and emergency capabilities for defense purposes.
- **Major Strategic Highway Network Connectors** These are highways that provide access between major military installations and highways that are part of the Strategic Highway Network.

- **Intermodal Connectors** These highways provide access between major intermodal facilities and the other four subsystems making up the National Highway System.

**natural vehicle path** The natural path that a driver navigates a vehicle given the layout of the intersection and the ultimate destination.

**need** A statement that identifies the transportation problem(s) or other performance gap

**negative illumination** Lighting the background and leaving the object dark to contrast with the light behind it as the driver views it.

**network connectivity** How the various roadways and other transportation facilities within a network interconnect in a defined geographic area.

**nighttime** The period of time from one-half hour after sunset to one-half hour before sunrise and any other time when persons or objects may not be clearly discernible at a distance of 500 feet ([RCW 46.04.200](#)).

**no-build condition** The baseline, plus state transportation plan and comprehensive plan improvements, expected to exist, as applied to the year of opening or the design year.

**nonconforming road approach** A road approach that does not meet current requirements for location, quantity, spacing, sight distance, or geometric elements.

**nonrecoverable slope** A slope on which an errant vehicle might continue until it reaches the bottom, without having the ability to recover control. Fill slopes steeper than 4H:1V, but not steeper than 3H:1V, are considered nonrecoverable.

**nonseparated HOV lane** An HOV lane that is adjacent to and operates in the same direction as the general-purpose lanes with unrestricted access between the HOV lane and the general-purpose lanes.

**notice of appearance** A form provided by WSDOT for anyone wanting to receive a copy of the findings and order and the adopted limited access plan (see [Chapter 210](#)).

**notice of hearing** (or hearing notice) A published advertisement that a public hearing will be held.

**notice of opportunity for a hearing** An advertised offer to hold a public hearing.

## O

**occupancy designation** The minimum number of occupants required for a vehicle to use the HOV facility.

**operating speed** The speed at which drivers are observed operating their vehicles during free flow conditions.

**order of hearing** The official establishment of a hearing date by the Director & State Design Engineer, Development Division.

**outer separation** The area between the outside edge of traveled way for through traffic and the nearest edge of traveled way of a frontage road or collector-distributor (C-D) road.

**overlapped displays** Overlapped displays allow a traffic movement to operate with one or more nonconflicting phases. Most commonly, a minor street's exclusive right-turn phase is overlapped with the nonconflicting major street's left-turn phase. An overlapped display can be terminated after the parent phase (the main phase the overlap is associated with) terminates. An overlapped display programmed for two or more parent phases continues to display until all of the parent phases have terminated. An overlap is made up of two or more phases—not one phase controlling two movements.

## P

**painted nose** The point where the main line and ramp lanes separate.

**passenger loading zone** An area provided for pedestrians to board/disembark a vehicle. (ADA term)

**passing lane** An auxiliary lane on a two-lane highway used to provide the desired frequency of passing zones.

**passing sight distance** The distance (on a two-lane highway) needed for a vehicle driver to execute a normal passing maneuver based on design conditions and design speed.

**pavement marking** A colored marking applied to the pavement by spray, extrusion, adhesives, or glue to provide drivers with guidance and other information.

**pavement marking beads** **Glass:** Small glass spheres used in highway pavement markings to provide retroreflectivity. **Composite:** any non-glass bead intended to provide wet weather retroreflectivity.

**pavement marking durability** A measure of a pavement marking's resistance to wear and deterioration.

**peak hour** The 60-minute interval that contains the largest volume of traffic during a given time period. If a traffic count covers consecutive days, the peak hour can be an average of the highest hour across all of the days. An a.m. peak is simply the highest hour from the a.m., and the p.m. peak is the highest from the p.m. The peak hour correlates to the DHV, but is not the same. However, it is close enough on items such as intersection plans for approval to be considered equivalent.

**pedestrian** Any person afoot or using a wheelchair (manual or motorized) or means of conveyance (other than a bicycle) propelled by human power, such as skates or a skateboard. (ADA term)

**pedestrian access route (PAR)** (synonymous with [accessible route](#)) A continuous, unobstructed walkway within a pedestrian circulation path that provides accessibility. Pedestrian access routes consist of one or more of the following pedestrian facilities: walkways/sidewalks, curb ramps (excluding flares), landings, crosswalks, pedestrian overpasses/underpasses, access ramps, elevators, and platform lifts. Note: Not all transportation facilities need to accommodate pedestrians. However, those that do accommodate pedestrians need to have an accessible route. (ADA term)

**pedestrian circulation path** A prepared exterior or interior way of passage provided for pedestrian travel. Includes independent walkways, shared-use paths, sidewalks, and other types of pedestrian facilities. All pedestrian circulation paths are required to contain a continuous pedestrian access route that connects to all adjacent pedestrian facilities, elements, and spaces that are required to be accessible. (ADA term)

**pedestrian facilities** Walkways such as sidewalks, walking and hiking trails, shared-use paths, pedestrian grade separations, crosswalks, and other improvements provided for the benefit of pedestrian travel. Pedestrian facilities are intended to be accessible routes. (ADA term)

**pedestrian overpass or underpass** A grade-separated pedestrian facility, typically a bridge or tunnel structure over or under a major highway or railroad that allows pedestrians to cross. (ADA term)

**pedestrian refuge island** An island in the roadway that physically separates the directional flow of traffic, provides pedestrians with a place of refuge, and reduces the crossing distance. Note: Islands with cut-through paths are more accessible to persons with disabilities than are raised islands with curb ramps. (ADA term)

**pedestrian signal** An adaptation of a conventional traffic signal installed at established pedestrian crossings. It is used to provide a protected phase for pedestrians by terminating the conflicting vehicular movements to allow for pedestrian crossings. (ADA term)

**performance-based decisions** Decisions that are made based on performance, performance metrics, performance targets, and performance gaps. Also, decisions made using performance evaluation tools, such as [the Highway Safety Manual predictive methods](#) for evaluating safety performance.

**performance category** Any broad area of performance important to an organization, project, or place. WSDOT's six performance categories: Economic Vitality, Preservation, Safety, Mobility, Environment, and Stewardship [are the result of legislative policy per RCW 47.04.280](#).

**performance evaluation tools** Quantitative tools used to measure performance. Examples of these tools currently being used by WSDOT are *Highway Safety Manual* methodology (for safety performance) and *Highway Capacity Manual* (for mobility performance).

**performance gap** The difference between the measured and targeted performance unit for a performance metric. This gap is another way of describing the performance need(s) at a location.

**performance metric** Any measurable indicator used to assess the achievement of outcomes.

**performance need** See [baseline performance need](#) and [contextual performance need](#)

**performance target(s)** An outcome or desired state intended for a project. Performance targets are identified as either baseline or contextual (see [Chapter 1101](#)).

**permit holder** The abutting property owner or other legally authorized person to whom an access connection permit is issued by the permitting authority.

**permitted access connection** A connection for which an access connection permit has been issued by a permitting authority.

**permitting authority** The agency that has legal authority to issue managed access connection permits. For access connections in unincorporated areas, the permitting authority is WSDOT; for access connections within corporate limits, the permitting authority is a city or town.

**person with a disability** Per the U.S. Department of Justice: An individual with a disability is defined by the ADA as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such an impairment, or a person who is perceived by others as having such an impairment. It is defined by law through the American with Disabilities Act. (ADA term)

**physical nose** The point, upstream of the gore, with a separation between the roadways of 16 to 22 feet (see [Chapter 1360](#)).

**planning** Transportation planning is a decision-making process required by federal and state law used to solve complex, interrelated transportation and land use problems.

**Planning and Environmental Linkage (PEL)** A collaborative and integrated approach to transportation decision-making that (1) considers environmental, community, and economic goals early in the planning process, and (2) uses the information, analysis, and products developed during planning to inform the environmental review process.

**Plans, Specifications, and Estimates (PS&E)** The project development activity that follows Project Definition and culminates in the completion of contract-ready documents and the engineer's cost estimate.

**pole height (H1)** The vertical distance from the light source to the pole base. This distance is specified in contracts and used by the pole manufacturers to fabricate the light standard.

**portable traffic signal** A type of conventional traffic signal used in work zones to control traffic. This signal is most commonly used on two-way two-lane highways where one lane has been closed for roadwork. This signal is most commonly operated in pairs, with one signal at each end of the work zone. This eliminates the need for 24-hour flagger control. The traffic signal provides alternating right of way assignments for conflicting traffic movements. The signal has an adjustable vertical support with two three-section signal displays and is mounted on a mobile trailer with its own power source.

**positive illumination** Lighting the surface of the object as the driver views it.

**posted speed** The maximum legal speed as posted on a section of highway using regulatory signs.

**Practical Design/Practical Solutions** An approach to making project decisions that focuses on the specific problem the project is intended to address. This performance-based approach looks for lower cost solutions that meet outcomes that WSDOT, partnering agencies, communities and stakeholders have identified. Practical design is a fundamental component to the vision, mission, values, goals, and reforms identified in [Results WSDOT- WSDOT's Strategic Plan](#). With practical solutions, decision-making focuses on maximum benefit to the system, rather than maximum benefit to the project. Focusing on the specific project need minimizes the scope of work for each project so that system-wide needs can be optimized.

**prehearing packet** A concise, organized collection of all necessary prehearing data, prepared by the region and approved by the HQ Access and Hearings Section Manager prior to the hearing (see [Chapter 210](#)).

**preliminary engineering (PE)** A term used to describe the Project Delivery process from project scoping through PS&E review.

**principal arterial system** A connected network of rural arterial routes with appropriate extensions into and through urban areas, including routes designated as part of the Interstate System, that serves corridor movements with travel characteristics indicative of substantial statewide and interstate travel ([RCW 47.05.021](#)).

**Priority Programming Process** The rational selection of projects and services according to factual need and an evaluation of life cycle costs and benefits.

**project** The Project Management Institute defines a project to be "a temporary endeavor undertaken to create a unique product or service."

**Project Definition** (see [Project Summary](#))

**Project Development Approval** Final approval of all project development documents by the designated representative of the approving organization prior to the advertisement of a capital transportation project (see [Chapter 300](#)).

**Project Engineer** This term applies to WSDOT personnel. Wherever "Project Engineer" appears in this manual, the design-builder shall deem it to mean "Engineer of Record."

**Project File (PF)** A file containing all documentation and data for all activities related to a project (see [Chapter 300](#)).

- **Design Documentation Package (DDP)** The portion of the Project File, including Design Approval and Project Development Approval that will be retained long term in accordance with WSDOT document retention policies. Depending on the scope of the project, it contains the Project Summary and some or all of the other documents discussed in [Chapter 300](#). Technical reports and calculations are part of the Project File, but they are not designated as components of the DDP. Include estimates and justifications for decisions made in the DDP (see [Chapter 300](#)). The DDP explains how and why the design was chosen and documents approvals.

**project management plan** A formal, approved document that defines how the project is executed, monitored, and controlled. It may be in summary or detailed form and may be composed of one or more subsidiary management plans and other work planning documents. For further information, see the Project Management Guide:

<http://www.wsdot.wa.gov/Projects/ProjectMgmt/OnlineGuide/ProjectManagementOnlineGuide.htm>

**project need statement** A statement identifying the baseline performance need for the project. For each identified project need, there may be one or more performance metrics, targets, and gaps.

**Project Scoping** See [scoping phase](#).

**Project Summary** A set of documents consisting of the, Environmental Review Summary (ERS), and Project Definition (PD). The Project Summary is part of the design documentation required to obtain Design Approval and is ultimately part of the design documentation required for Project Development Approval (see [Chapter 300](#)).

- **Environmental Review Summary (ERS)** A document that records the environmental classification (class of action) and considerations (consequences of action) for a specific project.
- **Project Definition (PD)** A document that records the purpose and need of the project, along with program level and design constraints.

**Projects of Division Interest (PoDIs)** A primary set of projects for which FHWA determines the need to exercise oversight and approval authority, as described in [Chapter 300](#).

**proposal** The combination of projects/actions selected through the study process to meet a specific transportation system need.

**public art** An enhancement to a functional element, feature, or place within a transportation facility to provide visual interest. The enhancement could be an addition to a functional element, integrated into a design, or for purely aesthetic purposes. An element is considered “public art” if it is beyond WSDOT standard practice for architectural treatment.

**public involvement plan** A plan to collaboratively involve the public in decision making, tailored to the specific needs and conditions of a project and the people and communities it serves. It is often part of a broader communications plan.

**public transportation** Passenger transportation services available to the public, including buses, ferries, rideshare, and rail transit.

**purpose** General project goals such as improve safety, enhance mobility, or enhance economic development.

## Q

**Quality of Service (QOS)** Defined by the *Highway Capacity Manual* or by agreement. Intended to describe how well a facility or service operates or functions from the perspective of the user.

**quantitative safety analysis** An analysis of quantitative safety performance based on data-driven science based tools and techniques that model modal crash potential.

**quantitative tools** Analytical tools used to measure performance. Examples of tools currently being used by WSDOT are:

- *Highway Safety Manual* predictive methods (for safety performance)
  - o AASHTOWare SafetyAnalyst
  - o ISATe (spreadsheet tool for implementing the HSM predictive methods for freeways and interchanges)
  - o IHSDM (FHWA software tool for implementing the HSM predictive methods)



- o HSM Enhanced Spread Sheets ([spreadsheet tools for implementing the HSM predictive methods for rural two lane two way roadways, rural multilane roads, and urban and suburban arterials](#))
- o See also <http://wwwi.wsdot.wa.gov/highwaysafety>
- *Highway Capacity Manual* (for mobility performance)

**queue cutter traffic signal** A traffic signal used at highway-rail grade crossings where the queue from a downstream traffic signal is expected to extend within the Minimum Track Clearance Distance. It is used to keep vehicles from an adjacent signalized intersection from queuing on the railroad tracks.

## R

**raised median** A raised island in the center of a road used to restrict vehicle left turns and side street access. Note: Islands with cut-through paths are more accessible to persons with disabilities than are raised islands with curb ramps. (ADA term)

**ramp** A walking surface with a running slope steeper than 20H:1V (5%). (ADA term)

**ramp** (in relation to a [Roadway](#)) A short roadway connecting a main lane of a highway with another facility, such as a road, parking lot, or transit stop, for vehicular use.

**ramp connection** The pavement at the end of a ramp, connecting to a main lane of a roadway.

**ramp meter** A traffic signal at a freeway entrance ramp that allows a measured or regulated amount of traffic to enter the freeway.

**ramp terminal** An intersection at the end of a ramp.

**Record of Decision (ROD)** Under the National Environmental Policy Act, the Record of Decision accompanies the Final Environmental Impact Statement; explains the reasons for the project decision; discusses alternatives and values considered in selection of the preferred alternative; and summarizes mitigation measures and commitments that will be incorporated in the project.

**recoverable slope** A slope on which the driver of an errant vehicle can regain control of the vehicle. Slopes of 4H:1V or flatter are considered recoverable.

**recovery area** The minimum target value used in highway design when a fill slope between 4H:1V and 3H:1V starts within the Design Clear Zone.

**Recreational Vehicle Account** In 1980 the RV account was established for use by the department of transportation for the construction, maintenance, and operation of recreational vehicle sanitary disposal systems at safety rest areas ([RCW 46.68.170](#)). A recreational vehicle sanitary disposal fee is required for registration of a recreational vehicle ([RCW 46.17.375](#)). Adjustments to the recreational vehicle fee by the department of transportation may be implemented after consultation with the citizens' representatives of the recreational vehicle user community ([RCW 47.01.460](#)).

**Regional Transportation Planning Organization (RTPO)** A planning organization authorized by the Legislature in 1990 as part of the Growth Management Act. The RTPO is a voluntary organization with representatives from state and local governments that are responsible for coordinating transportation planning activities within a region.

**relocation assistance program** A program that establishes uniform procedures for relocation assistance that will ensure legal entitlements and provide fair, equitable, and consistent treatment to persons displaced by WSDOT-administered projects, as defined in the [Right of Way Manual](#).

**Request for Proposal (RFP)** The document package issued by WSDOT requesting submittal of proposals for the project and providing information relevant to the preparation and submittal of proposals, including the instructions to proposers, contract documents, bidding procedures, and reference documents.

**rest area** An area to the side of a path.

**résumé** An official notification of action taken by WSDOT following adoption of a findings and order (see [Chapter 210](#)).

**retroreflection** The phenomenon of light rays striking a surface and being returned directly back to the source of light.

**Retroreflection, coefficient of ( $R_L$ )** A measure of retroreflection.

**retroreflectometer** An instrument used to measure retroreflectivity.

**right-hook** Potential intersection conflicts between motor vehicles making a right turn and the bicycle through movement.

**right of way (R/W)** A general term denoting land or interest therein, acquired for or designated for transportation purposes. More specifically, lands that have been dedicated for public transportation purposes or land in which WSDOT, a county, or a municipality owns the fee simple title, has an easement devoted to or required for use as a public road/street and appurtenant facilities, or has established ownership by prescriptive right.

**right of way and limited access plan (R/W and L/A plan)** A right of way plan that also shows limited access control details.

**road approach** An access point, other than a public road/street, that allows access to or from a limited access highway on the state highway system.

**roadside park** A roadside user facility for safe vehicular parking off the traveled way and separated from the highway by some form of buffer. These sites might be equipped with features or elements such as points of interest, picnic tables, and/or vault toilet buildings. Unlike a safety rest area, a roadside park does not always provide a permanent restroom building.

**roadway** The portion of a highway, including shoulders.

**roadway luminance** The light projected from a luminaire that travels toward a given area, represented by a point on the pavement surface, and then back toward the observer, opposite to the direction of travel. The units of roadway luminance are footcandles.

**roundabout** A circular intersection at grade with yield control of all entering traffic, channelized approaches with raised splitter islands, counter-clockwise circulation, and appropriate geometric curvature to force travel speeds on the circulating roadway generally to less than 25 mph.

**rumble strips** Rumble strips are grooves or rows of raised pavement markers placed perpendicular to the direction of travel, or ground in a continuous longitudinal sinusoidal pattern. They are used to alert inattentive drivers.

**running slope** A slope measured in the direction of travel, normally expressed as a percent. (ADA term)

## S

**Safety Analyst** A program developed to implement the *Highway Safety Manual* methodology

**safety rest area (SRA)** A roadside facility equipped with permanent restroom building(s), a parking area, picnic tables, refuse receptacles, illumination, and other ancillary services. SRAs typically include potable water and might include traveler information and telephones.

**Safety Rest Area Strategic Plan** Developed in 2008 under a stakeholder-coordinated effort of executive and advisory team members, this plan provides guidance for current and future management of the SRA program.

**sawtooth berth** A series of bays that are offset from one another by connecting curb lines, constructed at an angle from the bus bays. This configuration minimizes the amount of space needed for vehicle pull in and pull out.

**scoping phase** An initial phase of project development for a specific project. The scoping phase precedes the design and/or preliminary engineering phase and is intended to support priority programming and budget building scenarios. The [Project Summary](#) is the documentation developed during this phase.

**security lighting** A minimal amount of lighting used to illuminate areas for public safety or theft reduction. Security lighting for walkways is the lighting of areas where shadows and horizontal and vertical geometry obstruct a pedestrian's view.

**separated HOV facility** An HOV roadway that is physically separated from adjacent general-purpose lanes by a barrier or median, or is on a separate right of way.

**shared-use landing** A level (0 to 2% grade cross slope and running slope) paved area within the shared-use path, designed to provide turning and maneuvering space for wheelchair users and as a resting place for pedestrians.

**shared-use path** A facility physically separated from motorized vehicular traffic within the highway right of way or on an exclusive right of way with minimal crossflow by motor vehicles. Shared-use paths

are primarily used by bicyclists and pedestrians, including joggers, skaters, and pedestrians with disabilities, including those who use nonmotorized or motorized wheeled mobility devices. With appropriate design considerations, equestrians may also be accommodated by a shared-use path facility.

**short tunnel** A tunnel, lid, or underpass that is shorter than 80' in length and has a length to vertical clearance ratio of 10:1 or less.

**shoulder** The portion of the roadway contiguous with the traveled way, primarily for accommodation of stopped vehicles, emergency use, lateral support of the traveled way, and where allowed, use by pedestrians and bicycles.

**shoulder width** The lateral dimension of the shoulder, measured from the edge of traveled way to the edge of roadway or the face of curb.

**sidewalk** A walkway along a highway, road, or street intended for use by pedestrians. (ADA term)

**sight distance** The length of highway visible to a driver.

**Signal Maintenance Management System (SIMMS)** A database used for traffic signals, illumination, and Intelligent Transportation Systems (ITS). SIMMS is used to establish an inventory base, enter work reports, print timesheets, and store maintenance records for electrical/electronic systems within WSDOT right of way.

**single-lane roundabout** A roundabout having single-lane entries at all legs and one circulating lane.

**single-occupant vehicle (SOV)** Any motor vehicle other than a motorcycle carrying one occupant.

**site** Parcel(s) of land bounded by a property line or a designated portion of a public right of way. (ADA term)

**site design** Style and configuration of the built environment or parcel(s).

**slip base** A mechanical base designed to allow the light standard to break away from the fixed foundation when hit by a vehicle traveling at the design speed and traveling at a departure angle less than or equal to the design departure angle.

**slip lane** A lane that separates heavy right-turn movements from the roundabout circulating traffic (see [Chapter 1320](#)).

**slip ramp** A connection between legs of an intersection that allows right-turning vehicles to bypass the intersection or a connection between an expressway and a parallel frontage road. These are often separated by an island.

**slow-moving vehicle turnout** A shoulder area widened to provide room for a slow-moving vehicle to pull out of the through traffic, allow vehicles to pass, and then return to the through lane.

**speed** The operations or target or posted speed of a roadway. There are three classifications of speed established:

- **Low speed** is considered 35 mph and below.
- **Intermediate speed** is considered 40-45 mph.
- **High speed** is considered 50 mph and above.

**speed limit sign beacon** A beacon installed with a fixed or variable speed limit sign. The preferred display is two flashing yellow indications.

**speed management** An engineered effort to achieve a targeted speed.

**speed transition segment** An engineered segment of road intended to lower the operating speed between contexts with different target speeds.

**splitter island** The raised island at each two-way leg between entering and exiting vehicles, designed primarily to control the entry and exit speeds by providing deflection. They also discourage wrong-way movements, and provide pedestrian refuge.

**state highway system** All roads, streets, and highways designated as state routes in compliance with [RCW 47.17](#).

**static scale** A scale that requires a vehicle to stop for weighing.

**stopping sight distance** The distance needed for a driver to stop a vehicle traveling at design speed based on design conditions.

**stop sign beacon** A beacon installed above a stop sign. The display is a flashing red indication.

**street furniture** Sidewalk equipment or furnishings, including garbage cans, benches, parking meters, and telephone booths. (ADA term)

**streetside** The portion of the public right of way dedicated to the pedestrian thoroughfare and supporting the accessibility, activities and functions of the local land use. The streetside is comprised of a frontage zone, pedestrian zone and furnishing zone (see [Chapter 1238](#)). Note some local agencies may divide the streetside zone.

**study area** The transportation system area to study in the study process and for an [ARR](#). The study area is a minimum of one interchange upstream and downstream from the proposal. The study area shall also include the intersecting roadway in the area to the extent necessary to ensure its ability to collect and distribute traffic to and from the interchange. The study area should be expanded as necessary to capture operational impacts of adjacent interchanges in the vicinity that are, or will be, bottlenecks or chokepoints that influence the operations of the study interchange.

**study plan** A term associated with environmental procedures, this plan proposes an outline or “road map” of the environmental process to be followed during the development of a project that requires complex NEPA documentation (see [Chapter 210](#) and the [Environmental Manual](#)).

**subject matter expert** A person who is an authority in a particular area or topic, and understands the data and the limitations on the use and application of the data.

**superelevation** The rotation of the roadway cross section in such a manner as to overcome part of the centrifugal force that acts on a vehicle traversing a curve.

**superelevation runoff** The length of highway needed to accomplish the change in cross slope from a section with adverse crown removed (level) to a fully superelevated section, or vice versa.

**superelevation transition length** The length of highway needed to change the cross slope from normal crown or normal pavement slope to full superelevation.

**support team** An integral part of the ARR process consisting of an assemblage of people from the regions, FHWA (for Interstates), WSDOT HQ Access and Hearings, and other representatives organized to develop and analyze alternatives to meet the need of a proposal, including approval authorities.

**Surface Transportation Program (STP)** A federal program established by Congress in 1991 that provides a source of federal funding for highway and bridge projects.

## T

**tangent runoff** The length of highway needed to change the cross slope from normal crown to a section with adverse crown removed (level).

**target speed** A proactive approach to establishing a speed consistent with the context characteristics. Target speed is the design operating speed, which aligns design, posted and operating speed as the same value.

**temporary traffic signal** A conventional traffic signal used during construction to control traffic at an intersection while a permanent signal system is being constructed. A temporary traffic signal is typically an inexpensive span-wire installation using timber strain poles.

**tradeoffs analysis** An analysis method for balancing factors, performance or outcomes, which are not attainable at the same time.

**traffic barrier** A longitudinal barrier, including bridge rail or an impact attenuator, used to redirect vehicles from fixed features located within an established Design Clear Zone, help mitigate median crossovers, reduce the potential for errant vehicles to travel over the side of a bridge structure, or (occasionally) protect workers, pedestrians, or bicyclists from vehicular traffic.

**traffic barrier/longitudinal barrier** A device oriented parallel or nearly parallel to the roadway whose primary function is to contain or safely redirect errant vehicles away from fixed features or to (occasionally) protect workers, pedestrians, or bicyclists from vehicular traffic. Beam guardrail, cable barrier, bridge rail, concrete barrier, and impact attenuators are barriers, and they are categorized as rigid, rigid anchored, unrestrained rigid, semirigid, and flexible. They can be installed as roadside or median barriers.

**traffic calming** Design techniques that have been shown to reduce traffic speeds and unsafe maneuvers. These techniques can be stand-alone or used in combination, and they include lane narrowing, curb extensions, surface variations, and visual clues in the vertical plane. (ADA term)

**traffic calming treatments** Treatments along the roadway that can be used to reduce speeds through a section of roadway (see [Chapter 1103](#)).

**Traffic Impact Analysis (TIA)** (sometimes called *Traffic Impact Study (TIS)*) If a traffic analysis is not an ARR it is a TIA. TIAs are used for environmental reviews and developer projects (see [Chapter 320](#)).

**transit** A general term applied to passenger rail and bus service used by the public.

**transit facility** A capital facility that improves the efficiency of public transportation or encourages the use of public transportation.

**transit flyer stop** A multimodal connection located within the boundaries of a limited access facility.

**transition** A section of barrier used to produce the gradual stiffening of a flexible or semirigid barrier as it connects to a more rigid barrier or fixed object.

**transitional segments** Segments of a pedestrian circulation path that blend between existing undisturbed pedestrian facilities and newly altered pedestrian facilities. Use of transitional segments may permit the work of the alteration to more nearly meet the new construction standards. At a later time, when other segments of the pedestrian circulation path are altered, the noncomplying transitional segments can be removed and replaced with pedestrian facilities that meet the accessibility criteria. (ADA term)

**transit lane** A lane for the exclusive use of transit vehicles.

**transit stop** A facility for loading and unloading passengers that is set aside for the use of transit vehicles only.

**transit vehicle** A bus or other motor vehicle that provides public transportation (usually operated by a public agency).

**Transportation Management Area (TMA)** Urbanized areas with populations of 200,000 or greater are federally designated as Transportation Management Areas.

**transportation management plan (TMP)** A set of traffic control plans, transportation operations plans, and public information strategies for managing the work zone impacts of a project. A TMP is required for all projects to address work zone safety and mobility impacts.

**travel demand** The demand travelers will make on the system based on the number and types of trips they will take and the mode and routes they will use. Local travel demand represents short trips that should be made on the local transportation system, such as intracity roads and streets. Regional travel demand represents long trips that are made on the regional transportation system, such as Interstate, regional, and/or intercity/interregional roads, streets, or highways.

**traveled way** The portion of the roadway intended for the movement of vehicles, exclusive of shoulders and lanes for parking, turning, and storage for turning.

**traveled way zone** The portion of the roadway intended for the movement of people and goods, exclusive of shoulders, roadsides, on-street parking, medians and streetside zones.

**traveler information** Commercial and noncommercial information that informs and orients the traveling public. This includes access information for food, gas, lodging, local attractions, regional tourist attractions, roadway conditions, and construction schedules.

**traveling public** Motorists, motorcyclists, bicyclists, pedestrians, and pedestrians with disabilities.

**trips** Short trips are normally local. Long trips are normally interstate, regional, or interregional.

**truck apron** The optional mountable portion of the central island of a roundabout between the raised nontraversable area of the central island and the circulating roadway (see [Chapter 1320](#)).

**turning radius** The radius that the front wheel of the intersection design vehicle on the outside of the curve travels while making a turn (see [Chapter 1320](#)).

**turning roadway** A curve on an open highway, a ramp, or the connecting portion of the roadway between two intersecting legs of an intersection.

**two-way left-turn lane (TWLTL)** A lane, located between opposing lanes of traffic, to be used by vehicles making left turns from either direction, from or onto the roadway.

## U

**undivided multilane** A roadway with two or more through lanes in each direction on which left turns are not controlled.

**uniformity ratio** The ratio of the minimum average light level on the design area to the minimum light level of the same area (see [Chapter 1040](#)).

**universal access** Access for all persons regardless of ability or stature. (ADA term)

**urban area** An area designated by the Washington State Department of Transportation (WSDOT) in cooperation with the Transportation Improvement Board (TIB) and Regional Transportation Planning Organizations (RTPO), subject to the approval of the Federal Highway Administration (FHWA).

**urbanized area** An urban area with a population of 50,000 or more.

**usable shoulder** The width of the shoulder that can be used by a vehicle for stopping.



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**V**

**validation** A process to confirm the reasonableness, accuracy and completeness of estimated costs and quantities.

**Value Engineering (VE) Analysis** A systematic approach to identifying and removing unnecessary costs which do not contribute to a desired result by analyzing cost versus function.

**Value Engineering Change Proposal (VECP)** A construction contract change proposal submitted by the construction contractor based on a VECP provision in the contract. The intent of these types of proposals is to (1) improve the project's performance, value, and/or quality, (2) lower construction costs, or (3) shorten the delivery time, while considering their impacts on the project's overall life-cycle cost and other applicable factors.

**Value Engineering (VE) Job Plan** A systematic and structured action plan (see [Chapter 310](#)) for conducting and documenting the results of the VE analysis. While each VE analysis shall address each phase in the VE Job Plan, the level of analysis conducted and effort expended for each phase should be scaled to meet the needs of each individual project. The WSDOT VE analysis uses the Seven-Phase Job Plan shown in Exhibit 310-1.

**veiling luminance** The stray light produced within the eye by light sources produces a veiling luminance that is superimposed on the retinal image of the objects being observed. This stray light alters the apparent brightness of an object within the visual field and the background against which it is viewed, thereby impairing the ability of the driver to perform visual tasks. Conceptually, veiling luminance is the light that travels directly from the luminaire to the observer's eye.

**viewpoint** A roadside stopping opportunity with a view of some point of interest or area scenery. This area is not typically separated from the traveled way by some form of highway buffer.

**violation rate** The total number of violators divided by the total number of vehicles on an HOV facility.

**visioning exercises** a process of determining the goals for a facility or place.

**Visitor Information Center (VIC)** A staffed or nonstaffed booth or separate building that displays and dispenses free tourist travel maps and brochures. These are typically located at border-entry SRAs to provide travel information to highway users as they enter the state.

**W**

**walk interval** That phase of a traffic signal cycle during which the pedestrian is to begin crossing, typically indicated by a WALK message or the walking person symbol and its audible equivalent. (ADA term)

**walkway** The continuous portion of the pedestrian access route that is connected to street crossings by curb ramps. (ADA term)

**warning beacon** A beacon that supplements a warning or regulatory sign or marking. The display is a flashing yellow indication. These beacons are not used with STOP, YIELD, or DO NOT ENTER signs or at intersections that control two or more lanes of travel. A warning identification beacon is energized only during those times when the warning or regulation is in effect.

**warrant** A minimum condition for which an action is authorized. Meeting a warrant does not attest to the existence of a condition that needs attention. Further justification is required.

**Washington Transportation Plan (WTP)** A WSDOT planning document developed in coordination with local governments, regional agencies, and private transportation providers. The WTP addresses the future of transportation facilities owned and operated by the state as well as those the state does not own but in which it has an interest. It identifies needed transportation investments, which are defined by service objectives and specific desired outcomes for each transportation mode.

**weaving section** A length of highway over which one-way traffic streams cross by merging and diverging maneuvers.

**weigh in motion (WIM)** A scale facility capable of weighing a vehicle without the vehicle stopping.

**wet film thickness** Thickness of a pavement marking at the time of application without beads.

**work zone** An area of a highway with construction, maintenance, or utility work activities. A work zone is identified by the placement of temporary traffic control devices that may include signs, channelizing devices, barriers, pavement markings, and/or work vehicles with warning lights. It extends from the first warning sign or high-intensity rotating, flashing, oscillating, or strobe lights on a vehicle to the END ROAD WORK sign or the last temporary traffic control device ([MUTCD](#)).

**work zone impact** Highway construction, maintenance, or utility work operations in the traveled way, adjacent to the traveled way, or within the highway's right of way that creates safety and mobility concerns for workers or the traveling public.

**work zone traffic control** The planning, design, and preparation of contract documents for the modification of traffic patterns due to work zone impacts.

**wye (Y) connection** An intersecting one-way roadway, intersecting at an angle less than 60°, in the general form of a "Y."

## Y

**yield-at-entry** The requirement that vehicles on all entry lanes yield to vehicles within the circulating roadway.

**yield point** The point at which entering traffic must yield to circulating traffic before entering the circulating roadway (see [Chapter 1320](#)).

## Z